Amendment No. 1 to Draft Registration Statement, as confidentially submitted to the Securities and Exchange Commission on October 30, 2020.
This draft registration statement has not been publicly filed with the Securities and Exchange Commission and all information herein remains strictly confidential.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT

Under
The Securities Act of 1933

SEER, INC.

(Exact name of Registrant as specified in its charter)

Delaware	**3826**	**82-1153150**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification Number)**

3800 Bridge Parkway, Suite 102
Redwood City, California 94065
650-453-0000
(Address, including zip code and telephone number, including area code, of Registrant's principal executive offices)

Omid Farokhzad, M.D.
Chief Executive Officer
Seer, Inc.
3800 Bridge Parkway, Suite 102
Redwood City, California 94065
650-453-0000
(Name, address, including zip code and telephone number, including area code, of agent for service)

Copies to:

Tony Jeffries **Christina L. Poulsen** **Wilson Sonsini Goodrich & Rosati, P.C.** **650 Page Mill Road** **Palo Alto, California 94304** **650-493-9300**	**Alan F. Denenberg** **Davis Polk & Wardwell LLP** **1600 El Camino Real** **Menlo Park, California 94025** **650-752-2000**

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
		Smaller reporting company	☐
Non-accelerated filer	☒	Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price[(1)(2)]	Amount of Registration Fee
Class A Common Stock, $ 0.00001 par value	$	$

(1) Includes offering price of any additional shares of Class A common stock that the underwriters have the option to purchase.
(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED , 2020

PRELIMINARY PROSPECTUS

Shares

Class A Common Stock

We are offering shares of our Class A common stock. This is our initial public offering of our Class A common stock, and no public market currently exists for our Class A common stock. The rights of the holders of Class A common stock and Class B common stock are substantially identical, except with respect to voting and conversion. Each share of Class A common stock is entitled to one vote per share. Each share of Class B common stock is entitled to ten votes per share and is convertible at any time into one share of Class A common stock. Following this offering, outstanding shares of Class B common stock will represent approximately % of the voting power of our outstanding capital stock.

We expect the initial public offering price to be between $ and $ per share. We intend to apply to list our Class A common stock on the Nasdaq Stock Market under the symbol "SEER."

We are an "emerging growth company" as defined under the federal securities laws and, as such, we have elected to comply with certain reduced reporting requirements for this prospectus and may elect to do so in future filings.

Investing in our Class A common stock involves a high degree of risk. Please read "Risk Factors" beginning on page 18 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	PER SHARE	TOTAL
Initial Public Offering Price	$	$
Underwriting Discounts and Commissions[(1)]	$	$
Proceeds to Seer, Inc., before expenses	$	$

(1) See "Underwriting" beginning on page 174 for additional information regarding underwriter compensation.

Delivery of the shares of Class A common stock is expected to be made on or about , 2020. We have granted the underwriters an option for a period of 30 days to purchase an additional shares of our Class A common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $ and the total proceeds to us, before expenses, will be $.

J.P. Morgan **Morgan Stanley** **BofA Securities** **Cowen**

Prospectus dated , 2020

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Through and including , 2020 (the 25th day after the date of this prospectus), all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

We and the underwriters have not authorized anyone to provide you any information other than that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the underwriters are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date of this prospectus unless the information specifically indicates that another date applies, regardless of the time of delivery of this prospectus or of any sale of the shares of Class A common stock offered hereby. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside of the United States: we have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of Class A common stock and the distribution of this prospectus outside of the United States.

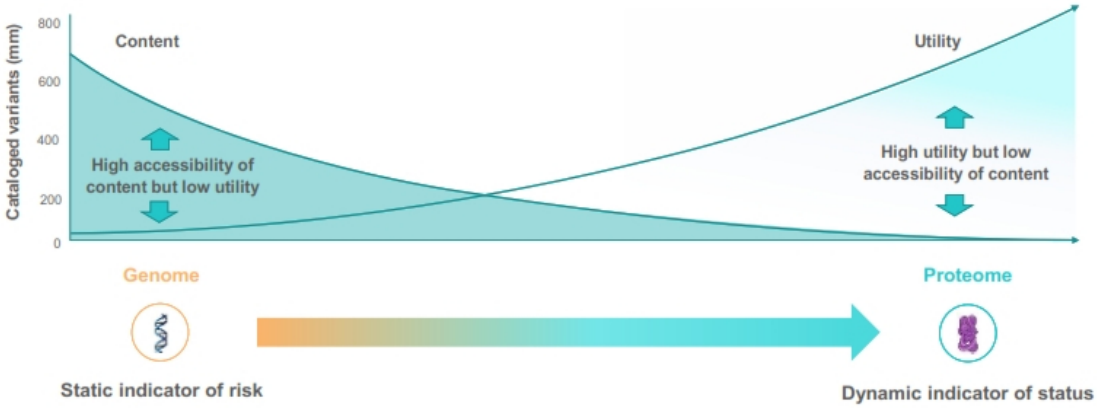
PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus and is qualified in its entirety by the more detailed information and financial statements included elsewhere in this prospectus. It does not contain all of the information that may be important to you and your investment decision. You should carefully read this entire prospectus, including the sections titled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," and our financial statements and related notes. In this prospectus, unless the context requires otherwise, references to "we," "us," "our," "Seer," or "the Company" refer to Seer, Inc. A summary of key terms used in this prospectus can be found in the section titled "Glossary" located after this Prospectus Summary.

Overview

We aim to enable exceptional scientific outcomes by commercializing transformative products for researchers to unlock deep, unbiased biological information. Our initial product, the Proteograph Product Suite (Proteograph), will leverage our proprietary engineered nanoparticle (NP) technology to provide unbiased, deep, rapid and large-scale access across the proteome. Our Proteograph Product Suite is an integrated solution that is comprised of consumables, an automation instrument and software. Our Proteograph provides an easy-to-use workflow, which has the potential to make proteomic profiling, and the analysis of the thousands of samples needed to characterize the complex, dynamic nature of the proteome, accessible for nearly any laboratory. We believe that characterizing and understanding the full complexity of the proteome is foundational for accelerating biological insights and will lead to broad potential end-markets for proteomics, encompassing basic research and discovery, translational research, diagnostics and applied applications. This full understanding of the complexity of the proteome requires large-scale, unbiased and deep interrogation of thousands of samples across time, which we believe is unavailable with the proteomic approaches available today. We believe that our Proteograph has the potential to enable researchers to perform proteomics studies at scale, similar to the manner in which next generation sequencing (NGS) technologies have transformed genomics.

Proteins are the functional units of all forms of life. While deoxyribonucleic acid (DNA) may be used as a static indicator of health risk, proteins are dynamic indicators of physiology and may be used to track health over time, gauge disease progression and monitor therapeutic response. Despite the central role proteins play in biology, the proteome is relatively unexplored compared to the genome, particularly the rich functional content that could be derived from large-scale proteomics studies. We believe large-scale characterization of the proteome has not been feasible with existing proteomics approaches, which broadly fall into two categories: (i) unbiased but not scalable, or (ii) scalable but biased. Current *de novo*, or unbiased, approaches require complex, lengthy, and labor- and capital-intensive workflows, which limit their scalability to small, under-powered studies, and require significant processing expertise. On the other hand, targeted or biased methods only enable interrogation of a limited number of known proteins per sample. Although biased approaches are scalable, they lack the breadth and depth necessary to appropriately characterize the proteome and catalog its many protein variants. Thus, we believe that proteomics researchers are forced into an unattractive trade-off between the number of samples in a study and the depth and breadth of the analysis. These trade-offs limit researchers' abilities to advance characterization of the proteome to match the current characterization of the genome. We believe large-scale proteomic analysis is needed for a more complete understanding of biology.



We plan to initially focus on research applications for our Proteograph Product Suite and will sell and market our Proteograph for research use only (RUO). We plan to commercialize our Proteograph utilizing a three phase plan that has been shown to be effective and optimal for introducing disruptive products in numerous life sciences technology markets, including NGS. We are currently in the first phase, during which we will collaborate with a small number of key opinion leaders in proteomics, whose assessment and validation of products can significantly influence other researchers in their respective markets. Our first Proteograph was delivered to one of our first collaborators in October 2020, and we expect to place another Proteograph with a second collaborator before the end of 2020. In consideration of our initial collaborators' significant contributions to the development of our Proteograph Product Suite, including providing us with helpful data and feedback on our Proteograph, we have offered our early collaborators a special discount program for consumables that is not reflective of our expected commercial pricing. Additionally, we have provided these early collaborators with the ability to purchase our Proteograph automation instrument at a discount following the completion of the the first phase of our commercialization plan. During the second phase, early access limited release, which we expect to commence in 2021, we plan to sell our Proteograph to select sites performing large-scale proteomics or genomics research. We will work closely with these sites, which we expect will serve as models for the rest of the market, to exemplify applications that demonstrate the unique value proposition of our Proteograph. We expect this phase to continue through 2021 and lead into the third phase of commercialization, broad commercial availability, in early 2022. During the second and third phases, we expect to sell our Proteograph at list prices though we may offer volume-based discounts on consumables, consistent with industry practice. We believe by following this approach we can appropriately scale our operations, deliver exceptional customer experiences, foster publications and develop a robust pipeline of customers to drive our revenue growth.

Challenges of Accessing the Proteome

The human proteome is dynamic and far more complex and diverse in structure, composition and number of variants than either the genome or transcriptome. Starting from the genome, there are multiple biological steps that take place to arrive at the proteome, each step driving increasing complexity and diversity. The human genome of approximately 20,000 genes is estimated to give rise to 1,000,000 or more protein variants, in part because a single gene produces distinct ribonucleic acid (RNA) isoforms through the process of transcription and a myriad of structurally distinct proteins through the process of translation. Biological processes can further chemically modify these proteins in unique ways, resulting in a large number of protein variants through post-translational modifications. Overall, these processes result in many levels of protein diversity, from amino acid sequence and structural variations, to post-translational modifications (PTMs), to functional changes due to interactions between the proteins themselves, known as protein-protein interactions (PPIs). In addition, all of these forms of diversity can differ between states of health and disease. We believe the fundamental challenge with existing proteomics methods is their inability to measure the breadth and depth of the proteome's complexity, rapidly and at scale.

Background of Massively Parallel Sampling

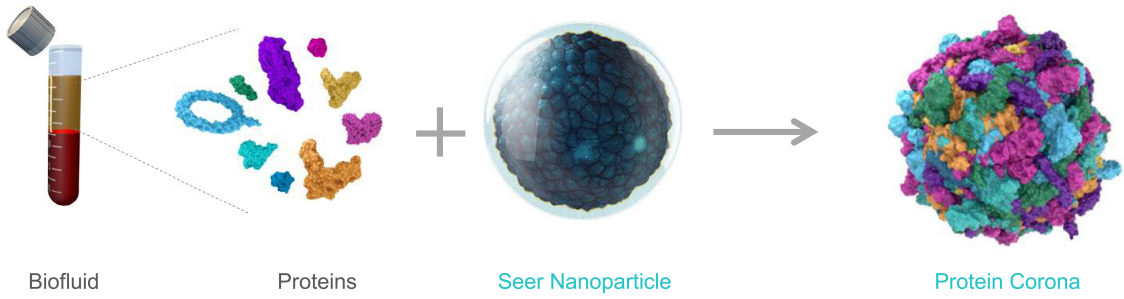
The ability to perform massively parallel sampling in biology has been transformational to researchers' ability to perform large-scale and unbiased biological analysis. For example, before NGS, genomic approaches were not scalable to either read the entire genome or process very large numbers of samples. Researchers could only sequence hundreds of fragments of DNA or RNA at a time, and not easily in parallel. Genetic analysis was limited to biased, shallow genetic studies that were time-consuming and not scalable. As a result, researchers in genomics faced similar challenges that researchers currently face in proteomics. The introduction of NGS enabled massively parallel sampling of small fragments of DNA, allowing researchers to, in parallel, sequence tens of millions, and, through subsequent innovations, currently tens of billions, of fragments of DNA per sample. This transformative approach to sampling enabled genomic sequencing technologies to scale and created the path to genomic end-market opportunities, including basic research and discovery, translational research and clinical applications, including early cancer detection, recurrence monitoring and non-invasive prenatal testing. While there are no assurances that our Proteograph will have the same effect on the proteomics market as NGS technologies have had on the genomics market, given the utility of proteins for measuring function, health and disease, we believe the same, if not a greater, market opportunity exists for providing unbiased, deep, rapid and scalable access to the proteome.

Our Proprietary Engineered Nanoparticle Technology

Our proprietary engineered NP technology overcomes the limitations of existing methods and is the foundation for our Proteograph Product Suite's easy-to-use workflow for unbiased, deep, rapid and scalable proteomic analysis. Our approach is based on proprietary engineered NPs that enable unbiased and massively parallel sampling of intact proteins across the proteome, capturing a myriad of molecular information at the level of protein variants as well as PPIs. Our NPs are designed to eliminate the need for complex workflows required by other unbiased approaches, which we believe will make proteomics more accessible to the broader scientific community.

The diameter of a nanoparticle is typically in the tens to hundreds of nanometers. As a reference, the diameter of the human hair is 80,000 nanometers. When nanoparticles are placed in contact with a biological sample, a thin layer of intact proteins rapidly, selectively and reproducibly adsorbs onto the surface of a nanoparticle upon contact, forming what is called a protein "corona." Additional intact proteins can also join the corona layer by binding directly to a protein that has already attached to the nanoparticle through PPIs and intact protein complexes may also attach to the nanoparticle directly. Our NPs' ability to capture whole and intact proteins and their many diverse variants provides access to protein structural information, including information on PPIs. At binding equilibrium, which occurs within minutes after our NPs come into contact with the protein, the selective sampling of proteins by our NPs is robust and highly reproducible.

The protein sampling and binding of proteins to the nanoparticle surface are driven by three primary factors: (i) affinity of a given protein for a given nanoparticle's physicochemical surface; (ii) concentration of a given protein in a biological sample; and (iii) affinity of the proteins for other proteins on the surface of the nanoparticle, forming PPIs. We can use a variety of different methods and materials to design and create different nanoparticles. Each nanoparticle can have distinct physicochemical properties that generate a unique protein corona pattern and a unique proteomic fingerprint. We can combine nanoparticles into panels to provide a representative and thorough sampling across the dynamic range of the proteome, from high to low abundance proteins. In effect, the properties of protein binding to a panel of nanoparticles are functionally equivalent to, and can replace, complex, biochemical laboratory workflows for the preparation of samples for deep, unbiased mass spectrometry (MS), and which enable the capture of thousands of proteins from biofluids for large-scale proteomics studies. Virtually any solubilized biological sample can be interrogated with nanoparticles, including cell or tissue homogenates, blood or blood components (such as plasma or serum, urine), saliva, cerebrospinal fluid and synovial fluid. The versatility of nanoparticles provides the opportunity to use a vast universe of different nanoparticles with different physicochemical properties to selectively, reproducibly and deeply sample the proteome in an unbiased way.



5 issued and over 25 pending patents

Our NPs enable the unique capabilities of our Proteograph Product Suite, including the ability to:

- eliminate complex biofluid processing workflows required by other unbiased proteomic approaches;
- sample in an unbiased manner across the dynamic range of the proteome in a variety of biological samples, including cell or tissue homogenates, blood or blood components (such as plasma or serum), urine, saliva, cerebrospinal fluid, and synovial fluid;
- identify and distinguish protein variants at the peptide level;
- identify and quantify protein variants and PPIs;
- use machine learning to design, synthesize and select different NPs and NP panels to create multiple products and applications; and
- be compatible across a wide range of laboratory workflows, automation equipment and sample processing and detection methods, lowering the hurdle for product adoption.

Our Proteograph Product Suite

Our proprietary engineered NP technology forms the basis for our first product, the Proteograph Product Suite. Our Proteograph is an integrated solution consisting of consumables, an automation instrument and software to perform unbiased, deep proteomic analysis at scale in a matter of hours. We designed our Proteograph to be efficient and easy-to-use, and to leverage broadly-used laboratory instrumentation to enable adoption in both decentralized and centralized settings and be widely available to life sciences researchers.

Our Proteograph's key components are the following:

- Consumables: Our Proteograph consumables consist of our NP panel and all other consumables necessary to assay samples on our automation instrument.
- Automation Instrument: Our Proteograph automation instrument is custom-configured for researchers to assay samples in approximately seven hours, which includes thirty minutes of set-up time and six and a half hours of automated instrument time. The output from our automation instrument is peptides ready to be processed on an MS instrument, which is a widely-accessible platform for protein detection.
- Software: Our Proteograph software was designed for ease-of-use and was developed to help users arrive at insights quickly and efficiently following peptide detection by an MS instrument.

The output from our automation instrument is peptides ready to be processed on an MS instrument, which is a widely-accessible platform for protein detection. The Proteograph Product Suite is detector agnostic and, therefore, we believe, will be adaptable to other protein detection instruments in the future. The MS component of our Proteograph workflow is either provided by the researcher's laboratory or can be outsourced to a third-party provider. We estimate that there are approximately 16,000 MS instruments with configurations typically used to perform proteomic analysis installed worldwide and, therefore, we believe that MS systems are readily accessible by researchers.

For our first Proteograph assay, we will employ a panel of five NPs. We designed the performance specifications of our Proteograph to meet the core needs of the market in terms of protein coverage and sample throughput required for proteomic experiments that are unbiased and at-scale. The product will allow for the interrogation and processing of up to 16 samples by our five proprietary engineered NPs in parallel on a single 96-well plate in approximately seven hours.

Proteograph Product Suite Performance

The four key technical attributes of our Proteograph Product Suite are its breadth of protein sampling, depth of coverage, accuracy and precision of measurement. In addition to its technical performance, our Proteograph automation instrument's rapid throughput is an important characteristic to scale the number of samples assayed. We believe that our Proteograph Product Suite is the only product to provide these technical and operational capabilities in an integrated solution to enable large-scale proteomic analysis.

- ***Breadth of protein sampling.*** Breadth of protein sampling refers to our Proteograph Product Suite's ability to conduct unbiased, highly parallel sampling of the proteome across its entire dynamic range, from high to low abundant proteins. Given the unique characteristics of our NPs, our Proteograph Product Suite allows for the unbiased highly parallel sampling of the proteome, and it does this across its entire dynamic range from high to low abundant proteins. Each uniquely engineered NP selectively captures hundreds of distinct intact proteins from a biosample based on their abundance and affinity for the NP surface. Our Proteograph leverages a panel of unique NPs to capture significantly more proteins and protein variants than current methods of unbiased proteomic analysis.
- ***Depth of coverage.*** Depth of coverage refers to our Proteograph's ability to evaluate the proteome across the wide dynamic range of abundance of proteins. The range from the most abundant to the least abundant protein in biological samples can vary greatly. In plasma, this range is estimated to be at least ten orders of magnitude, and the rich diversity of biology resides outside the most abundant proteins. Sampling across the entire dynamic range has been one of the seminal challenges in the field of proteomics. Conventional approaches to address this challenge have employed laborious depletion and fractionation methods, which can be avoided with the automated and scalable workflow of our Proteograph Product Suite.
- ***Accuracy of measurement.*** Accuracy refers to how close the measured abundance of a protein is to the true abundance in a sample. Accuracy of protein abundance measurement can be demonstrated by MS signal intensity of the proteins sampled with our Proteograph, and comparing these values with measurements

obtained directly by immuno-assay (ELISA). Our Proteograph assay can distinguish changes in protein abundance with significant accuracy.

- ***Precision of measurement.*** Precision refers to how close several measurements of protein abundance in the same sample are to each other. Less precision in the measurement of a protein adds noise to an experiment, requiring a larger number of samples in the study to observe a true difference. Precision is typically measured as the coefficient of variation (CV%), or standard deviation divided by the mean times 100. Therefore, a lower CV% represents a more precise outcome. Our Proteograph analysis shows lower CV%s than fractionation and depletion methods, which is notable since we achieve lower CV%s while concurrently sampling significantly more proteins.

- ***Rapid and large-scale.*** Our Proteograph enables rapid and large-scale proteomic sample processing in a seven-hour workflow, compared to other unbiased solutions that can take days to weeks. We believe this increased throughput will enable researchers to perform large-scale proteomics studies that were not previously accessible, but are needed for a more complete characterization of the proteome, and thus biology.

Markets

The proteome comprises millions of protein variants whose expression varies by cell, tissue, organ and system, as well as across time, and whose interaction with other proteins and biomolecules are essential to driving health and disease. No commercial product has existed that enables researchers to assess the proteome deeply, broadly, rapidly and at scale across thousands of samples. Despite this limitation, researchers rely on laborious, expensive and complex methods to survey as much of the proteome as they can. While NGS transformed life sciences end-markets through massively parallel access to the genome, lack of similar unbiased, deep, rapid and large-scale capabilities has to date evaded the field of proteomics. We believe our Proteograph enables such access to the proteome, and will allow researchers to undertake the scale of studies we believe are needed to understand the complexity of the proteome, and by extension biology.

We believe the two primary near-term markets for our Proteograph are the proteomics market, which was $32 billion in 2019, according to Allied Market Research, and the genomics market, which was $21 billion in 2019, according to Technavio. Within these markets, potential applications of our Proteograph span basic research and discovery, translational research, diagnostics and applied applications. Of the $32 billion proteomics market, $25 billion is estimated to be spent on reagents, $5 billion on instruments, and $2 billion on services. In the near-term, we believe we will compete in both the proteomics reagent and instrument markets. Furthermore, the $21 billion genomics market consists of approximately $13 billion spent on products and $7 billion spent on services. In the near-term, we believe we will be able to garner spend from both products and services as genomic customers link genotype to phenotype by supplementing existing genomic data with proteomics data. While we initially plan to sell and market our Proteograph for RUO, we believe that the capabilities of our Proteograph Product Suite may enable our customers to use our Proteograph in other applications. While we currently do not intend to pursue clinical diagnostics applications, we may in the future seek premarket approval or clearance for our Proteograph in order to allow our customers to use our Proteograph in other product offerings. We believe that our Proteograph's unique value proposition will resonate with proteomics researchers who already value deep and unbiased proteomic information, and who desire to scale experiments to far greater sample sizes at a fraction of the time and cost of current approaches. We also believe that as more genomics researchers incorporate other -omics approaches to elucidate key genomic findings, our Proteograph will uniquely provide large-scale, unbiased and deep proteomic information to complement genomic information, and enable researchers to gain a clearer picture of biology and a deeper understanding of genomic risk factors. Longer-term, we believe that the capabilities offered by our Proteograph and future products may potentially lead to new end-markets, applications, and business models that complement existing proteomics and genomics markets.

The Advantages of Our Proteograph Product Suite

We believe our proprietary engineered NP technology and Proteograph Product Suite have the following advantages:

- Our Proteograph Product Suite is expected to be the first commercially available solution to provide the combination of unbiased, deep, rapid and large-scale access to the proteome.
- Our Proteograph Product Suite provides insight into protein variation and PPIs at a depth and scale that we believe sets a new standard for unbiased and deep proteomics, and is unattainable with other existing approaches.
- Our Proteograph Product Suite was designed to enable broad adoption across a wide variety of customers in both decentralized and centralized settings.
- Our proprietary engineered NPs are a core technology from which we can develop a range of products, applications and platforms.
- Our NP technology inherently provides significant operational leverage in research and development, manufacturing and commercialization.
- Our Proteograph Product Suite has the potential to provide sustainable differentiation.

Our Strategy

We aim to enable exceptional scientific outcomes by commercializing transformative products for researchers to unlock deep, unbiased biological information. Our growth strategy is to:

- Drive adoption of our Proteograph Product Suite to enable researchers to create large-scale unbiased proteomic datasets that generate transformative scientific insights.
- Invest in market development activities to increase awareness of the importance of large-scale proteomic data and the ability to access it.
- Continually innovate to develop and commercialize additional transformative products to access the proteome and accelerate our understanding of biology.
- Rapidly build our commercial infrastructure and NP manufacturing capabilities to provide for our commercial launch in the United States and internationally.
- Foster the creation of an ecosystem of customers, partners and collaborators whose expertise and offerings complement and enhance the power and utility of our products.
- Expand our proprietary engineered NP technology to analyze molecules beyond proteins.

Risks Associated with Our Business

Our business is subject to numerous risks and uncertainties that you should consider before investing in our company. These risks are described more fully in the section titled “Risk Factors” in this prospectus. These risks include, but are not limited to, the following:

- We are an early-stage life sciences technology company with a history of net losses, which we expect to continue, and we may not be able to generate meaningful revenues or achieve and sustain profitability in the future.
- We have a limited operating history, which may make it difficult to evaluate the prospects for our future viability and predict our future performance.

- Our operating results may fluctuate significantly in the future, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.
- The size of the markets for our Proteograph Product Suite may be smaller than estimated, and new market opportunities may not develop as quickly as we expect, or at all, limiting our ability to successfully sell our products.
- We have not yet commercially launched our Proteograph Product Suite, and we may not be able to successfully commercially launch our Proteograph as planned.
- Even if we commercially launch our Proteograph Product Suite, our success depends on broad scientific and market acceptance of our Proteograph, which we may fail to achieve.
- Even if our Proteograph Product Suite is commercialized and achieves broad scientific and market acceptance, if we fail to improve it or introduce compelling new products, our revenues and our prospects could be harmed.
- The COVID-19 pandemic and efforts to reduce its spread have adversely impacted, and are expected to continue to materially and adversely impact, our business and operations.
- If we are unable to obtain and maintain sufficient intellectual property protection for our products and technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired.
- We have identified material weaknesses in our internal control over financial reporting. If our remediation measures are ineffective, or if we experience additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls in the future, we may not be able to report our financial condition or results of operations accurately or on a timely basis, which may adversely affect investor confidence in us and, as a result, the value of our Class A common stock.

Corporate Information and History

We were incorporated in Delaware on March 16, 2017, under the name Seer Biosciences, Inc., and changed our name to Seer, Inc. on July 16, 2018. Our principal executive offices are located at 3800 Bridge Parkway, Suite 102, Redwood City, California 94065. Our telephone number is 650-543-0000. Our website address is http://seer.bio. Information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus and should not be considered to be part of this prospectus.

We use Seer and Proteograph as trademarks in the United States and other countries. This prospectus contains references to our trademarks and service marks and to those belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other entities' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

Implications of Being an Emerging Growth Company

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act. We will remain an emerging growth company until the earliest to occur of: the last day of the fiscal year in which we have more than $1.07 billion in annual revenue; the date we qualify as a "large accelerated filer," with at least $700 million of equity securities held by non-affiliates; the issuance, in any three-year period, by us of more than $1.0 billion in non-convertible debt securities; and the last day of the fiscal year ending after the fifth anniversary of our initial public offering. As a result of this status, we have taken advantage of reduced reporting requirements in this prospectus and may elect to take advantage of other reduced reporting

requirements in our future filings with the Securities and Exchange Commission. In particular, in this prospectus, we have provided only two years of audited financial statements and have not included all of the executive compensation related information that would be required if we were not an emerging growth company. In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards, delaying the adoption of these accounting standards until they would apply to private companies. We have elected to use this extended transition period to enable us to comply with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with the new or revised accounting standards as of public company effective dates.

THE OFFERING

Class A common stock offered by us	shares
Underwriter's option to purchase additional shares of Class A common stock from us	The underwriters have been granted an option to purchase up to additional shares of Class A common stock from us at any time within 30 days from the date of this prospectus.
Class A common stock to be outstanding after this offering	shares (or shares if the underwriters exercise their option to purchase additional shares in full)
Class B common stock to be outstanding after this offering	shares
Total Class A common stock and Class B common stock to be outstanding after this offering	shares
Use of proceeds	We estimate that the net proceeds to us from this offering will be approximately $ million (or approximately $ million if the underwriters exercise their option to purchase additional shares in full), based upon the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. The principal purposes of this offering are to obtain additional capital to support our operations, establish a public market for our Class A common stock and facilitate our future access to the public capital markets. We currently intend to use the net proceeds from this offering, together with our existing cash, to commercialize our Proteograph Product Suite, ongoing sales and marketing activities, and for other development work associated with advancing our Proteograph Product Suite, research and development and general corporate purposes. We may also use a portion of the proceeds to in-license, acquire or invest in additional businesses, technologies, products or assets. Although we have no specific agreements, commitments or understandings with respect to any in-licensing activity or acquisitions, we evaluate these opportunities and engage in related discussions with other companies from time-to-time.
Risk factors	See "Risk Factors" beginning on page 18 and other information included in this prospectus for a discussion of factors that you should consider carefully before deciding to invest in our Class A common stock.

Voting rights	Shares of Class A common stock are entitled to one vote per share. Shares of Class B common stock are entitled to ten votes per share. Holders of our Class A common stock and Class B common stock will generally vote together as a single class, unless otherwise required by law or our amended and restated certificate of incorporation. Upon completion of this offering, holders of our outstanding Class B common stock, which includes our Chief Executive Officer, will hold approximately % of the voting power of our outstanding capital stock and will have the ability to control the outcome of matters submitted to our stockholders for approval, including the election of our directors, amendments of our organizational documents and any merger, consolidation, sale of all or substantially all of our assets or other major corporate transactions. See the sections titled "Principal Stockholders" and "Description of Capital Stock" for additional information.
Proposed Nasdaq Stock Market trading symbol	"SEER"

The number of shares of our common stock that will be outstanding after this offering is based on 7,054,694 shares of our Class A common stock and 20,000,000 shares of our Class B common stock outstanding as of September 30, 2020, and excludes the following:

- 16,164,706 shares of our Class A common stock issuable upon the exercise of options to purchase shares of our Class A common stock outstanding as of September 30, 2020, with a weighted-average exercise price of $1.17 per share;
- 717,319 shares of our Class A common stock issuable upon the vesting of restricted stock units (RSUs) outstanding as of September 30, 2020; and
- shares of our Class A common stock reserved for future issuance under our equity compensation plans, consisting of:
  - shares of our Class A common stock to be reserved for future issuance under our 2020 Equity Incentive Plan (our 2020 Plan), which will become effective prior to the completion of this offering, and any additional shares that become available under our 2020 Plan pursuant to provisions thereof that automatically increase the share reserve under the plan each year;
  - shares of common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan (our ESPP) which will become effective in connection with this offering, and any additional shares that become available under our ESPP pursuant to provisions thereof that automatically increase the share reserve under the plan each year; and
  - 2,551,205 shares of our Class A common stock reserved for future issuance under our 2017 Stock Incentive Plan (our 2017 Plan) (and no shares of our Class A common stock reserved for future issuance under our 2020 RSU Equity Incentive Plan (our RSU Plan)), and upon the termination of such 2017 Plan and RSU Plan in connection with the effectiveness of our 2020 Plan, an equivalent number of shares of our Class A common stock to be added to the shares reserved for future issuance under our 2020 Plan above.

Except as otherwise indicated, all information in this prospectus assumes:

- 62,117,410 shares of convertible preferred stock that will automatically convert into shares of Class A common stock immediately prior to the completion of this offering pursuant to the terms of our amended and restated certificate of incorporation; the filing and effectiveness of our amended and restated certificate of incorporation in Delaware and the effectiveness of our amended and restated bylaws will each occur immediately prior to the completion of this offering;
- no exercise of outstanding stock options or settlement of outstanding RSUs subsequent to October 26, 2020; and
- no exercise by the underwriters of their option to purchase up to an additional shares of our Class A common stock from us.

SUMMARY FINANCIAL AND OTHER DATA

The following tables summarize our financial and other data. We have derived the summary statement of operations data for the years ended December 31, 2018 and 2019 from our audited financial statements included elsewhere in this prospectus. We have derived the statement of operations data for the nine months ended September 30, 2019 and 2020, and the balance sheet data as of September 30, 2020 from our unaudited interim financial statements and related notes included elsewhere in this prospectus. Our unaudited interim financial statements were prepared in accordance with generally accepted accounting principles in the United States (GAAP), on the same basis as our audited financial statements and include, in the opinion of management, all adjustments, consisting of normal recurring adjustments, that are necessary for the fair presentation of the financial information set forth in those financial statements. Our historical results are not necessarily indicative of the results that may be expected in the future, and our interim results are not necessarily indicative of our results for the full fiscal year.. The following summary financial and other data should be read in conjunction with the sections titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Selected Financial Data" and our financial statements and related notes included elsewhere in this prospectus.

Statement of Operations Data

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
	(in thousands, except share and per share data)			
Total revenue	$ —	$ 116	$ 58	$ 320
Operating expenses:				
Research and development[1]	3,776	12,393	8,580	13,520
General and administrative[1]	2,982	4,606	2,963	7,408
Total operating expenses	6,758	16,999	11,543	20,928
Loss from operations	(6,758)	(16,883)	(11,485)	(20,608)
Other income (expense):				
Interest income	451	850	597	778
Interest expense	—	(5)	(4)	—
Other expense	—	—	—	(9)
Total other income	451	845	593	769
Net loss	$ (6,307)	$ (16,038)	$ (10,892)	$ (19,839)
Net loss per share attributable to common stockholders, basic and diluted[2]	$ (0.74)	$ (1.08)	$ (0.78)	$ (0.95)
Weighted-average common shares outstanding, basic and diluted[2]	8,502,926	14,878,157	13,987,682	20,778,317
Pro forma net loss per common share, basic and diluted[2]		$ (0.35)		$ (0.26)
Pro forma weighted-average common shares used to compute basic and diluted net loss per common share[2]		45,913,238		75,804,154

(1) Costs and expenses include stock-based compensation as follows:

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
	(in thousands)			
Research and development	$ 287	$ 766	$ 584	$ 561
General and administrative	385	791	572	2,003
Total stock-based compensation	$ 672	$ 1,557	$ 1,156	$ 2,564

(2) See Note 12 to our financial statements for an explanation of the calculations of our basic and diluted net loss per share attributable to common stockholders, pro forma net loss per share attributable to common stockholders and the weighted-average number of shares used in the computation of the per share amounts.

Balance Sheet Data

	As of September 30, 2020		
	Actual	Pro Forma[1]	Pro Forma as Adjusted[2][3]
		(in thousands)	
Cash, cash equivalents and investments	$ 121,506	$ 121,506	
Working capital[4]	117,451	117,451	
Total assets	133,890	133,890	
Total liabilities	8,354	8,354	
Accumulated deficit	(42,425)	(42,600)	
Total stockholders' equity	125,536	125,536	

(1) The pro forma column in the balance sheet data table above reflects (i) the automatic conversion of all shares of our convertible preferred stock into 62,117,410 shares of Class A common stock, as if such conversions had occurred on September 30, 2020, and (ii) stock-based compensation of approximately $0.2 million associated with RSUs subject to service-based and performance-based vesting conditions that we will recognize upon the completion of this offering and is reflected as an increase to additional paid-in capital and accumulated deficit.

(2) The pro forma as adjusted column in the balance sheet data table above gives effect to (i) the pro forma adjustments set forth above and (ii) the receipt of $ million in net proceeds from the sale and issuance by us of shares of our Class A common stock in this offering, based upon the assumed initial public offering price of $ per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the amount of our pro forma as adjusted cash, cash equivalents and investments, working capital, total assets and total stockholders' equity by $, assuming that the number of shares of Class A common stock offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting estimated underwriting discounts and commissions payable by us. An increase or decrease of 1.0 million shares in the number of shares of Class A common stock offered by us would increase or decrease, as applicable, the amount of our pro forma as adjusted cash, cash equivalents and investments, working capital, total assets and total stockholders' equity by $ assuming the assumed initial public offering price remains the same, and after deducting estimated underwriting discounts and commissions payable by us.

(4) We define working capital as current assets less current liabilities. See our financial statements included elsewhere in this prospectus for further details regarding our current assets and current liabilities.

GLOSSARY

Summary of Key Terms Used in this Prospectus

Accuracy. In the context of proteomics studies, accuracy of measurement refers to how close the measured abundance of a protein is to the true abundance in a sample.

Biased. Biased refers to molecular analyses that depend upon specific ligands that are targeted to specific proteins in the case of biased proteomics, or to specific genes or gene mutations in the case of biased genomics. Biased contrasts with unbiased, which does not require specific ligands to target molecules. Biased is also referred to as targeted since the ligands used are directed against specific target molecules.

Breadth. In the context of proteomics studies, breadth of sampling refers to the number of proteins that are sampled in a proteomics study.

Centralized. Centralized refers to a centralized laboratory in an institution where services, often highly technical or requiring specific capabilities and equipment, are performed for others in the institution. Examples of centralized laboratories include core labs for proteomics and genomics. Centralized contrasts with decentralized laboratories where technology and/or equipment is dispersed in an institution.

Consumables. Our consumables refer to the nanoparticle formulations, related reagents and disposable items in our assays that are provided to our customers to conduct proteomic assays using our Proteograph Product Suite.

Decentralized. Decentralized refers to a laboratory configuration in an institution where a specific technology, capabilities and equipment is dispersed throughout the institution. Decentralized contrasts with centralized where technology, capabilities and/or equipment is centralized in an institution, often in a core laboratory.

Depth. In the context of proteomics studies, depth of coverage refers to the magnitude of the range of protein concentrations that are represented in a data set of proteomic information. Thus, a data set which is deep has a wide range of protein concentrations in the components. For example, this range could represent more than five orders of magnitude of mass per volume of sample that are contained in that data set.

Functional context/characterization. Functional context/characterization, in the case of genes, refers to the details of how genes are hypothesized to interact biologically, either directly or through the mRNA or protein molecules that derive from the genes. The interactions of these molecules produce a specific biological function.

Genomics. Genomics refers to the study of all an organism's genes and their interactions to influence the organism. Large-scale studies are required to understand how changes in an organism's genes influence the organism.

Instrument. In the context of our Proteograph, our instrument refers to the automated, robotic, liquid handling workstation that is used along with our consumables to conduct proteomic assays using our Proteograph Product Suite.

Interactome. Interactome refers to the broad set of interaction networks among molecules, such PPIs. Other interactions may include those between small molecules and proteins.

Interrogation. In the context of our Proteograph, interrogation refers to analyses of one of more samples to explore the proteomic information contained in those samples.

Large-scale. In the context of proteomics studies, large-scale refers to studies of more than 100 samples, given that most proteomics studies, particularly those that cover a wide range of protein concentrations (i.e. deep studies) are in the range of less than 50 samples.

-omics. This term refers to various different biological analyses approaches whereby researchers can analyze complex biological data, often in high throughput methods, to find novel associations between biological entities, pinpoint relevant biomarkers and build elaborate markers of disease and physiology. Examples of various "omics"

analyses include: genomics, proteomics, transcriptomics, epigenomics, and metabolomics. When two or more of the -omics analyses approaches are combined either directly in analyses and/or in examination of -omics data sets, the approach is referred to as "multi-omics."

Mass spectrometry (MS). Mass spectrometry refers to an analytical technique that can be used to accurately measure the mass-to-charge ratio of different ions within a sample. The ions are derived from the sample by bombarding, or "ionizing," the sample with electrons. MS technology allows molecules, including proteins, to be analyzed accurately and with very high sensitivity at the atomic level. Analyzing complex biological samples, however, often requires prior sample preparation to allow for the sample to be more easily ionized and processed in an MS instrument.

Nanoparticle. Nanoparticle refers to a particle of matter that is generally tens to hundreds of nanometers in diameter. The small size of nanoparticles, which is between atomic scale and bulk material scale, results in material properties that can vary significantly from larger particles of the same material. These differences in material properties can be physical or chemical, and often involve differences in surface properties.

Peptide. Peptide refers to a chemical entity that is between two and 50 amino acids. A polypeptide that contains more than 50 amino acids is labelled as a protein.

Phenotype. Phenotype refers to the observable characteristics or traits of an organism, which can be manifested in form or structure by biochemical or physiological properties, or by behavior.

Polymorphism. Polymorphism refers to the occurrence of two or more forms or morphs of genes that are seen across a population. Polymorphisms can be, but are not always, associated with changes in phenotype, and these phenotypic changes are mediated through proteins and protein variants that can result from the polymorphism. Polymorphisms can be as small as a single nucleotide, and these are known as single nucleotide polymorphisms.

Post-translational modifications (PTMs). Post-translational modifications refer to the covalent and generally enzymatic modifications of proteins following protein synthesis. Examples of PTMs include phosphorylation, which is the addition of a phosphate group to an amino acid within a protein, or glycosylation, which refers to the addition of a carbohydrate group to an amino acid within a protein.

Precision. In the context of proteomics studies, precision of measurement refers to how close several measurements of protein abundance in the same sample are to each other.

Protein. Protein refers to a polypeptide of more than 50 amino acids. Proteins conduct a vast array of functions within an organism, including catalyzing enzymatic reactions, other molecular processes, cellular processes, and cell structure. The function of proteins is highly dependent on the three dimensional structure of the intact protein, including protein variants such as post-translational modifications. Moreover, these functional processes are often mediated through PPIs.

Protein-protein interactions (PPIs). Protein-protein interactions refer to specific physical interactions between two or more proteins driven by physicochemical forces, and which are the result of molecular mechanisms that mediate biological function.

Protein variant. Protein variant, also known as a protein isoform, refers to a set of similar proteins that originate from a single gene or gene family. These variations can be generated by different molecular mechanisms, including alternative splicing of RNAs, various expression patterns of RNAs and post-translational modifications.

Proteograph Product Suite. Our Proteograph Product Suite refers to an integrated solution consisting of consumables, which includes our nanoparticles, our automatic instrument, and our data analysis software.

Proteomic(s). Proteomic(s) refers to the large-scale study of proteins. The proteome is the entire set of proteins that is produced or modified in an organism or system.

Software. Our software refers to our integrated software suite that helps our customers process and interrogate the data that is generated by MS instruments after a proteomic assay has been performed using our Proteograph Product Suite.

Throughput. Throughput refers to the rate at which an assay can be performed on during a given time period.

Transcriptome. Transcriptome refers to the sum total of all messenger RNA (mRNA) molecules that are expressed from the genes of an organism, as the result of a biological process called "transcription" whereby the information in a strand of DNA is copied into a new molecule of mRNA.

Unbiased. Unbiased refers to molecular analyses that does not depend upon specific ligands that are targeted to specific proteins, genes or gene mutations. Unbiased contrasts with biased, which requires specific ligands to target molecules. Unbiased is also referred to as *de novo* since it enables the discovery of new molecular information by not being restricted to specific ligands and/or targets.

RISK FACTORS

Investing in our Class A common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this prospectus, including our financial statements and the related notes and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this prospectus, before deciding whether to invest in our Class A common stock. The occurrence of any of the events or developments described below could harm our business, financial condition, results of operations and prospects. In such an event, the market price of our Class A common stock could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations and the market price of our Class A common stock.

Summary Risk Factor

Our business is subject to numerous risks and uncertainties that you should consider before investing in our company, as fully described below. The principal factors and uncertainties that make investing in our company risky include, among others:

- we are an early-stage life sciences technology company with a history of net losses, which we expect to continue, and we may not be able to generate meaningful revenues or achieve and sustain profitability in the future;
- we have a limited operating history, which may make it difficult to evaluate the prospects for our future viability and predict our future performance;
- our operating results may fluctuate significantly in the future, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide;
- the size of the markets for our Proteograph Product Suite may be smaller than estimated, and new market opportunities may not develop as quickly as we expect, or at all, limiting our ability to successfully sell our products;
- we have not yet commercially launched our Proteograph Product Suite, and we may not be able to successfully commercially launch our Proteograph as planned;
- even if we commercially launch our Proteograph Product Suite, our success depends on broad scientific and market acceptance of our Proteograph, which we may fail to achieve;
- even if our Proteograph Product Suite is commercialized and achieves broad scientific and market acceptance, if we fail to improve it or introduce compelling new products, our revenues and our prospects could be harmed;
- the COVID-19 pandemic and efforts to reduce its spread have adversely impacted, and are expected to continue to materially and adversely impact, our business and operations;
- if we are unable to obtain and maintain sufficient intellectual property protection for our products and technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired; and
- we have identified material weaknesses in our internal control over financial reporting. If our remediation measures are ineffective, or if we experience additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls in the future, we may not be able to report our financial condition or results of operations accurately or on a timely basis, which may adversely affect investor confidence in us and, as a result, the value of our Class A common stock.

Risks Related to Our Business and Industry

We are an early-stage life sciences technology company with a history of net losses, which we expect to continue, and we may not be able to generate meaningful revenues or achieve and sustain profitability in the future.

We are an early-stage life sciences technology company, and we have incurred significant losses since we were formed in 2017, and expect to continue to incur losses in the future. We incurred net losses of $6.3 million and $16.0 million in 2018 and 2019, respectively and $10.9 million and $19.8 million in the nine months ended September 30, 2019 and 2020, respectively. As of September 30, 2020, we had an accumulated deficit of $42.4 million. These losses and accumulated deficit were primarily due to the substantial investments we have made to develop and improve our technology and our Proteograph Product Suite. Over the next several years, we expect to continue to devote substantially all of our resources towards continuing development and future commercialization of our Proteograph Product Suite and research and development efforts for products. These efforts may prove more costly than we currently anticipate. We have not generated any product revenue and we may never generate revenue sufficient to offset our expenses, or at all. In addition, as a public company, we will incur significant legal, accounting, administrative, insurance and other expenses that we did not incur as a private company. Accordingly, we cannot assure you that we will achieve profitability in the future or that, if we do become profitable, we will sustain profitability.

We have a limited operating history, which may make it difficult to evaluate the prospects for our future viability and predict our future performance.

We have not commercialized our Proteograph Product Suite or any other products and have not generated any revenue to date. Our operations to date have been limited to developing our technology and products. Our prospects must be considered in light of the uncertainties, risks, expenses, and difficulties frequently encountered by companies in their early stages of operations. We have not yet achieved market acceptance for our products, produced our products at scale, established a sales model, or conducted sales and marketing activities necessary for successful product commercialization. Consequently, predictions about our future success or viability are highly uncertain and may not be as accurate as they could be if we had a longer operating history or a company history of successfully developing and commercializing products.

In addition, as a business with a limited operating history, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown obstacles. We will eventually need to transition from a company with a focus on research and development to a company capable of supporting commercial activities as well, and we may not be successful in such a transition. We have encountered in the past, and will encounter in the future, risks and uncertainties frequently experienced by growing companies with limited operating histories in emerging and rapidly changing industries. If our assumptions regarding these risks and uncertainties, which we use to plan and operate our business, are incorrect or change, or if we do not address these risks successfully, our results of operations could differ materially from our expectations, and our business, financial condition and results of operations could be adversely affected.

Our operating results may fluctuate significantly in the future, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- our ability to successfully commercialize our Proteograph Product Suite on our anticipated timeline;
- the timing and cost of, and level of investment in, research and development and commercialization activities relating to our Proteograph Product Suite, including our Proteograph automation instrument and proprietary engineered nanoparticle (NP) technology, which may change from time to time;
- the level of demand for any products we are able to commercialize, particularly our Proteograph, which may vary significantly from period to period;

- our ability to drive adoption of our Proteograph in our target markets and our ability to expand into any future target markets;
- the prices at which we will be able to sell our Proteograph;
- the volume and mix of our sales between our Proteograph consumables, automation instruments and software, or changes in the manufacturing or sales costs related to our products;
- the length of time of the sales cycle for purchases of our Proteograph, including lead time needed to procure Proteograph automation instruments from our third-party contract manufacturer;
- the timing and amount of expenditures that we may incur to develop, commercialize or acquire additional products and technologies or for other purposes, such as the expansion of our facilities;
- changes in governmental funding of life sciences research and development or changes that impact budgets, budget cycles;
- seasonal spending patterns of our customers;
- the timing of when we recognize any revenues;
- future accounting pronouncements or changes in our accounting policies;
- the outcome of any future litigation or governmental investigations involving us, our industry or both;
- higher than anticipated service, replacement and warranty costs;
- the impact of the COVID-19 pandemic on the economy, investment in life sciences and research industries, our business operations, and resources and operations of our customers, suppliers, and distributors; and
- general industry, economic and market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors.

The cumulative effects of the factors discussed above could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If we are unable to commercialize products or generate revenue, or if our operating results fall below the expectations of analysts or investors or below any guidance we may provide, or if the guidance we provide is below the expectations of analysts or investors, it could cause the market price of our Class A common stock to decline.

The size of the markets for our Proteograph Product Suite may be smaller than estimated, and new market opportunities may not develop as quickly as we expect, or at all, limiting our ability to successfully sell our products.

The market for proteomics and genomics technologies and products is evolving, making it difficult to predict with any accuracy the size of the markets for our current and future products, including our Proteograph Product Suite. Our estimates of the total addressable market for our current and future products are based on a number of internal and third-party estimates and assumptions. In particular, our estimates are based on our expectations that researchers in the market for certain life sciences research tools and technologies will view our products as competitive alternatives to, or better options than, existing tools and technologies. We also expect researchers will recognize the ability of our products to complement, enhance and enable new applications of their current tools and technologies. We expect them to recognize the value proposition offered by our products, enough to purchase our products in addition to the tools and technologies they already own. Underlying each of these expectations are a number of estimates and assumptions that may be incorrect, including the assumptions that government or other sources of funding will continue to be available to life sciences researchers at times and in amounts necessary to

allow them to purchase our products and that researchers have sufficient samples and an unmet need for performing proteomics studies at scale across thousands of samples. In addition, sales of new products into new market opportunities may take years to develop and mature and we cannot be certain that these market opportunities will develop as we expect. New life sciences technology may not be adopted until the consistency and accuracy of such technology, method or device has been proven. As a result, the sizes of the annual total addressable market for new markets and new products are even more difficult to predict. Our product is an innovative new product, and while we draw comparisons between the evolution and growth of the genomics and proteomics markets, the proteomics market may develop more slowly or differently. In addition, our Proteograph may not impact the field of proteomics in the same manner or degree, or within the same time frame, that NGS technologies have impacted the field of genomics, or at all. While we believe our assumptions and the data underlying our estimates of the total addressable market for our products are reasonable, these assumptions and estimates may not be correct and the conditions supporting our assumptions or estimates, or those underlying the third-party data we have used, may change at any time, thereby reducing the accuracy of our estimates. As a result, our estimates of the total addressable market for our products may be incorrect.

The future growth of the market for our current and future products depends on many factors beyond our control, including recognition and acceptance of our products by the scientific community and the growth, prevalence and costs of competing products and solutions. Such recognition and acceptance may not occur in the near term, or at all. If the markets for our current and future products are smaller than estimated or do not develop as we expect, our growth may be limited and our business, financial condition and operational results of operations could be adversely affected.

We have not yet commercially launched our Proteograph Product Suite, and we may not be able to successfully commercially launch our Proteograph as planned.

We have not yet commercially launched our Proteograph Product Suite. We plan to follow a three phase launch plan to commercialize our Proteograph, which includes a collaboration phase, an early access limited release phase and a broad commercial availability phase. We are currently in the collaboration phase of our commercial launch plan. Our commercial launch plan may not progress as planned due to:

- the inability to establish the capabilities and value proposition of our Proteograph with key opinion leaders in a timely fashion;
- the potential need or desire to modify aspects of our Proteograph prior to entering into the second or third phases of our commercial launch plan;
- changing industry or market conditions, customer requirements or competitor offerings over the span of our commercial launch plan;
- delays in building out our sales, customer support and marketing organization as needed for each of the phases of our commercial launch plan; and
- delays in ramping up manufacturing, either internally or through our suppliers to meet the expected demand in each of the phases of our commercial launch plan.

To the extent our commercial launch plan is delayed or unsuccessful, our financial results will be adversely impacted.

Even if we commercially launch our Proteograph Product Suite, our success depends on broad scientific and market acceptance of our Proteograph, which we may fail to achieve.

Our ability to achieve and maintain scientific and commercial market acceptance of our Proteograph Product Suite will depend on a number of factors. We expect that our Proteograph will be subject to the market forces and adoption curves common to other new technologies. The market for proteomics and genomics technologies and products is in its early stages of development. If widespread adoption of our Proteograph takes longer than anticipated, we will continue to experience operating losses.

The success of life sciences products is due, in large part, to acceptance by the scientific community and their adoption of certain products in the applicable field of research. The life sciences scientific community is often led by a small number of early adopters and key opinion leaders who significantly influence the rest of the community through publications in peer-reviewed journals. In such journal publications, the researchers will describe not only their discoveries, but also the methods, and typically the products used, to fuel such discoveries. Mentions in peer-reviewed journal publications is a driver for the general acceptance of life sciences products, such as our Proteograph. During the collaboration and early access limited release phases of our commercialization launch plan, we intend to collaborate with a small number of key opinion leaders who are highly skilled at evaluating novel technologies and whose feedback can help us solidify our commercialization plans and processes. Ensuring that early adopters and key opinion leaders publish research involving the use of our products during the collaboration and early access limited release phases is critical to ensuring our products gain widespread scientific acceptance. In addition, continuing collaborative relationships with such key opinion leaders will be vital to maintaining any market acceptance we achieve. If too few researchers describe the use of our products, too many researchers shift to a competing product and publish research outlining their use of that product or too many researchers negatively describe the use of our products in publications, it may drive customers away from our products and it may delay our progression towards the broad commercial release phase of our commercialization plan.

Other factors in achieving commercial market acceptance, include:

- our ability to market and increase awareness of the capabilities of our Proteograph;
- the ability of our Proteograph to demonstrate comparable performance in intended use applications broadly in the hands of customers as achieved in the collaboration and early access limited release phases of our commercialization plan;
- our customers' willingness to adopt new products and workflows;
- our Proteograph's ease of use and whether it reliably provides advantages over other alternative technologies;
- the rate of adoption of our Proteograph by academic institutions, laboratories, biopharmaceutical companies and others;
- the prices we charge for our Proteograph;
- our ability to develop new products and workflows and solutions for customers;
- if competitors develop and commercialize products that perform similar functions as our Proteograph; and
- the impact of our investments in product innovation and commercial growth.

We cannot assure you that we will be successful in addressing each of these criteria or other criteria that might affect the market acceptance of any products we commercialize, particularly our Proteograph. If we are unsuccessful in achieving and maintaining market acceptance of our Proteograph, our business, financial condition and results of operations would be adversely affected.

If we are unable to establish sales and marketing capabilities, we may not be successful in commercializing our Proteograph Product Suite.

We have limited experience as a company in sales and marketing and our ability to achieve profitability depends on our being able to attract customers for our Proteograph. Although members of our management team have considerable industry experience, in the future we will be required to expand our sales, marketing, distribution and customer service and support capabilities with the appropriate technical expertise prior to the broad commercial

launch of our Proteograph. To perform sales, marketing, distribution, and customer service and support successfully, we will face a number of risks, including:

- our ability to attract, retain and manage the sales, marketing and customer service and support force necessary to commercialize and gain market acceptance for our technology;
- the time and cost of establishing a specialized sales, marketing and customer service and support force; and
- our sales, marketing and customer service and support force may be unable to initiate and execute successful commercialization activities.

We may seek to enlist one or more third parties to assist with sales, distribution and customer service and support globally or in certain regions of the world. There is no guarantee, if we do seek to enter into such arrangements, that we will be successful in attracting desirable sales and distribution partners or that we will be able to enter into such arrangements on favorable terms. If our sales and marketing efforts, or those of any third-party sales and distribution partners, are not successful, our Proteograph may not gain market acceptance, which could materially impact our business operations.

Even if our Proteograph Product Suite is commercialized and achieves broad scientific and market acceptance, if we fail to improve it or introduce compelling new products, our revenues and our prospects could be harmed.

Even if we are able to commercialize our Proteograph Product Suite and achieve broad scientific and market acceptance, our ability to attract new customers and increase revenue from existing customers will depend in large part on our ability to enhance and improve our Proteograph and to introduce compelling new products. The success of any enhancement to our Proteograph or introduction of new products depends on several factors, including timely completion and delivery, competitive pricing, adequate quality testing, integration with existing technologies, appropriately timed and staged introduction and overall market acceptance. Any new product or enhancement to our Proteograph that we develop may not be introduced in a timely or cost-effective manner, may contain defects, errors, vulnerabilities or bugs, or may not achieve the market acceptance necessary to generate significant revenue.

The typical development cycle of new life sciences products can be lengthy and complicated, and may require new scientific discoveries or advancements, considerable resources and complex technology and engineering. Such developments may involve external suppliers and service providers, making the management of development projects complex and subject to risks and uncertainties regarding timing, timely delivery of required components or services and satisfactory technical performance of such components or assembled products. If we do not achieve the required technical specifications or successfully manage new product development processes, or if development work is not performed according to schedule, then such new technologies or products may be adversely impacted. If we are unable to successfully develop new products, enhance our Proteograph to meet customer requirements, compete with alternative products, or otherwise gain and maintain market acceptance, our business, results of operations and financial condition could be harmed.

The COVID-19 pandemic and efforts to reduce its spread have adversely impacted, and are expected to continue to materially and adversely impact, our business and operations.

The COVID-19 pandemic has had, and is expected to continue to have, an adverse impact on our operations, particularly as a result of preventive and precautionary measures that we, other businesses, and governments are taking. Governmental mandates related to COVID-19 or other infectious diseases, or public health crises, have impacted, and we expect them to continue to impact, our personnel and personnel at third-party manufacturing facilities in the United States and other countries, and the availability or cost of materials, which would disrupt or delay our receipt of instruments, components and supplies from the third parties we rely on to, among other things, produce our Proteograph automation instrument and NPs. For instance, there are standing "stay-at-home" orders in California, and specifically San Mateo County where our headquarters is located, that require businesses to implement certain social distancing protocols and other written health and safety plans and measures which may affect productivity and morale. We have continued to operate within the rules applicable to our business; however, an extended implementation of these governmental mandates could further impact our ability to operate effectively and conduct ongoing research and development or other activities. The COVID-19 pandemic has also had an

adverse effect on our ability to attract, recruit, interview and hire at the pace we would typically expect to support our rapidly expanding operations. To the extent that any governmental authority imposes additional regulatory requirements or changes existing laws, regulations, and policies that apply to our business and operations, such as additional workplace safety measures, our product development plans may be delayed, and we may incur further costs in bringing our business and operations into compliance with changing or new laws, regulations, and policies.

In the near term, we expect that substantially all of our revenue will be derived from sales of our Proteograph Product Suite, including our instruments and consumables, to academic and research institutions. We are currently in the collaboration phase of our commercialization plan and, as a result, in the near term, our ability to drive the adoption of our Proteograph will depend upon our ability to visit customer sites, the ability of our customers to access laboratories, install and train on our Proteograph Product Suite and conduct research in light of the COVID-19 pandemic. Additionally, as we move into the early access limited release phase of our commercialization plan, the research and development budgets of these customers, the ability of such customers to receive funding for research, and the ability of such customers to receive instrument installations and visitors to their facilities and to travel to our facilities, other laboratories and industry events, will become increasingly important to the adoption of our Proteograph. All of these considerations are impacted by factors beyond our control, such as:

- reductions in capacity or shutdowns of laboratories and other institutions as well as other impacts stemming from the COVID-19 pandemic, such as reduced or delayed spending on instruments or consumables as a result of such shutdowns and delays before re-opened laboratories and institutions resume previous levels of research activities that require new purchases of our instruments or consumables;
- decreases in government funding of research and development; and
- changes to programs that provide funding to research laboratories and institutions, including changes in the amount of funds allocated to different areas of research, changes that have the effect of increasing the length of the funding process or the impact of the COVID-19 pandemic on our customers and potential customers and their funding sources.

Additionally, our suppliers have also been impacted by the COVID-19 pandemic. For example, our automation instrument manufacturer, Hamilton Company, has experienced a surge in demand for equipment and associated consumables used for COVID-19 diagnostics, and as a result, we have experienced longer lead times for our instruments. We have also experienced supply delays for critical hardware, instrumentation and medical and testing supplies that we use for product development, as these other components and supplies are otherwise diverted to COVID-19-related testing and other uses.

The ultimate impact of the COVID-19 pandemic is highly uncertain and subject to sudden change. This impact could have a material, adverse impact on our liquidity, capital resources, operations and business and those of the third parties on which we rely, and could worsen over time. The extent to which the COVID-19 pandemic impacts our results will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of COVID-19 and the actions to contain COVID-19 or treat its impact, among others. While we do not yet know the full extent of potential impacts on our business, any of these occurrences could significantly harm our business, results of operations and financial condition.

Unfavorable U.S. or global economic conditions as a result of the COVID-19 pandemic, or otherwise, could adversely affect our ability to raise capital and our business, results of operations and financial condition.

While the potential economic impact brought by, and the duration of, the COVID-19 pandemic is difficult to assess or predict, the COVID-19 pandemic has resulted in, and may continue to result in, extreme volatility and disruptions in the capital and credit markets, reducing our ability to raise additional capital through equity, equity-linked or debt financings, which could negatively impact our short-term and long-term liquidity and our ability to operate in accordance with our operating plan, or at all. Additionally, our results of operations could be adversely affected by general conditions in the global economy and financial markets. A severe or prolonged economic downturn could result in a variety of risks to our business, including weakened demand for our Proteograph Product Suite and our ability to raise additional capital when needed on favorable terms, if at all. A weak or declining economy could strain our customers' budgets or cause delays in their payments to us. Any of the foregoing could

harm our business, and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our ability to raise capital, business, results of operations and financial condition.

If we do not sustain or successfully manage our anticipated growth, our business and prospects will be harmed.

Our anticipated growth will place significant strains on our management, operational and manufacturing systems and processes, sales and marketing team, financial systems and internal controls and other aspects of our business. As of September 30, 2020, we had 60 employees. Developing and commercializing our Proteograph will require us to hire and retain scientific, sales and marketing, software, manufacturing, customer service, distribution and quality assurance personnel. In addition, we expect that we will need to hire additional accounting, finance and other personnel in connection with our becoming, and our efforts to comply with the requirements of being, a public company. Once public, our management and other personnel will need to devote a substantial amount of time towards maintaining compliance with these requirements and effectively manage these growth activities. We may face challenges integrating, developing and motivating our rapidly growing employee base. To effectively manage our growth, we must continue to improve our operational and manufacturing systems and processes, our financial systems and internal controls and other aspects of our business and continue to effectively expand, train and manage our personnel. Our ability to successfully manage our expected growth is uncertain given the fact that we have been in operation only since 2017. As our organization continues to grow, we will be required to implement more complex organizational management structures, and may find it increasingly difficult to maintain the benefits of our corporate culture, including our ability to quickly develop and launch new and innovative products. If we do not successfully manage our anticipated growth, our business, results of operations, financial condition and prospects will be harmed.

We depend on our key personnel and other highly qualified personnel, and if we are unable to recruit, train and retain our personnel, we may not achieve our goals.

Our future success depends upon our ability to recruit, train, retain and motivate key personnel. Our senior management team, including Omid Farokhzad, one of our founders and our Chief Executive Officer; Omead Ostadan, our President and Chief Operating Officer; and David Horn, our Chief Financial Officer, is critical to our vision, strategic direction, product development and commercialization efforts. The departure of one or more of our executives officers, senior management team members, or other key employees could be disruptive to our business until we are able to hire qualified successors. We do not maintain “key man” life insurance on our senior management team.

Our continued growth and ability to successfully transition from a company primarily focused on development to commercialization depends, in part, on attracting, retaining and motivating qualified personnel, including highly-trained sales personnel with the necessary scientific background and ability to understand our systems at a technical level to effectively identify and sell to potential new customers. New hires require significant training and, in most cases, take significant time before they achieve full productivity. Our failure to successfully integrate these key personnel into our business could adversely affect our business. In addition, competition for qualified personnel is intense, particularly in the San Francisco Bay Area. We compete for qualified scientific and information technology personnel with other life science and information technology companies as well as academic institutions and research institutions. Some of our scientific personnel are qualified foreign nationals whose ability to live and work in the United States is contingent upon the continued availability of appropriate visas. Due to the competition for qualified personnel in the San Francisco Bay Area, we expect to continue to utilize foreign nationals to fill part of our recruiting needs. As a result, changes to United States immigration policies could restrain the flow of technical and professional talent into the United States and may inhibit our ability to hire qualified personnel. The current United States administration has made restricting immigration and reforming the work visa process a key focus of its initiatives and these efforts may adversely affect our ability to find qualified personnel.

We do not maintain fixed term employment contracts with any of our employees. As a result, our employees could leave our company with little or no prior notice and would be free to work for a competitor. Due to the complex and technical nature of our products and technology and the dynamic market in which we compete, any

failure to attract, train, retain and motivate qualified personnel could materially harm our business, results of operations, financial condition and prospects.

We expect to be dependent upon revenue generated from the sale of our Proteograph Product Suite from the time it is commercialized through the foreseeable future.

We expect that our Proteograph Product Suite will be our first commercial product. While we anticipate having early access limited release in 2021, we do not expect to have broad commercial availability for our Proteograph until early 2022. If we are able to successfully commercialize our Proteograph, we expect that we will generate substantially all of our revenue from the sale of our Proteograph, which we expect to consist of consumables, automation instruments and software. There can be no assurance that we will be able to successfully commercialize our Proteograph, design other products that will meet the expectations of our customers or that any of our future products will become commercially viable. As technologies change in the future for life sciences research tools in general and in proteomics and genomics technologies specifically, we will be expected to upgrade or adapt our Proteograph in order to keep up with the latest technology. To date, we have limited experience simultaneously designing, testing, manufacturing and selling products and there can be no assurance we will be able to do so. Our sales expectations are based in part on the assumption that our Proteograph will increase study sizes for our future customers and their associated purchases of our consumables. If sales of our instruments fail to materialize, so will the related consumable sales and associated revenue.

In our development and commercialization plans for our Proteograph, we may forego other opportunities that may provide greater revenue or be more profitable. If our research and product development efforts do not result in commercially viable products within the anticipated timelines, or at all, our business and results of operations will be adversely affected. Any delay or failure by us to develop and release our Proteograph or new products or product enhancements would have a substantial adverse effect on our business and results of operations.

Our business will depend significantly on research and development spending by academic institutions and other research institutions, and any reduction in spending could limit demand for our products and adversely affect our business, results of operations, financial condition and prospects.

We expect that substantially all of our sales revenue in the near term will be generated from sales to academic institutions and other research institutions. Much of these customers' funding will be, in turn, provided by various state, federal and international government agencies. As a result, the demand for our Proteograph will depend upon the research and development budgets of these customers, which are impacted by factors beyond our control, such as:

- decreases in government funding of research and development;
- changes to programs that provide funding to research laboratories and institutions, including changes in the amount of funds allocated to different areas of research or changes that have the effect of increasing the length of the funding process;
- macroeconomic conditions and the political climate;
- researchers' opinions of the utility of our Proteograph;
- citation of our Proteograph in published research;
- potential changes in the regulatory environment;
- differences in budgetary cycles, especially government- or grant-funded customers, whose cycles often coincide with government fiscal year ends;
- competitor product offerings or pricing;
- market-driven pressures to consolidate operations and reduce costs; and

- market acceptance of relatively new technologies, such as our Proteograph.

In addition, various state, federal and international agencies that provide grants and other funding may be subject to stringent budgetary constraints that could result in spending reductions, reduced grant making, reduced allocations or budget cutbacks, which could jeopardize the ability of these customers, or the customers to whom they provide funding, to purchase our products. For example, congressional appropriations to the National Institutes of Health (NIH) have generally increased year-over-year for the last 19 years, and reached a new high in 2019, but the NIH also experiences occasional year-over-year decreases in appropriations, including as recently as 2013. In addition, funding for life science research has increased more slowly during the past several years compared to previous years and has actually declined in some countries. There is no guarantee that NIH appropriations will not decrease in the future, and a decrease may be more likely under the current administration, whose annual budget proposals have repeatedly decreased NIH appropriations. A decrease in the amount of, or delay in the approval of, appropriations to NIH or other similar United States or international organizations, such as the Medical Research Council in the United Kingdom, could result in fewer grants benefiting life sciences research. These reductions or delays could also result in a decrease in the aggregate amount of grants awarded for life sciences research or the redirection of existing funding to other projects or priorities, any of which in turn could cause our customers and potential customers to reduce or delay purchases of our products. Our operating results may fluctuate substantially due to any such reductions and delays. Any decrease in our customers' budgets or expenditures, or in the size, scope or frequency of their capital or operating expenditures, could materially and adversely affect our business, results of operations, financial condition and prospects.

We rely on a single contract manufacturer to manufacture and supply our instruments. If this manufacturer should fail or not perform satisfactorily, our ability to commercialize and supply our instruments would be adversely affected.

We rely on a single contract manufacturer, Hamilton Company, a manufacturer of precision measurement devices, automated liquid handling workstations, and sample management systems located in Nevada and other locations, to manufacture and supply our instruments. Since our contract with Hamilton does not commit them to carry inventory or make available any particular quantities, Hamilton may give other customers' needs higher priority than ours, and we may not be able to obtain adequate supplies in a timely manner or on commercially reasonable terms. For example, due to the COVID-19 pandemic and increased demand for Hamilton's products, we have seen the lead time for our instruments increase significantly. Further, if Hamilton is unable to obtain critical components used in our Proteograph or supply our instruments on the timelines we require, our business and commercialization efforts would be harmed.

In the event it becomes necessary to utilize a different contract manufacturer for our products, we would experience additional costs, delays and difficulties in doing so as a result of identifying and entering into an agreement with a new manufacturer as well as preparing such new manufacturer to meet the logistical requirements associated with manufacturing our instruments, and our business would suffer.

In addition, certain of the components used in our instruments are sourced from limited or sole suppliers. If we were to lose such suppliers, there can be no assurance that we will be able to identify or enter into agreements with alternative suppliers on a timely basis on acceptable terms, if at all. An interruption in our ability to sell and deliver instruments to customers could occur if we encounter delays or difficulties in securing these components, or if the quality of the components supplied do not meet specifications, or if we cannot then obtain an acceptable substitute. Our suppliers have also been impacted by the COVID-19 pandemic, and we have also experienced supply delays for critical hardware, instrumentation and medical and testing supplies that we use for product development, as these other components and supplies are otherwise diverted to COVID-19-related testing and other uses. If any of these events occur, our business, results of operations, financial condition and prospects could be harmed.

We have limited experience producing and supplying our products, and we may be unable to consistently manufacture or source our automation instruments and consumables to the necessary specifications or in quantities necessary to meet demand on a timely basis and at acceptable performance and cost levels.

Our Proteograph Product Suite is an integrated workstation with many different components that work together. As such, a quality defect in a single component can compromise the performance of the entire solution. In order to successfully generate revenue from our Proteograph Product Suite, we need to supply our customers with products that meet their expectations for quality and functionality in accordance with established specifications on a timely basis. Our instruments are manufactured by Hamilton at their facility using complex processes, sophisticated equipment and strict adherence to specifications and quality systems procedures. Given the complexity of this automation instrumentation, individual units may occasionally require additional installation and service time prior to becoming available for customer use.

We leverage well-established unit operations to formulate and manufacture our NPs at our facilities in Redwood City, California. We procure certain components of our consumables from third-party manufacturers, which includes the commonly-available raw materials needed for manufacturing our proprietary engineered NPs. These manufacturing processes are complex. As we move to towards commercial scale formulation and manufacturing of our NP panels, if we are not able to repeatably produce our NPs at commercial scale or source them from third-party suppliers, or encounter unexpected difficulties in packaging our consumables, our business will be adversely impacted.

As we continue to scale commercially and develop new products, and as our products incorporate increasingly sophisticated technology, it will be increasingly difficult to ensure our products are produced in the necessary quantities without sacrificing quality. There is no assurance that we or our third-party manufacturer will be able to continue to manufacture our Proteograph automation instrument so that it consistently achieves the product specifications and produces results with acceptable quality. Our NPs and other consumables have a limited shelf life, after which their performance is not ensured. While we have completed accelerated stability testing for our NPs, our real-time long-term liquid stability studies are underway, but have not been completed. Shipment of consumables that effectively expire early or shipment of defective instruments or consumables to customers may result in recalls and warranty replacements, which would increase our costs, and depending upon current inventory levels and the availability and lead time for additional inventory, could lead to availability issues. Any future design issues, unforeseen manufacturing problems, such as contamination of our or our manufacturers' facilities, equipment malfunctions, aging components, quality issues with components and materials sourced from third-party suppliers, or failures to strictly follow procedures or meet specifications, may have a material adverse effect on our brand, business, results of operations and financial condition and could result in us or our third-party manufacturers losing International Organization for Standardization (ISO) quality management certifications. If our third-party manufacturers fails to maintain ISO quality management certifications, customers might choose not to purchase products from us.

In addition, as we commercialize our Proteograph Product Suite, we will also need to make corresponding improvements to other operational functions, such as our customer support, service and billing systems, compliance programs and our internal quality assurance programs. We cannot assure you that any increases in scale, related improvements and quality assurance will be successfully implemented or that appropriate personnel will be available. As we develop additional products, we may need to bring new equipment on-line, implement new systems, technology, controls and procedures and hire personnel with different qualifications.

An inability to manufacture products and components that consistently meet specifications, in necessary quantities, at commercially acceptable costs and without significant delays, may have a material adverse effect on our business, results of operations, financial condition and prospects.

Our products could have defects or errors, which may give rise to claims against us, adversely affect market adoption of our Proteograph Product Suite, and adversely affect our business, financial condition, and results of operations.

Our Proteograph Product Suite utilizes novel and complex technology and may develop or contain undetected defects or errors. We cannot assure you that material performance problems, defects, or errors will not arise, and as we commercialize our Proteograph, these risks may increase. We expect to provide warranties that our products will meet performance expectations and will be free from defects. The costs incurred in correcting any defects or errors may be substantial and could adversely affect our operating margins.

In manufacturing our Proteograph, we depend upon third parties for the supply of our instruments and various components, many of which require a significant degree of technical expertise to produce. If our suppliers fail to produce our Proteograph automation instrument and components to specification or provide defective products to us and our quality control tests and procedures fail to detect such errors or defects, or if we or our suppliers use defective materials or workmanship in the manufacturing process, the reliability and performance of our products will be compromised.

If our Proteograph contain defects, we may experience:

- a failure to achieve market acceptance for our Proteograph or expansion of our Proteograph sales;
- loss of customer orders and delay in order fulfillment;
- damage to our brand reputation;
- increased warranty and customer service and support costs due to product repair or replacement;
- product recalls or replacements;
- inability to attract new customers;
- diversion of resources from our manufacturing and research and development departments into our service department; and
- legal claims against us, including product liability claims, which could be costly and time consuming to defend and result in substantial damages.

In addition, we expect that our Proteograph Product Suite will be used with our potential customers' own mass spectrometry (MS) instruments or the MS instrument of a third-party service provider and the performance of these MS instruments is outside of our control. If such third-party products are not produced to specification, are produced in accordance with modified specifications, or are defective, they may not be compatible or perform as intended with our Proteograph. In such case, the reliability, results and performance of our Proteograph may be compromised. The occurrence of any one or more of the foregoing could negatively affect our business, financial condition, and results of operations.

If we do not successfully develop and deploy our Proteograph software, our commercialization efforts and therefore business and results of operations could suffer.

The success of our Proteograph Product Suite depends, in part, on our ability to design and deploy our Proteograph software in a manner that enables the integration with our potential customers' systems and accommodates our potential customers' needs. Without our Proteograph software, the use of MS instruments can require expert knowledge and scalable high-performance computer infrastructure to run efficiently and can make it difficult for our customers to understand and evaluate the quality of their results.

We have and will continue to spend significant amounts of effort developing our Proteograph software, and potential enhanced versions over time, to meet our customers' and potential customers' evolving needs. There is no assurance that the development or deployment of our Proteograph software, or any potential enhancements, will be

compelling to our customers. In addition, we may experience delays in our release dates of our Proteograph software, and there can be no assurance that our Proteograph software will be released according to schedule. If our software development and deployment plan does not accurately anticipate customer demands or if we fail to develop our Proteograph software in a manner that satisfies customer preferences in a timely and cost-effective manner, our Proteograph may fail to gain market acceptance.

If we commercialize our Proteograph Product Suite outside of the United States, our international business could expose us to business, regulatory, political, operational, financial, and economic risks associated with doing business outside of the United States.

Engaging in international business inherently involves a number of difficulties and risks, including:

- required compliance with existing and changing foreign regulatory requirements and laws that are or may be applicable to our business in the future, such as the European Union's General Data Protection Regulation (GDPR) and other data privacy requirements, labor and employment regulations, anti-competition regulations, the U.K. Bribery Act of 2010 and other anti-corruption laws, regulations relating to the use of certain hazardous substances or chemicals in commercial products, and require the collection, reuse, and recycling of waste from products we manufacture;
- required compliance with U.S. laws such as the Foreign Corrupt Practices Act, and other U.S. federal laws and regulations established by the office of Foreign Asset Control;
- export requirements and import or trade restrictions;
- laws and business practices favoring local companies;
- foreign currency exchange, longer payment cycles and difficulties in enforcing agreements and collecting receivables through certain foreign legal systems;
- changes in social, economic, and political conditions or in laws, regulations and policies governing foreign trade, manufacturing, research and development, and investment both domestically as well as in the other countries and jurisdictions in which we operate and into which we may sell our products including as a result of the separation of the United Kingdom from the European Union (Brexit);
- potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements, and other trade barriers;
- difficulties and costs of staffing and managing foreign operations; and
- difficulties protecting, maintaining, enforcing or procuring intellectual property rights.

If one or more of these risks occurs, it could require us to dedicate significant resources to remedy such occurrence, and if we are unsuccessful in finding a solution, our financial results will suffer.

The life sciences technology market is highly competitive. If we fail to compete effectively, our business and results of operation will suffer.

We face significant competition in the life sciences technology market. We currently compete with life sciences technology and the diagnostic companies that are supplying components, products and services that serve customers engaged in proteomics analysis. These companies include Agilent Technologies, Bio-Rad Laboratories, Danaher, Luminex, Merck (and its subsidiary MilliporeSigma) and Thermo Fisher Scientific. We also compete with a number of emerging growth companies that have developed, or are developing, proteomic products and solutions, such as Nautilus Biotechnology, Olink Proteomics, Quanterix and SomaLogic.

Some of our current competitors are large publicly-traded companies, or are divisions of large publicly-traded companies, and may enjoy a number of competitive advantages over us, including:

- greater name and brand recognition;

- greater financial and human resources;
- broader product lines;
- larger sales forces and more established distributor networks;
- substantial intellectual property portfolios;
- larger and more established customer bases and relationships; and
- better established, larger scale and lower cost manufacturing capabilities.

We also face competition from researchers developing their own products. The area in which we compete involves rapid innovation and some of our customers have in the past, and more may in the future, elect to create their own assays rather than rely on a third-party supplier such as ourselves. This is particularly true for the largest research centers and laboratories who are continually testing and trying new technologies, whether from a third-party vendor or developed internally. We will also compete for the resources our customers allocate for purchasing a wide range of products used to analyze the proteome, some of which may be additive to or complementary with our own but not directly competitive.

We cannot assure investors that our products will compete favorably or that we will be successful in the face of increasing competition from products and technologies introduced by our existing or future competitors, companies entering our markets or developed by our customers internally. In addition, we cannot assure investors that our competitors do not have or will not develop products or technologies that currently or in the future will enable them to produce competitive products with greater capabilities or at lower costs than ours or that are able to run comparable experiments at a lower total experiment cost. Any failure to compete effectively could materially and adversely affect our business, financial condition and operating results.

We have identified material weaknesses in our internal control over financial reporting. If our remediation measures are ineffective, or if we experience additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls in the future, we may not be able to report our financial condition or results of operations accurately or on a timely basis, which may adversely affect investor confidence in us and, as a result, the value of our Class A common stock.

To date, we have never conducted a review of our internal control for the purpose of providing the reports required by the Sarbanes-Oxley Act (SOX). During our review and testing, we may identify deficiencies and be unable to remediate them before we must provide the required reports. In connection with the audit of our financial statements for the year ended December 31, 2019, we and our independent registered public accounting firm identified the following material weaknesses in our internal control over financial reporting, which remain unremediated:

- there is insufficient accounting personnel to enable segregation of duties relating to the general ledger, disbursement, and certain accounting functions;
- there are not formalized processes or controls for account reconciliations, including independent review of such reconciliations, or related financial statement analysis prepared in conformity with generally accepted accounting principles in the United States (U.S. GAAP); and
- there is not a sufficient complement of accounting personnel with the necessary U.S. GAAP technical expertise to timely identify and account for complex or non-routine transactions or to formalize accounting policies, memoranda, or controls for such transactions.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our financial statements will not be prevented or detected on a timely basis.

We have begun to take certain actions to address the control deficiencies in our financial reporting, including hiring three finance department employees with appropriate expertise, including our Chief Financial Officer and our Controller, and retaining an accounting consulting firm to provide additional depth and breadth to our technical accounting and financial reporting capabilities. We have also begun to review and document our accounting and financial processes and internal controls, build out our financial management and reporting systems infrastructure, and further develop and formalize our accounting policies and financial reporting procedures, which includes ongoing senior management review and establishing our audit committee oversight. In addition, our current plan includes the hiring of an additional two finance and accounting personnel during 2021 to assist in executing on these specific functions. While we have begun taking measures and plan to continue to take measures to design and implement an effective control environment, we cannot assure you that the measures we have taken to date and other remediation and internal control measures we implement in the future will be sufficient to remediate our current material weaknesses or prevent future material weaknesses. We may discover additional weaknesses in our system of internal financial and accounting controls and procedures that could result in a material misstatement of our financial statements. Our internal control over financial reporting will not prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

If we are unable to successfully maintain internal control over financial reporting, or identify any additional material weaknesses, the accuracy and timing of our financial reporting may be adversely affected. In addition, if we are unable to assert that our internal control over financial reporting is effective, or if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal control over financial reporting, when required, investors may lose confidence in the accuracy and completeness of our financial reports, we may face restricted access to the capital markets, and our stock price may be materially adversely affected. Moreover, we could become subject to investigations by regulatory authorities, which could require additional financial and management resources.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results in a timely manner or prevent fraud, which would harm our business.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation, could cause us to fail to meet our reporting obligations in a timely manner, or at all. In addition, any testing by us conducted in connection with Section 404(a) of SOX or any subsequent testing by our independent registered public accounting firm in connection with Section 404(b) of SOX, may reveal deficiencies in our internal controls over financial reporting that are deemed to be significant deficiencies or material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. As discussed above, we have identified material weaknesses in the past which we are in the process of remedying. However, our efforts to remediate previous material weaknesses may not be effective or prevent any future deficiency in our internal control over financial reporting. Ineffective internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our Class A common stock.

We will be required to disclose material changes made in our internal controls over financing reporting and procedures on a quarterly basis and our management will be required to assess the effectiveness of these controls annually. Beginning with our second annual report on Form 10-K after we become a public company, we will be required to make a formal assessment of the effectiveness of our internal control over financial reporting, and once we cease to be an emerging growth company, we will be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. However, for as long as we are an "emerging growth company" under the JOBS Act, our independent registered public accounting firm will not be required to attest to the effectiveness of our internal controls over financial reporting pursuant to Section 404(b).

To achieve compliance with Section 404(a) within the prescribed period, we will be engaging in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this

regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a plan to assess and document the adequacy of our internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are designed and operating effectively and implement a continuous reporting and improvement process for internal control over financial reporting.

We could be an "emerging growth company" for up to five years. An independent assessment of the effectiveness of our internal controls could detect problems that our management's assessment might not identify. Undetected material weaknesses in our internal controls could lead to financial statement restatements and require us to incur the expense of remediation.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our results of operation could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our Class A common stock.

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in our financial statements and accompanying notes. We base our estimates on historical experience and estimates and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. For example, in connection with the implementation of the new revenue accounting standard if and when we have product sales, management makes judgments and assumptions based on our interpretation of the new standard. The new revenue standard is principle-based and interpretation of those principles may vary from company to company based on their unique circumstances. It is possible that interpretation, industry practice and guidance may evolve as we apply the new standard. If our assumptions underlying our estimates and judgements relating to our critical accounting policies change or if actual circumstances differ from our assumptions, estimates or judgements, our operating results may be adversely affected and could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our Class A common stock.

If we elect to label and promote any of our products as clinical diagnostics tests or medical devices, we would be required to obtain prior approval or clearance by the FDA, which would take significant time and expense and could fail to result in FDA clearance or approval for the intended uses we believe are commercially attractive.

Our products are currently labeled and promoted, and are, and in the near-future will be, sold primarily to academic and research institutions and research companies as research use only (RUO) products, and are not currently designed, or intended to be used, for clinical diagnostic tests or as medical devices. If we elect to label and market our products for use as, or in the performance of, clinical diagnostics in the United States, thereby subjecting them to U.S. Food and Drug Administration (FDA) regulation as medical devices, we would be required to obtain premarket 510(k) clearance or premarket approval from the FDA, unless an exception applies.

We may in the future register with the FDA as a medical device manufacturer and list some of our products with the FDA pursuant to an FDA Class I listing for general purpose laboratory equipment. While this regulatory classification is exempt from certain FDA requirements, such as the need to submit a premarket notification commonly known as a 510(k), and some of the requirements of the FDA's Quality System Regulations (QSRs), we would be subject to ongoing FDA "general controls," which include compliance with FDA regulations for labeling, inspections by the FDA, complaint evaluation, corrections and removals reporting, promotional restrictions, reporting adverse events or malfunctions for our products, and general prohibitions against misbranding and adulteration.

In addition, we may in the future submit 510(k) premarket notifications to the FDA to obtain FDA clearance of certain of our products on a selective basis. It is possible, in the event we elect to submit 510(k) applications for certain of our products, that the FDA would take the position that a more burdensome premarket application, such as a premarket approval application (PMA) or a *de novo* application is required for some of our products. If such applications were required, greater time and investment would be required to obtain FDA approval. Even if the FDA agreed that a 510(k) was appropriate, FDA clearance can be expensive and time consuming. It generally takes a

significant amount of time to prepare a 510(k), including conducting appropriate testing on our products, and several months to years for the FDA to review a submission. Notwithstanding the effort and expense, FDA clearance or approval could be denied for some or all of our products for which we choose to market as a medical device or a clinical diagnostic device. Even if we were to seek and obtain regulatory approval or clearance, it may not be for the intended uses we request or that we believe are important or commercially attractive. There can be no assurance that future products for which we may seek premarket clearance or approval will be approved or cleared by FDA or a comparable foreign regulatory authority on a timely basis, if at all, nor can there be assurance that labeling claims will be consistent with our anticipated claims or adequate to support continued adoption of such products. Compliance with FDA or comparable foreign regulatory authority regulations will require substantial costs, and subject us to heightened scrutiny by regulators and substantial penalties for failure to comply with such requirements or the inability to market our products. The lengthy and unpredictable premarket clearance or approval process, as well as the unpredictability of the results of any required clinical studies, may result in our failing to obtain regulatory clearance or approval to market such products, which would significantly harm our business, results of operations, reputation, and prospects.

If we sought and received regulatory clearance or approval for certain of our products, we would be subject to ongoing FDA obligations and continued regulatory oversight and review, including the general controls listed above and the FDA's QSRs for our development and manufacturing operations. In addition, we would be required to obtain a new 510(k) clearance before we could introduce subsequent modifications or improvements to such products. We could also be subject to additional FDA post-marketing obligations for such products, any or all of which would increase our costs and divert resources away from other projects. If we sought and received regulatory clearance or approval and are not able to maintain regulatory compliance with applicable laws, we could be prohibited from marketing our products for use as, or in the performance of, clinical diagnostics and/or could be subject to enforcement actions, including warning letters and adverse publicity, fines, injunctions, and civil penalties; recall or seizure of products; operating restrictions; and criminal prosecution.

In addition, we could decide to seek regulatory clearance or approval for certain of our products in countries outside of the United States. Sales of such products outside the United States will likely be subject to foreign regulatory requirements, which can vary greatly from country to country. As a result, the time required to obtain clearances or approvals outside the United States may differ from that required to obtain FDA clearance or approval and we may not be able to obtain foreign regulatory approvals on a timely basis or at all. In Europe, we would need to comply with the new Medical Device Regulation 2017/745 and In Vitro Diagnostic Regulation 2017/746, which became effective May 26, 2017, with application dates of May 26, 2021 (postponed from 2020) and May 26, 2022 respectively. This will increase the difficulty of regulatory approvals in Europe in the future. In addition, the FDA regulates exports of medical devices. Failure to comply with these regulatory requirements or obtain and maintain required approvals, clearances and certifications could impair our ability to commercialize our products for diagnostic use outside of the United States.

Our products could become subject to government regulation as medical devices by the FDA and other regulatory agencies even if we do not elect to seek regulatory clearance or approval to market our products for diagnostic purposes, which would adversely impact our ability to market and sell our products and harm our business. If our products become subject to FDA regulation, the regulatory clearance or approval and the maintenance of continued and post-market regulatory compliance for such products will be expensive, time-consuming, and uncertain both in timing and in outcome.

We do not currently expect our Proteograph Product Suite to be subject to the clearance or approval of the FDA, as it is not intended to be used for the diagnosis, treatment or prevention of disease. However, as we expand our product line and the applications and uses of our current or products into new fields, certain of our future products could become subject to regulation by the FDA, or comparable international agencies, including requirements for regulatory clearance or approval of such products before they can be marketed. Also, even if our products are labeled, promoted, and intended as RUO, the FDA or comparable agencies of other countries could disagree with our conclusion that our products are intended for research use only or deem our sales, marketing and promotional efforts as being inconsistent with RUO products. For example, our customers may independently elect to use our RUO labeled products in their own laboratory developed tests (LDTs) for clinical diagnostic use, which could subject our products to government regulation, and the regulatory clearance or approval and maintenance process for

such products may be uncertain, expensive, and time-consuming. Regulatory requirements related to marketing, selling, and distribution of RUO products could change or be uncertain, even if clinical uses of our RUO products by our customers were done without our consent. If the FDA or other regulatory authorities assert that any of our RUO products are subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

The FDA has historically exercised enforcement discretion in not enforcing the medical device regulations against laboratories offering LDTs. However, on October 3, 2014, the FDA issued two draft guidance documents that set forth the FDA's proposed risk-based framework for regulating LDTs, which are designed, manufactured, and used within a single laboratory. The draft guidance documents provide the anticipated details through which the FDA would propose to establish an LDT oversight framework, including premarket review for higher-risk LDTs, such as those that have the same intended use as FDA-approved or cleared companion diagnostic tests currently on the market. In January 2017, the FDA announced that it would not issue final guidance on the oversight of LDTs and manufacturers of products used for LDTs, but would seek further public discussion on an appropriate oversight approach, and give Congress an opportunity to develop a legislative solution. More recently, the FDA has issued warning letters to certain genomics labs for illegally marketing genetic tests that claim to predict patients' responses to specific medications, noting that the FDA has not created a legal "carve-out" for LDTs and retains discretion to take action when appropriate, such as when certain genomic tests raise significant public health concerns.

As manufacturers develop more complex diagnostic tests and diagnostic software, the FDA may increase its regulation of LDTs. Any future legislative or administrative rule making or oversight of LDTs, if and when finalized, may impact the sales of our products and how customers use our products, and may require us to change our business model in order to maintain compliance with these laws. We cannot predict how these various efforts will be resolved, how Congress or the FDA will regulate LDTs in the future, or how that regulatory system will impact our business. Changes to the current regulatory framework, including the imposition of additional or new regulations, including regulation of our products, could arise at any time during the development or marketing of our products, which may negatively affect our ability to obtain or maintain FDA or comparable regulatory approval of our products, if required. Further, sales of devices for diagnostic purposes may subject us to additional healthcare regulation and enforcement by the applicable government agencies. Such laws include, without limitation, state and federal anti-kickback or anti-referral laws, healthcare fraud and abuse laws, false claims laws, privacy and security laws, Physician Payments Sunshine Act and related transparency and manufacturer reporting laws, and other laws and regulations applicable to medical device manufacturers.

Additionally, on November 25, 2013, the FDA issued Final Guidance "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only." The guidance emphasizes that the FDA will review the totality of the circumstances when it comes to evaluating whether equipment and testing components are properly labeled as RUO. The final guidance states that merely including a labeling statement that the product is for research purposes only will not necessarily render the device exempt from the FDA's clearance, approval, and other regulatory requirements if the circumstances surrounding the distribution, marketing and promotional practices indicate that the manufacturer knows its products are, or intends for its products to be, used for clinical diagnostic purposes. These circumstances may include written or verbal sales and marketing claims or links to articles regarding a product's performance in clinical applications and a manufacturer's provision of technical support for clinical applications.

Recently, as part of the Trump Administration's efforts to combat COVID-19 and consistent with the President's direction in Executive Orders 13771 and 13924, the Department of Health and Human Services (HHS) announced rescission of guidance and other informal issuances of the FDA regarding premarket review of LDT absent notice-and-comment rulemaking, stating that, absent notice-and-comment rulemaking, those seeking approval or clearance of, or an emergency use authorization, for an LDT may nonetheless voluntarily submit a premarket approval application, premarket notification or an Emergency Use Authorization request, respectively, but are not required to do so. However, laboratories opting to use LDTs without FDA premarket review or authorization would not be eligible for liability protection under the Public Readiness and Emergency Preparedness Act. While this action by HHS is expected to reduce the regulatory burden on clinical laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 that develop LDTs, it is unclear how this action as well as future legislation by federal and state governments and the FDA will impact the industry, including our business and that of our customers. Such HHS measure may compel the FDA to formalize earlier enforcement discretionary

policies and informal guidance through notice-and-comment rulemaking and/or impose further restrictions on LDTs. HHS' rescission policy may change over time. Congress could also enact legislation restricting LDTs. Any restrictions on LDTs by the FDA, HHS, Congress, or state regulatory authorities may decrease the demand for our products. The adoption of new restrictions on RUO products, whether by the FDA or Congress, could adversely affect demand for our specialized reagents and instruments. Further, we could be required to obtain premarket clearance or approval before we can sell our products to certain customers.

We may need to raise additional capital to fund commercialization plans for our Proteograph Product Suite, including manufacturing, sales and marketing activities, expand our investments in research, and develop and commercialize new products and applications.

Based on our current plans, we believe that our current cash and cash equivalents and anticipated cash flow from operations will be sufficient to meet our anticipated cash requirements for at least twelve months from the date of this prospectus. If our available cash resources, net proceeds from this offering and anticipated cash flow from operations are insufficient to satisfy our liquidity requirements including because of lower demand for our products or the realization of other risks described in this prospectus, we may be required to raise additional capital prior to such time through issuances of equity or convertible debt securities, entrance into a credit facility or another form of third-party funding or seek other debt financing.

We will consider raising additional capital in the future to expand our business, to pursue strategic investments, to take advantage of financing opportunities or for other reasons, including:

- increasing our sales and marketing and other commercialization efforts to drive market adoption of our Proteograph Product Suite, once commercialized;
- funding development and marketing efforts of our Proteograph or any other future products;
- expanding our technologies into additional markets;
- acquiring, licensing or investing in technologies and other intellectual property rights;
- acquiring or investing in complementary businesses or assets; and
- financing capital expenditures and general and administrative expenses.

Our present and future funding requirements will depend on many factors, including:

- our rate of progress in launching and commercializing our Proteograph and new products, and the cost of the sales and marketing activities associated with establishing adoption of our products;
- our rate of progress in, and cost of research and development activities associated with, products in research and development; and
- the effect of competing technological and market developments.

The various ways we could raise additional capital carry potential risks. If we raise funds by issuing equity securities, dilution to our stockholders could result. If we raise funds by issuing debt securities, those debt securities would have rights, preferences and privileges senior to those of holders of our Class A common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations. If we raise funds through collaborations or licensing arrangements, we might be required to relinquish significant rights to our technologies or products or grant licenses on terms that are not favorable to us.

If we are unable to obtain adequate financing or financing on terms satisfactory to us, if we require it, our ability to continue to pursue our business objectives and to respond to business opportunities, challenges, or unforeseen circumstances could be significantly limited, and could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may acquire other companies or technologies, which could divert our management's attention, result in additional dilution to our stockholders and otherwise disrupt our operations and harm our operating results.

We may in the future seek to acquire or invest in businesses, applications or technologies that we believe could complement or expand our Proteograph Product Suite or future products, enhance our technical capabilities or otherwise offer growth opportunities. The pursuit of potential acquisitions may divert the attention of management and cause us to incur various costs and expenses in identifying, investigating and pursuing suitable acquisitions, whether or not they are consummated. We may not be able to identify desirable acquisition targets or be successful in entering into an agreement with any particular target or obtain the expected benefits of any acquisition or investment.

To date, the growth of our operations has been organic, and we have limited experience in acquiring other businesses or technologies. We may not be able to successfully integrate acquired personnel, operations and technologies, or effectively manage the combined business following an acquisition. Acquisitions could also result in dilutive issuances of equity securities, the use of our available cash, or the incurrence of debt, which could harm our operating results. In addition, if an acquired business fails to meet our expectations, our operating results, business and financial condition may suffer.

We may not realize the benefits of PrognomIQ as a separate healthcare company in the area of disease testing.

In August 2020, we transferred certain assets to PrognomIQ, as a separate healthcare company to help enable the growth of ecosystems around new applications that leverage our Proteograph for unbiased, deep and large-scale proteomic information. We continue to hold approximately 19% of the outstanding capital stock of PrognomIQ. We may not realize the potential benefits of forming PrognomIQ for a variety of reasons, including:

- PrognomIQ may be unable to successfully develop viable testing products;
- PrognomIQ's business may not help demonstrate the value of our Proteograph;
- we may be unable to reach agreement with PrognomIQ on future commercial arrangements;
- PrognomIQ may not become a meaningful customer of ours;
- PrognomIQ may need to raise additional funding in the future and be unable to do so; and
- the formation of PrognomIQ and our continuing equity stake in PrognomIQ may add complexities to our business from a finance, tax and accounting perspective.

Further, PrognomIQ is a separate entity, and as such, may decide over time to pursue a different business model, decide to do business with our competitors in addition to or instead of with us, be acquired by a competitor or take other actions that may not be beneficial to us.

Risks Related to our Intellectual Property

If we are unable to obtain and maintain sufficient intellectual property protection for our products and technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired.

We rely on patent protection as well as trademark, copyright, trade secret and other intellectual property rights protection and contractual restrictions to protect our proprietary products and technologies, all of which provide limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. If we fail to obtain, maintain and protect our intellectual property, third parties may be able to compete more effectively against us. In addition, we may incur substantial litigation costs in our attempts to recover or restrict use of our intellectual property.

To the extent our intellectual property offers inadequate protection, or is found to be invalid or unenforceable, we would be exposed to a greater risk of direct competition. If our intellectual property does not provide adequate coverage of our competitors' products, our competitive position could be adversely affected, as could our business, financial condition, results of operations and prospects. Both the patent application process and the process of managing patent and other intellectual property disputes can be time-consuming and expensive.

Our success depends in large part on our and our licensor's ability to obtain and maintain protection of the intellectual property we may own solely and jointly with, or license from, third parties, particularly patents, in the United States and other countries with respect to our products and technologies. We apply for patents covering our products and technologies and uses thereof, as we deem appropriate. However, obtaining and enforcing patents is costly, time-consuming and complex, and we may fail to apply for patents on important products and technologies in a timely fashion or at all, or we may fail to apply for patents in potentially relevant jurisdictions. We may not be able to file and prosecute all necessary or desirable patent applications, or maintain, enforce and license any patents that may issue from such patent applications, at a reasonable cost or in a timely manner or in all jurisdictions. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, we may not develop additional proprietary products, methods and technologies that are patentable. We may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the rights to patents licensed from or to third parties. Therefore, these patents and applications may not be prosecuted and enforced by such third parties in a manner consistent with the best interests of our business.

In addition, the patent position of life sciences technology companies generally is highly uncertain, involves complex legal and factual questions, and has been the subject of much litigation in recent years. Changes in either the patent laws or in interpretations of patent laws in the United States or other countries or regions may diminish the value of our intellectual property. As a result, the issuance, scope, validity, enforceability, and commercial value of our patent rights are highly uncertain. It is possible that none of our pending patent applications will result in issued patents in a timely fashion or at all, and even if patents are granted, they may not provide a basis for intellectual property protection of commercially viable products or services, may not provide us with any competitive advantages, or may be challenged, narrowed and invalidated by third parties. We cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. It is possible that third parties will design around our current or future patents such that we cannot prevent such third parties from using similar technologies and commercializing similar products to compete with us. Some of our owned or licensed patents or patent applications may be challenged at a future point in time and we may not be successful in defending any such challenges made against our patents or patent applications. Any successful third-party challenge to our patents could result in the narrowing, unenforceability or invalidity of such patents and increased competition to our business. The outcome of patent litigation or other proceeding can be uncertain, and any attempt by us to enforce our patent rights against others or to challenge the patent rights of others may not be successful, or, regardless of success, may take substantial time and result in substantial cost, and may divert our efforts and attention from other aspects of our business. Any of the foregoing events could have a material adverse effect on our business, financial condition and results of operations.

The U.S. law relating to the patentability of certain inventions in the life sciences technology industry is uncertain and rapidly changing, which may adversely impact our existing patents or our ability to obtain patents in the future.

Changes in either the patent laws or interpretation of the patent laws in the United States or in other jurisdictions could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. For instance, under the Leahy-Smith America Invents Act, or the America Invents Act, enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application is entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. These changes include allowing third-party submission of prior art to the United States Patent and Trademark Office (USPTO) during patent prosecution and additional procedures to challenge the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, *inter partes* review and derivation proceedings. The America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent

applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Various courts, including the U.S. Supreme Court, have rendered decisions that impact the scope of patentability of certain inventions or discoveries relating to the life sciences technology. Specifically, these decisions stand for the proposition that patent claims that recite laws of nature are not themselves patentable unless those patent claims have sufficient additional features that provide practical assurance that the processes are genuine inventive applications of those laws rather than patent drafting efforts designed to monopolize the law of nature itself. What constitutes a "sufficient" additional feature is uncertain. Furthermore, in view of these decisions, since December 2014, the USPTO has published and continues to publish revised guidelines for patent examiners to apply when examining process claims for patent eligibility.

In addition, U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts and the USPTO, the laws and regulations governing patents could change in unpredictable ways that may have a material adverse effect on our ability to obtain new patents and to defend and enforce our existing patents and patents that we might obtain in the future.

We cannot assure you that our patent portfolio will not be negatively impacted by the current uncertain state of the law, new court rulings or changes in guidance or procedures issued by the USPTO or other similar patent offices around the world. From time to time, the U.S. Supreme Court, other federal courts, the U.S. Congress or the USPTO may change the standards of patentability, scope and validity of patents within the life sciences technology and any such changes, or any similar adverse changes in the patent laws of other jurisdictions, could have a negative impact on our business, financial condition, prospects and results of operations.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on our Proteograph Product Suite in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States.

The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the United States, and we and our licensor may encounter difficulties in protecting and defending such rights in foreign jurisdictions. Consequently, we and our licensor may not be able to prevent third parties from practicing our inventions in some or all countries outside the United States, or from selling or importing products made using our or our licensor's inventions in and into the United States or other jurisdictions. Competitors and other third parties may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and technologies and may also export infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products. Our and our licensor's patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. In addition, certain countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to other parties. Furthermore, many countries limit the enforceability of patents against other parties, including government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of any patents.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of many other countries do not favor the enforcement of patents and other intellectual property protection, which could make it difficult for us to stop the misappropriation or other violations of our intellectual property rights including infringement of our patents in such countries. The legal systems in certain countries may also favor state-sponsored or companies headquartered in particular jurisdictions over our first-in-time patents and other intellectual property protection. The absence of harmonized intellectual property protection laws and effective enforcement makes it difficult to ensure consistent respect for patent, trade secret, and

other intellectual property rights on a worldwide basis. As a result, it is possible that we will not be able to enforce our rights against third parties that misappropriate our proprietary technology in those countries.

Proceedings to enforce our or our licensor's patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business, could put our and our licensor's patents at risk of being invalidated or interpreted narrowly and our and our licensor's patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We and our licensors may not prevail in any lawsuits that we or our licensor initiate, or that are initiated against us or our licensor, and the damages or other remedies awarded, if any, may not be commercially meaningful. In addition, changes in the law and legal decisions by courts in the United States and foreign countries may affect our ability to obtain adequate protection for our products, services and other technologies and the enforcement of intellectual property. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license. Any of the foregoing events could have a material adverse effect on our business, financial condition, results of operations and prospects.

Issued patents covering our products could be found invalid or unenforceable if challenged.

Our owned and licensed patents and patent applications may be subject to validity, enforceability and priority disputes. The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability. Some of our patents or patent applications (including licensed patents and patent applications) may be challenged at a future point in time in opposition, derivation, reexamination, *inter partes* review, post-grant review or interference or other similar proceedings. Any successful third-party challenge to our patents in this or any other proceeding could result in the unenforceability or invalidity of such patents, which may lead to increased competition to our business, which could have a material adverse effect on our business, financial condition, results of operations and prospects. In addition, if we or our licensor initiate legal proceedings against a third party to enforce a patent covering our products, the defendant could counterclaim that such patent covering our products, as applicable, is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. There are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the relevant patent office, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include *ex parte* re-examination, *inter partes* review, post-grant review, derivation and equivalent proceedings in non-U.S. jurisdictions, such as opposition proceedings. Such proceedings could result in revocation of or amendment to our patents in such a way that they no longer cover and protect our products. With respect to the validity of our patents, for example, we cannot be certain that there is no invalidating prior art of which we, our licensor, our or its patent counsel and the patent examiner were unaware during prosecution. The outcome following legal assertions of invalidity and unenforceability during patent litigation is unpredictable. If a defendant or other third party were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on certain aspects of our products and technologies, which could have a material adverse effect on our business, financial condition, results of operations and prospects. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with us to license intellectual property, or develop or commercialize current or future products.

We may not be aware of all third-party intellectual property rights potentially relating to our products. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until approximately 18 months after filing or, in some cases, not until such patent applications issue as patents. We might not have been the first to make the inventions covered by each of our pending patent applications and we might not have been the first to file patent applications for these inventions. To determine the priority of these inventions, we may have to participate in interference proceedings, derivation proceedings or other post-grant proceedings declared by the USPTO, or other similar proceedings in non-U.S. jurisdictions, that could result in substantial cost to us and the loss of valuable patent protection. The outcome of such proceedings is uncertain. No assurance can be given that other patent

applications will not have priority over our patent applications. In addition, changes to the patent laws of the United States allow for various post-grant opposition proceedings that have not been extensively tested, and their outcome is therefore uncertain. Furthermore, if third parties bring these proceedings against our patents, regardless of the merit of such proceedings and regardless of whether we are successful, we could experience significant costs and our management may be distracted. Any of the foregoing events could have a material adverse effect on our business, financial condition, results of operations and prospects.

If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business could be harmed.

We rely heavily on trade secrets and confidentiality agreements to protect our unpatented know-how, technology and other proprietary information, including parts of our Proteograph Product Suite, and to maintain our competitive position. However, trade secrets and know-how can be difficult to protect. In particular, we anticipate that with respect to our technologies, these trade secrets and know how will over time be disseminated within the industry through independent development, the publication of journal articles describing the methodology, and the movement of personnel from academic to industry scientific positions.

In addition to pursuing patents on our technology, we take steps to protect our intellectual property and proprietary technology by entering into agreements, including confidentiality agreements, non-disclosure agreements and intellectual property assignment agreements, with our employees, consultants, academic institutions, corporate partners and, when needed, our advisers. However, we cannot be certain that such agreements have been entered into with all relevant parties, and we cannot be certain that our trade secrets and other confidential proprietary information will not be disclosed or that competitors or other third parties will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. For example, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Such agreements may not be enforceable or may not provide meaningful protection for our trade secrets or other proprietary information in the event of unauthorized use or disclosure or other breaches of the agreements, and we may not be able to prevent such unauthorized disclosure, which could adversely impact our ability to establish or maintain a competitive advantage in the market, business, financial condition, results of operations and prospects.

Monitoring unauthorized disclosure is difficult, and we do not know whether the steps we have taken to prevent such disclosure are, or will be, adequate. If we were to enforce a claim that a third party had wrongfully obtained and was using our trade secrets, it would be expensive and time-consuming, it could distract our personnel, and the outcome would be unpredictable. In addition, courts outside the United States may be less willing to protect trade secrets.

We also seek to preserve the integrity and confidentiality of our confidential proprietary information by maintaining physical security of our premises and physical and electronic security of our information technology systems, but it is possible that these security measures could be breached. If any of our confidential proprietary information were to be lawfully obtained or independently developed by a competitor or other third party, absent patent protection, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position. Competitors or third parties could purchase our products and attempt to replicate some or all of the competitive advantages we derive from our development efforts, design around our protected technology, develop their own competitive technologies that fall outside the scope of our intellectual property rights or independently develop our technologies without reference to our trade secrets. If any of our trade secrets were to be disclosed to or independently discovered by a competitor or other third party, it could materially and adversely affect our business, financial condition, results of operations and prospects.

We may be subject to claims challenging the inventorship of our patents and other intellectual property.

We or our licensor may be subject to claims that former employees, collaborators or other third parties have an interest in our owned or in-licensed patents, trade secrets or other intellectual property as an inventor or co-inventor. For example, we or our licensor may have inventorship disputes arise from conflicting obligations of employees, consultants or others who are involved in developing our products. In addition, counterparties to our consulting,

sponsored research, software development and other agreements may assert that they have an ownership interest in intellectual property developed under such arrangements. In particular, certain software development agreements pursuant to which certain third parties have developed parts of our proprietary software may not include provisions that expressly assign to us ownership of all intellectual property developed for us by such third parties. Furthermore, certain of our sponsored research agreements pursuant to which we provide certain research services for third parties do not assign to us all intellectual property developed under such agreements. As such, we may not have the right to use all such developed intellectual property under such agreements, we may be required to obtain licenses from third parties and such licenses may not be available on commercially reasonable terms or at all, or may be non-exclusive. If we are unable to obtain such licenses and such licenses are necessary for the development, manufacture and commercialization of our products and technologies, we may need to cease the development, manufacture and commercialization of our products and technologies. Litigation may be necessary to defend against these and other claims challenging inventorship of our or our licensor's ownership of our owned or in-licensed patents, trade secrets or other intellectual property. If we or our licensor fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, intellectual property that is important to our Proteograph, including our software, workflows, consumables and reagent kits. In such an event, we may be required to obtain licenses from third parties and such licenses may not be available on commercially reasonable terms or at all, or may be non-exclusive. If we are unable to obtain and maintain such licenses, we may need to cease the development, manufacture and commercialization of our products and technologies. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees, and certain customers or partners may defer engaging with us until the particular dispute is resolved. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may not be able to protect and enforce our trademarks and trade names, or build name recognition in our markets of interest thereby harming our competitive position.

The registered or unregistered trademarks or trade names that we own may be challenged, infringed, circumvented, declared generic, lapsed or determined to be infringing on or dilutive of other marks. We may not be able to protect our rights in these trademarks and trade names, which we need in order to build name recognition. In addition, third parties have filed, and may in the future file, for registration of trademarks similar or identical to our trademarks, thereby impeding our ability to build brand identity and possibly leading to market confusion. For example, we are aware of a third party in certain jurisdictions outside of the United States that have filed to own the trademark registrations for the trademark, SEER, and have opposed our application for registration for such trademark. If they succeed in registering or developing common law rights in such trademark or any other trademarks that are similar or identical to our trademarks, and if we are not successful in challenging such rights and defending against challenges to our trademarks, we may not be able to use such trademarks to develop brand recognition of our technologies, products or services. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. Further, we have and may in the future enter into agreements with owners of such third party trade names or trademarks to avoid potential trademark litigation which may limit our ability to use our trade names or trademarks in certain fields of business. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively, and our business, financial condition, results of operations and prospects may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources. Any of the foregoing events could have a material adverse effect on our business, financial condition and results of operations.

Patent terms may be inadequate to protect our competitive position on our Proteograph Product Suite for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. While extensions may be available, the life of a patent, and the protection it affords, is limited. In the United States, a patent's term may, in certain cases, be lengthened by patent term adjustment, which compensates a patentee for administrative delays by

the USPTO in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over a commonly owned patent or a patent naming a common inventor and having an earlier expiration date. Even if patents covering our products are obtained, once the patent life has expired, we may be open to competition from competitive products. If one of our products requires extended development, testing and/or regulatory review, patents protecting such products might expire before or shortly after such products are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours, which could have a material adverse effect on our business, financial condition and results of operations.

We may become involved in lawsuits to defend against third-party claims of infringement, misappropriation or other violations of intellectual property or to protect or enforce our intellectual property, any of which could be expensive, time consuming and unsuccessful, and may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our ability and the ability of future collaborators to develop, manufacture, market and sell our product and use our products and technologies without infringing, misappropriating or otherwise violating the intellectual property rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the life sciences technology sector, as well as administrative proceedings for challenging patents, including interference, derivation, *inter partes* review, post grant review, and reexamination proceedings before the USPTO, or oppositions and other comparable proceedings in foreign jurisdictions. We may be exposed to, or threatened with, future litigation by third parties having patent or other intellectual property rights alleging that our products, manufacturing methods, software and/or technologies infringe, misappropriate or otherwise violate their intellectual property rights. Numerous issued patents and pending patent applications that are owned by third parties exist in the fields in which we are developing our products and technologies. It is not always clear to industry participants, including us, the claim scope that may issue from pending patent applications owned by third parties or which patents cover various types of products, technologies or their methods of use or manufacture. Thus, because of the large number of patents issued and patent applications filed in our fields, there may be a risk that third parties, including our competitors, may allege they have patent rights encompassing our products, technologies or methods and that we are employing their proprietary technology without authorization.

If third parties, including our competitors, believe that our products or technologies infringe, misappropriate or otherwise violate their intellectual property, such third parties may seek to enforce their intellectual property, including patents against us by filing an intellectual property-related lawsuit, including patent infringement lawsuit, against us. Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability, or priority. For example, we are aware of a U.S. issued patent owned by a third party that is directed to a method for diagnosing a biological condition by analyzing certain types of proteomes, including through the use of nanoparticles. Such patent is expected to expire in 2026, without taking into account any possible patent term adjustments or extensions. We are also aware of a pending patent application in Europe owned by a third party that is directed to methods of identifying biomarkers in biofluids using nanoparticles and, if issued, is projected to expire in 2037, without taking into account any possible patent term adjustments or extensions. Such patent and patent application could be construed to cover our products and technologies, including our Proteograph Product Suite. If any of these third parties, or any other third parties, were to assert these or any other patents against us and we are unable to successfully defend against any such assertion, we may be required, including by court order, to cease the development and commercialization of the infringing products or technology and we may be required to redesign such products and technologies so they do not infringe such patents, which may not be possible or may require substantial monetary expenditures and time. We could also be required to pay damages, which could be significant, including treble damages and attorneys' fees if we are found to have willfully infringed such patents. We could also be required to obtain a license to such patents in order to continue the development and commercialization of the infringing product or technology, however such a license may not be available on commercially reasonable terms or at all, including because certain of these patents are held by or may be licensed to our competitors. Even if such license were available, it may require substantial payments or cross-licenses under our intellectual property rights, and it may only be available on a nonexclusive basis, in which case third parties, including our competitors, could

use the same licensed intellectual property to compete with us. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operation or prospects.

We may choose to challenge, including in connection with any allegation of patent infringement by a third party, the patentability, validity or enforceability of any third-party patent that we believe may have applicability in our field, and any other third-party patent that may be asserted against us. Such challenges may be brought either in court or by requesting that the USPTO, European Patent Office (EPO), or other foreign patent offices review the patent claims, such as in an *ex-parte* reexamination, *inter partes* review, post-grant review proceeding or opposition proceeding. However, there can be no assurance that any such challenge by us or any third party will be successful. Even if such proceedings are successful, these proceedings are expensive and may consume our time or other resources, distract our management and technical personnel, and the costs of these opposition proceedings could be substantial. There can be no assurance that our defenses of non-infringement, invalidity or unenforceability will succeed.

Third parties, including our competitors, could be infringing, misappropriating or otherwise violating our owned and in-licensed intellectual property rights. Monitoring unauthorized use of our intellectual property is difficult and costly. We may not be able to detect unauthorized use of, or take appropriate steps to enforce, our intellectual property rights. From time to time, we seek to analyze our competitors' products and services, and may in the future seek to enforce our rights against potential infringement, misappropriation or violation of our intellectual property. However, the steps we have taken to protect our intellectual property rights may not be adequate to enforce our rights as against such infringement, misappropriation or violation of our intellectual property. Any inability to meaningfully enforce our intellectual property rights could harm our ability to compete and reduce demand for our products and technologies.

Litigation proceedings may be necessary for us to enforce our patent and other intellectual property rights. In any such proceedings, a court may refuse to stop the other party from using the technology at issue on the grounds that our owned and in-licensed patents do not cover the technology in question. Further, in such proceedings, the defendant could counterclaim that our intellectual property is invalid or unenforceable and the court may agree, in which case we could lose valuable intellectual property rights, which could allow third parties to commercialize technology or products similar to ours and compete directly with us, without payment to us, or could require us to obtain license rights from the prevailing party in order to be able to manufacture or commercialize our products without infringing such party's intellectual property rights, and if we unable to obtain such a license, we may be required to cease commercialization of our products and technologies, any of which could have a material adverse effect on our business, financial condition, results of operations and prospects. The outcome in any such proceedings are unpredictable.

Regardless of whether we are defending against or asserting any intellectual property-related proceeding, any such intellectual property-related proceeding that may be necessary in the future, regardless of outcome, could result in substantial costs and diversion of resources and could have a material adverse effect on our business, financial condition, results of operations and prospects. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions, or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our Class A common stock. Some of our competitors and other third parties may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. We may not have sufficient financial or other resources to adequately conduct these types of litigation or proceedings. Any of the foregoing, or any uncertainties resulting from the initiation and continuation of any litigation, could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, financial condition, results of operations and prospects. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar adverse effect on our business, financial condition, results of operations and prospects.

Obtaining and maintaining our patent protection depends on compliance with various required procedures, document submissions, fee payments and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the USPTO and various governmental patent agencies outside of the United States at several stages over the lifetime of the patents and/or applications. The USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. In certain circumstances, we rely on our licensor to pay these fees due to the U.S. and non-U.S. patent agencies and to take the necessary action to comply with these requirements with respect to our licensed intellectual property. In many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors may be able to enter the market without infringing our patents and this circumstance would have a material adverse effect on our business, financial condition, results of operations and prospects.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

We have employed and expect to employ individuals who were previously employed at universities or other companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants, advisors and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that our employees, advisors, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information of their former employers or other third parties, or to claims that we have improperly used or obtained such trade secrets. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights and face increased competition to our business. Any such litigation or the threat thereof may adversely affect our ability to hire employees or contract with advisors, contractors and consultants. A loss of key research personnel work product could hamper or prevent our ability to commercialize potential products, which could harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management. This type of litigation or proceeding could substantially increase our operating losses and reduce our resources available for development activities. Some of our competitors may be able to sustain the costs of this type of litigation or proceedings more effectively than we can because of their substantially greater financial resources.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Furthermore, individuals executing agreements with us may have pre-existing or competing obligations to a third party, such as an academic institution, and thus an agreement with us may be ineffective in perfecting ownership of inventions developed by that individual, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Furthermore, we or our licensor may in the future be subject to claims by former employees, consultants or other third parties asserting an ownership right in our owned or licensed patents or patent applications. An adverse determination in any such proceeding may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar technology, without payment to us, or could limit the duration of the patent protection covering our technology and products. Such challenges may also result in our inability to develop,

manufacture or commercialize our products without infringing third-party patent rights. Any of the foregoing could harm our business, financial condition, results of operations and prospects.

We currently rely on a license from a third party, and in the future may rely on additional licenses from other third parties, in relation to our Proteograph Product Suite and if we lose any of these licenses, then we may be subjected to future litigation.

We are, and may in the future become, a party to license agreements that grant us rights to use certain intellectual property, including patents and patent applications, typically in certain specified fields of use. Currently, we rely on an in-license from The Brigham and Women's Hospital, Inc. (BWH), for patents relating to methods of using nanoparticles to measure the proteome, including the methods used in our Proteograph Product Suite and may in the future rely on licenses from other third parties with respect to our Proteograph Product Suite or other technology. Our rights to use licensed technology in our business are subject to the continuation of and compliance with the terms of this license and any licenses we may enter into in the future. Some of these licensed rights provide us with freedom to operate for aspects of our products and technologies. As a result, any termination of this license could result in the loss of significant rights and could harm our ability to develop, manufacture and commercialize our Proteograph. We may need to obtain additional licenses from others to advance our research, development and commercialization activities. For instance, under our license agreement with BWH, we currently in-license two patent families that include the methods used in our Proteograph Product Suite, and to the extent any additional intellectual property developed by BWH that are not included in such licensed patent families are necessary or useful for our Proteograph Product Suite, we would need to negotiate for additional licenses to such additional intellectual property. Such licenses may not be available on commercially reasonable terms or at all, or may be non-exclusive.

Our success may depend in part on the ability of our licensor and any future licensors to obtain, maintain and enforce patent protection for our licensed intellectual property. Under our license agreement with BWH and under any licenses we may enter into in the future, BWH controls, and future licensors may control, the prosecution, maintenance and enforcement of patents and patent applications that are licensed to us. BWH or any future licensors may not successfully prosecute the patent applications we license or prosecute such patent applications in our best interest. Even if patents issue in respect of these patent applications, BWH and any future licensors may fail to maintain these patents, may determine not to pursue litigation against other companies that are infringing these patents or may pursue such litigation less aggressively than we would. Without protection for the intellectual property we license, other companies might be able to offer substantially identical products and technologies for sale, which could materially adversely affect our competitive business position and harm our business prospects, financial condition or results of operations.

Our current license agreement imposes, and future agreements may impose, various diligence, commercialization, milestone payment, royalty, insurance and other obligations on us and require us to meet development timelines, or to exercise commercially reasonable efforts to develop and commercialize licensed products, in order to maintain the licenses. If we fail to comply with these obligations, our licensor(s) may have the right to terminate our license, in which event we would not be able to develop or market products or technology covered by the licensed intellectual property. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations and prospects.

Moreover, disputes may also arise between us and our licensor regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- our financial or other obligations under the license agreement;
- whether, and the extent to which, our products, technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;

- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensor(s); and
- the priority of invention of patented technology.

If we do not prevail in such disputes, we may lose any or all of our rights under such license agreements, experience significant delays in the development and commercialization of our products and technologies, or incur liability for damages, any of which could have a material adverse effect on our business, financial condition, results of operations, and prospects. In addition, we may seek to obtain additional licenses from our licensor(s) and, in connection with obtaining such licenses, we may agree to amend our existing licenses in a manner that may be more favorable to the licensor(s), including by agreeing to terms that could enable third parties, including our competitors, to receive licenses to a portion of the intellectual property that is subject to our existing licenses and to compete with our products.

In addition, the agreements under which we currently and in the future license intellectual property or technology from third parties are complex and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize any affected products or services, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Absent the license agreements, we may infringe patents subject to those agreements, and if the license agreements are terminated, we may be subject to litigation by the licensor. Litigation could result in substantial costs to us and distract our management. If we do not prevail, we may be required to pay damages, including treble damages, attorneys' fees, costs and expenses and royalties or be enjoined from selling our Proteograph, which could adversely affect our ability to offer products or services, our ability to continue operations and our business, financial condition, results of operations and prospects.

If we cannot license rights to use technologies on reasonable terms, we may not be able to commercialize new products in the future.

We may identify third-party technology that we may need to license or acquire in order to develop or commercialize our products or technologies, including our Proteograph Product Suite. However, we may be unable to secure such licenses or acquisitions. The licensing or acquisition of third-party intellectual property rights is a competitive area, and several more established companies may pursue strategies to license or acquire third-party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us.

We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. In return for the use of a third party's technology, we may agree to pay the licensor royalties based on sales of our products or services. Royalties are a component of cost of products or technologies and affect the margins on our products. We may also need to negotiate licenses to patents or patent applications before or after introducing a commercial product. We may not be able to obtain necessary licenses to patents or patent applications, and our business may suffer if we are unable to enter into the necessary licenses on acceptable terms or at all, if any necessary licenses are subsequently terminated, if the licensor fails to abide by the terms of the license or fails to prevent infringement by third parties, or if the licensed intellectual property rights are found to be invalid or unenforceable.

Certain of our in-licensed patents are, and our future owned and in-licensed patents may be, subject to a reservation of rights by one or more third parties, including government march-in rights, that may limit our ability to exclude third parties from commercializing products similar or identical to ours.

In addition, our owned and in-licensed patents may be subject to a reservation of rights by one or more third parties. For example, the U.S. government has certain rights, including march-in rights, to patent rights and technology funded by the U.S. government and licensed to us from BWH. When new technologies are developed with government funding, in order to secure ownership of such patent rights, the recipient of such funding is required to comply with certain government regulations, including timely disclosing the inventions claimed in such patent rights to the U.S. government and timely electing title to such inventions. Any failure to timely elect title to such inventions may provide the U.S. government to, at any time, take title such inventions. Additionally, the U.S. government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to use the invention or to have others use the invention on its behalf. If the government decides to exercise these rights, it is not required to engage us as its contractor in connection with doing so. These rights may permit the U.S. government to disclose our confidential information to third parties and to exercise march-in rights to use or allow third parties to use our licensed technology. The U.S. government can exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any exercise by the government of any of the foregoing rights could have a material adverse effect on our business, financial condition, results of operations and prospects.

Our products contain third-party open source software components and failure to comply with the terms of the underlying open source software licenses could restrict our ability to sell our products and provide third parties access to our proprietary software.

Our products contain software licensed by third parties under open source software licenses. Use and distribution of open source software may entail greater risks than use of third-party commercial software, as open source software licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. Some open source software licenses contain requirements that the licensee make its source code publicly available if the licensee creates modifications or derivative works using the open source software, depending on the type of open source software the licensee uses and how the licensee uses it. If we combine our proprietary software with open source software in a certain manner, we could, under certain open source software licenses, be required to release the source code of our proprietary software to the public for free. This would allow our competitors and other third parties to create similar products with less development effort and time and ultimately could result in a loss of our product sales and revenue, which could have a material adverse effect on our business, financial condition, results of operations and prospects. In addition, some companies that use third-party open source software have faced claims challenging their use of such open source software and their compliance with the terms of the applicable open source license. We may be subject to suits by third parties claiming ownership of what we believe to be open source software, or claiming non-compliance with the applicable open source licensing terms. Use of open source software may also present additional security risks because the public availability of such software may make it easier for hackers and other third parties to compromise or attempt to compromise our technology platform and systems.

Although we review our use of open source software to avoid subjecting our proprietary software to conditions we do not intend, the terms of many open source software licenses have not been interpreted by United States courts, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our products and proprietary software. Moreover, we cannot assure investors that our processes for monitoring and controlling our use of open source software in our products will be effective. If we are held to have breached the terms of an open source software license, we could be subject to damages, required to seek licenses from third parties to continue offering our products on terms that are not economically feasible, to re-engineer our products, to discontinue the sale of our products if re-engineering could not be accomplished on a timely basis, or to make generally available, in source code form, our proprietary code, any of which could adversely affect our business, financial condition, results of operations and prospects.

Intellectual property rights do not necessarily address all potential threats.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make products that are similar to products and technologies we may develop or utilize similar technology that are not covered by the claims of the patents that we own or license now or in the future;
- we, or our licensor(s), might not have been the first to make the inventions covered by the issued patent or pending patent application that we license or may own in the future;
- we, or our licensor(s), might not have been the first to file patent applications covering certain of our or their inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing, misappropriating or otherwise violating our owned or licensed intellectual property rights;
- it is possible that our pending licensed patent applications or those that we may own in the future will not lead to issued patents;
- issued patents that we hold rights to may be held invalid or unenforceable, including as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- the patents of others may harm our business; and
- we may choose not to file a patent for certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property.

Should any of these events occur, they could materially adversely affect our business, financial condition, results of operations and prospects.

Risks Related to this Offering and Ownership of Our Class A Common Stock

Prior to this offering, there has been no public market for shares of our Class A common stock and an active trading market for our Class A common stock may never develop or be sustained.

Prior to this offering, there has been no public market for shares of our Class A common stock. We intend to apply to list our Class A common stock on the Nasdaq Stock Market under the symbol "SEER." We cannot assure you that an active trading market for our Class A common stock will develop on that exchange or elsewhere. If an active trading market does not develop, or develops but is not maintained, you may have difficulty selling any of our Class A common stock that you purchase due to the limited public float. Accordingly, we cannot assure you of your ability to sell your shares of Class A common stock when desired or the prices that you may obtain for your shares.

The market price of our Class A common stock may be volatile, which could result in substantial losses for investors purchasing shares in this offering.

The initial public offering price for our Class A common stock will be determined through negotiations with the underwriters. This initial public offering price may differ from the market price of our Class A common stock after the offering. As a result, you may not be able to sell your Class A common stock at or above the initial public

offering price. Some of the factors that may cause the market price of our Class A common stock to fluctuate include, but are not limited to:

- the timing of our launch and commercialization of our products and degree to which such launch and commercialization meets the expectations of securities analysts and investors;
- actual or anticipated fluctuations in our operating results, including fluctuations in our quarterly and annual results;
- operating expenses being more than anticipated;
- the failure or discontinuation of any of our product development and research programs;
- changes in the structure or funding of research at academic and research laboratories and institutions, including changes that would affect their ability to purchase our instruments or consumables;
- the success of existing or new competitive businesses or technologies;
- announcements about new research programs or products of our competitors;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- litigation and governmental investigations involving us, our industry or both;
- regulatory or legal developments in the United States and other countries;
- volatility and variations in market conditions in the life sciences technology sector generally, or the proteomics or genomics sectors specifically;
- investor perceptions of us or our industry;
- the level of expenses related to any of our research and development programs or products;
- actual or anticipated changes in our estimates as to our financial results or development timelines, variations in our financial results or those of companies that are perceived to be similar to us or changes in estimates or recommendations by securities analysts, if any, that cover our Class A common stock or companies that are perceived to be similar to us;
- whether our financial results meet the expectations of securities analysts or investors;
- the announcement or expectation of additional financing efforts;
- sales of our Class A common stock by us or sales of our Class A common stock or Class B common stock by our insiders or other stockholders;
- the expiration of market standoff or lock-up agreements;
- general economic, industry and market conditions; and
- the COVID-19 pandemic, natural disasters or major catastrophic events.

Recently, stock markets in general, and the market for life sciences technology companies in particular, have experienced significant price and volume fluctuations that have often been unrelated or disproportionate to changes in the operating performance of the companies whose stock is experiencing those price and volume fluctuations, particularly in light of the current COVID-19 pandemic. Broad market and industry factors may seriously affect the market price of our Class A common stock, regardless of our actual operating performance. These fluctuations may be even more pronounced in the trading market for our stock shortly following this offering. Following periods of

such volatility in the market price of a company's securities, securities class action litigation has often been brought against that company. Because of the potential volatility of our stock price, we may become the target of securities litigation in the future. Securities litigation could result in substantial costs and divert management's attention and resources from our business.

The multi-class structure of our common stock will have the effect of concentrating voting control with those stockholders who held our capital stock prior to the completion of this offering and it may depress the trading price of our Class A common stock.

Our Class A common stock, which is the stock we are offering in this offering, has one vote per share, and our Class B common stock has ten votes per share, except as otherwise required by law. Our Class B common stock is held by our founders and early investors. Following this offering, the holders of our Class B common stock will hold in the aggregate % of the voting power of our capital stock.

As a result, the holders of our Class B common stock collectively will continue to control a majority of the combined voting power of our common stock and therefore be able to control all matters submitted to our stockholders for approval. This control will limit to the stockholders' influence over corporate matters for approximately five years following this offering, including the election of directors, amendments of our organizational documents and any sale of the company or other major corporate transaction requiring stockholder approval. This may prevent or discourage unsolicited proposals to acquire the company. Future transfers by holders of Class B common stock will generally result in those shares converting to Class A common stock, subject to limited exceptions, such as certain transfers effected for estate planning purposes where sole dispositive power and exclusive voting control with respect to the shares of Class B common stock is retained by the transferring holder. The Class B common stock will also automatically convert into Class A common stock upon the earlier of the first day following the fifth anniversary of the closing of this offering and December 31, 2025. See the section titled "Description of Capital Stock—Common stock—Conversion of Class B Common Stock" for additional information about conversions. The conversion of Class B common stock to Class A common stock will have the effect, over time, of increasing the relative voting power of those individual holders of Class B common stock who retain their shares over the long term.

In addition, FTSE Russell and Standard & Poor's no longer allow most newly public companies utilizing dual or multi-class capital structures to be included in their indices. Affected indices include the Russell 2000 and the S&P 500, S&P MidCap 400, and S&P SmallCap 600, which together make up the S&P Composite 1500. Under the announced policies, our multi-class capital structure would make us ineligible for inclusion in any of these indices, and as a result, mutual funds, exchange-traded funds and other investment vehicles that attempt to passively track these indices will not be investing in our stock. It is unclear what effect, if any, exclusion from any indices has had on the valuations of the affected publicly traded companies. It is possible that such policies could depress the valuations of public companies excluded from such indices compared to those of other companies that are included.

If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our Class A common stock, the price of our Class A common stock could decline.

The trading market for our Class A common stock will rely in part on the research and reports that industry or securities analysts publish about us or our business. We do not currently have and may never obtain research coverage by industry or securities analysts. If no or few analysts commence coverage of us, the trading price of our Class A common stock could decrease. Even if we do obtain analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our Class A common stock, the price of our Class A common stock could decline. If one or more of these analysts cease to cover our Class A common stock, we could lose visibility in the market for our Class A common stock, which in turn could cause the price of our Class A common stock to decline.

Sales of a substantial number of shares of our Class A common stock by our existing stockholders following this offering could cause the price of our Class A common stock to decline.

Sales of a substantial number of shares of our Class A common stock in the public market could occur at any time following the expiration of the market standoff and lock-up agreements or the early release of these agreements

or the perception in the market that the holders of a large number of shares of Class A common stock intend to sell shares and could reduce the market price of our Class A common stock. After giving effect to (i) the filing and effectiveness of our amended and restated certificate of incorporation, (ii) the automatic conversion of all shares of our convertible preferred stock outstanding as of September 30, 2020 into 62,117,410 shares of Class A common stock and (iii) the issuance and sale of shares of Class A common stock by us in this offering, we will have shares of Class A common stock outstanding and 20,000,000 shares of Class B common stock outstanding. Of these shares, the shares of Class A common stock we are selling in this offering may be resold in the public market immediately, unless purchased by our affiliates. The remaining 69,192,354 shares of Class A common stock, or % of our outstanding shares of Class A common stock after this offering and all shares of our Class B common stock (and any share of Class A common stock into which they are converted) are currently prohibited or otherwise restricted from being sold in the public market under securities laws, market standoff agreements entered into by our stockholders with us, or lock-up agreements entered into by our stockholders with the underwriters; however, subject to applicable securities law restrictions and excluding shares of Class A common stock issued pursuant to the early exercise of unvested stock options that will remain unvested, the shares of our Class A common stock outstanding after this offering will be able to be sold in the public market beginning on , 2021. The representatives may, in their sole discretion, release all or some portion of the shares subject to lock-up agreements at any time and for any reason. Shares issued upon the exercise of stock options outstanding under our equity incentive plans or pursuant to future awards granted under those plans will become available for sale in the public market to the extent permitted by the provisions of applicable vesting schedules, any applicable market standoff and lock-up agreements, and Rule 144 and Rule 701 under the Securities Act of 1933, as amended, or the Securities Act.

Moreover, after this offering, holders of an aggregate of 63,224,477 shares of our Class A common stock will have rights, subject to conditions, to require us to file registration statements with the SEC covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders as described under "Description of Capital Stock—Registration Rights." We also plan to register all shares of Class A common stock that we may issue under our equity compensation and employee stock purchase plans. Once we register these shares, they can be freely sold in the public market upon issuance and, if applicable, vesting, subject to volume limitations applicable to affiliates and the lock-up agreements described in the section titled "Underwriting" in this prospectus. Sales of Class A common stock in the public market as restrictions end or pursuant to registration rights may make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. These sales also could cause the trading price of our Class A common stock to fall and make it more difficult for you to sell shares of our Class A common stock. See the section titled "Shares Eligible for Future Sale" for more information regarding shares of Class A common stock that may be sold in the public market after this offering.

We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

We cannot specify with certainty the particular uses of the net proceeds we will receive from this offering. Our management will have broad discretion in the application of the net proceeds, including for any of the purposes described in the section titled "Use of Proceeds" in this prospectus. Our management may spend a portion or all of the net proceeds from this offering in ways that our stockholders may not desire or that may not yield a favorable return. The failure by our management to apply these funds effectively could harm our business, financial condition, results of operations and prospects. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

We do not expect to pay any dividends for the foreseeable future. Investors in this offering may never obtain a return on their investment.

You should not rely on an investment in our Class A common stock to provide dividend income. We do not anticipate that we will pay any dividends to holders of our Class A common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our existing operations, fund our research and development programs and continue to invest in our commercial infrastructure. In addition, any future credit facility or financing we obtain may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our Class A common stock. Accordingly, investors must rely on sales of their Class A common stock after price

appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not purchase our Class A common stock.

Our amended and restated bylaws designate a state or federal court located within the State of Delaware as the exclusive forum for substantially all disputes between us and our stockholders, and also provide that the federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act of 1933, as amended, each of which could limit our stockholders' ability to choose the judicial forum for disputes with us or our directors, officers, stockholders, or employees.

Our amended and restated certificate of incorporation that will become effective upon the closing of this offering specifies that, unless we consent in writing to the selection of an alternative forum, the sole and exclusive forum for (a) any derivative action or proceeding brought on our behalf, (b) any action asserting a claim of breach of a fiduciary duty owed by any of our current or former directors, stockholders, officers, or other employees to us or our stockholders, (c) any action or proceeding asserting a claim arising pursuant to, or seeking to enforce any right, obligation or remedy under, any provision of the Delaware General Corporation Law, our amended and restated certificate of incorporation, or our amended and restated bylaws, (d) any action or proceeding as to which the Delaware General Corporation Law confers jurisdiction on the Court of Chancery of the State of Delaware, or (e) any action or proceeding asserting a claim that is governed by the internal affairs doctrine shall be the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, another state court in Delaware or, if no state court in Delaware has jurisdiction, the federal district court for the District of Delaware) and any appellate court therefrom, in all cases subject to the court having jurisdiction over the claims at issue and the indispensable parties; provided that the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Exchange Act.

Section 22 of the Securities Act of 1933, as amended (the Securities Act), creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated bylaws also provide that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

Any person or entity purchasing or otherwise acquiring or holding or owning (or continuing to hold or own) any interest in any of our securities shall be deemed to have notice of and consented to the foregoing bylaw provisions. Although we believe these exclusive forum provisions benefit us by providing increased consistency in the application of Delaware law and federal securities laws in the types of lawsuits to which each applies, the exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with us or any of our directors, officers, stockholders, or other employees, which may discourage lawsuits with respect to such claims against us and our current and former directors, officers, stockholders, or other employees. Our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder as a result of our exclusive forum provisions. Further, in the event a court finds either exclusive forum provision contained in our amended and restated bylaws to be unenforceable or inapplicable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our results of operations.

Delaware law and provisions in our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect prior to the closing of this offering might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the trading price of our Class A common stock.

Our status as a Delaware corporation and the anti-takeover provisions of the Delaware General Corporation Law may discourage, delay or prevent a change in control by prohibiting us from engaging in a business combination with an interested stockholder for a period of three years after the person becomes an interested stockholder, even if a change of control would be beneficial to our existing stockholders. In addition, our restated

certificate of incorporation and restated bylaws contain provisions that may make the acquisition of our company more difficult, including the following:

- any transaction that would result in a change in control of our company requires the approval of a majority of our outstanding Class B common stock voting as a separate class;
- our multi-class common stock structure provides our holders of Class B common stock with the ability to significantly influence the outcome of matters requiring stockholder approval, even if they own significantly less than a majority of the shares of our outstanding Class A common stock and Class B common stock;
- our board of directors will be classified into three classes of directors with staggered three-year terms and directors will only be able to be removed from office for cause by the affirmative vote of holders of at least two-thirds of the voting power of our then outstanding capital stock;
- certain amendments to our amended and restated certificate of incorporation will require the approval of stockholders holding two-thirds of the voting power of our then outstanding capital stock;
- any stockholder-proposed amendment to our amended and restated bylaws will require the approval of stockholders holding two-thirds of the voting power of our then outstanding capital stock;
- our stockholders will only be able to take action at a meeting of stockholders and will not be able to take action by written consent for any matter;
- our stockholders will be able to act by written consent only if the action is first recommended or approved by the board of directors;
- vacancies on our board of directors will be able to be filled only by our board of directors and not by stockholders;
- only the chair of the board of directors, chief executive officer or a majority of the board of directors are authorized to call a special meeting of stockholders;
- certain litigation against us can only be brought in Delaware;
- our restated certificate of incorporation authorizes undesignated preferred stock, the terms of which may be established and shares of which may be issued, without the approval of the holders of our capital stock; and
- advance notice procedures apply for stockholders to nominate candidates for election as directors or to bring matters before an annual meeting of stockholders.

These anti-takeover defenses could discourage, delay, or prevent a transaction involving a change in control of our company. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors of their choosing and to cause us to take other corporate actions they desire, any of which, under certain circumstances, could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock and could also affect the price that some investors are willing to pay for our Class A common stock.

Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.

As of December 31, 2018 and 2019, we had U.S. federal and state net operating loss carryforwards, or NOLs, of $5.3 million and $35.1 million, respectively, which if not utilized will expire in 2031 for state purposes. We may use these NOLs to offset against taxable income for U.S. federal and state income tax purposes. However, Section 382 of the Internal Revenue Code of 1986, as amended, may limit the NOLs we may use in any year for U.S. federal income tax purposes in the event of certain changes in ownership of our company. A Section 382 “ownership change” generally occurs if one or more stockholders or groups of stockholders who own at least 5% of a company’s stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules may apply under state tax laws. We have not conducted a 382 study to

determine whether the use of our NOLs is impaired. We may have previously undergone an "ownership change." In addition, this offering or future issuances or sales of our stock, including certain transactions involving our stock that are outside of our control, could result in future "ownership changes." "Ownership changes" that have occurred in the past or that may occur in the future, including in connection with this offering, could result in the imposition of an annual limit on the amount of pre-ownership change NOLs and other tax attributes we can use to reduce our taxable income, potentially increasing and accelerating our liability for income taxes, and also potentially causing those tax attributes to expire unused. States may impose other limitations on the use of our NOLs. Any limitation on using NOLs could, depending on the extent of such limitation and the NOLs previously used, result in our retaining less cash after payment of U.S. federal and state income taxes during any year in which we have taxable income, rather than losses, than we would be entitled to retain if such NOLs were available as an offset against such income for U.S. federal and state income tax reporting purposes, which could adversely impact our operating results.

We are an "emerging growth company" and the reduced disclosure requirements applicable to emerging growth companies may make our Class A common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act. For so long as we remain an emerging growth company, we are permitted by SEC rules and plan to rely on exemptions from certain disclosure requirements that are applicable to other SEC registered public companies that are not emerging growth companies. These exemptions include not being required to comply with the auditor attestation requirements of Section 404 of the SOX, not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements, reduced disclosure obligations regarding executive compensation and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. As a result, the information we provide stockholders will be different than the information that is available with respect to other public companies. In this prospectus, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. We cannot predict whether investors will find our Class A common stock less attractive if we rely on these exemptions. If some investors find our Class A common stock less attractive as a result, there may be a less active trading market for our Class A common stock and our stock price may be more volatile.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

We will incur significant increased costs and management resources as a result of operating as a public company.

As a public company, we will incur significant legal, accounting, compliance and other expenses that we did not incur as a private company and these expenses may increase even more after we are no longer an "emerging growth company." Our management and other personnel will need to devote a substantial amount of time and incur significant expense in connection with compliance initiatives. For example, in anticipation of becoming a public company, we will need to adopt additional internal controls and disclosure controls and procedures, retain a transfer agent and adopt an insider trading policy. As a public company, we will bear all of the internal and external costs of preparing and distributing periodic public reports in compliance with our obligations under the securities laws.

In addition, regulations and standards relating to corporate governance and public disclosure, including SOX, and the related rules and regulations implemented by the SEC and the Nasdaq Stock Market, LLC, or Nasdaq, have increased legal and financial compliance costs and will make some compliance activities more time-consuming. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment will result in increased general and administrative expenses and may divert management's time and attention from our other

business activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us, and our business may be harmed. In connection with this offering, we intend to increase our directors' and officers' insurance coverage, which will increase our insurance cost. In the future, it may be more expensive or more difficult for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

If you purchase our Class A common stock in this offering, you will incur immediate and substantial dilution as a result of this offering.

If you purchase our Class A common stock in this offering, you will incur immediate and substantial dilution of $ per share, representing the difference between the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, and our pro forma net tangible book value per share after giving effect to (i) the filing and effectiveness of our amended and restated certificate of incorporation, (ii) the automatic conversion of all shares of our convertible preferred stock outstanding as of September 30, 2020 into 62,117,410 shares of Class A common stock and (iii) the issuance and sale of shares of Class A common stock by us in this offering. As of September 30, 2020, there were 16,164,706 shares of our Class A common stock subject to outstanding stock options with a weighted-average exercise price of $1.17 per share. To the extent that these outstanding stock options and warrants are ultimately exercised or the underwriters exercise their option to purchase additional shares of our Class A common stock, you will incur further dilution. See the section titled "Dilution" for more information.

General Risks

If our facilities or our third-party manufacturers' facilities become unavailable or inoperable, our research and development program and commercialization launch plan could be adversely impacted and manufacturing of our instruments and consumables could be interrupted.

Our Redwood City, California, facilities house our corporate, research and development and quality assurance teams. Our instruments are manufactured at our third-party manufacturer's facilities in Nevada, and our consumables are manufactured at various locations in the United States and internationally.

Our facilities in Redwood City and those of our third-party manufacturers are vulnerable to natural disasters, public health crises, including the impact of the COVID-19 pandemic, and catastrophic events. For example, our Redwood City facilities are located near earthquake fault zones and are vulnerable to damage from earthquakes as well as other types of disasters, including fires, floods, power loss, communications failures and similar events. If any disaster, public health crisis or catastrophic event were to occur, our ability to operate our business would be seriously, or potentially completely, impaired. If our facilities or our third-party manufacturer's facilities become unavailable for any reason, we cannot provide assurances that we will be able to secure alternative manufacturing facilities with the necessary capabilities and equipment on acceptable terms, if at all. We may encounter particular difficulties in replacing our Redwood City facilities given the specialized equipment housed within it. The inability to manufacture our instruments or consumables, combined with our limited inventory of manufactured instruments and consumables, may result in the loss of future customers or harm our reputation, and we may be unable to re-establish relationships with those customers in the future. Because our NPs are perishable and must be kept in temperature controlled storage, the loss of power to our facilities, mechanical or other issues with our storage facilities or other events that impact our temperature controlled storage could result in the loss of some or all of such NPs, and we may not be able to replace them without disruption to our customers or at all.

If our research and development program or commercialization program were disrupted by a disaster or catastrophe, the launch of new products, including our Proteograph Product Suite, and the timing of improvements to our products could be significantly delayed and could adversely impact our ability to compete with other available products and solutions. If our or our third-party manufacturer's capabilities are impaired, we may not be able to

manufacture and ship our products in a timely manner, which would adversely impact our business. Although we possess insurance for damage to our property and the disruption of our business, this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all.

If we experience a significant disruption in our information technology systems or breaches of data security, our business could be adversely affected.

We rely, or will rely, on information technology systems to keep financial records, facilitate our research and development initiatives, manage our manufacturing operations, maintain quality control, fulfill customer orders, maintain corporate records, communicate with staff and external parties and operate other critical functions. Our information technology systems and those of our vendors and partners are potentially vulnerable to disruption due to breakdown, malicious intrusion and computer viruses or other disruptive events, including, but not limited to, natural disasters and catastrophes. Cyberattacks and other malicious internet-based activity continue to increase and cloud-based platform providers of services have been and are expected to continue to be targeted. Methods of attacks on information technology systems and data security breaches change frequently, are increasingly complex and sophisticated, including social engineering and phishing scams, and can originate from a wide variety of sources. In addition to traditional computer "hackers," malicious code, such as viruses and worms, employee theft or misuse, denial-of-service attacks and sophisticated nation-state and nation-state supported actors now engage in attacks, including advanced persistent threat intrusions. Despite our efforts to create security barriers to such threats, it is virtually impossible for us to entirely mitigate these risks. In addition, we have not finalized our information technology and data security procedures and therefore, our information technology systems may be more susceptible to cybersecurity attacks than if such security procedures were finalized. Despite any of our current or future efforts to protect against cybersecurity attacks and data security breaches, there is no guarantee that our efforts are adequate to safeguard against all such attacks and breaches. Moreover, it is possible that we may not be able to anticipate, detect, appropriately react and respond to, or implement effective preventative measures against, all cybersecurity incidents.

If our security measures, or those of our vendors and partners, are compromised due to any cybersecurity attacks or data security breaches, including as a result of third-party action, employee or customer error, malfeasance, stolen or fraudulently obtained log-in credentials or otherwise, our reputation could be damaged, our business and reputation may be harmed, we could become subject to litigation and we could incur significant liability. If we were to experience a prolonged system disruption in our information technology systems or those of certain of our vendors and partners, it could negatively impact our ability to serve our customers, which could adversely impact our business, financial condition, results of operations and prospects. If operations at our facilities were disrupted, it may cause a material disruption in our business if we are not capable of restoring functionality on an acceptable timeframe. In addition, our information technology systems, and those of our vendors and partners, are potentially vulnerable to data security breaches, whether by internal bad actors, such as employees or other third parties with legitimate access to our or our third-party providers' systems, or external bad actors, which could lead to the exposure of personal data, sensitive data and confidential information to unauthorized persons. Any such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the exposure of personal information, including sensitive personal information, of our employees, customers and others, any of which could have a material adverse effect on our business, reputation, financial condition and results of operations.

In addition, any such access, disclosure or other loss or unauthorized use of information or data could result in legal claims or proceedings, regulatory investigations or actions, and other types of liability under laws that protect the privacy and security of personal information, including federal, state and foreign data protection and privacy regulations, violations of which could result in significant penalties and fines. Furthermore, defending a suit, regardless of its merit, could be costly, divert management's attention and harm our reputation. In addition, although we seek to detect and investigate all data security incidents, security breaches and other incidents of unauthorized access to our information technology systems and data can be difficult to detect and any delay in identifying such breaches or incidents may lead to increased harm and legal exposure of the type described above. Moreover, there could be public announcements regarding any cybersecurity incidents and any steps we take to respond to or remediate such incidents, and if securities analysts or investors perceive these announcements to be negative, it could, among other things, have a material adverse effect on the price of our Class A common stock.

The cost of protecting against, investigating, mitigating and responding to potential breaches of our information technology systems and data security breaches and complying with applicable breach notification obligations to individuals, regulators, partners and others can be significant. As cybersecurity incidents continue to evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security vulnerabilities. The inability to implement, maintain and upgrade adequate safeguards could have a material adverse effect on our business, financial condition, results of operations and prospects. While we currently maintain cybersecurity insurance, our insurance policies may not be adequate to compensate us for the potential costs and other losses arising from such disruptions, failures or security breaches. In addition, such insurance may not be available to us in the future on economically reasonable terms, or at all, or that any insurer will not deny coverage as to any future claim. The successful assertion of one or more large claims against us that exceed available insurance coverage, or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, financial condition, results of operations and prospects.

We are currently subject to, and may in the future become subject to additional, U.S. federal and state laws and regulations imposing obligations on how we collect, store and process personal information. Our actual or perceived failure to comply with such obligations could harm our business. Ensuring compliance with such laws could also impair our efforts to maintain and expand our future customer base, and thereby decrease our revenue.

In the ordinary course of our business, we currently, and in the future will, collect, store, transfer, use or process sensitive data, including personally identifiable information of employees, and intellectual property and proprietary business information owned or controlled by ourselves and other parties. The secure processing, storage, maintenance, and transmission of this critical information are vital to our operations and business strategy. We are, and may increasingly become, subject to various laws and regulations, as well as contractual obligations, relating to data privacy and security in the jurisdictions in which we operate. The regulatory environment related to data privacy and security is increasingly rigorous, with new and constantly changing requirements applicable to our business, and enforcement practices are likely to remain uncertain for the foreseeable future. These laws and regulations may be interpreted and applied differently over time and from jurisdiction to jurisdiction, and it is possible that they will be interpreted and applied in ways that may have a material adverse effect on our business, financial condition, results of operations and prospects.

In the United States, various federal and state regulators, including governmental agencies like the Consumer Financial Protection Bureau and the Federal Trade Commission, have adopted, or are considering adopting, laws and regulations concerning personal information and data security. Certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to personal information than federal, international or other state laws, and such laws may differ from each other, all of which may complicate compliance efforts. For example, the California Consumer Privacy Act (CCPA), which increases privacy rights for California residents and imposes obligations on companies that process their personal information, came into effect on January 1, 2020. Among other things, the CCPA requires covered companies to provide new disclosures to California consumers and provide such consumers new data protection and privacy rights, including the ability to opt-out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for certain data breaches that result in the loss of personal information. This private right of action may increase the likelihood of, and risks associated with, data breach litigation. In addition, laws in all 50 U.S. states require businesses to provide notice to consumers whose personal information has been disclosed as a result of a data breach. State laws are changing rapidly and there is discussion in the U.S. Congress of a new comprehensive federal data privacy law to which we would become subject if it is enacted.

Furthermore, regulations promulgated pursuant to the Health Insurance Portability and Accountability Act of 1996 (HIPAA), establish privacy and security standards that limit the use and disclosure of individually identifiable health information (known as “protected health information”) and require the implementation of administrative, physical and technological safeguards to protect the privacy of protected health information and ensure the confidentiality, integrity and availability of electronic protected health information. Determining whether protected health information has been handled in compliance with applicable privacy standards and our contractual obligations can require complex factual and statistical analyses and may be subject to changing interpretation. Although we take

measures to protect sensitive data from unauthorized access, use or disclosure, our information technology and infrastructure may be vulnerable to attacks by hackers or viruses or breached due to employee error, malfeasance or other malicious or inadvertent disruptions. Any such breach or interruption could compromise our networks and the information stored there could be accessed by unauthorized parties, manipulated, publicly disclosed, lost or stolen. Any such access, breach or other loss of information could result in legal claims or proceedings, and liability under federal or state laws that protect the privacy of personal information, such as the HIPAA, the Health Information Technology for Economic and Clinical Health Act (HITECH), and regulatory penalties. Notice of breaches must be made to affected individuals, the Secretary of the Department of Health and Human Services, and for extensive breaches, notice may need to be made to the media or State Attorneys General. Such a notice could harm our reputation and our ability to compete.

We are in the process of evaluating compliance needs, but do not currently have in place formal policies and procedures related to the storage, collection and processing of information, and have not conducted any internal or external data privacy audits, to ensure our compliance with all applicable data protection laws and regulations. Additionally, we do not currently have policies and procedures in place for assessing our third-party vendors' compliance with applicable data protection laws and regulations. All of these evolving compliance and operational requirements impose significant costs, such as costs related to organizational changes, implementing additional protection technologies, training employees and engaging consultants, which are likely to increase over time. In addition, such requirements may require us to modify our data processing practices and policies, distract management or divert resources from other initiatives and projects, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Any failure or perceived failure by us or our third-party vendors, collaborators, contractors and consultants to comply with any applicable federal, state or similar foreign laws and regulations relating to data privacy and security, or could result in damage to our reputation, as well as proceedings or litigation by governmental agencies or other third parties, including class action privacy litigation in certain jurisdictions, which would subject us to significant fines, sanctions, awards, penalties or judgments, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy, research and development costs, timing and likelihood of success, as well as plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that are in some cases beyond our control and may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "would," "expect," "plan," "anticipate," "could," "intend," "target," "project," "believe," "estimate," "predict," "potential," or "continue" or the negative of these terms or other similar expressions. Forward-looking statements contained in this prospectus include, but are not limited to, statements about:

- estimates of our addressable market, market growth, future revenue, key performance indicators, expenses, capital requirements and our needs for additional financing;
- our ability to successfully implement our three phase commercial launch plan;
- the implementation of our business model and strategic plans for our Proteograph Product Suite;
- our expectations regarding the rate and degree of market acceptance of our Proteograph Product Suite;
- the impact of our Proteograph Product Suite on the field of proteomics and the size and growth of the addressable proteomics market;
- competitive companies and technologies and our industry;
- our ability to manage and grow our business and commercialize our Proteograph;
- our ability to develop and commercialize new products;
- our ability to establish and maintain intellectual property protection for our products or avoid or defend claims of infringement;
- the performance of third-party manufacturers and suppliers;
- the potential effects of government regulation;
- our ability to hire and retain key personnel and to manage our future growth effectively;
- our ability to obtain additional financing in this or future offerings;
- the volatility of the trading price of our Class A common stock;
- our expectations regarding use of proceeds from this offering;
- the benefits of the PrognomIQ, Inc. transaction;
- the impact of local, regional, and national and international economic conditions and events;
- the impact of COVID-19 on our business; and
- our expectations about market trends.

We have based these forward-looking statements largely on our current expectations and projections about our business, the industry in which we operate and financial trends that we believe may affect our business, financial condition, results of operations and prospects, and these forward-looking statements are not guarantees of future

performance or development. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described in the section titled "Risk Factors" and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we undertake no obligation to update or revise any forward-looking statements contained herein to reflect events or circumstances after the date of this prospectus, whether as a result of any new information, future events or otherwise.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain, and you are cautioned not to unduly rely upon these statements.

MARKET, INDUSTRY AND OTHER DATA

This prospectus contains estimates, projections and other information concerning our industry, our business and the markets for our Proteograph Product Suite, including data regarding the estimated size of such markets. We obtained the industry, market and similar dataset forth in this prospectus from our internal estimates and research and from academic and industry research, publications, surveys and studies conducted by third parties, including governmental agencies. In some cases, we do not expressly refer to the sources from which this information is derived. In that regard, when we refer to one or more sources of this type of information in any paragraph, you should assume that other information of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. While we believe that the data we use from third parties are reliable, we have not separately verified these data. Further, while we believe our internal research is reliable, such research has not been verified by any third party. You are cautioned not to give undue weight to any such information, projections and estimates. The sources listed below are not a part of this prospectus and are not incorporated by reference in this prospectus.

The sources of industry, market and other data contained in this prospectus are listed below:

1. Allied Market Research. “Global Proteomics Market - Opportunity Analysis and Industry Forecast, 2018-2025” (March 2019).

2. Technavio. “Genomics Market by Solution and Geography - Forecast and Analysis 2020-2024”.

3. Pubmed Database. PubMed is the National Library of Medicine. PubMed comprises more than 30 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites.

4. UniProt Database. The Universal Protein Resource (UniProt) is a comprehensive resource for protein sequence and annotation data. The UniProt databases are the UniProt Knowledgebase (UniProtKB), the UniProt Reference Clusters (UniRef), and the UniProt Archive (UniParc).

5. ClinVar. ClinVar is a freely accessible, public archive of reports of the relationships among human variations and phenotypes, with supporting evidence.

6. dbSNP. dbSNP is a public-domain archive for human single nucleotide variations, microsatellites, and small-scale insertions and deletions along with publication, population frequency, molecular consequence, and genomic and RefSeq mapping information for both common variations and clinical mutations.

There are published studies referenced throughout this prospectus, the citations for those studies are listed below:

1. Blume, J. E. et al. Rapid, deep and precise profiling of the plasma proteome with multi-nanoparticle protein corona. *Nat. Commun.* 11, (2020).

2. Keshishian, H. et al. Quantitative, multiplexed workflow for deep analysis of human blood plasma and biomarker discovery by mass spectrometry. *Nat. Protoc.* 12, 1683–1701 (2017).

3. Schwenk, J. M. et al. The Human Plasma Proteome Draft of 2017: Building on the Human Plasma PeptideAtlas from Mass Spectrometry and Complementary Assays. *J. Proteome Res.* 16, 4299–4310 (2017).

4. Liao, W. Y. et al. Heparin co-factor II enhances cell motility and promotes metastasis in non-small cell lung cancer. *J. Pathol.* 235, 50–64 (2015).

5. Szklarczyk, D. et al. STRING v11: Protein-protein association networks with increased coverage, supporting functional discovery in genome-wide experimental datasets. *Nucleic Acids Res.* 47, D607–D613 (2019).

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of shares of our Class A common stock in this offering will be approximately $ million, or approximately $ million if the underwriters exercise their option to purchase up to additional shares our Class A common stock in full, based on an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover of this prospectus, would increase or decrease, as applicable, the aggregate net proceeds to us from this offering by approximately $ million, assuming the number of shares of Class A common stock offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1.0 million shares in the number of shares of Class A common stock offered by us would increase or decrease, as applicable, the net proceeds to us from this offering by approximately $ million, assuming that the assumed initial public offering price remains the same, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. We do not expect that a change in the initial public offering price or the number of shares by these amounts would have a material effect on our uses of the proceeds from this offering, although it may change the time at which we will need to seek additional capital.

The principal purposes of this offering are to obtain additional capital to support our operations, establish a public market for our Class A common stock and facilitate our future access to the public capital markets. We currently intend to use the net proceeds from this offering, together with our existing cash as follows:

- approximately $ million to commercialize our Proteograph Product Suite and for ongoing sales and marketing activities; and
- the remainder for other development work associated with advancing our Proteograph Product Suite, research and development, and general corporate purposes.

We may also use a portion of the proceeds to in-license, acquire or invest in additional businesses, technologies, products or assets. Although we have no specific agreements, commitments or understandings with respect to any in-licensing activity or acquisitions, we evaluate these opportunities and engage in related discussions with other companies from time-to-time.

Our expected use of proceeds from this offering represents our current intentions based on our present plans and business condition. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the proceeds to be received upon the completion of this offering or the actual amounts that we will spend on the uses set forth above.

The amount and timing of our actual expenditures will depend on numerous factors, including the results of our research and development and commercialization efforts, cash flows from operations, the anticipated growth of our business and any unforeseen cash needs. As a result, our management will have broad discretion over the use of the proceeds from this offering.

Pending their uses, we plan to invest the net proceeds of this offering in short-term, interest-bearing, investment-grade instruments, including certificates of deposit or direct or guaranteed obligations of the U.S. government.

We believe that the proceeds for this offering, together with our existing cash, will be sufficient to fund our operations through the broad commercial availability phase of our commercial launch plan.

DIVIDEND POLICY

We have not declared or paid any cash dividends on our capital stock since our inception. We intend to retain future earnings, if any, to finance the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Payment of future cash dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs, the requirements and contractual restrictions of then-existing debt instruments and other factors that our board of directors deems relevant.

CAPITALIZATION

The following table sets forth our cash, cash equivalents and investments and our capitalization as of September 30, 2020:

- on an actual basis;
- on a pro forma basis to give effect to:
  - the automatic conversion of all of our outstanding shares of convertible preferred stock into an aggregate of 62,117,410 shares of Class A common stock immediately prior to the completion of this offering as if such conversion had occurred on September 30, 2020,
  - stock-based compensation of approximately $0.2 million associated with RSUs subject to service-based and performance-based vesting conditions that we will recognize upon the completion of this offering and is reflected as an increase to additional paid-in capital and accumulated deficit, and
  - the filing and effectiveness of our amended and restated certificate of incorporation, which will occur immediately prior to the completion of this offering; and
- on a pro forma as adjusted basis, to give effect to:
  - the pro forma adjustments set forth above; and
  - the sale and issuance of shares of our Class A common stock by us in this offering, based upon the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma as adjusted information set forth in the table below is illustrative only and will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing.

You should read this information in conjunction with our financial statements and the related notes and the sections titled "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" that are included elsewhere in this prospectus.

	As of September 30 , 2020		
	Actual	Pro Forma	Pro Forma as Adjusted[1]
	(in thousands, except share and per share data)		
Cash, cash equivalents and investments	$ 121,506	$ 121,506	$
Stockholders' equity:			
Convertible preferred stock, par value $0.00001 per share: 62,117,414 shares authorized, 62,117,410 issued and outstanding, actual; no shares authorized, issued and outstanding, pro forma and pro forma as adjusted	$ 162,849	$ —	$
Preferred stock, par value $0.00001 per share: no shares authorized, issued and outstanding, actual; shares authorized and no shares issued and outstanding, pro forma and pro forma as adjusted	—	—	
Class A common stock, par value $0.00001 per share: 120,000,000 shares authorized, 7,054,694 issued and outstanding, actual; shares authorized, 69,172,104 shares issued and outstanding, pro forma; and shares authorized, shares issued and outstanding, pro forma as adjusted	—	1	
Class B common stock, par value $0.00001 per share: 20,000,000 shares authorized, issued and outstanding, actual; shares authorized, 20,000,000 shares issued and outstanding, pro forma and pro forma as adjusted	—	—	
Additional paid-in capital	4,969	167,992	
Accumulated other comprehensive income	143	143	
Accumulated deficit	(42,425)	(42,600)	
Total stockholders' equity	125,536	125,536	
Total capitalization	$ 125,536	$ 125,536	$

(1) Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the amount of our pro forma as adjusted cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by $, assuming that the number of shares of Class A common stock offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions payable by us. An increase or decrease of 1.0 million shares in the number of shares of Class A common stock offered by us would increase or decrease, as applicable, the amount of our pro forma as adjusted cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by $, assuming the assumed initial public offering price remains the same, and after deducting estimated underwriting discounts and commissions payable by us.

The pro forma and pro forma as adjusted columns in the table above are based on 69,172,104 shares of our Class A common stock (after giving effect to the conversion of all of our shares of convertible preferred stock) and 20,000,000 shares of our Class B common stock outstanding as of September 30, 2020, and excludes the following:

- 16,164,706 shares of our Class A common stock issuable upon the exercise of options to purchase shares of our Class A common stock outstanding as of September 30, 2020, with a weighted-average exercise price of $1.17 per share;
- 717,319 shares of our Class A common stock issuable upon the vesting of RSUs outstanding as of September 30, 2020; and

- shares of our Class A common stock reserved for future issuance under our equity compensation plans, consisting of:
  - shares of our Class A common stock to be reserved for future issuance under our 2020 Plan, which will become effective prior to the completion of this offering, and any additional shares that become available under our 2020 Plan pursuant to provisions thereof that automatically increase the share reserve under the plan each year;
  - shares of common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan (our ESPP) which will become effective in connection with this offering, and any additional shares that become available under our ESPP pursuant to provisions thereof that automatically increase the share reserve under the plan each year; and
  - 2,551,205 shares of our Class A common stock reserved for future issuance under our 2017 Plan (and no shares of our RSU Plan, and upon the termination of such 2017 Plan and RSU Plan in connection with the effectiveness of our 2020 Plan, an equivalent number of shares of our Class A common stock to be added to the shares reserved for future issuance under our 2020 Plan above.

DILUTION

If you invest in our Class A common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the initial public offering price per share of our Class A common stock and the pro forma as adjusted net tangible book value per share of our common stock immediately after this offering.

Our historical net tangible book value as of September 30, 2020 was $124.4 million, or $4.60 per share. Our historical net tangible book value is the amount of our total tangible assets less our total liabilities. Historical net tangible book value per share represents historical net tangible book value divided by the number of shares of our Class A common stock and Class B common stock outstanding as of September 30, 2020.

Our pro forma net tangible book value as of September 30, 2020 was $124.4 million, or $1.39 per share. Pro forma net tangible book value represents the amount of our total tangible assets less our total liabilities, after giving effect to the conversion of all outstanding shares of our convertible preferred stock into an aggregate of 62,117,410 shares of Class A common stock immediately prior to the completion of this offering. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares of our Class A common stock and Class B common stock outstanding as of September 30, 2020, after giving effect to the conversion of all outstanding shares of our convertible preferred stock into an aggregate of 62,117,410 shares of our Class A common stock immediately prior to the completion of this offering.

After giving further effect to our sale of shares of Class A common stock in this offering at the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, based on shares of Class A common stock outstanding as of September 30, 2020, our pro forma as adjusted net tangible book value as of September 30, 2020 would have been approximately $ million, or approximately $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to our existing stockholders and an immediate dilution in pro forma as adjusted net tangible book value of approximately $ per share to new investors purchasing Class A common stock in this offering. Dilution per share to new investors purchasing Class A common stock in this offering is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the assumed initial public offering price per share paid by new investors. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share		$
Historical net tangible book value per share as of September 30, 2020	$ 4.60	
Pro forma decrease in net tangible book value per share as of September 30, 2020	(3.21)	
Pro forma net tangible book value per share as of September 30, 2020	1.39	
Increase in pro forma net tangible book value per share attributable to new investors purchasing shares of Class A common stock in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution in pro forma as adjusted net tangible book value per share to new investors in this offering		$

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, the midpoint of the estimated offering price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, our pro forma as adjusted net tangible book value as of September 30, 2020 after this offering by approximately $ million, or approximately $ per share, and would decrease (increase) dilution to investors in this offering by approximately $ per share, assuming that the number of shares of Class A common stock offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares of Class A common stock we are offering. An increase or decrease of 1.0 million in the number of shares of our Class A common stock we are offering would increase or decrease, as applicable, our pro forma as adjusted net tangible book value as of September 30, 2020 after this offering by approximately $ million, or approximately $ per share, and would decrease or increase, as applicable, dilution to investors in this offering by approximately $ per share, assuming the assumed initial public offering price per share

remains the same, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. The pro forma as adjusted information is illustrative only, and we will adjust this information based on the actual initial public offering price and other terms of this offering determined at pricing.

If the underwriters fully exercise their option to purchase additional shares of Class A common stock at the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover of this prospectus, assuming the number of shares offered by us as set forth on the cover page of this prospectus remains the same, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, pro forma as adjusted net tangible book value after this offering would increase to approximately $ per share, and there would be an immediate dilution of approximately $ per share to new investors.

The following table summarizes, on a pro forma as adjusted basis, as of September 30, 2020, the difference between the number of shares of common stock purchased from us (on an as converted to Class A common stock basis), the total consideration paid, and the weighted-average price per share paid, by existing stockholders and by new investors in this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and before deducting underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
			(dollars in thousands)		
Existing stockholders		%	$	%	$
New investors					$
Total		100 %	$	100 %	

The table above assumes no exercise of the underwriters' option to purchase additional shares of Class A common stock in this offering. If the underwriters' option to purchase additional shares of Class A common stock is exercised in full, the number of shares of our common stock held by existing stockholders would be reduced to % of the total number of shares of our common stock outstanding after this offering, and the number of shares of common stock held by new investors participating in the offering would be increased to % of the total number of shares outstanding after this offering.

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the total consideration paid by new investors by $ million, assuming that the number of shares of Class A common stock offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the underwriting discounts and commissions payable by us. Similarly, an increase or decrease of 1.0 million shares in the number of shares of Class A common stock offered by us would increase or decrease, as applicable, the total consideration paid by new investors by $ million, assuming no change in the assumed initial public offering price and after deducting the underwriting discounts and commissions payable by us.

The foregoing tables and calculations (other than the historical net tangible book value per share calculation) are based on 69,172,104 shares of our Class A common stock (after giving effect to the conversion of all of our shares of convertible preferred stock) and 20,000,000 shares of our Class B common stock outstanding as of September 30, 2020, and excludes the following:

- 16,164,706 shares of our Class A common stock issuable upon the exercise of options to purchase shares of our Class A common stock outstanding as of September 30, 2020, with a weighted-average exercise price of $1.17 per share;
- 717,319 shares of our Class A common stock issuable upon the vesting of RSUs outstanding as of September 30, 2020; and

- shares of our Class A common stock reserved for future issuance under our equity compensation plans, consisting of:
  - shares of our Class A common stock to be reserved for future issuance under our 2020 Plan, which will become effective prior to the completion of this offering, and any additional shares that become available under our 2020 Plan pursuant to provisions thereof that automatically increase the share reserve under the plan each year;
  - shares of common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan (our ESPP) which will become effective in connection with this offering, and any additional shares that become available under our ESPP pursuant to provisions thereof that automatically increase the share reserve under the plan each year; and
  - 2,551,205 shares of our Class A common stock reserved for future issuance under our 2017 Plan (and no shares of our RSU Plan), and upon the termination of such 2017 Plan and RSU Plan in connection with the effectiveness of our 2020 Plan, an equivalent number of shares of our Class A common stock to be added to the shares reserved for future issuance under our 2020 Plan above.

SELECTED FINANCIAL DATA

The following selected statement of operations data for the years ended December 31, 2018 and 2019, and the balance sheet data as of December 31, 2018 and 2019, have been derived from our audited financial statements included elsewhere in this prospectus. We have derived the statement of operations data for the nine months ended September 30, 2019 and 2020, and the balance sheet data as of September 30, 2020 from our unaudited interim financial statements and related notes included elsewhere in this prospectus. Our unaudited interim financial statements were prepared in accordance with GAAP, on the same basis as our audited financial statements and include, in the opinion of management, all adjustments, consisting of normal recurring adjustments, that are necessary for the fair presentation of the financial information set forth in those financial statements. Our historical results are not necessarily indicative of the results that may be expected in the future, and our interim results are not necessarily indicative of our results for the full fiscal year. You should read the following selected financial and other data below in conjunction with the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus.

Statement of Operations Data

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
	(in thousands, except share and per share data)			
Total revenue	$ —	$ 116	$ 58	$ 320
Operating expenses:				
Research and development[(1)]	3,776	12,393	8,580	13,520
General and administrative[(1)]	2,982	4,606	2,963	7,408
Total operating expenses	6,758	16,999	11,543	20,928
Loss from operations	(6,758)	(16,883)		
Other income (expense):				
Interest income	451	850	597	778
Interest expense	—	(5)	(4)	—
Other expense	—	—	—	(9)
Total other income	451	845	593	769
Net loss	$ (6,307)	$ (16,038)	$ (10,892)	$ (19,839)
Net loss per share attributable to common stockholders, basic and diluted[(2)]	$ (0.74)	$ (1.08)	$ (0.78)	$ (0.95)
Weighted-average common shares outstanding, basic and diluted[(2)]	8,502,926	14,878,157	13,987,682	20,778,317
Pro forma net loss per common share, basic and diluted[(2)]		$ (0.35)		$ (0.26)
Pro forma weighted-average common shares used to compute basic and diluted net loss per common share[(2)]		45,913,238		75,804,154

(1) Operating expenses include stock-based compensation as follows:

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
	(in thousands)			
Research and development	$ 287	$ 766	$ 584	$ 561
General and administrative	385	791	572	2,003
Total stock-based compensation	$ 672	$ 1,557	$ 1,156	$ 2,564

(2) See Note 12 to our financial statements for an explanation of the calculations of our basic and diluted net loss per share attributable to common stockholders, pro forma net loss per share attributable to common stockholders and the weighted-average number of shares used in the computation of the per share amounts.

Balance Sheet Data

	As of December 31,		As of September 30,
	2018	2019	2020
		(in thousands)	
Cash, cash equivalents and investments	$ 30,953	$ 86,020	$ 121,506
Working capital[(3)]	27,521	82,991	117,451
Total assets	33,696	93,236	133,890
Total liabilities	3,721	5,557	8,354
Accumulated deficit	(6,548)	(22,586)	(42,425)
Total stockholders' equity	29,975	87,679	125,536

(3) We define working capital as current assets less current liabilities. See our financial statements included elsewhere in this prospectus for further details regarding our current assets and current liabilities.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with the section titled "Selected Financial Data" and our financial statements and related notes included elsewhere in this prospectus. This discussion contains forward-looking statements that involve risks and uncertainties, including those described in the section titled "Special Note Regarding Forward Looking Statements." Our actual results and the timing of selected events could differ materially from those discussed below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below and those set forth under the section titled "Risk Factors."

Overview

We aim to enable exceptional scientific outcomes by commercializing transformative products for researchers to unlock deep, unbiased biological information. Our initial product, the Proteograph Product Suite (Proteograph), will leverage our proprietary engineered nanoparticle (NP) technology to provide unbiased, deep, rapid and large-scale access across the proteome. Our Proteograph Product Suite is an integrated solution that is comprised of consumables, an automation instrument and software. Our Proteograph provides an easy-to-use workflow, which has the potential to make proteomic profiling, and the analysis of the thousands of samples needed to characterize the complex, dynamic nature of the proteome, accessible for nearly any laboratory. We believe that characterizing and understanding the full complexity of the proteome is foundational for accelerating biological insights and will lead to broad potential end-markets for proteomics, encompassing basic research and discovery, translational research, diagnostics and applied applications. This full understanding of the complexity of the proteome requires large-scale, unbiased and deep interrogation of thousands of samples across time, which we believe is unavailable with the proteomic approaches available today. We believe that our Proteograph has the potential to enable researchers to perform proteomics studies at scale, similar to the manner in which next generation sequencing (NGS) technologies have transformed genomics.

Since we were incorporated in 2017, we have devoted substantially all of our resources to research and development activities, including with respect to our Proteograph Product Suite, establishing and maintaining our intellectual property portfolio, hiring personnel, raising capital, building our commercial infrastructure and providing general and administrative support for these activities.

Our revenue to date has been nominal and generated from research collaborations and activities. Our initial product, the Proteograph Product Suite, has not yet been commercialized, and we have not generated any revenue from product sales to date. Our ability to generate product revenue sufficient to achieve profitability, if ever, will depend on the successful commercialization of our Proteograph Product Suite. We plan to commercialize our Proteograph utilizing a three phase plan that has been shown to be effective and optimal for introducing disruptive products in numerous life sciences technology markets, including NGS. We are currently in the first phase, during which we will collaborate with a small number of key opinion leaders in proteomics, whose assessment and validation of products can significantly influence other researchers in their respective markets. During the second phase, early access limited release, which we expect to commence in 2021, we plan to sell our Proteograph to select sites performing large-scale proteomics or genomics research. We will work closely with these sites, which we expect will serve as models for the rest of the market, to exemplify applications that demonstrate the unique value proposition of our Proteograph. We expect this phase to continue through 2021 and lead into the third phase of commercialization, broad commercial availability, in early 2022.

We intend to commercialize our Proteograph Product Suite as an integrated solution comprising consumables, an automation instrument and software. Our commercial strategy will focus on growing adoption by the research community of our Proteograph, expanding the installed base and increasing utilization to generate revenue from the purchase of our Proteograph consumables. We expect a highly efficient sales model since our Proteograph does not have a large capital expenditure component and our Proteograph automation instrument integrates with most existing proteomics laboratories' workflows and also complements large-scale genomics research.

We intend to commercialize our Proteograph through a direct sales channel in the United States, and through both direct and distributor sales channels in regions outside the United States. Given our stage of development, we currently have limited marketing and no sales, commercial product distribution or service and support capabilities. We intend to build the necessary infrastructure for these activities in the United States, European Union, the United Kingdom, and potentially other countries and regions, including Asia-Pacific, as we execute on our three phase commercial launch strategy for our Proteograph.

We leverage well-established unit operations to formulate and manufacture our NPs at our facilities in Redwood City, California. We procure some of our consumables, including components of our NPs, from third-party manufacturers, which includes the commonly-available raw materials needed for manufacturing our proprietary engineered NPs. We are currently manufacturing using our pilot line and building out our manufacturing capabilities as we ramp towards broad commercial availability. We obtain some of the reagents and components used in our Proteograph workflow from third-party suppliers. While some of these reagents and components are sourced from a single supplier, these products are readily available from numerous suppliers. While we currently plan to handle filling and packaging of our Proteograph assay and the related consumables, in the future, we may have our filling and packaging outsourced to a third-party. We conduct vendor and component qualification for components provided by third-party suppliers and quality control tests on all of our NPs. We will need to substantially expand our NP manufacturing capabilities to enable the successful commercialization of our Proteograph Product Suite.

We have designed our Proteograph automation instrument and have outsourced the manufacturing of our Proteograph automation instrument to Hamilton Company, a leading manufacturer of automated liquid handling workstations. We have entered into a non-exclusive agreement with Hamilton that covers the manufacturing of our Proteograph automation instrument and its continued supply on a purchase order basis. The agreement has an initial term that runs three years following our commercial launch. Pricing for the supply of our Proteograph automation instrument is on a fixed schedule during the initial term of the agreement, with tiered pricing dependent upon the number of units purchased in a twelve-month period.

Since our incorporation, we have incurred significant losses and negative cash flows from operations. During the year ended December 31, 2019, we incurred a net loss of $16.0 million and used $13.1 million of cash in operations. During nine months ended September 30, 2020, we incurred a net loss of $19.8 million and used $15.3 million of cash in operations. As of September 30, 2020, we had an accumulated deficit of $42.4 million. We expect to continue to incur significant and increasing losses and do not expect positive cash flows from operations for the foreseeable future, and our net losses may fluctuate significantly from period to period, depending on the timing of and expenditures on our planned commercialization and research and development activities.

To date, we have financed our operations primarily through private placements of convertible preferred stock. From the date of our incorporation through September 30, 2020, we have raised aggregate net proceeds of approximately $162.8 million from the issuance of convertible preferred stock, net of issuance costs. As of September 30, 2020, we had unrestricted cash and cash equivalents of $17.7 million and investments of $103.8 million.

We expect our expenses to increase significantly in connection with our ongoing activities, as we:

- continue to develop and commercialize our Proteograph Product Suite;
- attract, hire and retain qualified personnel;
- establish a sales, marketing, service, support and distribution infrastructure in advance of commercialization;
- build-out and expand our in-house NP manufacturing capabilities;
- continue to engage in research and development of other products and enhancements to our Proteograph;
- implement operational, financial and management information systems;
- obtain, maintain, expand, and protect our intellectual property portfolio; and

- build the infrastructure to operate as a public company.

PrognomIQ

In August 2020, we transferred certain assets related to disease testing to PrognomIQ, Inc. (PrognomIQ), a new wholly-owned subsidiary, in exchange for all of its outstanding equity interests. Following the transfer, we completed a pro-rata distribution to our stockholders of most of the shares of capital stock of PrognomIQ. Following the distribution and a subsequent $55.0 million equity financing of PrognomIQ, we hold approximately 19% of the outstanding capital stock in PrognomIQ.

The rationale for this transaction was to enable the growth of ecosystems around new applications that leverage unbiased, deep and large-scale proteomic information. The transaction allows us to remain focused on our core strategy, which is to be a provider, rather than a consumer, of proteomics solutions to all customers across these ecosystems. By focusing on our role as a provider of proteomics solutions, we are no longer potentially competing with, or creating the perception that we are competing with, our customers. Our relationship with PrognomIQ does not preclude us from selling our Proteograph to any customer in any geography, nor does it preclude our customers from using our Proteograph in any way. PrognomIQ has indicated that it plans to combine the protein data from our Proteograph with genomics and other -omics data, to create a multi-omics approach to health and disease testing. We believe PrognomIQ's use of proteomics and the potential for other similar companies which use proteomics in their research and products will help us drive the adoption of our Proteograph Product Suite in these applications.

Omid Farokhzad, Chief Executive Officer and Chair of our board of directors, serves as the Chair of PrognomIQ's board of directors. Philip Ma, Ph.D. our former Chief Business Officer serves as the Chief Executive Officer of PrognomIQ. While Dr. Ma has fully transitioned to PrognomIQ, he will remain our consultant until April 2021. In addition, three of our other employees have also transitioned to PrognomIQ. We will be providing general transition services and support, including laboratory and office space to PrognomIQ during the transition period. We anticipate these services to continue through the first half of 2021.

We granted PrognomIQ a non-exclusive license to certain patents and patent applications that we own and a non-exclusive sublicense to certain patent applications we exclusively licensed from BWH, in each case relating to our core technology, to develop, manufacture and commercialize licensed products for the field of human diagnostics on a worldwide basis. In consideration of the non-exclusive sublicense to certain patent applications licensed from BWH, PrognomIQ paid us a low-five digit figure, and would pay a low single digit royalty, in an amount equivalent to what we would have to pay under our license with BWH, on net sales of sublicensed products beginning with the first commercial sale of a sublicensed product during the term of the agreement. For further discussion of our license and sublicense arrangement with PrognomIQ, see the section titled "Business — Collaboration and License Agreements — *PrognomIQ*." We do not view these amounts to be material to our financial condition and results of operations nor do we expect these amounts to ever be material to us in the future.

COVID-19 Pandemic

As a result of the COVID-19 pandemic, we could experience disruptions that could severely impact our business. For example, we have experienced longer lead times from Hamilton for orders of our automation instruments and may experience delays and longer lead times from our other suppliers of critical hardware, instrumentation and consumables used for product development and manufacturing operations. Pandemic precautions and preventative measures may also impact our commercialization plans due to restrictions on our customers' ability to access laboratories, causing delays in the delivery and installation of our Proteograph products, training such customers on our products, and their ability to conduct research. The ongoing build-out of our expansion facilities may also be delayed by COVID-related restrictions. Furthermore, COVID-19 has adversely affected the broader economy and financial markets, resulting in an economic downturn that could curtail the research and development budgets of our customers, our ability to hire additional personnel and our financing prospects. Any of the foregoing could harm our operations and we cannot anticipate all the ways in which it could be adversely impacted by health epidemics such as COVID-19.

For additional details, see the section titled "Risk Factors."

Components of Results of Operations

Revenue

We have not generated any revenue from product sales and may not do so in the near future. Our revenue to date has been generated from research collaborations and activities.

Research and Development Expenses

Research and development, or R&D, expenses include cost associated with performing services under research and development service contracts and research and development of our technology and product candidates. R&D expenses consist primarily of employee compensation, including stock-based compensation, and related benefits, laboratory supplies used for in-house research, consulting costs, costs related to clinical studies for the collection of biological samples for research use, which relate to the assets transferred to PrognomIQ, and allocated overhead, including rent, depreciation, information technology and utilities.

We plan to increase our investment in our R&D efforts related to our Proteograph Product Suite, our product development pipeline and our proprietary engineered NP technology. Therefore, we expect R&D expenses will increase in absolute dollars in future periods as we incur expenses associated with hiring additional personnel, purchasing supplies and materials, and the allocation of facility expense associated with the ongoing build-out of our expansion facilities to support our R&D efforts.

General and Administrative Expenses

General and administrative expenses consist primarily of employee compensation, including stock-based compensation, and related benefits for executive management, finance, administration and human resources, allocated overhead, professional service fees and other general overhead costs to support our operations.

We expect to incur additional general and administrative expenses as we continue to invest in our personnel as we grow and with the additional costs incurred as a result of preparing to operate as a public company, including accounting, human resources, legal, insurance and investor relations costs. As a result, we expect general and administrative expenses to increase in absolute dollars in future periods.

Interest Income

Interest income consists of interest earned on cash, cash equivalents and investments.

Interest Expense

Interest expense consists of interest related to certain convertible promissory notes that were issued in May 2019. These notes were converted to convertible preferred stock in November 2019.

Other Expense

Other expense consists of our share of losses from our equity method investment made in August 2020, the carrying amount of which was reduced to zero during the period ended September 30, 2020.

Results of Operations

Comparisons of the Nine Months Ended September 30, 2019 and 2020

The following table summarizes our results of operations for the periods presented:

	Nine months ended September 30,		Change	
	2019	2020	Amount	%
	(dollars in thousands)			
Revenue:				
Research revenue	$ 58	$ —	$ (58)	(100)%
Grant revenue	—	320	320	*
Total revenue	58	320	262	452 %
Operating expenses:				
Research and development	8,580	13,520	4,940	58 %
General and administrative	2,963	7,408	4,445	150 %
Total operating expenses	11,543	20,928	9,385	81 %
Loss from operations	(11,485)	(20,608)	(9,123)	79 %
Other income (expense):				
Interest income	597	778	181	30 %
Interest expense	(4)	—	4	(100)%
Other expense	—	(9)	(9)	*
Total other income	593	769	176	30 %
Net loss	(10,892)	(19,839)	(8,947)	82 %
Other comprehensive income:				
Unrealized gain on available-for-sale securities	15	119	104	693 %
Comprehensive loss	$ (10,877)	$ (19,720)	$ (8,843)	81 %

**** Not meaningful***

Revenue

	Nine months ended September 30,		Change	
	2019	2020	Amount	%
	(dollars in thousands)			
Revenue	$ 58	$ 320	$ 262	452%

Revenue increased by $0.3 million, or 452%, from $58 thousand in the nine months ended September 30, 2019 to $0.3 million in the nine months ended September 30, 2020, due to a Small Business Innovation Research grant awarded in the third quarter of 2019 and continued through 2020.

Research and Development

	Nine months ended September 30,		Change	
	2019	2020	Amount	%
	(dollars in thousands)			
Research and development	$ 8,580	$ 13,520	$ 4,940	58 %

R&D expenses increased by $4.9 million, or 58%, from $8.6 million in the nine months ended September 30, 2019 to $13.5 million in the nine months ended September 30, 2020. The increase was primarily due to an increase

in product development efforts related to our Proteograph Product Suite including $2.6 million in employee compensation costs, stock-based compensation and other related costs due to growth in research and development personnel, $1.0 million related to the expansion of facilities and maintenance and depreciation of laboratory equipment, $1.2 million in laboratory materials and prototypes, supplies and reagents used for in-house research and $0.8 million in professional and consulting fees. This was offset by a decrease in clinical study fees of $0.6 million related to the costs associated with the ramp down of site enrollment for clinical studies related to the collection of biological samples for research use. These clinical studies are related to the assets transferred to PrognomIQ.

General and Administrative

	Nine months ended September 30,		Change	
	2019	2020	Amount	%
	(dollars in thousands)			
General and administrative	$ 2,963	$ 7,408	$ 4,445	150 %

General and administrative expenses increased by $4.4 million, or 150%, from $3.0 million in the nine months ended September 30, 2019 to $7.4 million in the nine months ended September 30, 2020, primarily due to a $2.4 million increase in employee compensation, including stock-based compensation and other related expenses, as a result of both converting consultants to full-time employees and an increase in personnel. Other increases include $0.6 million in professional and consulting fees related to non-deferred accounting and audit services related to our proposed initial public offering, $1.0 million in corporate legal matters primarily related to the PrognomIQ transaction and patent activities, $0.2 million in public relation costs, and $0.1 million related to expansion of information technology services and support.

Total Other Income

	Nine months ended September 30,		Change	
	2019	2020	Amount	%
	(dollars in thousands)			
Total other income	$ 593	$ 769	$ 181	30 %

Total other income increased by $0.2 million, or 30%, from $0.6 million in the nine months ended September 30, 2019 to $0.8 million in the nine months ended September 30, 2020. The increase was attributable to an increase in interest income, which in turn was attributable to higher amounts of cash invested in money market funds and U.S. Treasury securities in the first nine months of 2020 as a result of $55.0 million raised in convertible preferred stock financings in the fourth quarter of 2019 and $55.0 million raised in convertible preferred stock financings in the second quarter of 2020, compared to $17.1 million raised in convertible preferred stock financings during the first nine months of 2019.

Comparisons of the Years Ended December 31, 2018 and 2019

The following table summarizes our results of operations for the periods presented:

	Year ended December 31,		Change	
	2018	2019	Amount	%
	(dollars in thousands)			
Revenue:				
Research revenue	$ —	$ 58	$ 58	*
Grant revenue	—	58	58	*
Total revenue	—	116	116	*
Operating expenses:				
Research and development	3,776	12,393	8,617	228 %
General and administrative	2,982	4,606	1,624	54 %
Total operating expenses	6,758	16,999	10,241	152 %
Loss from operations	(6,758)	(16,883)	(10,125)	150 %
Other income (expense):				
Interest income	451	850	399	88 %
Interest expense	—	(5)	(5)	*
Total other income	451	845	394	87 %
Net loss	(6,307)	(16,038)	(9,731)	154 %
Other comprehensive income:				
Unrealized gain on available-for-sale securities	—	24	24	*
Comprehensive loss	$ (6,307)	$ (16,014)	$ (9,707)	154 %

**** Not meaningful***

Revenue

	Year ended December 31,		Change	
	2018	2019	Amount	%
	(dollars in thousands)			
Revenue	$ —	$ 116	$ 116	*

Revenue increased by $0.1 million from $0 in 2018 due to approximately $58,000 received under a Small Business Innovation Research grant awarded in the third quarter of 2019, as well as approximately $58,000 earned for research collaboration.

Research and Development

	Year ended December 31,		Change	
	2018	2019	Amount	%
	(dollars in thousands)			
Research and development	$ 3,776	$ 12,393	$ 8,617	228 %

R&D expenses increased by $8.6 million, or 228%, from $3.8 million in 2018 to $12.4 million in 2019. The increase was primarily due to an increase in product development efforts related to our Proteograph Product Suite including $3.7 million in employee compensation costs, stock-based compensation and other related costs due to growth in research and development personnel, $1.4 million related to the expansion of facilities and maintenance and depreciation of laboratory equipment, $1.5 million in laboratory materials, supplies and reagents used for in-

house research and $0.4 million in professional and consulting fees. It also reflects an increase in clinical study fees of $1.5 million related to the costs associated with clinical studies for the collection of biological samples for research use, which relate to the assets transferred to PrognomIQ.

General and Administrative

	Year ended December 31,		Change	
	2018	2019	Amount	%
	(dollars in thousands)			
General and administrative	$ 2,982	$ 4,606	$ 1,624	54 %

General and administrative expenses increased by $1.6 million, or 54%, from $3.0 million in 2018 to $4.6 million in 2019, primarily due to a $1.0 million increase in employee compensation, including stock-based compensation and other related expenses, as a result of both converting consultants to full-time employees and an increase in personnel. Other increases include $0.4 million in professional and consulting fees related to accounting and audit services and corporate legal matters, and an increase of $0.1 million related to business license fees and taxes.

Total Other Income

	Year ended December 31,		Change	
	2018	2019	Amount	%
	(dollars in thousands)			
Total other income	$ 451	$ 845	$ 394	87 %

Total other income increased by $0.4 million, or 87%, from $0.5 million in 2018 to $0.8 million in 2019. The increase in interest income was attributable to higher amounts of excess cash invested in money market funds and U.S. Treasury securities as a result of $71.7 million raised in convertible preferred stock financings during 2019, compared to $29.9 million raised in convertible preferred stock financings during 2018.

Liquidity and Capital Resources

Since the date of our incorporation, we have not generated any revenue from product sales and have incurred significant operating losses and negative cash flows from operations. Our operations have been funded primarily through the sale and issuance of convertible preferred stock since inception. We anticipate that we will continue to incur net losses and do not expect positive cash flows from operations for the foreseeable future. As of September 30, 2020, we had an accumulated deficit of $42.4 million. As of September 30, 2020, we had unrestricted cash and cash equivalents of $17.7 million and investments of $103.8 million.

Based upon our current operating plan, we believe our existing cash, cash equivalents and investments will enable us to fund our operating expenses and capital expenditure requirements through at least the next 12 months. We continue to face challenges and uncertainties and, as a result, our available capital resources may be consumed more rapidly than currently expected due to: (i) delays in execution of or a significant expansion of our commercialization plans; (ii) changes we may make to the business that affect ongoing operating expenses; (iii) changes we may make in our business or commercialization strategy; (iv) changes we may make in our research and development spending plans; (v) the impact of the COVID-19 pandemic; and (vi) other items affecting our forecasted level of expenditures and use of cash resources including potential acquisitions.

We may be unable to raise additional funds or to enter into financing agreements or arrangements on favorable terms, or at all. Our failure to obtain sufficient funds on acceptable terms when needed could have a material adverse effect on our business, results of operations and financial condition, and could force us to delay future commercialization efforts. We cannot assure you that we will ever be profitable or generate positive cash flow from operating activities or that, if we achieve profitability, we will be able to sustain it.

Cash Flows

The following table summarizes our cash flows for the periods indicated:

	Year ended December 31,		Nine months ended September 30,	
	2018	2019	2019	2020
	(in thousands)		*(in thousands)*	
Net cash used in operating activities	$ (4,651)	$ (13,073)	$ (9,650)	$ (15,343)
Net cash used in investing activities	(168)	(72,383)	(28,550)	(39,831)
Net cash provided by financing activities	29,945	72,331	17,747	55,395
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 25,126	$ (13,125)	$ (20,453)	$ 221

Operating Activities

In the nine months ended September 30, 2020, cash used in operating activities was $15.3 million, attributable to a net loss of $19.8 million, partially offset by a net change in our net operating assets and liabilities of $0.6 million and non-cash charges of $3.9 million. Non-cash charges primarily consisted of $2.6 million in stock-based compensation, $1.1 million of depreciation and amortization and $0.2 million of net amortization of premiums on available-for-sales securities. The change in our net operating assets and liabilities was primarily due to increased accrued liabilities related to professional, consulting and legal fees of $0.5 million.

In the nine months ended September 30, 2019, cash used in operating activities was $9.7 million, attributable to a net loss of $10.9 million, partially offset by a net change in our net operating assets and liabilities of $0.2 million, and by non-cash charges of $1.4 million. Non-cash charges primarily consisted of $1.2 million in stock-based compensation and $0.5 million of depreciation and amortization, offset by $0.2 million of net accretion of discounts on available-for-sales securities. The change in our net operating assets and liabilities was primarily due to increased accrued liabilities related to clinical study fees of $0.4 million, offset by deposits related to a lease agreement of $0.5 million.

In 2019, cash used in operating activities was $13.1 million, attributable to a net loss of $16.0 million, partially offset by a net change in our net operating assets and liabilities of $1.0 million, and by non-cash charges of $2.0 million. Non-cash charges primarily consisted of $1.6 million in stock-based compensation and $0.7 million of depreciation and amortization, offset by $0.3 million of net accretion of discounts on available-for-sales securities. The change in our net operating assets and liabilities was primarily due to increased accrued liabilities related to clinical study fees of $0.4 million, tenant improvements of $0.3 million, professional services and consulting costs of $0.4 million, and $0.2 million in other general business expenses, offset by deposits related to a lease agreement of $0.3 million.

In 2018, cash used in operating activities was $4.7 million, attributable to a net loss of $6.3 million, partially offset by a net change in our net operating assets and liabilities of $1.0 million, and by non-cash charges of $0.7 million, which primarily consisted of stock-based compensation. The change in our net operating assets and liabilities was due to increased account payables and accrued liabilities of $1.3 million which was primarily driven by laboratory equipment purchases, offset by increases in prepaid expenses and other assets that was primarily driven by multi-year maintenance contracts purchased on the laboratory equipment.

Investing Activities

In the nine months ended September 30, 2020, cash used in investing activities was $39.8 million, which related to purchases of available-for-sale securities, net of proceeds from maturities of $35.4 million, in addition to $4.4 million in payments primarily for laboratory equipment.

In the nine months ended September 30, 2019, cash used in investing activities was $28.6 million, which related to purchases of available-for-sale securities, net of proceeds from maturities of $24.8 million, in addition to $3.8 million in payments primarily for laboratory equipment.

In 2019, cash used in investing activities was $72.4 million, which related to purchases of available-for-sale securities, net of proceeds from maturities of $68.3 million, in addition to $4.1 million in payments primarily for laboratory equipment.

In 2018, cash used in investing activities was $0.2 million, which related to payments for property and equipment used for general business operations.

Financing Activities

In the nine months ended September 30, 2020, cash provided by financing activities was $55.4 million. This was attributable to the net proceeds of $54.9 million from the issuance of Series D-1 convertible preferred stock, net of issuance costs and $0.6 million from the exercise of stock options.

In the nine months ended September 30, 2019, cash provided by financing activities was $17.7 million. This was attributable to the net proceeds of $17.3 million from the issuance of Series C convertible preferred stock, net of issuance costs and $0.4 million from the issuance of convertible notes payable.

In 2019, cash provided by financing activities was $72.3 million. This was attributable to the net proceeds of $17.3 million from the issuance of Series C convertible preferred stock, net of issuance costs and $54.6 million from the issuance of Series D convertible preferred stock, net of issuance costs.

In 2018, cash provided by financing activities was $29.9 million which was attributable to the net proceeds from the issuance of Series B convertible preferred stock, net of issuance costs.

Contractual Obligations

The following table summarizes our contractual obligations as of December 31, 2019:

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
			(in thousands)		
Operating lease obligations	$ 8,788	$ 453	$ 1,609	$ 1,691	$ 5,035

In addition, we enter into agreements as a part of normal course of business with various vendors, which are generally cancellable without material penalty upon written notice. Payments associated with these agreements are not included in this table of contractual obligations.

Our operating lease obligations reflect our lease obligations for our headquarters facility in Redwood City, California. In June 2020, we amended the lease agreement for this facility to expand the office and laboratory space covered by the lease, extend the lease through February 2032, and increase the annual base rent for the expanded premises. Upon occupancy of the expansion facility that is anticipated to occur in the second half of 2021, the annual base rent will be $0.9 million in the first 12 months of the lease term (subject to an abatement period of nine months), and increases on an annual basis to $1.2 million in the final 12 months of the lease term. The amendment also provides for tenant incentives in the amount of $2.4 million.

Off-Balance Sheet Arrangements

Since the date of our incorporation, we have not engaged in any off-balance sheet arrangements, as such term is defined in the rules and regulations of the SEC.

Critical Accounting Policies, Significant Judgments and Use of Estimates

The discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with United States generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as revenue and expenses incurred during the reporting periods. Our estimates are based on our

historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

While our significant accounting policies are described in the notes to our financial statements, we believe that the following critical accounting policies are most important to understanding and evaluating our reported financial results.

Accrued Research and Development Expenses

We record accrued liabilities for estimated costs of research and development activities conducted by third-party service providers, which include expenses associated with clinical studies for the collection of biological samples for research use. These costs are a significant component of our research and development expenses. We accrue for these costs based on factors such as estimates of the work completed and in accordance with agreements established with its third-party service providers under the service agreements. We include these costs in accrued research and development in the balance sheets and within research and development expenses in the statements of operations and comprehensive loss. We make significant judgments and estimates such as when services are performed and the level of effort expended in each period to determine the accrued liabilities balance in each reporting period. As actual costs become known, we adjust our accrued liabilities. We have not experienced any material differences between accrued costs and actual costs incurred. However, the status and timing of actual services performed, number of patients enrolled and the rate of patient enrollments may vary from our estimates, resulting in adjustments to expense in future periods. As these accrued expenses are associated with clinical studies for the collection of biological samples for research use, which relate to the assets transferred to PrognomIQ, we do not anticipate similar accrued expenses going forward.

Stock-Based Compensation

We account for stock-based compensation by measuring and recognizing compensation expense for all share-based awards made to employees and non-employees based on estimated grant-date fair values. We use the straight-line method to allocate compensation cost to reporting periods over the requisite service period, which is generally the vesting period. We recognize actual forfeitures by reducing the stock-based compensation in the same period as the forfeitures occur. We estimate the fair value of share-based awards to employees and non-employees using the Black-Scholes option-pricing valuation model. The Black-Scholes model requires the input of subjective assumptions, including fair value of common stock, expected term, expected volatility, risk-free interest rate, and expected dividend yield, which are described in greater detail below.

Estimating the fair value of equity-settled awards as of the grant date using the Black-Scholes option pricing model is affected by assumptions regarding a number of complex variables. Changes in the assumptions can materially affect the fair value and ultimately how much stock-based compensation is recognized. These inputs are subjective and generally require significant analysis and judgment to develop. These inputs are as follows:

- Fair value of common stock—Historically, as there has been no public market for our common stock, the fair value of our common stock was determined by our board of directors based in part on valuations of our common stock prepared by a third-party valuation specialist. See the subsection titled "Fair Value of Common Stock" below.

- Expected term—The expected term represents the average period that our options granted are expected to be outstanding and is determined using the simplified method (based on the mid-point between the weighted-average vesting date and the end of the contractual term). We have very limited historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for our stock option grants.

- Expected volatility—Since we are a privately-held company and do not have any trading history for our common stock, the expected volatility was estimated based on the historical average volatility for comparable publicly traded life sciences technology companies over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, life cycle stage, or area of specialty. We will continue to apply this process until enough historical information regarding the volatility of our own stock price becomes available.

- Risk-free interest rate—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of the options.

- Expected dividend yield—We have never paid dividends on our common stock and have no plans to pay dividends on our common stock. Therefore, we used an expected dividend yield of zero.

For options granted to non-employee consultants, the fair value of these options is also measured using the Black-Scholes option-pricing model reflecting the same assumptions as applied to employee options in each of the reported periods, other than the expected term which is assumed to be the remaining contractual life of the option.

We will continue to use judgment in evaluating the expected volatility, expected terms, and interest rates utilized for our stock-based compensation calculations on a prospective basis. Assumptions we used in applying the Black-Scholes option-pricing model to determine the estimated fair value of our stock options granted involve inherent uncertainties and the application of significant judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our equity-based compensation could be materially different.

The intrinsic value of all outstanding options as of September 30, 2020 was $ million, of which $ million related to unvested options as of such date, based on the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus.

We expect to incur stock-based compensation of approximately $11.0 million to $12.7 million over the next three to four years as a result of all compensatory equity issuances made in fiscal year 2020.

We expect to incur stock-based compensation of approximately $5.1 million to $6.7 million in fiscal year 2021 as a result of all compensatory equity issuances outstanding as of September 30, 2020.

Fair Value of Common Stock

Historically, for all periods prior to this initial public offering, the fair values of the shares of our common stock underlying our share-based awards were determined on each grant date by our board of directors with input from management and the assistance of an independent third-party valuation specialist. Given the absence of a public trading market of our common stock, and in accordance with the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, or the Practice Aid, our board of directors exercised reasonable judgment and considered numerous objective and subjective factors to determine the best estimate of the fair value of our common stock at each grant date. These factors include:

- external market conditions affecting the life sciences technology industry and trends within the industry;

- our stage of development;

- the rights, preferences and privileges of our convertible preferred stock relative to those of our common stock;

- the prices at which we sold shares of our convertible preferred stock;

- actual operating results and financial performance, including our levels of available capital resources;

- the progress of our research and development efforts and business strategy;

- equity market conditions affecting comparable public companies;

- general U.S. market conditions; and
- the lack of marketability of our common stock.

In valuing our common stock, the fair value of our business, or enterprise value, was determined using various valuation methods, including combinations of income, market and asset approaches with input from management. The income approach determines value by using one or more methods that convert anticipated economic benefits into a present single amount. The application of the income approach establishes value by methods that discount or capitalize earnings or cash flow, by a discount or capitalization rate that reflects investors' rate of return expectations, market conditions, and the relative risk of the subject investment. The market approach involve identifying and evaluating comparable public companies and acquisition targets that operate in the same industry or which have similar operating characteristics as the subject company. From the comparable companies, publicly available information is used to extrapolate market-based valuation multiples that are applied to historical or prospective financial information in order to derive an indication of value. The asset approach determines the value of the underlying assets and liabilities of a business as a means of determining the value of the business in aggregate. This approach can include the value of both tangible and intangible assets.

The Practice Aid identifies various available methods for allocating enterprise value across classes and series of capital stock to determine the estimated fair value of common stock at each valuation date. In accordance with the Practice Aid, we considered the following methods:

- Option Pricing Method (OPM). Under the OPM, shares are valued by creating a series of call options with exercise prices based on the liquidation preferences and conversion terms of each equity class. The estimated fair values of the convertible preferred stock and common stock are inferred by analyzing these options. This method is appropriate to use when the range of possible future outcomes is difficult to predict and thus creates highly speculative forecasts.
- Probability-Weighted Expected Return Method (PWERM). The PWERM is a scenario-based analysis that estimates value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to us, as well as the economic and control rights of each share class. This method is generally most appropriate to use when the time to a liquidity event is short, making the range of possible future outcomes relatively easy to predict.

Based on our early stage of development and other relevant factors, we determined that an OPM was the most appropriate method for allocating our enterprise value to determine the estimated fair value of our common stock for valuations during 2018 and 2019.

Starting in 2020, we used a hybrid method to determine the estimated fair value of our common stock, which included both the OPM and PWERM models.

Application of these approaches involves the use of estimates, judgment, and assumptions that are highly complex and subjective, such as those regarding our expected future revenue, expenses, and cash flows, discount rates, market multiples, the selection of comparable companies, and the probability of future events. Changes in any or all of these estimates and assumptions, or the relationships between those assumptions, impact our valuations as of each valuation date and may have a material impact on the valuation of common stock. The assumptions underlying these valuations represent our management's best estimate, which involve inherent uncertainties and the application of management judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation could be materially different.

After the completion of this offering, the fair value of each share of underlying common stock will be determined based on the closing price as reported on the date of grant on the primary stock exchange on which our common stock is traded.

Emerging Growth Company Status

We are an emerging growth company, as defined in the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. Other exemptions and reduced reporting requirements under the JOBS Act for emerging growth companies include presentation of only two years audited financial statements in a registration statement for an initial public offering, an exemption from the requirement to provide an auditor's report on internal controls over financial reporting pursuant to the Sarbanes-Oxley Act, an exemption from any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation, and less extensive disclosure about our executive compensation arrangements. We have elected to use the extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that (i) we are no longer an emerging growth company or (ii) we affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

We will remain an emerging growth company under the JOBS Act until the earliest of (i) the last day of our first fiscal year in which we have total annual gross revenue of $1.07 billion or more, (ii) the date on which we have issued more than $1.0 billion of non-convertible debt instruments during the previous three fiscal years or (iii) the date on which we are deemed a "large accelerated filer" under the rules of the SEC with at least $700.0 million of outstanding equity securities held by non-affiliates, or (iv) the last day of the fiscal year following the fifth anniversary of completion of this offering.

Recent Accounting Pronouncements

See Note 2 to our financial statements included elsewhere in this prospectus for more information about recent accounting pronouncements, the timing of their adoption, and our assessment, to the extent we have made one yet, of their potential impact on our financial condition of results of operations.

Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with GAAP. As a result of becoming a public company, we will be required, pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, as amended, to furnish a report by our management on, among other things, the effectiveness of our internal control over financial reporting for the first fiscal year beginning after the effective date of the registration statement of which this prospectus is a part or the date we are no longer an EGC as defined in the JOBS Act, if we take advantage (as we expect to do) of the exemptions for EGCs contained in the JOBS Act. This assessment will need to include disclosures of any material weaknesses identified by our management in our internal control over financial reporting.

In connection with the audits of our financial statements included elsewhere in this prospectus, we and our independent registered public accounting firm identified material weaknesses related to:

- there being insufficient accounting personnel to enable segregation of duties relating to the general ledger, disbursement, and certain accounting functions.
- there not being formalized processes or controls for account reconciliations, including independent review of such reconciliations, or related financial statement analysis prepared in conformity with U.S. GAAP; and
- there not being a sufficient complement of accounting personnel with the necessary U.S. GAAP technical expertise to timely identify and account for complex or non-routine transactions or to formalize accounting policies, memoranda, or controls for such transactions.

Under standards established by the Public Company Accounting Oversight Board, a material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected and corrected on a timely basis.

We are working to remediate the material weaknesses and are taking steps to strengthen our internal control over financial reporting through the hiring of additional finance and accounting personnel. With the additional personnel, we intend to take appropriate and reasonable steps to remediate these material weaknesses through the implementation of appropriate segregation of duties, formalization of accounting policies and controls and retention of appropriate expertise for complex accounting transactions. However, we cannot assure you that these measures will significantly improve or remediate the material weaknesses described above. As of December 31, 2019, the material weaknesses have not been remediated.

The actions that we are taking are subject to ongoing executive management review, and will also be subject to audit committee oversight. If we are unable to successfully remediate the material weakness, or if in the future, we identify further material weaknesses in our internal control over financial reporting, we may not detect errors on a timely basis and our financial statements may be materially misstated.

Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Risk

Our cash, cash equivalents and investments as of December 31, 2019 and September 30, 2020 consisted of $86.0 million and $121.5 million, respectively, in money market funds and U.S. Treasury securities. Such interest-earning instruments carry a degree of interest rate risk. The goals of our investment policy are liquidity and capital preservation; we do not enter into investments for trading or speculative purposes and have not used any derivative financial instruments to manage our interest rate exposure. We believe that we do not have any material exposure to changes in the fair value of these assets as a result of changes in interest rates due to the short-term nature of our cash, cash equivalents, restricted cash and investments.

BUSINESS

Overview

We aim to enable exceptional scientific outcomes by commercializing transformative products for researchers to unlock deep, unbiased biological information. Our initial product, the Proteograph Product Suite (Proteograph), will leverage our proprietary engineered nanoparticle (NP) technology to provide unbiased, deep, rapid and large-scale access across the proteome. Our Proteograph Product Suite is an integrated solution that is comprised of consumables, an automation instrument and software. Our Proteograph provides an easy-to-use workflow, which has the potential to make proteomic profiling, and the analysis of the thousands of samples needed to characterize the complex, dynamic nature of the proteome, accessible for nearly any laboratory. We believe that characterizing and understanding the full complexity of the proteome is foundational for accelerating biological insights and will lead to broad potential end-markets for proteomics, encompassing basic research and discovery, translational research, diagnostics and applied applications. This full understanding of the complexity of the proteome requires large-scale, unbiased and deep interrogation of thousands of samples across time, which we believe is unavailable with the proteomic approaches available today. We believe that our Proteograph has the potential to enable researchers to perform proteomics studies at scale, similar to the manner in which next generation sequencing (NGS) technologies have transformed genomics.

Proteins are the functional units of all forms of life. While deoxyribonucleic acid (DNA) may be used as a static indicator of health risk, proteins are dynamic indicators of physiology and may be used to track health over time, gauge disease progression and monitor therapeutic response. Despite the central role proteins play in biology, the proteome is relatively unexplored compared to the genome, particularly the rich functional content that could be derived from large-scale proteomics studies. We believe large-scale characterization of the proteome has not been feasible with existing proteomics approaches, which broadly fall into two categories: (i) unbiased but not scalable, or (ii) scalable but biased. Current *de novo*, or unbiased, approaches require complex, lengthy, and labor- and capital-intensive workflows, which limit their scalability to small, under-powered studies, and require significant processing expertise. On the other hand, targeted or biased methods only enable interrogation of a limited number of known proteins per sample. Although biased approaches are scalable, they lack the breadth and depth necessary to appropriately characterize the proteome and catalog its many protein variants. Thus, we believe that proteomics researchers are forced into an unattractive trade-off between the number of samples in a study and the depth and breadth of the analysis. These trade-offs limit researchers' abilities to advance characterization of the proteome to match the current characterization of the genome. We believe large-scale proteomic analysis is needed for a more complete understanding of biology.

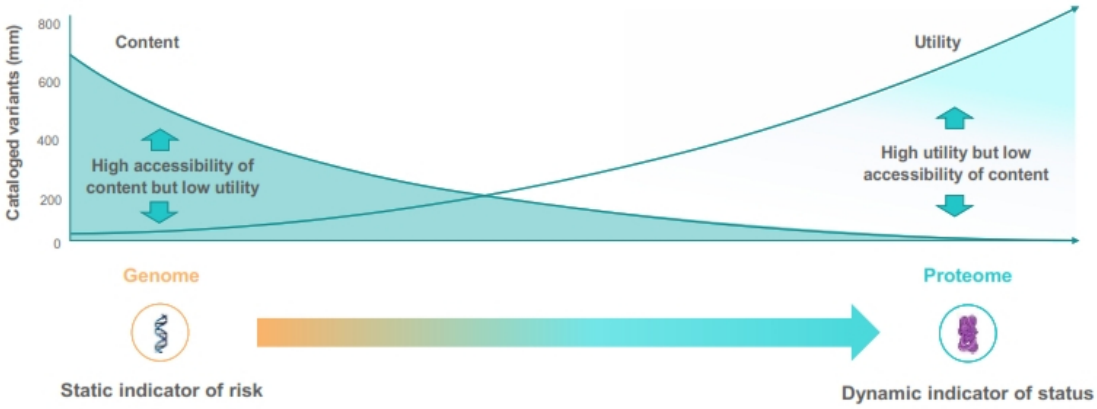
Much like NGS enabled large-scale access to the genome and transformed science and medicine, we believe that widespread access to unbiased and deep proteomics will lead to novel biological insights, deepen understanding of health and disease, and aid functional characterization of genomic variants. We believe these capabilities appeal to a broad range of researchers and can lead to the creation of substantial end-market opportunities that may extend well beyond human health. We are initially focused on driving adoption of our Proteograph with customers in proteomics and genomics markets, who see the value of large-scale, unbiased, deep proteomics. Allied Market Research estimates the proteomics market was $32 billion in 2019. We believe that our Proteograph's unique capabilities will enable researchers to undertake studies not possible today, particularly those of larger scale. We also believe that our Proteograph will complement genomics technologies by adding critical missing information that can provide functional context to genomic variation. According to the dbSNP database, approximately 695 million individual genetic variants have been identified to date; however, fewer than 0.2% of those variants have been cataloged in the ClinVar database with a reported relationship between variation and phenotype. We believe unbiased, deep and large-scale proteomics can help researchers map biological function of genomic variants, identify the most impactful disease and response-specific risk factors, and accelerate discovery of molecular mechanisms of health and disease. We believe these capabilities will broadly appeal to researchers and entities undertaking large-scale genomics studies. Therefore, we believe we will attract spending from the genomics market, estimated by Technavio to be $21 billion in 2019. In addition to the markets and applications that apply to current proteomics and genomics researchers, we believe our Proteograph is likely to lead to entirely new applications and market opportunities, much like NGS has done in genomics over the last fifteen years.

We plan to initially focus on research applications for our Proteograph Product Suite and will sell and market our Proteograph for research use only (RUO). We plan to commercialize our Proteograph utilizing a three phase plan that has been shown to be effective and optimal for introducing disruptive products in numerous life sciences technology markets, including NGS. We are currently in the first phase, during which we will collaborate with a small number of key opinion leaders in proteomics, whose assessment and validation of products can significantly influence other researchers in their respective markets. Our first Proteograph was delivered to one of our first collaborators in October 2020, and we expect to place another Proteograph with a second collaborator before the end of 2020. In consideration of our initial collaborators' significant contributions to the development of our Proteograph Product Suite, including providing us with helpful data and feedback on our Proteograph, we have offered our early collaborators a special discount program for consumables that is not reflective of our expected commercial pricing. Additionally, we have provided these early collaborators with the ability to purchase our Proteograph automation instrument at a discount following the completion of the the first phase of our commercialization plan. During the second phase, early access limited release, which we expect to commence in 2021, we plan to sell our Proteograph to select sites performing large-scale proteomics or genomics research. We will work closely with these sites, which we expect will serve as models for the rest of the market, to exemplify applications that demonstrate the unique value proposition of our Proteograph. We expect this phase to continue through 2021 and lead into the third phase of commercialization, broad commercial availability, in early 2022. During the second and third phases, we expect to sell our Proteograph at list prices though we may offer volume-based discounts on consumables, consistent with industry practice. We believe by following this approach we can appropriately scale our operations, deliver exceptional customer experiences, foster publications and develop a robust pipeline of customers to drive our revenue growth.

The Importance of Proteomics

Proteomics has been a key area of focus for researchers given the utility of the detailed and complex information to understanding biology that resides at the protein level. Virtually every function within a living organism occurs by the action of a protein or a group of proteins interacting with each other and working in concert. For example, enzymes catalyze chemical and biochemical reactions, hormones regulate cellular processes, receptors facilitate signal detection, antibodies provide immunity, and proteins also function in cellular and sub-cellular structure, storage, motility, and transport processes. Proteins are dynamic indicators of status and can be used to track a person's health, disease progression and therapeutic response. By contrast, DNA is effectively a blueprint of what a person's physiology could be, not an indicator of current physiological state. In short, DNA represents risk and proteins represent status.

Despite the impact that proteins have on biology and physiology, the human proteome is relatively unexplored compared to the human genome. While the understanding of biology and disease mechanisms has advanced significantly over the past decade through large-scale data collection technologies, we believe these advances have mainly been in genomics. The widespread adoption of molecular profiling techniques, including NGS, has led to the identification of approximately 695 million genetic variations across all genomes that have been sequenced. Although this information has significantly improved the understanding of biology, the functional context at the protein level has not been established for the vast majority of this genomics information. In other words, researchers have not been able to connect phenotypic information with the relevant genotypic information. We believe that if we enable researchers to generate large bodies of proteomic data, to couple with large bodies of genomic data, they will be better positioned to understand the relationship between variation and function and its impact on biology.



Challenges of Accessing the Proteome

The human proteome is dynamic and far more complex and diverse in structure, composition and number of variants than either the genome or transcriptome. Starting from the genome, there are multiple biological steps that take place to arrive at the proteome, each step driving increasing complexity and diversity. The human genome of approximately 20,000 genes is estimated to give rise to 1,000,000 or more protein variants, in part because a single gene produces distinct ribonucleic acid (RNA) isoforms through the process of transcription and a myriad of structurally distinct proteins through the process of translation. Biological processes can further chemically modify these proteins in unique ways, resulting in a large number of protein variants through post-translational modifications. Overall, these processes result in many levels of protein diversity, from amino acid sequence and structural variations, to post-translational modifications (PTMs), to functional changes due to interactions between the proteins themselves, known as protein-protein interactions (PPIs). In addition, all of these forms of diversity can differ between states of health and disease. We believe the fundamental challenge with existing proteomics methods is their inability to measure the breadth and depth of the proteome's complexity, rapidly and at scale.

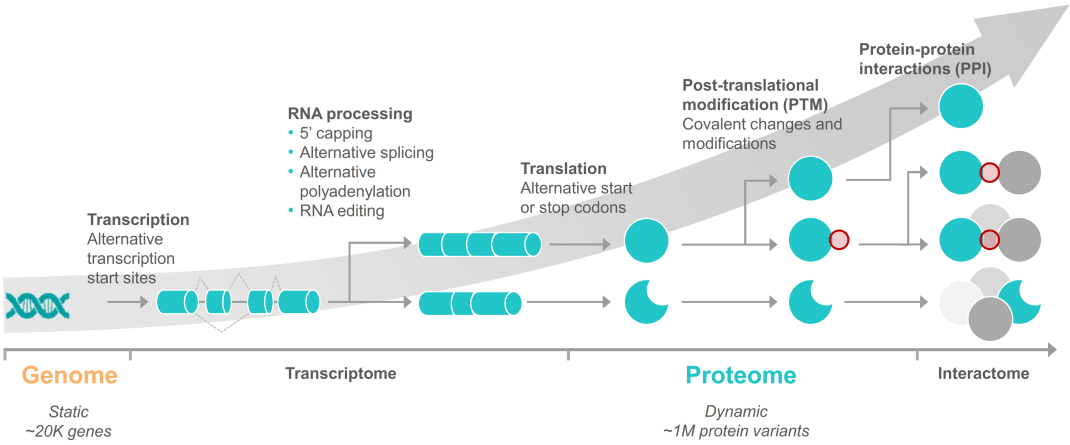
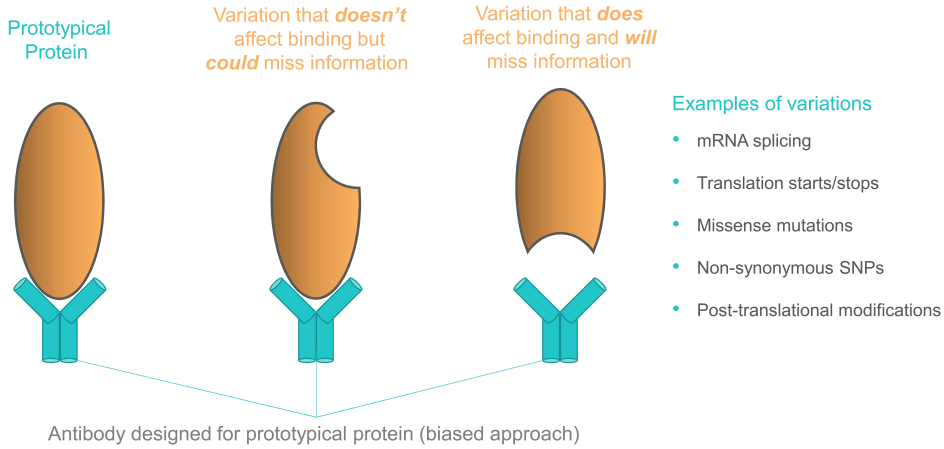


Image from Isabell Bludau et al. Proteomic and interactomic insights into the molecular basis of cell functional diversity. *Nature Reviews Molecular Cell Biology* (2020).

Limitations of Biased Approaches to Proteomics

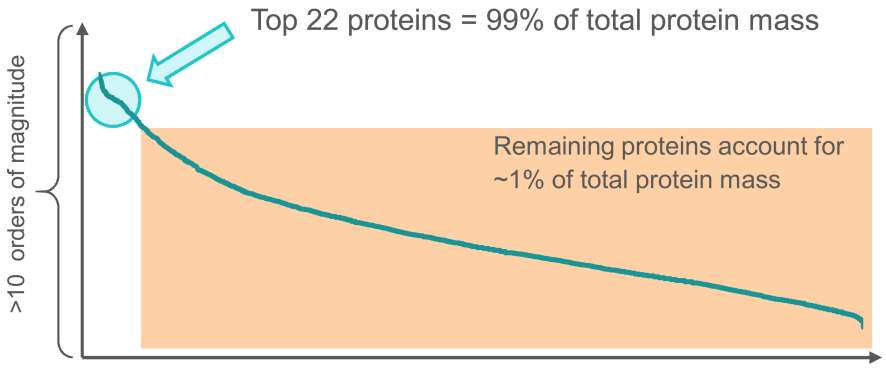
Unlike DNA, proteins' structures, chemistries and concentrations in any given sample are widely variable. Proteins also lack a direct amplification mechanism which creates technological challenges for identifying proteins at low concentration. This is different than DNA, which has an inherent and direct amplification mechanism for its replication, a mechanism that researchers have exploited with technologies such as polymerase chain reaction (PCR) for detection of DNA at low concentrations. Given the diversity of protein structures, coupled with the lack of a common amplification mechanism, researchers often use analyte-specific reagents (ASRs) to measure proteins. ASRs are ligands, such as antibodies, that have been designed to bind to specific areas of proteins, and therefore, involve a targeted or biased approach. This biased approach is limited in that ASRs do not have the capability to interrogate the entirety of the protein structure that they bind to and may not detect the presence of important protein variants. The average length of a human protein is approximately 470 amino acids, whereas the average binding site of an ASR is an epitope with a length of five to eight amino acids. ASRs cannot recognize differences between proteins outside of this small epitope binding site and therefore may not differentiate among protein variants. While a large number of ASRs can be designed to detect a large number of different proteins, because this approach is limited in its ability to measure protein variation, we believe that ASRs and other biased approaches are not optimal for discovery given the inherent protein complexity. This limitation of biased approaches is illustrated in the figure below where an antibody is unable to differentiate between two distinct variants of the same protein. If such variants are differentially related to health and disease, such approach may fail to discover important insights. Biased approaches, in general, are useful when the scientist or clinician knows what he or she is specifically analyzing. This is analogous to the role of PCR in genomics, which amplifies a specific DNA fragment in a targeted or biased manner to confirm the presence of a specific mutation, whereas NGS employs an unbiased approach to interrogate the breadth of the genome.



Limitations of Current Unbiased Approaches to Proteomics

Rather than interrogating proteins at the amino acid level, there are unbiased approaches that interrogate proteins at the peptide level, providing amino-acid level resolution to protein variants. However, current unbiased approaches are limited by lack of scalability due to the vastly different concentrations of different proteins in samples. The concentration of proteins in plasma, for example, can span ten orders of magnitude from the most abundant protein, which is albumin, to some of the least abundant proteins, such as cytokines. The top 22 most abundant proteins account for approximately 99% of the total protein mass in the plasma, yet the many thousands of less abundant proteins comprising the other one percent of the total proteins by mass have significant impact on

biology. Therefore, it is critical to be able to broadly and deeply detect proteins across the proteome, including those proteins that appear in low concentrations in plasma.



Mass spectrometry (MS) can be used as an unbiased or biased detection technology, and has been used for detection of proteins and their variants for unbiased discovery, biased research and clinical applications. Given the varying dynamic range of protein concentrations in plasma and other biological samples, current MS methods for proteomic detection require complex sample preparation workflows that involve depletion of abundant proteins and grouping of the remaining proteins into smaller units through fractionation in order to measure deeper into the proteome. We believe current unbiased approaches are not widely adopted by researchers because the workflows, protocols and unit operations are extremely complex, the process is expensive and the time required to complete such analysis is significant. As one example of these complex methods, in a paper from *Keshishian, H. et al.*, the researchers first depleted the most abundant proteins with immuno-affinity columns and then separated the remaining proteins by many subsequent and complex chromatographic steps and mass spectrometer injections. This approach identified 4,500 different proteins, but only across 16 samples. The study took multiple months to complete.

The critical unmet needs in proteomic analysis remain how to collect unbiased proteomic data on thousands of proteins in a sample spanning more than ten orders of dynamic range in concentration and how to do so in thousands of samples at a reasonable cost and in a reasonable amount of time. Genomics faced a similar unmet need before the advent of NGS, which allowed for massively parallel sampling.

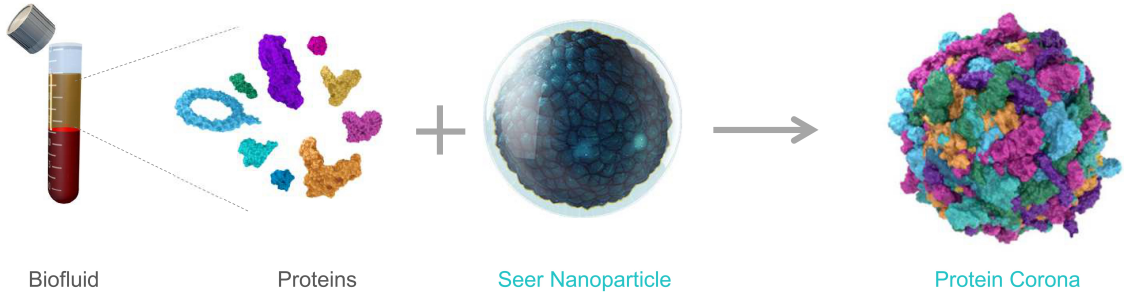
Background of Massively Parallel Sampling

The ability to perform massively parallel sampling in biology has been transformational to researchers' ability to perform large-scale and unbiased biological analysis. For example, before NGS, genomic approaches were not scalable to either read the entire genome or process very large numbers of samples. Researchers could only sequence hundreds of fragments of DNA or RNA at a time, and not easily in parallel. Genetic analysis was limited to biased, shallow genetic studies that were time-consuming and not scalable. As a result, researchers in genomics faced similar challenges that researchers currently face in proteomics. The introduction of NGS enabled massively parallel sampling of small fragments of DNA, allowing researchers to, in parallel, sequence tens of millions, and, through subsequent innovations, currently tens of billions, of fragments of DNA per sample. This transformative approach to sampling enabled genomic sequencing technologies to scale and created the path to genomic end-market opportunities, including basic research and discovery, translational research and clinical applications, including early cancer detection, recurrence monitoring and non-invasive prenatal testing. While there are no assurances that our Proteograph will have the same effect on the proteomics market as NGS technologies have had on the genomics market, given the utility of proteins for measuring function, health and disease, we believe the same, if not a greater, market opportunity exists for providing unbiased, deep, rapid and scalable access to the proteome.

Our Proprietary Engineered Nanoparticle Technology

Our proprietary engineered NP technology overcomes the limitations of existing methods and is the foundation for our Proteograph Product Suite's easy-to-use workflow for unbiased, deep, rapid and scalable proteomic analysis. Our approach is based on proprietary engineered NPs that enable unbiased and massively parallel sampling of intact proteins across the proteome, capturing a myriad of molecular information at the level of protein variants as well as PPIs. Our NPs are designed to eliminate the need for complex workflows required by other unbiased approaches, which we believe will make proteomics more accessible to the broader scientific community.

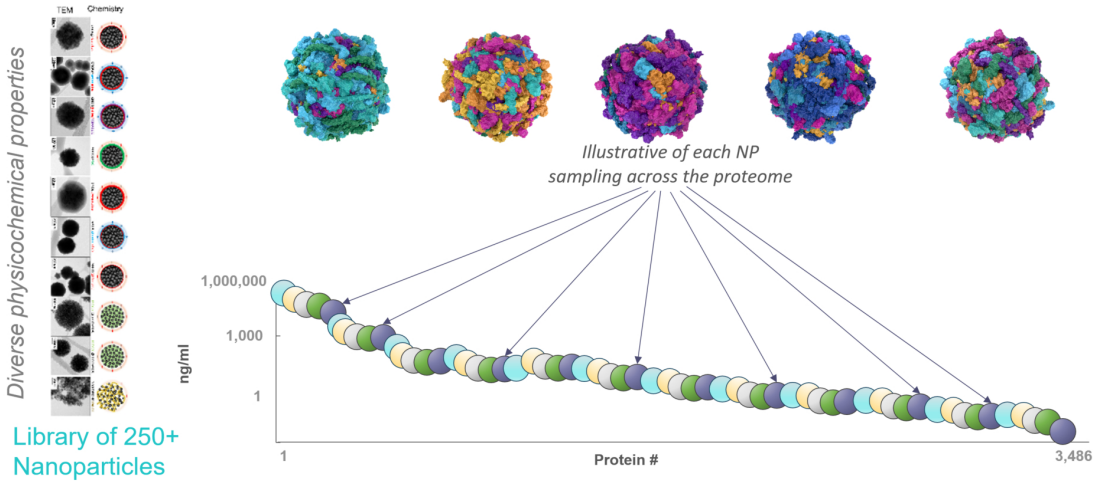
The diameter of a nanoparticle is typically in the tens to hundreds of nanometers. As a reference, the diameter of the human hair is 80,000 nanometers. When nanoparticles are placed in contact with a biological sample, a thin layer of intact proteins rapidly, selectively and reproducibly adsorbs onto the surface of a nanoparticle upon contact, forming what is called a protein "corona." Additional intact proteins can also join the corona layer by binding directly to a protein that has already attached to the nanoparticle through PPIs and intact protein complexes may also attach to the nanoparticle directly. Our NPs' ability to capture whole and intact proteins and their many diverse variants provides access to protein structural information, including information on PPIs. At binding equilibrium, which occurs within minutes after our NPs come into contact with the protein, the selective sampling of proteins by our NPs is robust and highly reproducible.



5 issued and over 25 pending patents

The protein sampling and binding of proteins to the nanoparticle surface are driven by three primary factors: (i) affinity of a given protein for a given nanoparticle's physicochemical surface; (ii) concentration of a given protein in a biological sample; and (iii) affinity of the proteins for other proteins on the surface of the nanoparticle, forming PPIs. We can use a variety of different methods and materials to design and create different nanoparticles. Each nanoparticle can have distinct physicochemical properties that generate a unique protein corona pattern and a unique proteomic fingerprint. We can combine nanoparticles into panels to provide a representative and thorough sampling across the dynamic range of the proteome, from high to low abundance proteins. In effect, the properties of protein binding to a panel of nanoparticles are functionally equivalent to, and can replace, complex, biochemical laboratory workflows for the preparation of samples for deep, unbiased MS, and which enable the capture of thousands of proteins from biofluids for large-scale proteomics studies. Virtually any solubilized biological sample can be interrogated with nanoparticles, including cell or tissue homogenates, blood or blood components (such as plasma or serum, urine), saliva, cerebrospinal fluid and synovial fluid. The versatility of nanoparticles provides the opportunity to use a vast universe of different nanoparticles with different physicochemical properties to selectively, reproducibly and deeply sample the proteome in an unbiased way.

The figure below illustrates the dynamic range of the proteome with high abundance proteins in the upper left of the curve and low abundance proteins in the lower right of the curve. Each of our unique nanoparticles has different physicochemical properties, which allows it to sample selectively across the breadth of the proteome.



Our NPs enable the unique capabilities of our Proteograph Product Suite, including the ability to:

- eliminate complex biofluid processing workflows required by other unbiased proteomic approaches;
- sample in an unbiased manner across the dynamic range of the proteome in a variety of biological samples, including cell or tissue homogenates, blood or blood components (such as plasma or serum), urine, saliva, cerebrospinal fluid, and synovial fluid;
- identify and distinguish protein variants at the peptide level;
- identify and quantify protein variants and PPIs;
- use machine learning to design, synthesize and select different NPs and NP panels to create multiple products and applications; and
- be compatible across a wide range of laboratory workflows, automation equipment and sample processing and detection methods, lowering the hurdle for product adoption.

We have validated our NP technology and the principle of protein corona formation as a robust and reproducible method to deeply and broadly profile the proteome in a high-throughput manner. In our recent publication in *Nature Communications* (Blume et al.), we demonstrated a rapid, deep and precise profiling of the plasma proteome with our proprietary engineered NP technology.

Our Proteograph Product Suite

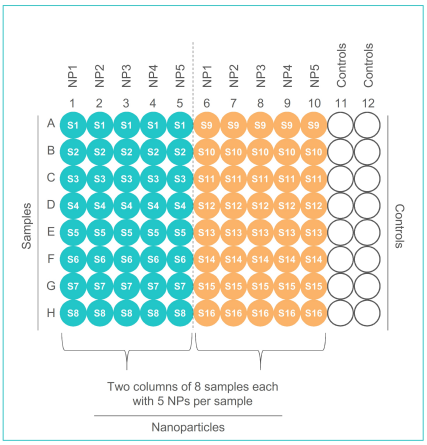
Our proprietary engineered NP technology forms the basis for our first product, the Proteograph Product Suite. Our Proteograph is an integrated solution consisting of consumables, an automation instrument and software to perform unbiased, deep proteomic analysis at scale in a matter of hours. We designed our Proteograph to be efficient and easy-to-use, and to leverage broadly-used laboratory instrumentation to enable adoption in both decentralized and centralized settings and be widely available to life sciences researchers.

Our Proteograph consumables consist of our NP panel and all other consumables necessary to assay samples on our automation instrument. Our Proteograph automation instrument is custom-configured for researchers to assay samples in approximately seven hours, which includes thirty minutes of set-up time and six and a half hours of automated instrument time. The output from our automation instrument is peptides ready to be processed on an MS instrument, which is a widely-accessible platform for protein detection. The Proteograph Product Suite is detector agnostic and, therefore, we believe, will be adaptable to other protein detection instruments in the future. The MS component of our Proteograph workflow is either provided by the researcher's laboratory or can be outsourced to a third-party provider. We estimate that there are approximately 16,000 MS instruments with configurations typically used to perform proteomic analysis installed worldwide and, therefore, we believe that MS systems are readily accessible by researchers. Finally, we provide a data analytics software suite to analyze the output from the system that helps researchers interpret and gain insights into their data.

Consumables

For our first Proteograph assay, we will employ a panel of five NPs. Our Proteograph consumables also include buffers and reagents for protein lysis and digestion, peptide purification and peptide quantification. We designed the performance specifications of our Proteograph to meet the core needs of the market in terms of protein coverage and sample throughput required for proteomic experiments that are unbiased and at-scale. The product will allow for the interrogation and processing of up to 16 samples by our five proprietary engineered NPs in parallel on a single 96-well plate in approximately seven hours. Eighty wells are arrayed in two groups of columns with eight samples and five particles in each column. The remaining 16 wells are for integrated quality control samples for gathering assay metrics and aid in troubleshooting. We include these quality controls because they greatly facilitate comparison of results across different assays, and also help to differentiate between anomalous versus accurate results in an assay.

Sample Proteograph Plate Layout



The ready availability of the non-particle reagents combined with our ability to efficiently and quickly design different NPs with different properties, greatly simplifies the development and production of future iterations or additional versions of our Proteograph assays to address potential customer needs, such as expanded coverage or specialized assays. Additionally, we can introduce new assays that include a different number of NPs and process different sample numbers. Our customers also can easily process the new assay using their existing Proteograph automation instrument, which allows for a greater number of samples to be analyzed in parallel, or additional NPs to analyze the proteome at greater depth.

Automation Instrument

We designed our NPs for robust performance in assays run on our Proteograph automation instrument, which is a custom-configured industry-standard liquid handling workstation. Our Proteograph instrument is designed to be robust and reproducible in its ability to consistently run experiments at the scale of hundreds to thousands of samples. Our instrument allows for rapid highly parallel proteomic sampling of multiple biosamples using multiple NPs on a 96-well plate. The assay protocol is fully automated after approximately thirty minutes of set-up time. The flexibility of our instrument, coupled with the inherent diversity of our NP technology, provides for many potential applications and study workflows that can suit particular experimental needs.

Our Proteograph automation instrument has been configured to process one full 96-well plate at a time. For our first Proteograph assay this translates into processing 16 samples in parallel for each 96-well plate run. Our Proteograph Instrument Control Software (PICS) for the Proteograph is fixed and tailored to our specified workflow. Each new Proteograph assay will be able to run on our same Proteograph automation instrument with a new NP panel and an accompanying software update. After an initial 30 minute set-up process, our first Proteograph assay runs for approximately six and one-half hours on our automation instrument. The output of our Proteograph assay and instrument is peptides that are quantified, dried, and reconstituted when ready to inject into a mass spectrometer for quantitative detection, either on an MS provided by the user or sent out for MS analysis to a third-party provider.

Software

Our Proteograph software was designed for ease-of-use and was developed to help users arrive at insights quickly and efficiently following peptide detection by an MS instrument. To accommodate varying customer needs, we have designed our Proteograph software to be deployed as cloud-based and, in the future, on-premise. Both deployment options will provide a predefined workflow for data management and analysis that leverages publicly available MS data analysis tools. Without our software, the use of these tools requires expert knowledge and scalable high-performance computer infrastructure to run efficiently. We believe that our software could accelerate adoption among non-proteomic experts by providing an intuitive user interface that automates and simplifies data handling, processing and analysis, and which provides access to a scalable infrastructure.

Another potential roadblock for researchers is understanding and evaluating the quality of their results. Our Proteograph assay incorporates a series of controls for monitoring quality of the assay. Our software provides an integrated view of the results of these control runs. Using the software, the customer can evaluate trends over time

and implement performance boundaries around the expected values that flag unexpected outcomes in the data. Providing a simple, consistent interface for customers to evaluate the control data and generate a quality control (QC) report will help them understand our approach to QC in our Proteograph and simplify support. Eventually, user communities might provide an avenue for customers to share their experiences against the backdrop of a common environment and understanding.

We expect that our Proteograph will enable generation of large volumes of proteomic data, and we have developed our Proteograph software to ensure that handling, management and analysis of data does not create new bottlenecks for researchers. Our Proteograph software offers ease of implementation and addresses key customer needs, which include analysis of raw MS data with pre-configured parameters, integrated QC reporting, the ability to visualize and download the primary data analysis, and statistical analysis tools. Our software is highly scalable and is designed to accommodate multi-instrument settings, rapidly expanding data volumes and emerging data analysis tools. Finally, as we continue to improve and extend our product portfolio, we expect to expand our Proteograph software suite to include advanced data analysis tools, including PPI analysis, mapping of PTMs, genetic polymorphisms, multi-omics integration, and systems biology framework analysis.

From Sample to Data Using our Proteograph Product Suite

Proteomic analysis using our Proteograph Product Suite has five primary steps:

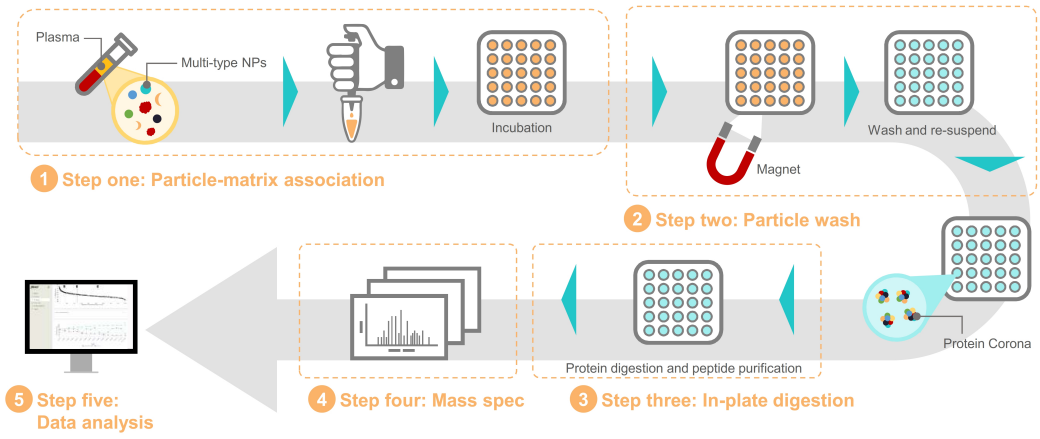
1. *Particle-Matrix Association*. NPs can be mixed with a wide variety of soluble biological sample types (matrices), including cell or tissue homogenates, blood or blood components (such as plasma or serum), urine, saliva, cerebrospinal fluid, and synovial fluid. After combining the biosample and the NP, the mixture is incubated in a solution that mimics physiological conditions, producing protein-corona on the surface of the NPs.

2. *Particle Wash*. NPs are then captured by a magnetic field, after which they undergo repeated cycles of wash with buffer to remove unbound, or loosely bound, proteins.

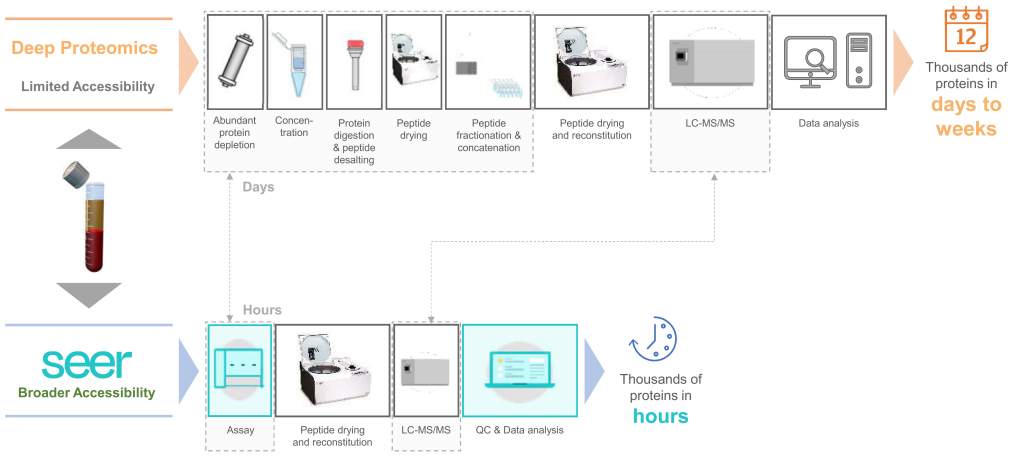
3. *In-plate Digestion*. Washed NPs are subject to enzymatic digestion to generate peptides, which are collected, quantified, dried and ready for subsequent MS analysis.

4. *Mass Spectrometry*. The researcher prepares the digested peptides for measurement by dissolution in appropriate peptide reconstitution buffer suitable for MS injection, at a volume and concentration that meets the researcher's MS instrument and liquid chromatography gradient requirements.

5. *Data analysis.* After data acquisition, typical MS analysis methods are employed within our Proteograph software to identify and quantify the peptides and proteins in the sample. Quality control metrics are reported for the MS sample data, sample data summaries and output files are created, and initial cross-sample analyses are provided.



Given the seven-hour run time per plate for our initial five-NP panel, our Proteograph Product Suite could process 48 samples in a 24-hour period for unbiased and deep proteomic analysis. By comparison, the workflows developed by leading proteomics labs can take as long as several days to weeks, for sample preparation for MS measurement to reach an equivalent depth of proteomic coverage.

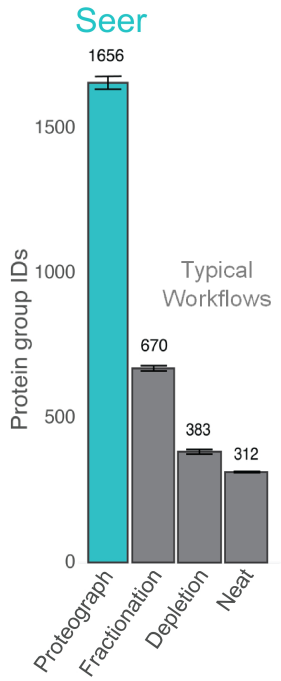


Proteograph Product Suite Performance

The four key technical attributes of our Proteograph Product Suite are its breadth of protein sampling, depth of coverage, accuracy and precision of measurement. In addition to its technical performance, our Proteograph automation instrument's rapid throughput is an important characteristic to scale the number of samples assayed. We believe that our Proteograph Product Suite is the only product to provide these technical and operational capabilities in an integrated solution to enable large-scale proteomic analysis. As described below, we discuss the performance of our first Proteograph assay relative to existing unbiased proteomics methods across the technical attributes of breadth, depth, accuracy and precision of measurement and the operational aspect of throughput.

- ***Breadth of protein sampling.*** Breadth of protein sampling refers to our Proteograph Product Suite's ability to conduct unbiased, highly parallel sampling of the proteome across its entire dynamic range, from high to low abundant proteins. Given the unique characteristics of our NPs, our Proteograph Product Suite allows for the unbiased highly parallel sampling of the proteome, and it does this across its entire dynamic range from high to low abundant proteins. Each uniquely engineered NP selectively captures hundreds of distinct intact proteins from a biosample based on their abundance and affinity for the NP surface. Our Proteograph leverages a panel of unique NPs to capture significantly more proteins and protein variants than current

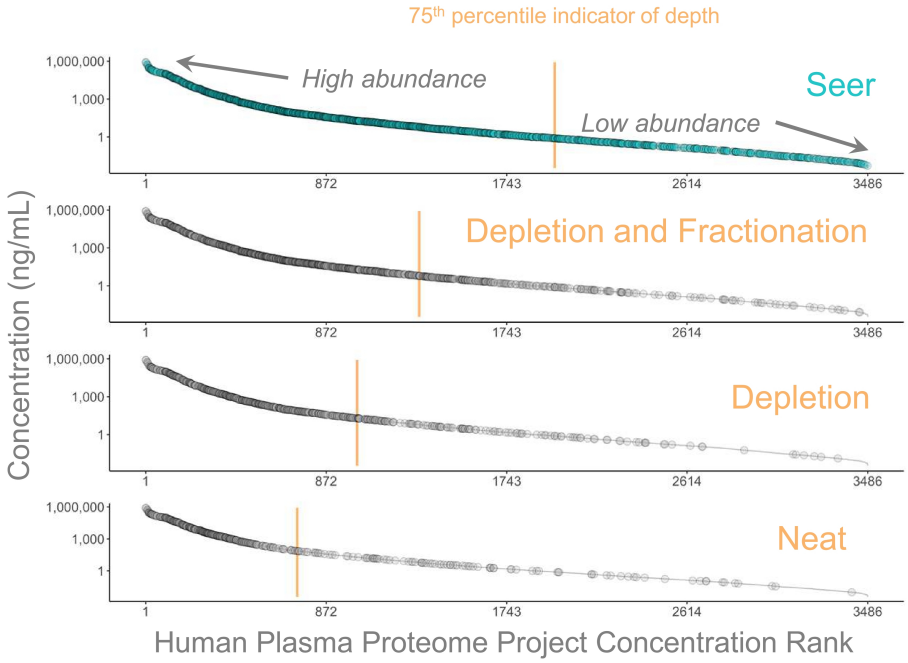
methods of unbiased proteomic analysis, as shown in the figure below. This advantage of our Proteograph Product Suite is particularly strong in complex biofluids such as plasma.



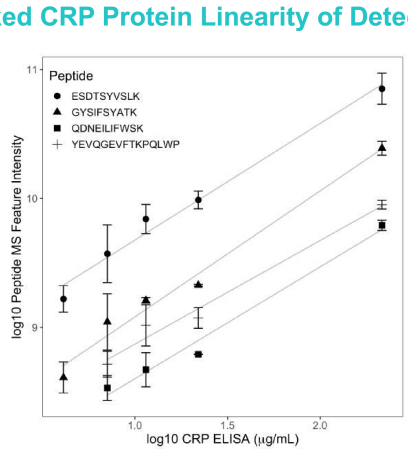
As illustrated above, we compared our Proteograph Product Suite with other unbiased proteomics methods in a head-to-head experiment using the same biological sample. Neat plasma represents the simplest form of unbiased proteomic analysis, requiring minimal processing time, and resulted in a breadth of coverage of 312 proteins. By adding processing steps such as depletion of high abundance proteins and separation of the remaining proteins into multiple fractions (a process called fractionation), the breadth of protein sampling increased to 670 proteins. However, with our Proteograph, we detected 1,656 proteins in plasma, which represents a major expansion in breadth of protein coverage.

- ***Depth of coverage.*** Depth of coverage refers to our Proteograph's ability to evaluate the proteome across the wide dynamic range of abundance of proteins. The range from the most abundant to the least abundant protein in biological samples can vary greatly. In plasma, this range is estimated to be at least ten orders of magnitude, and the rich diversity of biology resides outside the most abundant proteins. Sampling across the entire dynamic range has been one of the seminal challenges in the field of proteomics. Conventional approaches to address this challenge have employed laborious depletion and fractionation methods, which can be avoided with the automated and scalable workflow of our Proteograph Product Suite. We compared the depth of coverage of our Proteograph with other unbiased proteomic methods in a head-to-head experiment, shown in the figure below. Our Proteograph samples proteins across the entire dynamic range of the plasma proteome, as defined in the Human Plasma Proteome Project database (Schwenk et al.), with the 75th percentile point of depth of coverage shown with the orange bar. The depth of coverage for our

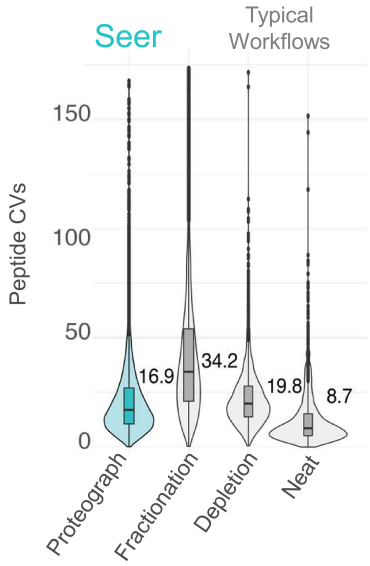
Proteograph reaches further into the low abundant proteins than the fractionation, depletion and neat plasma methods.



- ***Accuracy of measurement.*** Accuracy refers to how close the measured abundance of a protein is to the true abundance in a sample. Accuracy of protein abundance measurement can be demonstrated by MS signal intensity of the proteins sampled with our Proteograph, and comparing these values with measurements obtained directly by immuno-assay (ELISA). In the below experiment, purified C-Reactive Protein (CRP) was added or "spiked" in to plasma at levels of 2x, 5x, 10x, and 100x of the baseline measured levels for CRP in the plasma. These samples with known concentrations of CRP were then interrogated with our Proteograph Product Suite and ELISA. The figure shows the linearity of measurement of our Proteograph, as determined by MS signal intensity of four peptides within CRP when compared to the ELISA measurement of CRP. Our Proteograph assay can distinguish changes in protein abundance with significant accuracy, as demonstrated by a slope response approximately equal to one and an r-squared value greater than 0.95.



- ***Precision of measurement.*** Precision refers to how close several measurements of protein abundance in the same sample are to each other. Less precision in the measurement of a protein adds noise to an experiment, requiring a larger number of samples in the study to observe a true difference. Precision is typically measured as the coefficient of variation (CV%), or standard deviation divided by the mean times 100. Therefore, a lower CV% represents a more precise outcome. We compared the precision of our Proteograph with that of depletion, fractionation, and neat, by evaluating the same sample three times and calculating the CV% for the detected peptides and proteins. On average across the peptides, the median precision was 16.9 CV%. At this level of performance, our Proteograph has 80% statistical power to detect a 50% change in a peptide levels with only ten samples per sample group. Our Proteograph analysis shows lower CV%s than fractionation and depletion methods, which is notable since we achieve lower CV%s while concurrently sampling significantly more proteins, as shown in the figure below. In general, in unbiased assays, CV%s are expected to increase as the number of analytes detected increases. However, our Proteograph can increase the number of analytes that it detects while achieving comparatively better CV%s. Although neat plasma has a lower CV%, it is limited in the breadth of protein coverage to 312 proteins compared to 1,652 proteins sampled by our Proteograph.



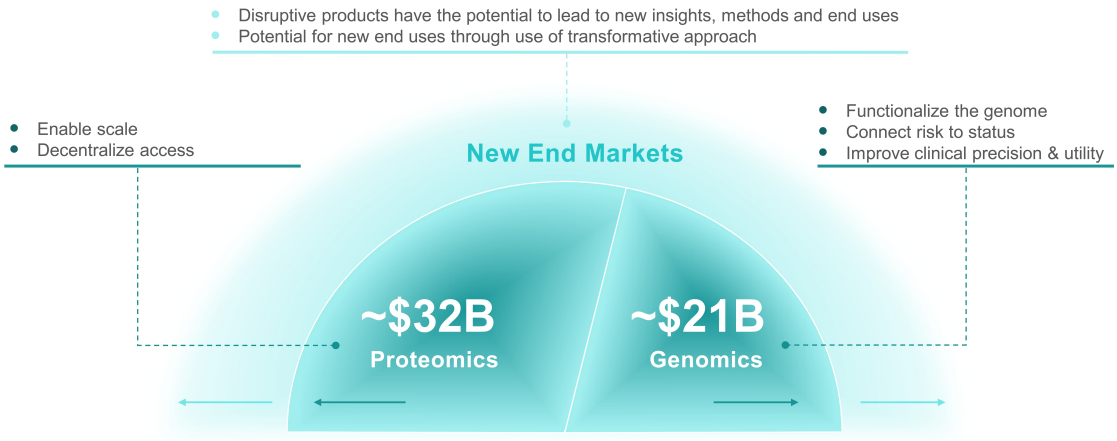
- ***Rapid and large-scale.*** Our Proteograph enables rapid and large-scale proteomic sample processing in a seven-hour workflow, compared to other unbiased solutions that can take days to weeks. We recently reviewed major published plasma and serum proteomics studies from 2016 to 2019 to compare protein coverage, throughput and sample size. We have compared the results of 14 published unbiased, deep proteomics studies with the results from our recent *Nature Communications* paper (Blume et al.). While unbiased proteomics studies are vastly different in terms of their workflows, they may be considered more comparable in the quantifiable outputs of protein coverage, the amount of MS time required for the study and number of samples in the study. We only utilize the published MS time and did not account for up-front sample processing time. We examined these three outputs from the literature review against our published study. While we do not consider this to be a head-to-head comparison, it does provide general guidance to understand the comparative performance of our assay. We observed an average protein coverage of 1,960, with an average throughput of 1.5 proteins per minute, and average study size of 15 samples. This compares to our protein coverage of 2,094, a throughput of 14.2 proteins per minute, and study size of 141 samples. This advantage in throughput reflects only the MS time and does not include the additional throughput advantages of our Proteograph automation instrument, which enables simpler and faster sample processing, which is otherwise also a lengthy part of unbiased studies.

We believe that our studies demonstrate that our Proteograph Product Suite has a unique combination of attributes spanning breadth, depth, accuracy and precision of measurement and throughput necessary for large-scale proteomics studies. We believe our Proteograph will broadly appeal to researchers seeking an easy to use, scalable approach for such studies.

Markets

The proteome comprises millions of protein variants whose expression varies by cell, tissue, organ and system, as well as across time, and whose interaction with other proteins and biomolecules are essential to driving health and disease. No commercial product has existed that enables researchers to assess the proteome deeply, broadly, rapidly and at scale across thousands of samples. Despite this limitation, researchers rely on laborious, expensive and complex methods to survey as much of the proteome as they can. While NGS transformed life sciences end-markets through massively parallel access to the genome, lack of similar unbiased, deep, rapid and large-scale capabilities has to date evaded the field of proteomics. We believe our Proteograph enables such access to the proteome, and will allow researchers to undertake the scale of studies we believe are needed to understand the complexity of the proteome, and by extension biology.

We believe the two primary near-term markets for our Proteograph are the proteomics market, which was $32 billion in 2019, according to Allied Market Research, and the genomics market, which was $21 billion in 2019, according to Technavio. Within these markets, potential applications of our Proteograph span basic research and discovery, translational research, diagnostics and applied applications. Of the $32 billion proteomics market, $25 billion is estimated to be spent on reagents, $5 billion on instruments, and $2 billion on services. In the near-term, we believe we will compete in both the proteomics reagent and instrument markets. Furthermore, the $21 billion genomics market consists of approximately $13 billion spent on products and $7 billion spent on services. In the near-term, we believe we will be able to garner spend from both products and services as genomic customers link genotype to phenotype by supplementing existing genomic data with proteomics data. While we initially plan to sell and market our Proteograph for RUO, we believe that the capabilities of our Proteograph Product Suite may enable our customers to use our Proteograph in other applications. While we currently do not intend to pursue clinical diagnostics applications, we may in the future seek premarket approval or clearance for our Proteograph in order to allow our customers to use our Proteograph in other product offerings. We believe that our Proteograph's unique value proposition will resonate with proteomics researchers who already value deep and unbiased proteomic information, and who desire to scale experiments to far greater sample sizes at a fraction of the time and cost of current approaches. We also believe that as more genomics researchers incorporate other -omics approaches to elucidate key genomic findings, our Proteograph will uniquely provide large-scale, unbiased and deep proteomic information to complement genomic information, and enable researchers to gain a clearer picture of biology and a deeper understanding of genomic risk factors. Longer-term, we believe that the capabilities offered by our Proteograph and future products may potentially lead to new end-markets, applications, and business models that complement existing proteomics and genomics markets.



Proteomics

Allied Market Research estimates the global proteomics market was $32 billion in 2019, and is expected to grow to $64 billion in 2024, representing a 15% compound annual growth rate. According to Allied Market Research, 60% of the proteomics market is focused on life sciences research, 35% for clinical applications and 5% other applications. Products in the proteomics market include spectrometry, microarray and chromatography instruments as well as reagents, used for both unbiased and biased proteomics. The majority of proteomic analysis to date either relies on biased or targeted methods or expensive, complex, and laborious unbiased or *de novo* deep methods that are applied only to tens of samples versus the thousands needed to power large-scale studies. Few methods are based on capture of intact proteins that enable analysis of proteome complexity at the level of amino acid variants, PTMs and PPIs, all of which have the potential to generate important biological insights. We believe the unique capabilities of our Proteograph will appeal to researchers either as a complement or substitute for current approaches, or in creating an entirely novel path to survey the proteome. We estimate that there are approximately 16,000 MS instruments with configurations typically used to perform proteomic analysis installed worldwide. Since our Proteograph can leverage most MS instruments as a detector, we believe that we can take advantage of this installed base to accelerate adoption of our Proteograph. We believe that we have an opportunity to provide a strong alternative to both unbiased and biased proteomics approaches, particularly in the discovery of new biology, and to grow the proteomics market by enabling new applications for unbiased proteomics. These applications currently span research, translational and clinical settings, and we believe that our Proteograph can address all these applications over time.

Genomics

Technavio estimates the global genomics market was $21 billion in 2019 and is expected to grow to $38 billion by 2024, representing a 13% compound annual growth rate. Over the last fifteen years, application of large-scale genomics across the population has led to discovery of approximately 695 million individual human variants and it is expected the total number of such variants will only expand as more exomes and genomes are sequenced. However, despite this impressive rate of variant discovery, fewer than 0.2% of those variants have been cataloged in the ClinVar database with a reported relationship between genetic variation and phenotype. We believe that large-scale deep, unbiased proteomics studies, such as those our Proteograph could enable, will provide important missing biological information to improve functional characterization of genomic variants. In genomics markets, complementing large-scale genomics analysis with large-scale proteomic analysis has the potential to enhance and accelerate our understanding of biology, human health and ultimately the treatment of disease. Therefore, we believe our Proteograph can appeal to an increasing number of genomics customers, especially those in translational settings, who are looking to leverage multi-omics approaches to further annotate genomic variants in terms of function and connect genotype to phenotype.

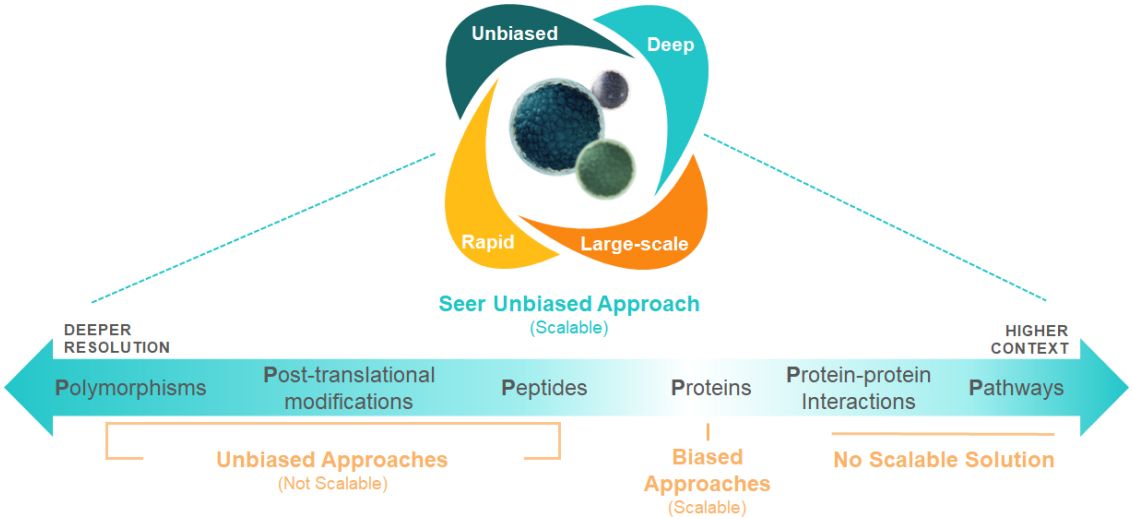
New Markets

We also believe that our Proteograph Product Suite will enable novel applications and insights leading to new end-markets, similar to the impact that broad access to genomics products have had in creating new applications, end-markets and business models. For example, non-invasive prenatal testing and precision oncology currently make up a significant part of the current $21 billion genomics market, yet we believe that it would have been difficult to anticipate these market opportunities a decade ago. We believe the same dynamic of new market creation will occur in proteomics. One such application for proteomics is early disease detection. We recently spun out a new entity, PrognomIQ, Inc. (PrognomIQ), which aims to develop and commercialize novel diagnostic tests that leverage our Proteograph, in combination with genomics and metabolomics information, and will be a participant in the existing ecosystem of early disease detection. More broadly, we believe our Proteograph has the potential to further stimulate growth of new applications and end-markets in additional ecosystems.

The Advantages of Our Proteograph Product Suite

We believe our Proteograph Product Suite and its underlying NP technology have the following advantages:

- ***Our Proteograph Product Suite is expected to be the first commercially available solution to provide the combination of unbiased, deep, rapid and large-scale access to the proteome.*** While other proteomics technologies exist today, we believe that our Proteograph is the first and only product to provide the combination of these four attributes in a single integrated solution with an easy-to-use workflow. We believe these capabilities fill a gap that to date has been one of the rate-limiting steps in unlocking the complexity of biology. This creates a unique opportunity for us to drive widespread adoption of our Proteograph, transform proteomics and biological research, and establish our Proteograph as the industry standard for generating deep, unbiased proteomic information.



- ***Our Proteograph Product Suite provides insight into protein variation and PPIs at a depth and scale that we believe sets a new standard for unbiased and deep proteomics, and is unattainable with other existing approaches.*** The ability to observe the myriad of possible protein variations, which go beyond simple total protein abundance, with the accuracy and precision necessary to extract useful insights across large numbers of subjects, is a key differentiating attribute of our Proteograph. Furthermore, capturing these variations at scale enables synergistic insights when combined with genomic variations, finally enabling the development of informative, individualized models of biology at population scale. As noted in the figure above, biased approaches can capture individual proteins at scale, but are not readily able to capture protein variants at scale. Current unbiased approaches are able to capture some protein variants at the peptide level and can capture polymorphisms and PTMs, but not at scale. Moreover, these unbiased approaches are not able to capture PPIs

and protein pathway information at scale. We believe that our Proteograph is uniquely positioned to fully capture the breadth, depth and the complexity of the proteome at scale.

- ***Our Proteograph Product Suite was designed to enable broad adoption across a wide variety of customers in both decentralized and centralized settings.*** Our Proteograph is an integrated solution comprised of consumables, an automation instrument and software, and was designed to deliver ease-of-use, efficiency, robustness and reproducibility of results and to complement existing laboratory infrastructure. Our Proteograph's simple and integrated workflow enables the customer to use their own MS instrument or leverage a widely available installed base of MS instruments . We estimate that there are approximately 16,000 MS instruments with configurations typically used to perform proteomic analysis installed worldwide. Since our Proteograph can leverage most MS instruments as a detector, we believe that we can take advantage of this installed base to accelerate adoption of our Proteograph. We believe these characteristics will facilitate broad adoption of our Proteograph across a variety of laboratories and institutions in both decentralized and centralized settings.

- ***Our proprietary engineered NPs are a core technology from which we can develop a range of products, applications and platforms.*** We have evaluated over 250 different NPs with diverse sets of physicochemical properties, from which our five NPs for our first Proteograph assay were selected. From our growing and diverse NP library, we can develop new arrays of NP consumables that address a variety of applications and customer needs. We plan to use machine learning techniques and apply large-scale data analyses of our NP binding properties to understand relationships between NP surfaces and protein binding and interactions in order to rationally design our NP panels. Our NPs are versatile and can be designed to work with different sample types from plasma to homogenized tissue and collect proteomic, molecular and other -omics information. We believe these characteristics will enable development of additional differentiated products to enable our customers to utilize applications across the life sciences industry, ranging from basic research and discovery, translational research, diagnostics and applied applications.

- ***Our NP technology inherently provides significant operational leverage in research and development, manufacturing and commercialization.*** NPs are efficient to design, develop and manufacture. We believe we will be able to rapidly increase and deploy our understanding of NP design to develop new products with our software and data analytics capabilities. In the NP manufacturing process, we use well-characterized inputs and methods, which require relatively modest capital equipment and space investments. Since our core technology resides in the NP consumables, not the instrument, new products will often involve commercializing new NP assays and software that can be run on the existing instrumentation. This capital-efficient and labor-efficient model has the potential to provide significant operating leverage to our organization.

- ***Our Proteograph Product Suite has the potential to provide sustainable differentiation.*** Our Proteograph is uniquely capable of generating robust, reproducible, deep and unbiased proteomic data, and as more of this data gets created over our time and used by more customers to generate insights, we expect to create a virtuous cycle that will fuel further adoption of our Proteograph throughout the industry. Our Proteograph was designed to fully integrate with customer workflows and provide a unique user experience, supported by our software packages, to create a sustainable solution within our customers' organizations. Our Proteograph automation instrument and NP technology are covered by five issued patents and over 25 pending patent applications, worldwide, as of September 30, 2020, covering improvements in NPs, assay methods and ways to leverage proteomic data and information for life sciences research and clinical diagnostic and drug discovery applications.

Our Strategy

We aim to enable exceptional scientific outcomes by commercializing transformative products for researchers to unlock deep, unbiased biological information. Our growth strategy is to:

- ***Drive adoption of our Proteograph Product Suite to enable researchers to create large-scale unbiased proteomic datasets that generate transformative scientific insights.*** Our initial product, the Proteograph, uniquely enables researchers and clinicians to generate unbiased, deep proteomic information at speed and scale

which are not possible today. The utility and potential applications of these capabilities are broad, spanning across basic research and discovery, translational research, diagnostics and applied applications. We believe our first NP assay for our Proteograph is particularly well suited to address the core needs of researchers focused on basic and translational research and diagnostics. We intend to drive adoption of our Proteograph through a three phase commercial launch plan that includes an initial collaboration phase with key opinion leaders, then an early access limited availability phase in 2021 to initiate and build momentum of customer references, and finally broad commercial availability in early 2022.

- ***Invest in market development activities to increase awareness of the importance of large-scale proteomic data and the ability to access it***. In order to expand and accelerate demand for our products, particularly as new applications are created and adopted by customers, we plan to invest in market development activities to educate prospective customers, funding bodies, commercial entities, government-sponsored -omics programs, and other stakeholders of the importance and value of large-scale unbiased and deep proteomic data. These activities will likely include collaborations with key opinion leaders, generation of peer-reviewed publications, sponsorship of targeted projects, joint publications and seminars, and industry partnerships. These activities aim to establish the value of large-scale unbiased and deep proteomic data, and demonstrate the unique capabilities offered by our products.

- ***Continually innovate to develop and commercialize additional transformative products to access the proteome and accelerate our understanding of biology***. We aim to continually innovate and develop new products, applications, workflows and analysis tools that simplify and accelerate researchers and clinicians' ability to generate proteomic data and to connect proteomic data to genomic and transcriptomic data that drive novel biological insights. As leaders in NGS have demonstrated, our sustainable advantage will come from continual development and commercialization of new products and applications based on our technology, and we will drive innovation through both internal R&D projects and from collaborations with customers and partners.

- ***Rapidly build our commercial infrastructure and NP manufacturing capabilities to provide for our commercial launch in the United States and internationally.*** We are initially building our commercial infrastructure to sell and support our products directly in the United States, the European Union and United Kingdom. We expect to expand access to our products in other geographies, starting with select countries in Asia Pacific through distributors, and eventually to the rest of the world. We are also scaling our NP manufacturing capabilities in our facility in Redwood City, California, and will continually evaluate and optimize our manufacturing and supply chain footprint to meet our business objectives.

- ***Foster the creation of an ecosystem of customers, partners and collaborators whose expertise and offerings complement and enhance the power and utility of our products.*** We intend to seed and develop a new ecosystem of applications and organizations that can take advantage of large-scale proteomic analysis. This ecosystem can include areas such as disease detection, large-scale population studies, agriculture, environmental monitoring and food safety. Much as we have seen large-scale genomic analysis spur new innovations in non-invasive prenatal testing, early cancer detection and recurrence monitoring, we believe large-scale proteomics will enhance these markets and spur the development of new markets and applications. To help seed the growth of this ecosystem, we recently spun-out a new company called PrognomIQ, which plans to develop and commercialize diagnostic tests for early disease detection, leveraging our Proteograph in combination with other -omics technologies.

- ***Expand our proprietary engineered NP technology to analyze molecules beyond proteins.*** Given the inherent flexibility and ability to synthesize myriad NPs, we intend to seek over the long-term to expand the scope of our propriety engineered NP technology to analyze other biomolecules such nucleic acids, metabolites and small molecules among others. As we continue to work closely with our initial and future customers, we will better understand their needs and requirements, which will inform our product development pathway and development of our library of NPs and our software capabilities to address other -omics applications. We believe our management's knowledge and experience in both the proteomics and genomics markets will position us to take advantage of such new expansion opportunities as they arise.

The Applications of our Proteograph Product Suite

We believe the ability to generate unbiased, deep proteomic data at scale, with rich content at the protein variant level will have broad applications in proteomics, encompassing basic research and discovery, translational research, diagnostics and applied markets. We believe this data will be used in many of the same application areas as are used with genomics data, proteomics applications that are uniquely possible with unbiased proteomic data, and in new applications that the field will develop in the future.

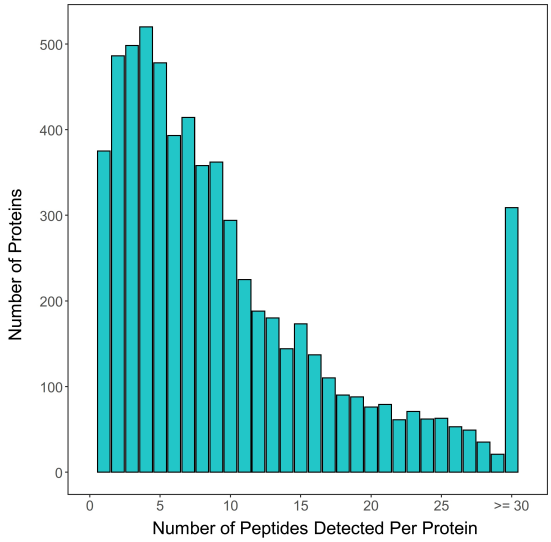
Basic Research and Discovery Applications

We believe that researchers will use our Proteograph for a variety of basic research and discovery applications, including cataloging protein diversity, proteogenomics and exploring the interactome. While researchers are pursing these applications today, the studies are either limited in scale due to the complex workflows of current unbiased methods or the limited set of ASRs that are available for biased methods. Our Proteograph is designed to enable the use of unbiased proteomic data at scale, which we believe will greatly accelerate these areas of basic research and discovery.

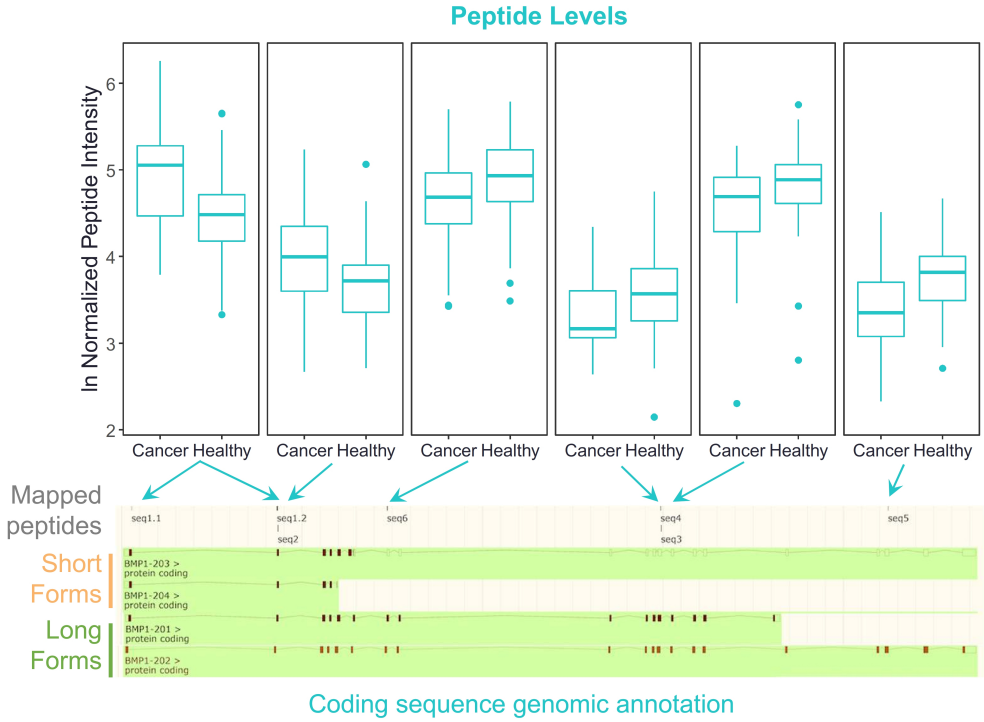
Cataloging protein diversity

Our Proteograph is designed to enable researchers to broadly explore the complexity and diversity of the proteome at the peptide and amino acid levels and discover many distinct protein variants. This is analogous to how NGS enabled genomic researchers to change their experimental focus from exploring genes to exploring exons and nucleotides, revealing approximately 695 million genetic variants to date. We expect that researchers will use our Proteograph to catalog these protein variants much like the cataloging of genetic variants that occurred over the past fifteen years, and this will uniquely provide functional context at a scale that is not accessible today with other proteomics methods. We believe the utility of these protein variants has the potential to impact a broad spectrum of the life sciences field.

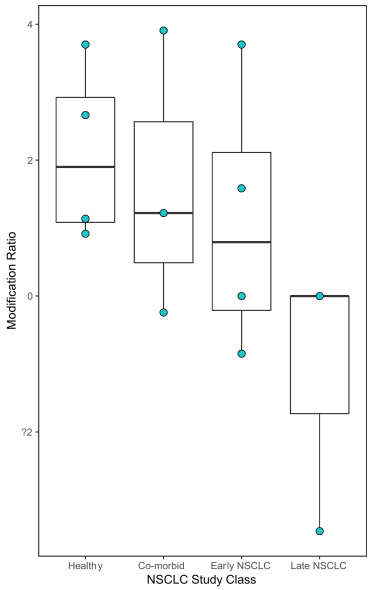
The figure below shows the type of protein cataloging possible with our Proteograph Product Suite. Interrogating the protein data from our previously published work in *Nature Communications* (Blume et al.), we illustrate below that our Proteograph can identify a range of peptides for the proteins in plasma samples from lung cancer patients and healthy controls, which is not feasible or practical using a biased method.



In the following figure, we have analyzed the Bone Morphogenic Protein 1 (BMP1) gene, which is known to have seven variants at the RNA level from alternative splicing and four variants at the protein level. Of these four variants, two are the long form and two are the short form of the BMP1 protein. Among the peptides that our Proteograph detected in this study, six specific peptides came from various parts of BMP1. Interestingly, the short form of the BMP1 protein was expressed predominantly in cancer patients, whereas the long forms of the protein were seen more often among the healthy controls. According to Pubmed, this observation has not been previously reported in the literature and may merit further investigation for the potential role of different BMP1 protein variants in health and cancer. We believe that researchers will therefore use our Proteograph to pursue large-scale proteomics studies in order to generate data that may link disease biology to protein variants produced from alternative RNA splicing, alternative transcription and from PTMs.

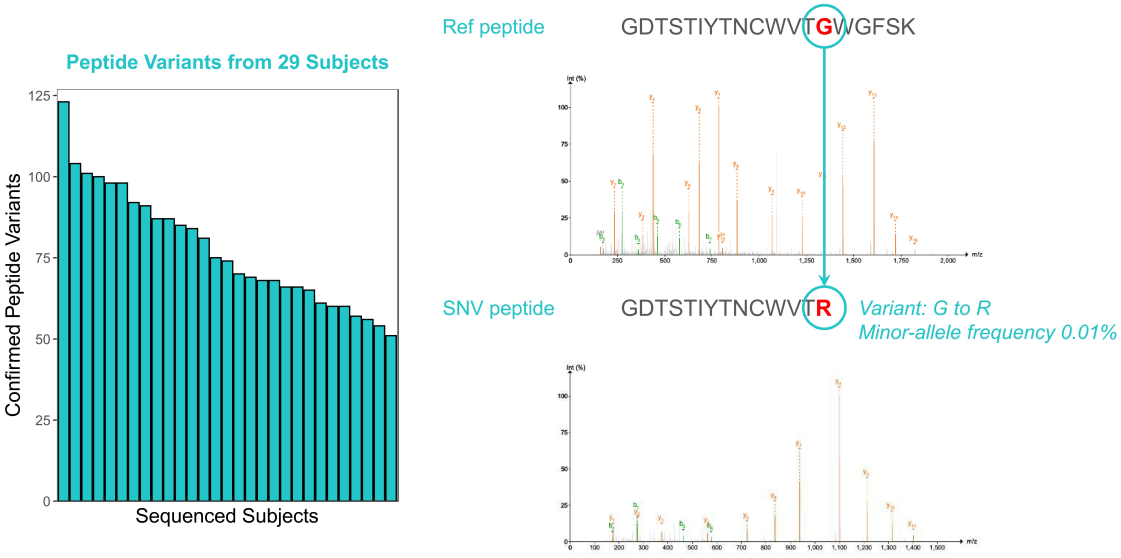


In cataloging protein variants, researchers can also gain valuable insights with PTMs, such as phosphorylation. These PTMs are dynamic and the resulting protein variants can be seen with different states of health and disease. The figure below shows the differences in the ratio of phosphorylated to unphosphorylated states of a specific peptide within Heparin Co-factor 2 across 14 samples taken from each group of early and late stage lung cancer patients, healthy and comorbid controls. We show that the phosphorylation state of this peptide may vary as the disease state varies. Heparin Co-factor 2 has been previously shown to play a role in cancer and is associated with over-expression in lung cancer (Liao et al.). The phosphorylation observations below may merit further investigation for their roles in lung cancer. We believe that as researchers pursue large-scale proteomics studies, the literature that links disease biology to protein variants produced from alternative RNA splicing and from PTMs will exponentially increase.



Proteogenomics

Proteogenomics is an emerging area of research, whereby personalized protein sequence databases are generated using genomic and transcriptomic information to help identify novel peptides. In turn, the proteomic data provides functional context to genomic information and refines gene expression models for transcriptomic information. Our Proteograph generates large-scale unbiased proteomic data, which will facilitate mapping protein variants to genomic variants, and therefore, the advancement of the emerging proteogenomics field. As an example, we performed individual exon-based sequencing on 29 patient samples from our previously published proteomics work in *Nature Communications* (Blume et al.) to enable proteogenomic analysis on these samples and evaluate additional protein variants that could be revealed with the addition of genomic information. As shown in the left panel of the figure below, the sequencing information from these 29 samples, coupled to matching unbiased and deep analyses of the samples' proteomic data using our Proteograph, yielded an average of approximately 70 predicted and confirmed peptide variations per sample. The right panel of the figure shows a subject who is heterozygous at the KLKB1 gene, which codes for the prekallikrein protein. This subject has both the reference allele for KLKB1 and a minor allele with a frequency of 0.01% in the population, resulting in a glycine to arginine amino acid change in the prekallikrein. Interestingly, we identified both prekallikrein variants in the plasma sample of this subject. Given the current level of access to genomic and transcriptomic information, as researchers conduct the large-scale proteomics studies that our Proteograph enables, we expect proteogenomic content to rapidly increase, providing functional information to existing genomics and gene expression information.

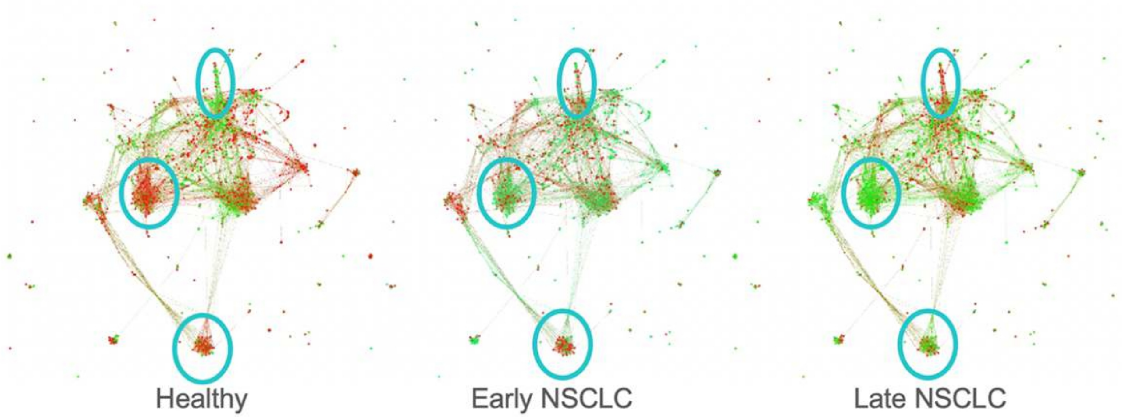


Interactome

The interactome refers to the broad set of interaction networks among molecules, such as those interactions among proteins, also referred to as protein-protein interactions, or PPIs. Protein interaction networks have been used to infer the function of proteins. Different types of interaction maps can be composed by the research community for different applications. These include physical interactions or the functional pathway implications of these interactions. PPI network maps can be constructed by pegging individual proteins as nodes and linking proteins that interact to them by a drawn line. These maps naturally cluster into hubs of proteins that fall into related pathways or have related functions.

We interrogated the plasma proteome of 276 subjects across early- and late-stage non-small-cell lung carcinoma (NSCLC), co-morbid and healthy controls. These subjects are a subset of those described in our *Nature Communications* publication (Blume et al.). Using proteins detected in these samples, we analyzed potential PPI interactions using the STRING PPI database (Szklarczyk et al.). In the figure below, we show a map of healthy versus early- and late-stage NSCLC where each protein is represented as a node and colored by its relative abundance. Green represents high abundance of proteins and red represents low abundance relative to the average abundance of the proteins across the samples. Multiple nodes can group together forming hubs with related common pathways or functions. Correlated changes in the abundance of proteins in these hubs may represent functional changes between health and disease. We highlight three hubs in the figure below with turquoise circles, and show changes depending upon health and disease state. Examination of the hubs can suggest biological hypotheses for the change in quantities. For example, the proteins in the central cluster are associated with Golgi vesicle transport, which is potentially linked to NSCLC. Access to the deep unbiased proteomic information provided by our Proteograph may enable researchers to better understand biological implications of known PPIs. Furthermore, given our highly parallel sampling of the proteome across multiple NPs and many samples, we believe researchers using

the Proteograph may be able to leverage machine learning methods on the resulting large data sets to derive novel PPIs.



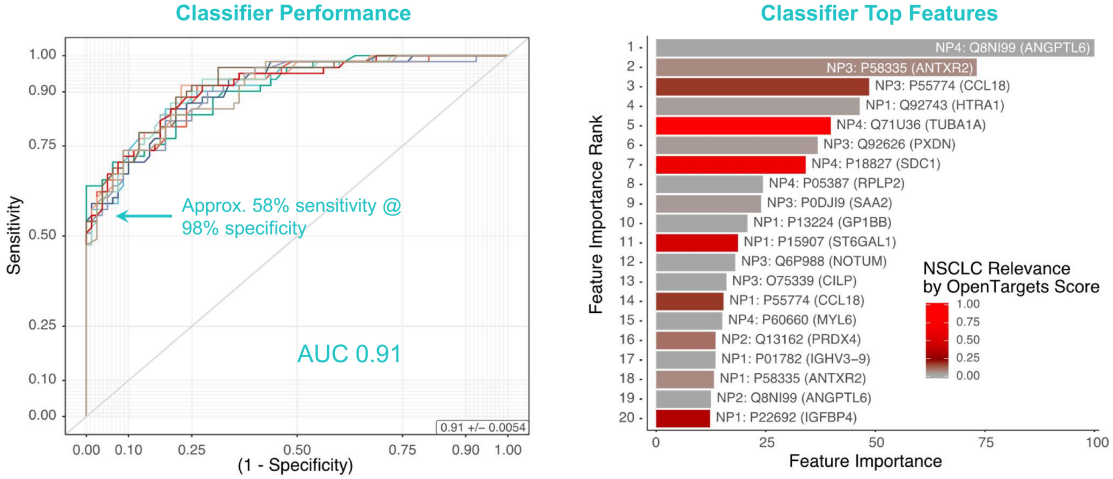
Translational Research Applications

Researchers can use our Proteograph to address translational research applications, which aim to shorten the cycle time from early discovery research to clinical application. Our Proteograph allows clinical and translational researchers to conduct unbiased, deep and large-scale proteomics studies in therapeutic and diagnostic research and clinical trials, which can allow for significant advances in biomarker discovery, target identification and exploration, and clinical trial applications.

Biomarker discovery

To date, most *de novo* biomarker discovery research is limited by the size of studies that can be done in an unbiased way, or limited to targeted studies that leverage existing knowledge. These approaches have yet to uncover the vast number of putative biomarkers that may be available as single markers or as combinations of markers for a range of clinical applications. We believe our Proteograph can greatly enable the discovery of biomarkers through large-scale, unbiased and deep proteomics studies.

The utility of our Proteograph for exploration of potential biomarkers is illustrated in a proof-of-principle study in lung-cancer, as published in *Nature Communications* (Blume et al.). In this study, approximately 2,000 proteins were quantified across 141 subjects comprising early stage lung cancer (i.e., Stages 1, 2 or 3) and age- and gender-matched non-cancer controls. Machine-learning-based classifiers were developed. Plotting the sensitivity and specificity levels of our classifiers in a receiver operating characteristic (ROC) curve, we achieved a mean Area Under the Curve (AUC) of 0.91 on a scale from 1.0 (i.e., perfect) to 0.5 (i.e., random), as shown in the left panel of the figure below. In the right panel of the figure below, we show the most important classifiers in the study, with accompanying OpenTargets scores, where a score of one represents a validated target for a drug that is on-market, and a score of zero represents a target with no known target validation data in the literature. In our study, our Proteograph identified proteins with high OpenTargets scores such as tubulin 1-alpha and syndecin 1; the former is the molecular target for paclitaxel used in first-line therapy for NSCLC, and the latter is a molecular target for an antibody-drug conjugate, indatuximab ravtansine, currently in clinical trials for different cancer types. Our Proteograph identified proteins with low OpenTargets scores, and these could represent novel biomarker candidates for therapeutics and diagnostics development. A study of this size can be completed using our Proteograph in a fraction of the time of conventional methods, thus highlighting the efficiency of our Proteograph in biomarker discovery studies.



Target Identification and Exploration

Currently FDA-approved drugs are directed to 754 separate human proteins that are directly related to the mechanism of action for the drug, and there are 4,009 genes in the UniProt database that have experimental evidence for being involved in disease. We believe that large-scale access to protein variant information that map to different states of health and disease, as enabled by our Proteograph and concurrent advances in proteogenomics, has the potential to lead to the discovery of personalized drug targets that could reach the hundred thousand range. We believe that the translational application of our Proteograph for potential biomarker development, as exemplified above in our NSCLC study, may also be applied to the identification of novel targets for therapeutic development. Components of classifiers may directly be targets themselves for drug development, or they may highlight new knowledge with respect to disease mechanism which then could help in the exploration of additional targets and/or help to elucidate the function of potential targets, particularly if these targets are discovered with genomics approaches, and lack protein functional context.

Clinical Trial Applications

Clinical researchers can use our Proteograph for deep and broad proteomic profiling for subjects in therapeutic clinical trials, including to make observations on efficacy and adverse events. Applications could include the real-time monitoring of protein-related drug effects, distribution, and metabolism. Virtually all clinical trials in drug development include monitoring of this type, but currently use biased or targeted panels of proteins. It is currently impractical to do this type of monitoring with unbiased proteomic methods given the inability of these methods to scale to the hundreds or thousands of samples that are evaluated in clinical trials.

Our Proteograph may also be used to select and group patients in clinical studies based on their proteomics profiles. As our understanding of the complexity of biology increases with new data accrued from our Proteograph as well as in adjacent -omics spaces, our ability to refine patient selection at a higher resolution may improve the ability to confirm efficacy for novel therapies, particularly in complex diseases that involve many inter-related physiological systems. Genomic approaches are widely used to select patients in cancer and rare genetic disease clinical trials, but the use of genomics-based selection for clinical trials outside of these indications has not been as widely used, given the relative lack of genetic understanding of these diseases. We believe that our Proteograph has the potential to generate useful proteomic signatures that can complement genomic and other patient selection criteria to improve how clinical researchers select and segment patients for these trials, particularly for indications outside of cancer and rare genetic diseases.

Diagnostic Applications

We see significant opportunities for researchers to use our Proteograph Product Suite for diagnostic development. Similar to the way in which NGS enabled the development of ecosystems that included genomics-based diagnostics in disease areas such as cancer and rare genetic diseases, we see the unbiased, deep and scalable proteomic information provided by our Proteograph potentially creating ecosystems, including proteomics and multi-omics based diagnostics in cancer and other complex disease areas. To help accelerate the future growth of this end-market, we recently spun-out a new company, PrognomIQ, that will leverage our Proteograph to develop multi-omics tests for health and disease. We expect that PrognomIQ will be our customer. We expect that our Proteograph will be used by other companies in the healthcare testing space, and we will support all of these customers as the ecosystem grows. We plan to enable our customers by providing our Proteograph for their basic research and translational research applications, as they develop their own diagnostic applications.

Applied Applications in Agriculture, Environmental and Food Safety

Outside of the areas related to human health, we believe there are opportunities for our Proteograph to be applied in other applied applications, including those applications where broad scale genomics is being widely applied today, and other applications where proteomics can uniquely enable the creation of end-markets. We believe that unbiased, deep and large-scale proteomic information as enabled by our Proteograph can complement and extend the value of genomics, transcriptomics, and metabolomics information in fields such as agriculture, environmental monitoring and food safety. This is exemplified in a recent plant proteomics study that identified PPIs and multi-protein complexes that likely play a role in important agronomic traits.

Pathogen monitoring is a core research area in environmental sciences. Genomics-based approaches have been applied for environmental monitoring, and we believe that unbiased proteomic data can be used to complement genomic information in monitoring environmental pathogens.

The food industry has complex supply chains where food can be subject to contamination and spoilage in the food product itself as one moves from raw material to processing to distribution, storage and consumption of the food product. We believe that unbiased proteomic data from our Proteograph could complement existing biochemical approaches for tracking signals of contamination and food spoilage.

PrognomIQ

In August 2020, we transferred certain assets related to disease testing to PrognomIQ, a wholly-owned subsidiary of the Company, in exchange for all of its outstanding equity interests. Following the transfer, we completed a pro-rata distribution to our stockholders of most of the shares of capital stock of PrognomIQ. Following the distribution and a subsequent $55.0 million financing of PrognomIQ, we hold approximately 19% of the outstanding equity in PrognomIQ.

The rationale for this transaction was to enable the growth of ecosystems around new applications that leverage unbiased, deep and large-scale proteomic information. The transaction allows us to remain focused on our core strategy, which is to be a provider. rather than a consumer, of proteomics solutions to all customers across these ecosystems. By focusing on our role as a provider of proteomics solutions, we are no longer potentially competing with, or creating the perception that we are competing with, our customers. Our relationship with PrognomIQ does not preclude us from selling our Proteograph to any customer in any geography, nor does it preclude our customers from using our Proteograph in any way. PrognomIQ has indicated that it plans to combine the protein data from our Proteograph with genomics and other -omics data, to create a multi-omics approach to health and disease testing, which we believe will help us drive the adoption of our Proteograph Product Suite in these applications.

Omid Farokhzad, Chief Executive Officer and Chair of our board of directors, serves as the Chair of PrognomIQ's board of directors. Philip Ma, Ph.D. our former Chief Business Officer serves as the Chief Executive Officer of PrognomIQ. While Dr. Ma has fully transitioned to PrognomIQ, he will remain our consultant until April 2021. In addition, three of our other employees have also transitioned to PrognomIQ. We will be providing general

transition services and support, including laboratory and office space to PrognomIQ during the transition period. We anticipate these services to continue through the first half of 2021.

We granted PrognomIQ a non-exclusive license to certain patents and patent applications that we own and a non-exclusive sublicense to certain patent applications we exclusively licensed from BWH, in each case relating to our core technology, to develop, manufacture and commercialize licensed products for the field of human diagnostics on a worldwide basis. In consideration of the non-exclusive sublicense to certain patent applications licensed from BWH, PrognomIQ paid us a low-five digit figure, and would pay a low single digit royalty, in an amount equivalent to what we would have to pay under our license with BWH, on net sales of sublicensed products beginning with the first commercial sale of a sublicensed product during the term of the agreement. For further discussion of our license and sublicense arrangement with PrognomIQ, see the section titled "Business — Collaboration and License Agreements — *PrognomIQ*." We do not view these amounts to be material to our financial condition and results of operations nor do we expect these amounts to ever be material to us in the future.

Commercial

Commercial Strategy

Our Proteograph Product Suite is an integrated solution comprising consumables, an automation instrument and software. We have developed our Proteograph to simplify and accelerate proteomics workflow, reduce labor and capital requirements, and deliver robust and reproducible performance. We will focus on growing the installed base of our Proteograph across a wide variety of customer types and driving applications, scale of experimentation and discoveries that lead to increasing utilization of our Proteograph by our customers.

We intend to initially target potential customers who value unbiased and deep proteomic information and are performing proteomic or genomic analysis at academic institutions, translational research groups and biopharmaceutical companies. Our direct sales and marketing efforts will be focused on the principal investigators, researchers, department heads, research laboratory directors and core facility directors who control the buying decision. We expect these customers to purchase our Proteograph automation instruments and associated consumables in line with typical purchases of other life science instrumentation and consumables. We intend to price our Proteograph Product Suite within the authorization range of most researchers who can directly make the buying decision, without the need for additional levels of approval, simplifying our sales process.

We believe broad accessibility of MS instruments simplifies the adoption of our Proteograph Product Suite. We estimate that there are approximately 16,000 MS instruments with configurations typically used to perform proteomic analysis installed worldwide. We expect that many of our potential customers will have their own MS instrument, and for those who do not, will be able to outsource the MS portion of the Proteograph workflow to a third-party service provider.

The generation of publications and scientific presentations is a core pillar of our market awareness strategy and is important for establishing validity and utility of new products in the life sciences community. We plan to work closely with our customers, including key opinion leaders, to generate clear use-cases, as well as peer-reviewed publications that illustrate our product performance claims and value proposition. In addition, we plan to drive awareness by developing and deploying online and in-person training and educational tools that explain our Proteograph technology and key applications in easy-to-access, easy-to-understand, and scientifically rigorous and credible ways. We also expect to partner with select service facilities and core labs globally and certify them as Centers of Excellence for our Proteograph. We expect these sites will become our customers and potentially provide fee-for service capabilities that allow interested parties to evaluate our Proteograph using their own samples. We expect that these Centers of Excellence will actively promote our Proteograph and its capabilities and help us further raise awareness.

To service our potential Proteograph customers, we will provide multiple levels of technical service for our Proteograph automation instruments, depending upon customer need. We recognize that excellent customer support can be a critical part of a customer experience, and we will invest accordingly in our technical and application support to achieve the desired levels of service.

Proteograph Product Suite Commercial Launch Plan

We intend to follow a three phase launch plan to commercialize our Proteograph. This approach has been successfully used to introduce transformative technologies in numerous life science sectors over many years, including in genomics with the roll-out of NGS products. We believe that this phased approach allows us to introduce the product in a measured way, demonstrate clear customer use-cases, help to ensure we are scaling and expanding in a way that delivers a positive and differentiated customer experience, and builds a prospective customer pipeline to provide visibility to future demand.

- Collaboration phase: We began collaborating with two sites in the third quarter of 2020 and we expect to collaborate with additional sites as we expand and continue this phase in 2021. Our first Proteograph was delivered to one of our first collaborators in October 2020, and we expect to place another Proteograph with a second collaborator before the end of 2020. We are targeting key opinion leaders who are highly-skilled at evaluating novel technologies and whose feedback can help us solidify our commercialization plans and processes. We will work with these collaborators to establish early models of impactful research and discovery that will highlight the unique capabilities and value proposition of our Proteograph. During this phase, we plan to provide our Proteograph automation instrument for a minimal fee and also provide consumables at a reduced price. The sites will be given the option to purchase the automation instrument at a reduced price following the completion of the collaboration phase.

- Early access limited release: We expect to start the second phase of our commercial roll-out in 2021 in parallel with winding down the collaboration phase. In this second phase, we will expand to six to ten additional potential customers across our target segments, including key opinion leaders in proteomics as well those in genomics. We will primarily target customers who can scale quickly and demonstrate the power and utility of our Proteograph across a number of applications, such as discovery research, oncology, complex diseases, and proteogenomics. We believe these customers will become important reference sites and key influencers whose adoption of the technologies gives others a clear blueprint to follow. During this phase, we expect to broaden our commercial footprint to access and support an increasing number of customers and to set the foundation for the final phase of our commercial roll out. We plan to offer our Proteograph Product Suite to customers in the early access limited release phase at our proposed list price, with certain volume discounts for consumables consistent with industry standards.

- Broad commercial availability: We intend to build on the momentum we expect to have created through both the collaboration and early access limited release phases of our roll-out to provide for broad commercial availability in early 2022.

Commercial Organization

We are in the process of building out our commercial organization and we expect to have direct commercial staff in marketing, sales, customer success, and technical support functions. We will scale each function within our commercial organization in anticipation of demand and with the intent to deliver exceptional customer experience. We believe that coupling exceptional customer experience with a transformative product will allow us to deliver substantial value to our customers, build long-term customer loyalty, enhance our competitive differentiation, and, importantly, use our customer relationships to gain insights that inform our product development to grow our offerings in ways that will benefit our customers.

We expect to initially target customers in North America, the European Union and United Kingdom through direct sales and customer support organizations. We expect to grow into other geographies over time, initially through distributors, starting with key countries in Asia Pacific. We expect a highly efficient sales model since our Proteograph does not have a large capital expenditure component, can leverage the existing installed base of MS instruments and complements large-scale genomics data ecosystems.

Suppliers and Manufacturing

Our overall manufacturing strategy is to continuously develop and refine our processes to achieve our objectives of continuity of supply, quality of supply and margin enhancement. Over time, this may lead to in-sourcing or

outsourcing certain functions, including manufacturing, in various geographic locations in order to achieve our objectives.

Consumables

We leverage well-established unit operations to formulate and manufacture our NPs at our facilities in Redwood City, California. We procure certain components of our consumables from third-party manufacturers, which includes the commonly-available raw materials needed for manufacturing our proprietary engineered NPs. We are currently manufacturing using our pilot line and building out our manufacturing capabilities as we ramp towards broad commercial availability. We obtain some of the reagents and components used in our Proteograph workflow from third-party suppliers. While some of these reagents and components are sourced from a single supplier, these products are readily available from numerous suppliers. While we currently plan to handle filling and packaging of our Proteograph assay and the related consumables, in the future, we may have our filling and packaging outsourced to a third-party. We conduct vendor and component qualification for components provided by third-party suppliers and quality control tests on our NPs.

Automation Instrument

We designed our Proteograph automation instrument and have outsourced the manufacturing of our Proteograph automation instrument to Hamilton Company, a leading manufacturer of automated liquid handling workstations. We have entered into a non-exclusive agreement with Hamilton that covers the manufacturing of our Proteograph automation instrument and its continued supply on a purchase order basis. The agreement has an initial term that runs three years following our commercial launch. We have the option to extend the term of the agreement with Hamilton upon written notice at the end of the initial term; provided that prices are only fixed during the initial term of the agreement. Hamilton has represented to us that it maintains ISO 9001 and ISO 13485 certification.

Competition

The life sciences technology industry is characterized by rapidly advancing technologies, intense competition and a strong emphasis on intellectual property. Today the proteomics market is served by companies that offer a variety of analytical instruments, such as chromatography and MS instruments, and associated reagents. We believe that competitors in the proteomics market are differentiated by their proprietary technologies, rapid product development capabilities, applications and intellectual property. We believe that there are currently no commercially available products that offer the capability to conduct unbiased, deep proteomics studies at the same scale and throughput as our Proteograph Product Suite. Given the potential market opportunity and scientific promise of proteomics, we expect the intensity of the competition to increase and, as a result, one or more competing products emerging in the future. Competing products may emerge from various sources, including life sciences tools, diagnostics, pharmaceutical and biotechnology companies, third-party service providers, academic research institutions, governmental agencies and public and private research institutions.

Current companies that provide proteomics products include Agilent Technologies, Bio-Rad Laboratories, Danaher, Luminex, Merck (and its subsidiary MilliporeSigma) and Thermo Fisher Scientific. There are also a number of companies that provide proteomic analysis services. In addition, a number of emerging growth companies have developed, or are developing, proteomics products, services and solutions, such as Nautilus Biotechnology, Olink Proteomics, Quanterix and SomaLogic.

Government Regulation

The development, testing, manufacturing, marketing, post-market surveillance, distribution, advertising and labeling of certain of medical devices are subject to regulation in the United States by the Center for Devices and Radiological Health of the U.S. Food and Drug Administration (FDA) under the Federal Food, Drug, and Cosmetic Act (FDC Act) and comparable state and international agencies. FDA defines a medical device as an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar or related article, including any component part or accessory, which is (i) intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease, in man or other animals, or (ii) intended to affect the structure or any function of the body of man or other animals and which does not achieve any of its primary

intended purposes through chemical action within or on the body of man or other animals and which is not dependent upon being metabolized for the achievement of any of its primary intended purposes. Medical devices to be commercially distributed in the United States must receive from the FDA either clearance of a premarket notification, known as 510(k), or premarket approval pursuant to the FDC Act prior to marketing, unless subject to an exemption.

We intend to label and sell our products for research purposes only (RUO) and expect to sell them to academic institutions, life sciences and research laboratories that conduct research, and biopharmaceutical and biotechnology companies for non-diagnostic and non-clinical purposes. Our products are not intended or promoted for use in clinical practice in the diagnosis of disease or other conditions, and they are labeled for research use only, not for use in diagnostic procedures. Accordingly, we believe our products, as we intend to market them, are not subject to regulation by FDA. Rather, while FDA regulations require that research use only products be labeled with – "For Research Use Only. Not for use in diagnostic procedures." – the regulations do not subject such products to the FDA's jurisdiction or the broader pre- and post-market controls for medical devices.

In November 2013, the FDA issued a final guidance on products labeled RUO, which, among other things, reaffirmed that a company may not make any clinical or diagnostic claims about an RUO product, stating that merely including a labeling statement that the product is for research purposes only will not necessarily render the device exempt from the FDA's clearance, approval, or other regulatory requirements if the totality of circumstances surrounding the distribution of the product indicates that the manufacturer knows its product is being used by customers for diagnostic uses or the manufacturer intends such a use. These circumstances may include, among other things, written or verbal marketing claims regarding a product's performance in clinical diagnostic applications and a manufacturer's provision of technical support for such activities. If FDA were to determine, based on the totality of circumstances, that our products labeled and marketed for RUO are intended for diagnostic purposes, they would be considered medical devices that will require clearance or approval prior to commercialization. Further, sales of devices for diagnostic purposes may subject us to additional healthcare regulation. We continue to monitor the changing legal and regulatory landscape to ensure our compliance with any applicable rules, laws and regulations.

In the future, certain of our products or related applications could become subject to regulation as medical devices by the FDA. If we wish to label and expand product lines to address the diagnosis of disease, regulation by governmental authorities in the United States and other countries will become an increasingly significant factor in development, testing, production, and marketing. Products that we may develop in the molecular diagnostic markets, depending on their intended use, may be regulated as medical devices or in vitro diagnostic products (IVDs) by the FDA and comparable agencies in other countries. In the U.S., if we market our products for use in performing clinical diagnostics, such products would be subject to regulation by the FDA under pre-market and post-market control as medical devices, unless an exemption applies, we would be required to obtain either prior 510(k) clearance or prior premarket approval from the FDA before commercializing the product.

The FDA classifies medical devices into one of three classes. Devices deemed to pose lower risk to the patient are placed in either class I or II, which, unless an exemption applies, requires the manufacturer to submit a pre-market notification requesting FDA clearance for commercial distribution pursuant to Section 510(k) of the FDC Act. This process, known as 510(k) clearance, requires that the manufacturer demonstrate that the device is substantially equivalent to a previously cleared and legally marketed 510(k) device or a "pre-amendment" class III device for which pre-market approval applications (PMAs) have not been required by the FDA. This FDA review process typically takes from four to twelve months, although it can take longer. Most class I devices are exempted from this 510(k) premarket submission requirement. If no legally marketed predicate can be identified for a new device to enable the use of the 510(k) pathway, the device is automatically classified under the FDC Act as class III, which generally requires PMA approval. However, FDA can reclassify or use "de novo classification" for a device that meets the FDC Act standards for a class II device, permitting the device to be marketed without PMA approval. To grant such a reclassification, FDA must determine that the FDC Act's general controls alone, or general controls and special controls together, are sufficient to provide a reasonable assurance of the device's safety and effectiveness. The de novo classification route is generally less burdensome than the PMA approval process.

Devices deemed by the FDA to pose the greatest risk, such as life-sustaining, life-supporting, or implantable devices, or those deemed not substantially equivalent to a legally marketed predicate device, are placed in class III. Class III devices typically require PMA approval. To obtain PMA approval, an applicant must demonstrate the reasonable safety and effectiveness of the device based, in part, on data obtained in clinical studies. All clinical studies of investigational medical devices to determine safety and effectiveness must be conducted in accordance with FDA's investigational device exemption (IDE) regulations, including the requirement for the study sponsor to submit an IDE application to FDA, unless exempt, which must become effective prior to commencing human clinical studies. PMA reviews generally last between one and two years, although they can take longer. Both the 510(k) and the PMA processes can be expensive and lengthy and may not result in clearance or approval. If we are required to submit our products for pre-market review by the FDA, we may be required to delay marketing and commercialization while we obtain premarket clearance or approval from the FDA. There would be no assurance that we could ever obtain such clearance or approval.

All medical devices, including IVDs, that are regulated by the FDA are also subject to the quality system regulation. Obtaining the requisite regulatory approvals, including the FDA quality system inspections that are required for PMA approval, can be expensive and may involve considerable delay. The regulatory approval process for such products may be significantly delayed, may be significantly more expensive than anticipated, and may conclude without such products being approved by the FDA. Without timely regulatory approval, we will not be able to launch or successfully commercialize such diagnostic products. Changes to the current regulatory framework, including the imposition of additional or new regulations, could arise at any time during the development or marketing of our products. This may negatively affect our ability to obtain or maintain FDA or comparable regulatory clearance or approval of our products in the future. In addition, regulatory agencies may introduce new requirements that may change the regulatory requirements for us or our customers, or both.

As noted above, although our products are currently labeled and sold for research purposes only, the regulatory requirements related to marketing, selling, and supporting such products could be uncertain and depend on the totality of circumstances. This uncertainty exists even if such use by our customers occurs without our consent. If the FDA or other regulatory authorities assert that any of our RUO products are subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

For example, in some cases, our customers may use our RUO products in their own laboratory-developed tests (LDTs) or in other FDA-regulated products for clinical diagnostic use. The FDA has historically exercised enforcement discretion in not enforcing the medical device regulations against LDTs and LDT manufacturers. However, on October 3, 2014, the FDA issued two draft guidance documents that set forth the FDA's proposed risk-based framework for regulating LDTs, which are designed, manufactured, and used within a single laboratory. In January 2017, the FDA announced that it would not issue final guidance on the oversight of LDTs and LDT manufacturers, but would seek further public discussion on an appropriate oversight approach and give Congress an opportunity to develop a legislative solution. More recently, the FDA has issued warning letters to genomics labs for illegally marketing genetic tests that claim to predict patients' responses to specific medications, noting that the FDA has not created a legal "carve-out" for LDTs and retains discretion to take action when appropriate, such as when certain genomic tests raise significant public health concerns. As laboratories and manufacturers develop more complex genetic tests and diagnostic software, FDA may increase its regulation of LDTs. Any future legislative or administrative rule making or oversight of LDTs and LDT manufacturers, if and when finalized, may impact the sales of our products and how customers use our products, and may require us to change our business model in order to maintain compliance with these laws. We would become subject to additional FDA requirements if our products are determined to be medical devices or if we elect to seek 510(k) clearance or premarket approval. If our products become subject to FDA regulation as medical devices, we would need to invest significant time and resources to ensure ongoing compliance with FDA quality system regulations and other post-market regulatory requirements.

International sales of medical devices are subject to foreign government regulations, which vary substantially from country to country. In the future, if we decide to distribute or market our diagnostic products as IVDs in Europe, such products will be subject to regulation under the European Union (EU) IVD Directive and/or the IVD Medical Device Regulation (IVDR) European Union (EU) 2017/746. The IVDR was published in 2017, will replace the IVD Directive, is significantly more extensive than the IVD Directive, including requirements on performance data and quality system, and will become fully enforceable in 2022. Outside of the EU, regulatory approval needs to

be sought on a country-by-country basis in order to market medical devices. Although there is a trend towards harmonization of quality system, standards and regulations in each country may vary substantially which can affect timelines of introduction.

Recently, as part of the Trump Administration's efforts to combat COVID-19 and consistent with the President's direction in Executive Orders 13771 (Executive Order on Reducing Regulation and Controlling Regulatory Costs) and 13924 (Executive Order on Regulatory Relief to Support Economic Recovery), the Department of Health and Human Services (HHS) announced rescission of guidance and other informal issuances of the FDA regarding premarket review of LDT absent notice-and-comment rulemaking, stating that, absent notice-and-comment rulemaking, those seeking approval or clearance of, or an emergency use authorization, for an LDT may nonetheless voluntarily submit a premarket approval application, premarket notification or an Emergency Use Authorization request, respectively, but are not required to do so. However, laboratories opting to use LDTs without FDA premarket review or authorization would not be eligible for liability protection under the Public Readiness and Emergency Preparedness Act. While this action by HHS is expected to reduce the regulatory burden on clinical laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 that develop LDTs, it is unclear how this action as well as future legislation by federal and state governments and the FDA will impact the industry, including our business and that of our customers. Such HHS measure may compel the FDA to formalize earlier enforcement discretionary policies and informal guidance through notice-and-comment rulemaking or impose further restrictions on LDTs. HHS' rescission policy may change over time. Congress could also enact legislation restricting LDTs. Any restrictions on LDTs by the FDA, HHS, Congress, or state regulatory authorities may decrease the demand for our products. The adoption of new restrictions on RUOs, whether by the FDA or Congress, could adversely affect demand for our specialized reagents and instruments.

In the future, to the extent we develop any clinical diagnostic assays, we may pursue payment for such products through a diverse and broad range of channels and seek coverage and reimbursement by government health insurance programs and commercial third-party payors for such products. In the United States, there is no uniform coverage for clinical laboratory tests. The extent of coverage and rate of payment for covered services or items vary from payor to payor. Obtaining coverage and reimbursement for such products can be uncertain, time-consuming, and expensive, and, even if favorable coverage and reimbursement status were attained for our tests, to the extent applicable, less favorable coverage policies and reimbursement rates may be implemented in the future. Changes in healthcare regulatory policies could also increase our costs and subject us to additional regulatory requirements that may interrupt commercialization of our products, decrease our revenue and adversely impact sales of, and pricing of and reimbursement for, our products.

For further discussion of the risks we face relating to regulation, see the section titled "Risk factors—Risks related to our business and industry— *Our products could become subject to government regulation as medical devices by the FDA and other regulatory agencies even if we do not elect to seek regulatory clearance or approval to market our products for diagnostic purposes, which would adversely impact our ability to market and sell our products and harm our business. If our products become subject to FDA regulation, the regulatory clearance or approval and the maintenance of continued and post-market regulatory compliance for such products will be expensive, time-consuming, and uncertain both in timing and in outcome*."

The federal Health Insurance Portability and Accountability Act of 1996 (HIPAA), as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH), and their implementing regulations, which impose obligations, including mandatory contractual terms, with respect to safeguarding the transmission, security and privacy of protected health information by covered entities subject to HIPAA, such as health plans, health care clearinghouses and healthcare providers, and their respective business associates that access protected health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates in some cases, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions.

In addition, in the U.S., numerous federal and state laws and regulations, including state data breach notification laws, state health information privacy laws, and federal and state consumer protection laws, govern the collection, use, disclosure, and protection of health-related and other personal information. For example, in June 2018, the State

of California enacted the CCPA, which came into effect on January 1, 2020 and provides new data privacy rights for consumers and new operational requirements for companies. While we are not currently subject to the CCPA, we may in the future be required to comply with the CCPA, which may increase our compliance costs and potential liability. Furthermore, the CCPA could mark the beginning of a trend toward more stringent state privacy legislation in the U.S., which could increase our potential liability and adversely affect our business.

Furthermore, the collection, use, storage, disclosure, transfer, or other processing of personal data regarding individuals in the European Economic Area (EEA), including personal health data, is subject to the GDPR, which became effective on May 25, 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the EEA, including the United States, and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. In addition, the GDPR includes restrictions on cross-border data transfers. The GDPR may increase our responsibility and liability in relation to personal data that we process where such processing is subject to the GDPR, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, including as implemented by individual countries. Compliance with the GDPR will be a rigorous and time-intensive process that may increase our cost of doing business or require us to change our business practices, and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation, and reputational harm in connection with our European activities. Further, the United Kingdom's decision to leave the EU, often referred to as Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom.

For further discussion of the risks we face relating to regulation, see the section titled "Risk factors—Risks related to our business and industry— *We are currently subject to, and may in the future become subject to additional, U.S., state and foreign laws and regulations imposing obligations on how we collect, store and process personal information. Our actual or perceived failure to comply with such obligations could harm our business. Ensuring compliance with such laws could also impair our efforts to maintain and expand our future customer base, and thereby decrease our revenue compliance with such laws could also impair our efforts to maintain and expand our future customer base, and thereby decrease our revenue.*"

Intellectual Property

Our success depends in part on our ability to obtain and maintain intellectual property protection for our products and technology. We use a variety of intellectual property protection strategies, including patents, trademarks, trade secrets and other methods of protecting proprietary information.

As of September 30, 2020, we own approximately two issued U.S. patents, eight U.S. pending patent applications and four pending Patent Cooperation Treaty (PCT) patent applications. Our owned patents and patent applications, if issued, are expected to expire between 2023 and 2041, in each case without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

Such patent portfolio owned by us includes:

- pending U.S. and PCT patent applications that are directed to methods for sampling a proteome at specific levels of protein coverage, methods for sampling a proteome under particular assay conditions, and nanoparticle compositions for the same;
- pending U.S. patent applications that are directed to methods for interrogating protein pathways and PPIs with the biosensors;

- an issued U.S. patent and a pending U.S. patent application directed to the classification of biological states; and
- an issued U.S. patent and a pending PCT patent application directed to methods for biomarker discovery, including an algorithm-based method that uses data sampled by the biosensor platform.

We exclusively license from The Brigham and Women's Hospital, Inc. (BWH), two issued U.S. patents, five U.S. pending patent applications, one issued ex-U.S. patent and eight ex-U.S. pending patent applications, as of September 30, 2020. These patents and patent applications are directed to methods for identifying a biological state, including classification and early detection of cancers and other diseases, using nanoparticle and biosensor compositions, as well as other nanoparticle compositions. Our in-licensed patents and patent applications, if issued, are expected to expire between 2027 and 2037, in each case without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

In addition to licensing patents and patent applications from BWH, we have also non-exclusively licensed certain of our patents and patent applications to PrognomIQ for use in the field of human diagnostics. Pursuant to our agreement with PrognomIQ, we also assigned a patent application related to lung cancer biomarkers to PrognomIQ. In connection with our agreement with PrognomIQ, we have granted PrognomIQ a non-exclusive sublicense to certain patents and patent applications that we license from BWH under our license agreement with BWH for use in the field of human diagnostics. For further information on the intellectual property transfer and license agreement with PrognomIQ and the license agreement with BWH, see the section titled *"Business —Collaboration and License Agreements."*

We intend to pursue additional intellectual property protection to the extent we believe it would be beneficial and cost-effective. Our ability to stop third parties from making, using, selling, offering to sell, importing or otherwise commercializing any of our patented inventions, either directly or indirectly, will depend in part on our success in obtaining, defending and enforcing patent claims that cover our technology, inventions, and improvements. With respect to both our owned and in-licensed intellectual property, we cannot provide any assurance that any of our current or future patent applications will result in the issuance of patents in any particular jurisdiction, or that any of our current or future issued patents will effectively protect any of our products or technology from infringement or prevent others from commercializing infringing products or technology. Even if our pending patent applications are granted as issued patents, those patents may be challenged, circumvented or invalidated by third parties. Consequently, we may not obtain or maintain adequate patent protection for any of our products or technologies.

In addition to our reliance on patent protection for our inventions, products and technologies, we also rely on trade secrets, know-how, confidentiality agreements and continuing technological innovation to develop and maintain our competitive position. For example, some elements of manufacturing processes, analytics techniques and processes, as well as computational-biological algorithms, and related processes and software, are based on unpatented trade secrets and know-how that are not publicly disclosed. Although we take steps to protect our proprietary information and trade secrets, including through contractual means with our employees, advisors and consultants, these agreements may be breached and we may not have adequate remedies for any breach. In addition, third parties may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose our technology. As a result, we may not be able to meaningfully protect our trade secrets. For further discussion of the risks relating to intellectual property, see the section titled *"Risk factors—Risks Related to our Intellectual Property."*

Collaboration and License Agreements

The Brigham and Women's Hospital

In December 2017, we entered into an exclusive patent license agreement with BWH, pursuant to which we obtained an exclusive, royalty-bearing, sublicensable (with approval from BWH) license to certain U.S. and foreign patents and patent applications in one patent family related to methods for identifying a biological state using nanoparticle and biosensor compositions and other nanoparticle compositions to develop, manufacture, use and

commercialize products and processes in all fields, including but not limited to therapeutic, diagnostic, or other uses, on a worldwide basis. In addition, we were also granted an exclusive, royalty-bearing, sublicensable (with approval from BWH) license to certain U.S. pending patent applications in another patent family to develop, manufacture, use and commercialize products and processes in all fields, including but not limited to therapeutic, diagnostic, or other uses, other than for the treatment of cancer through antigen-specific immune stimulation or the treatment of disease through immune tolerance or immune switching of lymphocyte subclasses. We may sublicense the patent rights licensed under the agreement subject to certain conditions, including obtaining the review and approval by BWH of such sublicense and any such sublicense must be consistent with and subject to the terms of the agreement.

In consideration for the licenses granted under the agreement, we must pay BWH annual license fees prior to the first commercial sale of a licensed product that range in the low- to mid-five digit figures, and a low single digit royalty on net sales of licensed products beginning with the first commercial sale of a licensed product in any country during the term of the agreement. In the event we commercialize a product in the therapeutic space, we are also required to make certain drug-approval regulatory and commercialization milestone payments to BWH of up to a mid seven digit figure in the aggregate for licensed products. In the event we sublicense any of the licensed intellectual property, we must pay BWH a percentage of any sublicense income received by us, which on a going-forward basis will be in the high single digits.

Under the terms of the agreement, we are required to use commercially reasonable efforts to develop and commercialize the licensed products, including in accordance to certain developmental, funding, regulatory and commercialization milestones. BWH controls the prosecution, maintenance and enforcement of all licensed patents and patent applications under the agreement.

Unless earlier terminated, the agreement continues until the expiration of the last to expire patent right licensed under the agreement. Subject to an applicable cure period, BWH may terminate the agreement if we fail to comply with applicable payments or diligence obligations or upon a breach of our obligation under the agreement, or for certain insolvency-related events.

PrognomIQ

In August 2020, we entered into an intellectual property transfer and license agreement and, in October 2020, we entered into an intellectual property sublicense agreement, in each case with PrognomIQ in connection with the spin-out of PrognomIQ. Under the intellectual property transfer and license agreement, we granted PrognomIQ a non-exclusive, perpetual, irrevocable (subject to termination for breach) license to certain patents and patent applications that we own and, under the intellectual property sublicense agreement, we granted a non-exclusive sublicense to certain patent applications exclusively licensed from BWH, in each case, relating to our core technology to develop, manufacture and commercialize licensed products for the field of human diagnostics on a worldwide basis. In addition, we assigned a patent application relating to lung cancer biomarkers, and transferred certain clinical samples, contracts and other related assets to PrognomIQ. PrognomIQ may extend such licensed and sublicensed rights to customers of licensed products. PrognomIQ is not required to pay us any royalties or fees pursuant to the intellectual property transfer and license agreement. In consideration of the non-exclusive sublicense to certain patent applications licensed from BWH, PrognomIQ paid us a low-five digit figure, and would pay a low single digit royalty, in an amount equivalent to what we would have to pay under our license with BWH, on net sales of sublicensed products beginning with the first commercial sale of a sublicensed product during the term of the intellectual property sublicense agreement.

In the event we elect to grant an exclusive license to a third party in the field of human diagnostics for any of the patents and patent applications licensed or sublicensed, as applicable, to PrognomIQ under the respective agreements, we are required to first negotiate with PrognomIQ for a period of sixty days for a license or sublicense, as applicable, to such rights on reasonable terms. Furthermore, for a period of two years after the effective date, we are required to negotiate in good faith with PrognomIQ for a license or sublicense, as applicable, to any improvements to the patents and patent applications assigned or licensed or sublicensed, as applicable, under the intellectual property transfer and license agreement and the intellectual property sublicense agreement.

Neither party may assign the intellectual property transfer and license agreement nor any rights or obligations under the agreement without the other party's prior written consent, other than to an affiliate or pursuant to an acquisition. PrognomIQ may not assign the intellectual property sublicense agreement or any rights or obligations under the agreement without our prior written consent, other than to an affiliate or pursuant to an acquisition, and in any event only with BWH's prior written consent. Our right to assign the intellectual property sublicense agreement and any rights or obligations under the agreement is subject to the terms and conditions of our license with BWH. Unless terminated earlier, the terms of the both agreements continue until the expiration of the last to expire intellectual property right granted under such agreement. Either party may terminate either agreement for an uncured breach of the other party, upon which all licenses granted under such agreement to the breaching party will terminate.

Scientific Advisory Board

We have assembled a highly qualified scientific advisory board composed of advisors who have deep expertise in the fields of nanotechnology, proteomics, genomics, medicine, regulatory compliance and data science. Our scientific advisory board is composed of Robert Langer, Sc.D., Mostafa Ronaghi, Ph.D., Steve Carr, Ph.D., Vivek Farias, Ph.D., Philip Kantoff, M.D., Erwin Böttinger, M.D., Charles Cantor, Ph.D., Bradley Hyman, M.D., Mark McClellan, Ph.D., M.D., Wolfgang Parak, Ph.D. and Ralph Weissleder, M.D.

Employees

As of September 30, 2020, we had 60 employees, all based in the United States, including 46 in research and development and 14 in selling, general and administrative. None of our employees are represented by a labor union or covered under a collective bargaining agreement.

Facilities

Our corporate headquarters, research and development facilities, and manufacturing and distribution centers are located at 3800 Bridge Parkway, Redwood City, CA 94065. The facility is approximately 25,600 square feet and is compliant with all relevant stage and federal requirements. Our lease on this facility runs through February 2032. We do not own any real property and believe that our current facilities are sufficient to meet our ongoing needs and that, if we require additional space, we will be able to obtain additional facilities on commercially reasonable terms.

Legal Proceedings

We are not currently a party to any material legal proceedings. From time to time we may be involved in legal proceedings or investigations, which could have an adverse impact on our reputation, business and financial condition and divert the attention of our management from the operation of our business.

MANAGEMENT

Executive Officers and Directors

The following table sets forth the names, ages and positions of our executive officers and directors as of September 30, 2020:

Name	Age	Position
Executive Officers:		
Omid Farokhzad, M.D.	51	Chief Executive Officer and Chair of the Board of Directors
David R. Horn	53	Chief Financial Officer
Omead Ostadan	48	President, Chief Operating Officer and Director
Non-Employee Directors:		
David Hallal	54	Lead Independent Director
Catherine J. Friedman	60	Director
Robert Langer, Sc.D.	72	Director
Terrance McGuire	64	Director
David Singer	58	Director

(1) Member of the audit committee
(2) Member of the compensation committee
(3) Member of the corporate governance and nominating committee

Executive Officers

Omid Farokhzad, M.D. co-founded our Company and has served as our Chief Executive Officer since February 2018 and as a member of our board of directors since March 2017, serving as the Chair since September 2020. From September 2004 to February 2018, he was a Professor at Harvard Medical School and directed the Center for Nanomedicine at Brigham and Women's Hospital. He previously co-founded BIND Therapeutics, a biotechnology company acquired by Pfizer Inc., Selecta Biosciences, Inc., a clinical-stage biotechnology company, and Tarveda Therapeutics, Inc., a clinical stage biopharmaceutical company. He currently serves as a member of the board of directors of several privately-held companies and previously served as a director of Selecta Biosciences and BIND Therapeutics. Dr. Farokhzad holds an M.A. and M.D. from Boston University and an M.B.A. from Massachusetts Institute of Technology Sloan School of Management. We believe Dr. Farokhzad is qualified to serve on our board of directors because of the perspective and experience he brings as our Chief Executive Officer, his experience in leadership positions in the biotechnology and life science industry, his educational background and his strong scientific knowledge.

David R. Horn has served as our Chief Financial Officer since May 2020. Prior to joining us, Mr. Horn was with Morgan Stanley, an investment bank and financial services company, from May 2007 to May 2020, where he served as a Managing Director in the Global Healthcare Group within the Investment Banking Department. From May 2003 to May 2007, Mr. Horn served as a Principal at Montgomery & Co., LLC, a provider of merger and acquisition and private placement services. He holds an A.B. in Politics from Princeton University and an M.B.A. from Stanford University Graduate School of Business.

Omead Ostadan has served as our President and Chief Operating Officer since July 2020 and as a member of our board of directors since March 2020. Prior to joining us, Mr. Ostadan was with Illumina, Inc., a biotechnology company, from January 2007 to June 2020 where he served in various executive roles, most recently as Senior Vice President & Chief Products and Marketing Officer from July 2019 to June 2020 and Senior Vice President, Products & Marketing from April 2015 to June 2019. Mr. Ostadan holds a B.Sc in Biochemistry from the University of California, Davis and an M.B.A from the Wharton School of Business. We believe Mr. Ostadan is qualified to serve

on our board of directors because of his extensive experience in product development at life science companies, his leadership skills, as well as his strong strategic planning and product knowledge.

Non-Employee Directors

David Hallal has served as a member of our board of directors since February 2018 and as Lead Independent Director since September 2020. Mr. Hallal has served as Chief Executive Officer of AlloVir, Inc., a biotechnology company since September 2018 and as Chief Executive Officer of ElevateBio LLC, a biotechnology company he co-founded, since December 2017. From June 2006 to December 2016, he served in various executive roles at Alexion Pharmaceuticals, Inc., a pharmaceutical company, most recently as Chief Executive Officer from April 2015 until December 2016, and as Chief Operating Officer from September 2014 until April 2015. Mr. Hallal currently serves as Chairman of the board at AlloVir, ElevateBio, Scholar Rock Holding Corp. and iTeos Therapeutics S.A. He holds a B.A. in Psychology from the University of New Hampshire. We believe Mr. Hallal is qualified to serve on our board of directors because of his extensive business experience and knowledge of company operations, and his experience working with companies in the life sciences industry.

Catherine J. Friedman has served as a member of our board of directors since September 2020. Ms. Friedman has been an independent financial consultant serving public and private companies in the life sciences industry since 2006. Ms. Friedman served in various executive roles from 1982 to 2006 at Morgan Stanley, an investment bank and financial services company, including as Manager Director from 1997 to 2006 and Head of West Coast Healthcare and Co-Head of the Biotechnology Practice from 1993 to 2006. She currently serves as Chairperson of the board at GRAIL, Inc., a cancer testing company, and on the board of directors of Altaba Inc., a closed-end management investment company (formerly Yahoo! Inc.), and Radius Health, Inc., a biopharmaceutical company. Ms. Friedman previously served on the board of directors of EnteroMedics, Inc., GSV Capital Corp., Innoviva, Inc. (formerly Theravance, Inc.), and XenoPort, Inc. She holds an A.B. in Economics from Harvard University and an M.B.A. from the University of Virginia Darden School of Business, where she serves as a member of the Darden School Foundation Board of Trustees. We believe Ms. Friedman is qualified to serve on our board of directors because of her financial expertise, 23-year tenure as an investment banker and extensive experience serving as a member on other public company boards.

Robert Langer, Sc.D. has served as a member of our board of directors since December 2017. Dr. Langer has served as a David H. Koch Institute Professor at the Massachusetts Institute of Technology since July 2005. He currently serves on the board of directors of Abpro Bio Co. Ltd., Frequency Therapeutics, Inc., Lyra Therapeutics, Inc., Moderna, Inc. and Puretech Health plc, and previously served on the board of directors of Alkermes, Inc., Kala Pharmaceuticals, Inc., Momentum Pharmaceuticals, Inc., Millipore Corp., Rubius Therapeutics and Wyeth. Dr. Langer holds a B.S. in Chemical Engineering from Cornell University and an Sc.D. in Chemical Engineering from Massachusetts Institute of Technology. We believe Dr. Langer is qualified to serve on our board of directors because of his pioneering academic work, extensive medical and scientific knowledge, and experience serving on public company boards of directors.

Terrance McGuire has served as a member of our board of directors since December 2017. Mr. McGuire serves as a General Partner of Polaris Partners, a venture capital firm he co-founded in 1996. He currently serves on the board of directors of Alector, Inc. and Cyclerion, Inc., and previously served on the board of directors of Acceleron Pharma, Inc., Arsanis, Inc., Ironwood Pharmaceuticals, Inc. and Pulmatrix, Inc. Mr. McGuire also serves as a member of the board of The David H. Koch Institute for Integrative Cancer Research at the Massachusetts Institute of Technology, The Arthur Rock Center for Entrepreneurship at Harvard Business School and The Healthcare Initiative Advisory Board and on the Board of Advisors of the Thayer School of Engineering at Dartmouth College. Mr. McGuire holds a B.S. in Physics and Economics from Hobart College, an M.S. in Engineering from the Thayer School at Dartmouth College and an M.B.A. from Harvard Business School. We believe Mr. McGuire is qualified to serve on our board of directors because of his substantial corporate development and business strategy expertise gained in the venture capital industry.

*David B. Singe*r has served as a member of our board of directors since December 2017. Mr. Singer has held various positions at Maverick Ventures, a venture capital firm, or its affiliates, since December 2004, including Managing Partner of Maverick Ventures since February 2015. Mr. Singer currently serves on the board of directors

of 1Life Healthcare, Inc. (OneMedical), Castlight Health, Inc. and several privately-held companies. Previously, Mr. Singer served on the board of four other public companies, including Pacific BioSciences of California, Inc. and Affymetrix, Inc., where he was the founding CEO. He previously served as a health commissioner of San Francisco and a member of the San Francisco General Hospital Joint Conference Committee from July 2013 to January 2017. He holds a B.A. in History from Yale University and an M.B.A. from Stanford University. We believe Mr. Singer is qualified to serve on our board of directors because of his knowledge of the healthcare industry and his substantial corporate development and business strategy expertise gained in the venture capital industry.

Board Composition

Our board of directors currently consists of seven members. After the completion of this offering, the number of directors will be fixed by our board of directors, subject to the terms of our amended and restated certificate of incorporation and amended and restated bylaws. Each of our current directors will continue to serve as a director until the election and qualification of his or her successor, or until his or her earlier death, resignation or removal.

Our amended and restated certificate of incorporation will provide that our board of directors will be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of stockholders, with the other classes continuing for the remainder of their respective three-year terms. Our current directors will be divided among the three classes as follows:

- the Class I directors will be , and their terms will expire at the annual meeting of stockholders to be held in 2021;
- the Class II directors will be , and their terms will expire at the annual meeting of stockholders to be held in 2022; and
- the Class III directors will be , and their terms will expire at the annual meeting of stockholders to be held in 2023.

At each annual meeting of stockholders, upon the expiration of the term of a class of directors, the successor to each such director in the class will be elected to serve from the time of election and qualification until the third annual meeting following his or her election and until his or her successor is duly elected and qualified, in accordance with our amended and restated certificate of incorporation. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of our directors.

This classification of our board of directors may have the effect of delaying or preventing changes in control of our company.

Director Independence

Upon the completion of this offering, we anticipate that our Class A common stock will be listed on the Nasdaq Stock Market. Under the rules of Nasdaq, independent directors must comprise a majority of a listed company's board of directors within one year of the completion of this offering. In addition, the rules of Nasdaq require that, subject to specified exceptions, each member of a listed company's audit, compensation and corporate governance and nominating committees be independent. Audit committee members and compensation committee members must also satisfy the independence criteria set forth in Rule 10A-3 and Rule 10C-1, respectively, under the Exchange Act. Under the rules of Nasdaq, a director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

To be considered to be independent for purposes of Rule 10A-3 and under the rules of Nasdaq, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee: (1) accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries or (2) be an affiliated person of the listed company or any of its subsidiaries.

To be considered independent for purposes of Rule 10C-1 and under the rules of Nasdaq, the board of directors must affirmatively determine that each member of the compensation committee is independent, including a consideration of all factors specifically relevant to determining whether the director has a relationship to the company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to: (1) the source of compensation of such director, including any consulting, advisory or other compensatory fee paid by the company to such director and (2) whether such director is affiliated with the company, a subsidiary of the company or an affiliate of a subsidiary of the company.

Our board of directors undertook a review of its composition, the composition of its committees and the independence of our directors and considered whether any director has a material relationship with us that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that , representing a majority of our directors, do not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the rules of Nasdaq.

In making these determinations, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director, and the transactions involving them described in the section titled "Certain Relationships and Related-Party Transactions." There are no family relationships among any of our directors or executive officer.

Board Leadership Structure

Our board of directors has appointed David Hallal to serve as our Lead Independent Director. As a general matter, our board of directors believes that appointing a Lead Independent Director, while our Chief Executive Officer serves as Chair, creates an environment that encourages objective oversight of management's performance and enhances the effectiveness of our board of directors as a whole. As Lead Independent Director, David Hallal will preside over periodic meetings of our independent directors, serve as a liaison between our Chair and Chief Executive Officer and our independent directors and perform such additional duties as our board of directors may otherwise determine and delegate.

Role of the Board in Risk Oversight

Our board of directors has an active role, as a whole and also at the committee level, in overseeing the management of our risks. Our board of directors is responsible for general oversight of risks and regular review of information regarding our risks, including credit risks, liquidity risks and operational risks. The compensation committee is responsible for overseeing the management of risks relating to our executive compensation plans and arrangements. The audit committee is responsible for overseeing the management of risks relating to accounting matters and financial reporting. The corporate governance and nominating committee is responsible for overseeing the management of risks associated with the independence of our board of directors and potential conflicts of interest. Although each committee is responsible for evaluating certain risks and overseeing the management of such risks, our entire board of directors is regularly informed through discussions from committee members about such risks. Our board of directors believes its administration of its risk oversight function has not negatively affected the board of directors' leadership structure.

Board Committees

Our board of directors has an audit committee, a compensation committee and a corporate governance and nominating committee, each of which has the composition and the responsibilities described below.

Audit Committee

The members of our audit committee are . is the chair of our audit committee. Each of is an audit committee financial expert, as that term is defined under the SEC rules implementing Section 407 of SOX, and possesses financial sophistication, as defined under the rules of Nasdaq. Our audit committee oversees our corporate accounting and financial reporting process and assists our board of directors in monitoring our financial systems. Our audit committee will also:

- select and hire the independent registered public accounting firm to audit our financial statements;
- help to ensure the independence and performance of the independent registered public accounting firm;
- approve audit and non-audit services and fees;
- review financial statements and discuss with management and the independent registered public accounting firm our annual audited and quarterly financial statements, the results of the independent audit and the quarterly reviews and the reports and certifications regarding internal controls over financial reporting and disclosure controls;
- prepare the audit committee report that the SEC requires to be included in our annual proxy statement;
- review reports and communications from the independent registered public accounting firm;
- review the adequacy and effectiveness of our internal controls and disclosure controls and procedure;
- review our policies on risk assessment and risk management;
- review related-party transactions; and
- establish and oversee procedures for the receipt, retention and treatment of accounting related complaints and the confidential submission by our employees of concerns regarding questionable accounting or auditing matters.

Our audit committee will operate under a written charter, to be effective prior to the completion of this offering, which will satisfy the applicable rules of the SEC and the listing standards of Nasdaq.

Compensation Committee

The members of our compensation committee are . is the chair of our compensation committee. Our compensation committee oversees our compensation policies, plans and benefits programs. The compensation committee will also:

- oversee our overall compensation philosophy and compensation policies, plans and benefit programs;
- review and approve or recommend to the board of directors for approval compensation for our executive officers and directors;
- prepare the compensation committee report that the SEC will require to be included in our annual proxy statement; and
- administer our equity compensation plans.

Our compensation committee will operate under a written charter, to be effective prior to the completion of this offering, which will satisfy the applicable rules of the SEC and the listing standards of Nasdaq.

Corporate Governance and Nominating Committee

The members of our corporate governance and nominating committee are . is the chair of our corporate governance and nominating committee. Our corporate governance and nominating committee

oversees and assists our board of directors in reviewing and recommending nominees for election as directors. Specifically, the corporate governance and nominating committee will:

- identify, evaluate and make recommendations to our board of directors regarding nominees for election to our board of directors and its committees;
- consider and make recommendations to our board of directors regarding the composition of our board of directors and its committees;
- review developments in corporate governance practices;
- evaluate the adequacy of our corporate governance practices and reporting; and
- evaluate the performance of our board of directors and of individual directors.

Our corporate governance and nominating committee will operate under a written charter, to be effective prior to the completion of this offering, which will satisfy the applicable rules of the SEC and the listing standards of Nasdaq.

Scientific Advisory Board Compensation

We also reimburse each member of our scientific advisory board for all reasonable and necessary expenses in connection with the performance of his or her services. In addition, we grant each new member an option to purchase shares of our Class A common stock. In the future, we may make additional grants to our scientific advisory board members for continued service on the scientific advisory board.

Director Compensation

Our employee director, Dr. Farokhzad, did not receive any compensation for his service as a director for the year ended December 31, 2019. The compensation received by Dr. Farokhzad as an employee is set forth in the section titled "Executive Compensation—Summary Compensation Table."

The following table provides information regarding the compensation of our non-employee directors for service as directors for the year ended December 31, 2019:

Name	Option Awards ($)[1]	Total ($)
Catherine J. Friedman[2]	—	—
David Hallal	—	—
Robert Langer, Sc.D.	—	—
Mark McClellan, Ph.D.[3]	658,600	658,600
Terrance McGuire	—	—
David Singer	—	—

(1) The amount in this column represents the aggregate grant-date fair value of the award as computed as of the grant date of each option awarded in fiscal 2019 in accordance with Financial Accounting Standard Board Accounting Standards Codification Topic 718, or ASC Topic 718. The assumptions used in calculating the grant-date fair value of the awards reported in this column are set forth in the notes to our financial statements included elsewhere in this prospectus.
(2) Ms. Friedman joined our board of directors in September 2020.
(3) Mr. McClellan resigned from our board of directors in September 2020.

The following table lists all outstanding equity awards held by our non-employee directors as of December 31, 2019:

Name	Grant Date	Number of Securities Underlying Unvested Stock Awards	Number of Securities Underlying Unexercised Options (#)	Option Exercise Price Per Share ($)	Option Expiration Date
Catherine J. Friedman[1]	—	—	—	—	—
David Hallal	2/19/2018	192,031 [2]	—	—	—
	5/18/2018	125,235 [3]	—	—	—
Robert Langer, Sc.D.	9/20/2017	119,792 [4]	—	—	—
	2/19/2018	47,598 [5]	—	—	—
	5/18/2018	—	222,639 [6]	0.02	5/17/2028
Mark McClellan, Ph.D.[7]	6/27/2019	—	644,927 [8]	1.03	6/26/2029
Terrance McGuire	11/15/2017	130,209 [9]	—	—	—
	2/19/2018	47,598 [10]	—	—	—
	5/18/2018	—	222,639 [11]	0.02	5/17/2028
David Singer	—	—	—	—	—

(1) Ms. Friedman joined our board of directors in September 2020.
(2) The shares were acquired pursuant to a restricted stock award and vest in 27 equal monthly installments beginning on January 23, 2020, subject to continued service to the Company.
(3) The shares were acquired pursuant to an early option exercise and vest in 27 equal monthly installments beginning on January 23, 2020, subject to continued service to the Company.
(4) The shares were acquired pursuant to a restricted stock award and vest in 23 equal monthly installments beginning on January 31, 2020, subject to continued service to the Company.
(5) The shares were acquired pursuant to a restricted stock award and vest in 25 equal monthly installments beginning on January 31, 2020, subject to continued service to the Company.
(6) The shares underlying the option are subject to an early exercise provision and are immediately exercisable. One-fourth of the shares underlying the option vested on March 23, 2019 and 1/48th of the shares vest monthly thereafter, subject to continued service to the Company, subject to continued service to the Company.
(7) Mr. McClellan resigned from our board of directors in September 2020, subject to continued service to the Company.
(8) The shares underlying the option are subject to an early exercise provision and are immediately exercisable. One-fourth of the shares underlying the option vested on March 6, 2020 and 1/48th of the shares vest monthly thereafter, subject to continued service to the Company.
(9) The shares are held of record by Strong Bridge LLC (Strong Bridge) for which Mr. McGuire serves as an operating manager. The shares were acquired pursuant to a restricted stock award and vest in 25 equal monthly installments beginning on January 31, 2020, subject to Mr. McGuire's continued service to the Company.
(10) The shares are held of record by Strong Bridge LLC. The shares were acquired pursuant to an early exercise provision and vest in 25 equal monthly installments beginning on January 31, 2020, subject to Mr. McGuire's continued service to the Company.
(11) The option is held of record by Strong Bridge. The shares underlying the option are subject to an early exercise provision and are immediately exercisable. One-fourth of the shares underlying the option vested on March 23, 2019 and 1/48th of the shares vest monthly thereafter, subject to Mr. McGuire's continued service to the Company.

Following the completion of this offering, we expect to implement an annual cash and equity compensation program for our non-employee directors.

Outside Director Compensation Policy

Prior to this offering, we did not have a formal policy with respect to compensation payable to our non-employee directors for their service as directors. From time to time, we have granted equity awards to attract non-employee directors to join our board of directors and for their continued service on our board of directors. We also have reimbursed our directors for expenses associated with attending meetings of our board of directors and its committees.

In 2020, our compensation committee retained Radford, a third-party compensation consultant, to provide our board of directors and its compensation committee with an analysis of publicly available market data regarding practices and compensation levels at comparable companies and assistance in determining compensation to be

provided to our non-employee directors. Based on the discussions with and assistance from the compensation consultant, prior to the completion of this offering, our board of directors intends to adopt, and we expect our stockholders will approve, an Outside Director Compensation Policy that will provide for certain compensation to our non-employee directors on and after the effective date of the registration statement of which this prospectus forms a part. The below is a summary of the terms currently expected to be implemented under the Outside Director Compensation Policy, which are subject to change.

Cash Compensation

The Outside Director Compensation Policy will provide for the following cash compensation program for our non-employee directors, effective upon the effective date of the registration statement of which this prospectus forms a part:

- $ per year for service as a non-employee director;
- $ per year for service as lead independent director;
- $ per year for service as chair of the audit committee;
- $ per year for service as a member of the audit committee;
- $ per year for service as chair of the compensation committee;
- $ per year for service as a member of the compensation committee;
- $ per year for service as chair of the corporate governance and nominating committee; and
- $ per year for service as a member of the corporate governance and nominating committee.

Each non-employee director who serves as a committee chair will receive only the cash retainer fee as the chair of the committee but not the cash retainer fee as a member of that committee, provided that the non-employee director who serves as lead independent director will receive the annual retainer fees for such role as well as the annual retainer fee for service as a non-employee director. These fees to our non-employee directors will be paid quarterly in arrears on a prorated basis. The above-listed fees for service as lead independent director, a chair or member of any committee are payable in addition to the non-employee director retainer. Under our Outside Director Compensation Policy, we also will reimburse our non-employee directors for reasonable travel expenses to attend meetings of our board of directors and its committees.

Equity Compensation

Initial Award. Pursuant to our Outside Director Compensation Policy, each person who first becomes a non-employee director after the effective date of such policy will receive, on the first trading day on or after the date that the person first becomes a non-employee director, an initial award of stock options to purchase shares of our common stock (the Initial Award). The Initial Award will be scheduled to vest in equal installments as to 1/36th of the shares of our common stock subject to the Initial Award on a monthly basis following the Initial Award's grant date, on the same day of the month as the grant date, subject to continued services to us through the applicable vesting dates. If the person was a member of our board of directors and also an employee, then becoming a non-employee director due to termination of employment will not entitle the person to an Initial Award.

Annual Award. Each non-employee director automatically will receive, on the first trading day immediately after the date of each annual meeting of our stockholders (an Annual Meeting) that occurs following the effective date of our Outside Director Compensation Policy, an annual award of stock options to purchase shares of our common stock (the Annual Award), except if an individual began service as a non-employee director after the date of the Annual Meeting that occurred immediately prior to such Annual Meeting (or if there is no such prior Annual Meeting, then the effective date of the registration statement of the offering of which this prospectus forms a part), then the Annual Award granted to such non-employee director will be prorated based on the number of whole months that the individual served as a non-employee director prior to the Annual Award's grant date during the 12

month period immediately preceding such Annual Meeting or such effective registration statement date, as applicable. Each Annual Award will be scheduled to vest as to all of the shares of our common stock subject to such award on the earlier of (i) the one year anniversary of the date the Annual Award is granted or (ii) the day immediately before the date of the next Annual Meeting that occurs after the grant date of the Annual Award, subject to continued services to us through the applicable vesting date.

IPO Awards. Effective as of the effective date of the registration statement of which this prospectus forms a part, each non-employee director who previously was granted any stock options covering shares of our common stock prior to such date will be granted an award of stock options to purchase shares of our common stock (a Continuing Director IPO Award) and each non-employee director who, prior to such date, was not granted any stock options covering shares of our common stock will be granted an award of stock options to purchase shares of our common stock (a New Director IPO Award). Each New Director IPO Award will be scheduled to vest in equal installments as to 1/36th of the shares of our common stock subject to the New Director IPO Award on a monthly basis following the effective date of the registration statement of which this prospectus forms a part, on the same day of the month as such date, subject to continued services to us through the applicable vesting dates. Each Continuing Director IPO Award will be scheduled to vest as to all of the shares of our common stock subject to such award on the earlier of (i) the one year anniversary of the date the Continuing Director IPO Award is granted or (ii) the day immediately before the date of the next Annual Meeting that occurs after the effective date of the registration statement of which this prospectus forms a part, subject to continued services to us through the applicable vesting date.

Change in Control. In the event of our change in control, as defined in our 2020 Equity Incentive Plan, each non-employee director's then outstanding equity awards covering shares of our common stock that were granted to him or her while a non-employee director will accelerate vesting in full, provided that he or she remains a non-employee director through the date of our change in control.

Other Award Terms. Each Initial Award, Annual Award, Continuing Director IPO Award, and New Director IPO Award will be granted under our 2020 Equity Incentive Plan (or its successor plan, as applicable) and form of award agreement under such plan. These awards will have a maximum term to expiration of ten years from their grant and a per share exercise price equal to 100% of the fair market value of a share of our common stock on the award's grant date.

Director Compensation Limits. Our Outside Director Compensation Policy will provide that in any fiscal year, a non-employee director may be paid cash compensation and granted equity awards with an aggregate value of no more than $ (with the value of equity awards based on its grant date fair value determined in accordance with GAAP for purposes of this limit), with such limit increased to $ in the fiscal year of his or her initial service as a non-employee director. Equity awards granted or other compensation provided to a non-employee director for services provided as an employee or consultant (other than a non-employee director), or provided before the effective date of the registration statement of which this prospectus forms a part, will not count toward this annual limit.

Compensation Committee Interlocks and Inside Participation

None of the members of our compensation committee is or has been an officer or employee of our company. None of our executive officers currently serves, or in the past fiscal year has served, as a member of the board of directors or compensation committee (or other board committee performing equivalent functions or, in the absence of any such committee, the entire board of directors) of any entity that has one or more executive officers serving on our board of directors or compensation committee.

Code of Business Conduct and Ethics

Prior to the closing of this offering, we intend to adopt a written code of business conduct and ethics that will apply to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller or, persons performing similar functions. Following this offering, the code of business conduct and ethics will be available on our website at http://seer.bio. We intend to disclose future amendments to such code, or any waivers of its requirements, applicable to any principal executive officer, principal

financial officer, principal accounting officer or controller or persons performing similar functions, or our directors on our website identified above or in public filings. Information contained on the website is not incorporated by reference into this prospectus and should not be considered to be part of this prospectus.

EXECUTIVE COMPENSATION

Our named executive officers for the year ended December 31, 2019, which consist of our principal executive officer and our only other executive officer for that year, are:

- Omid Farokhzad, M.D., our Chief Executive Officer; and
- Philip Ma, Ph.D., our Chief Business Officer and former President.

Summary Compensation Table

The following table sets forth information regarding the compensation of our named executive officers for the year ended December 31, 2019.

Name and Principal Position	Year	Salary	Bonus	Stock Awards	Option Awards	Non-Equity Incentive Plan Compensation	All Other Compensation	Total
Omid Farokhzad, M.D. *Chief Executive Officer*	2019	$ 421,011	—	—	—	$ 214,240	$ 115,872	$ 751,123
Philip Ma, Ph.D.[1] *Chief Business Officer*	2019	$ 342,071	—	—	—	$ 130,000	$ 15,014	$ 487,085

(1) Dr. Ma transitioned to PrognomIQ to serve as its full-time chief executive officer as of October 15, 2020. He will remain a consultant of the Company until April 2021.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information regarding outstanding equity awards held by each of our named executive officers as of December 31, 2019:

		Option Awards				Stock Awards	
Name	Grant Date[1]	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested ($)[2]
Omid Farokhzad, M.D.	9/20/2017	—	—	—	—	625,000 [3]	787,500
	2/19/2018	—	—	—	—	247,507 [4]	311,859
	5/18/2018	1,113,195 [5]	—	0.02	5/17/2028	—	—
Philip Ma, Ph.D.	9/20/2017	—	—	—	—	187,500 [3]	236,250
	2/19/2018	—	—	—	—	74,252 [4]	93,558
	5/18/2018	333,959 [5]	—	0.02	5/17/2028	—	—

(1) Each of the outstanding equity awards was granted pursuant to our 2017 Plan.
(2) This amount reflects the fair market value of our common stock of $1.26 as of December 31, 2019 (the determination of the fair market value by our board of directors as of the most proximate date) multiplied by the amount shown in the column for the number of shares or units that have not vested.
(3) The shares were acquired pursuant to a restricted stock award and vest in 24 equal monthly installments beginning on January 20, 2020, subject to continued service to the Company.
(4) The shares were acquired pursuant to a restricted stock award and vest in 26 equal monthly installments beginning on January 31, 2020, subject to continued service to the Company.
(5) The shares underlying the option are subject to an early exercise provision and are immediately exercisable. One-fourth of the shares underlying the option vested on March 23, 2019 and the remaining shares vest in 36 equal monthly installments thereafter, subject to continued service to the Company.

Employment Arrangements with Our Named Executive Officers

Each of our named executive officers has executed our standard form of confidential information, invention assignment and arbitration agreement.

Dr. Omid Farokhzad

Prior to the completion of this offering, we intend to enter into a confirmatory employment letter with Dr. Farokhzad, our chief executive officer, which employment letter will be effective as of the day before the effective date of our registration statement of which this prospectus forms a part. The confirmatory employment letter will have no specific term and will provide that Dr. Farokhzad is an at-will employee. Dr. Farokhzad's current annual base salary is $426,500 and he is eligible for an annual target cash incentive bonus for our fiscal year 2020 equal to 50% of his annual base salary. Provided Dr. Farokhzad remains employed by us through the effective date of this offering, his annual base salary will be immediately increased to $510,000 and his annual target cash incentive bonus for both 2020 and 2021 will be increased to 65% of his annual base salary. The employment letter will continue to provide for our reimbursement of Dr. Farokhzad's reasonable travel and lodging expenses incurred by him for his travel between his primary residence and our offices in Redwood City, California, as well as for additional payments sufficient to make such reimbursements tax neutral to Dr. Farokhzad.

Change in Control and Severance Agreement

Prior to the completion of this offering, we expect to enter into a change in control and severance agreement (the Severance Agreement) with Dr. Farokhzad, which Severance Agreement would provide for certain severance and change in control benefits as described below. The Severance Agreement will be effective as of the day before the effective date of our registration statement of which this prospectus forms a part.

If Dr. Farokhzad's employment is terminated outside the period beginning on the date that is three months prior to the date of a change in control and ending on the date that is twelve months following such change in control (the Change in Control Period) either (1) by the Company without "cause" (excluding by reason of death or disability) or (2) by Dr. Farokhzad as a "good reason termination" (as such terms are defined in and the Severance Agreement), Dr. Farokhzad will receive the following benefits if he timely signs and does not revoke a release of claims in our favor:

- continuing payments of Dr. Farokhzad's base salary for a period of twelve months following the date of such termination (or if such termination is a good reason termination by Dr. Farokhzad based on a material reduction in base salary, then as in effect immediately prior to the reduction);
- a lump sum cash equal to Dr. Farokhzad's annual target cash incentive bonus prorated for the number of days during which Dr. Farokhzad was employed by the Company (or the parent or subsidiary of the Company employing him) in the calendar year such termination occurs;
- if Dr. Farokhzad and his eligible dependents have qualifying health care at the time of such termination, then either reimbursements for or direct payments of payment of premiums for coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended (COBRA), for Dr. Farokhzad and his eligible dependents, if any, for up to 12 months; and
- vesting acceleration of 50% of the shares subject to Dr. Farokhzad's outstanding Company equity awards that are scheduled to vest based solely on Dr. Farokhzad's continued service to the Company (or any parent or subsidiary of the Company (time-based equity awards), or, with respect to the shares of company restricted stock received by Dr. Farokhzad under restricted stock purchase agreements entered into with the Company on September 20, 2017, as amended December 20, 2017 and on February 19, 2018 only, if greater, 100% acceleration of the number of shares that are otherwise scheduled to vest if Dr. Farokhzad remained employed by the Company (or any parent or subsidiary of the Company) through the one year anniversary of his termination.

If, during the Change in Control Period, Dr. Farokhzad's employment with the Company is terminated either (1) by the Company without cause (excluding by reason of death or disability) or (2) by Dr. Farokhzad as a good reason

termination, Dr. Farokhzad will receive the following benefits if he timely signs and does not revoke a separation agreement and release of claims in our favor:

- continuing payments of Dr. Farokhzad's base salary for a period of 18 months following the date of such termination (or if such termination is a good reason termination by Dr. Farokhzad based on a material reduction in base salary, then as in effect immediately prior to the reduction)(or, if higher, as in effect immediately before the change in control);
- a lump sum cash equal to 150% of Dr. Farokhzad's annualized target bonus as in effect for the performance period in which such termination occurs, or, if greater, as in effect for the performance period in which a change in control occurs;
- if Dr. Farokhzad and his eligible dependents have qualifying health care at the time of such termination, then either reimbursements for or direct payments of payment of premiums for coverage under COBRA, for Dr. Farokhzad and his eligible dependents, if any, for up to 18 months; and
- vesting acceleration of 100% of the shares subject to Dr. Farokhzad's outstanding time-based equity awards.

In addition to signing and not revoking a separation agreement and release of claims in our favor, Dr. Farokhzad's receipt and retention of any severance benefits under the Severance Agreement is subject to his compliance with the terms of any confidentiality, information and inventions agreement or other written agreement us under which he has a material duty or obligation to us.

If Dr. Farokhzad begins employment or enters into a consultant entity with a new employer during the period he is receiving severance benefits from us under the Severance Agreement, then any cash compensation paid to him by the new employer will reduce our cash severance benefit obligations under the Severance Agreement, and we will have no obligation to provide COBRA benefits for medical, vision and dental coverage if the new employer provides such benefits to Dr. Farokhzad.

In addition, if Dr. Farokhzad remains employed by the Company (or any parent or subsidiary of the Company) through the two year anniversary of the change in control (the Retention Date) and if he timely signs and does not revoke a release of claims in our favor, Dr. Farokhzad will receive 100% accelerated vesting of all of his then-unvested and outstanding Company equity awards that were granted prior to the effective date of the registration statement of which this prospectus forms a part.

If any of the amounts provided for under the Severance Agreement otherwise payable to Dr. Farokhzad would constitute "parachute payments" within the meaning of Section 280G of the Internal Revenue Code and could be subject to the related excise tax, Dr. Farokhzad would be entitled to receive either full payment of benefits or such lesser amount which would result in no portion of the benefits being subject to the excise tax, whichever results in the greater amount of after-tax benefits to the named executive officer. The Severance Agreement does not provide for any Section 280G-related tax gross-up payments from us.

Under the Severance Agreement, "cause" generally means Dr. Farokhzad's: indictment or conviction of any felony or any crime involving dishonesty; participation in any fraud against us; any intentional damage to any material property of the Company; willful misconduct which materially and adversely reflects upon the business, operations, or reputation of the Company, which has not been cured or cannot be cured within ten days after receiving written notice regarding such misconduct; breach of any material provision of any agreement with the company and failure to cure such breach within ten days after receiving written notice of such breach.

Under the Severance Agreement, "good reason termination" generally means that Dr. Farokhzad resigns from the Company within 30 days following the end of our cure period discussed below as a result of any of the following that occurs without his written consent: a material reduction in his base salary as compared to his base salary in effect immediately prior to such reduction; a material and adverse change in his authorities, duties or responsibilities relative to his authorities, duties or responsibilities in effect immediately prior to such reduction (provided that if he continues to serve as executive chair of the Company with a base salary and target bonus opportunity each

materially the same as in effect immediately prior to such transition, such transition will not by itself be deemed to constitute a material and adverse change to his authorities, duties or responsibilities, and provided, further that any change that results in Dr. Farokhzad not servicing as the Chief Executive Officer of (or reporting directly to the board of directors of) the parent corporation in a group of controlled corporations including the Company or all or a substantial portion of the Company's assets following a change in control, will be deemed to constitute a material and adverse change to his authorities, duties or responsibilities); and a material change in the geographic location of his principal work office or facility, provided that a change that increases his commute by 50 miles or less will not constitute a material change. For a resignation to qualify as a "good reason termination," Dr. Farokhzad also must provide written notice within 90 days following the initial existence of the good reason condition, and we must have failed to materially remedy such event within 30 days after receipt of such notice.

Employee Benefit and Stock Plans

Executive Incentive Compensation Plan

Prior to the completion of this offering, our board of directors intends to adopt our Executive Incentive Compensation Plan. Our Executive Incentive Compensation Plan will be administered by our board of directors or a committee appointed by our board of directors. Unless and until our board of directors determines otherwise, our compensation committee will administer our Executive Incentive Compensation Plan. Our Executive Incentive Compensation Plan will allow us to grant incentive awards, generally payable in cash, to employees selected by the administrator, including our named executive officers, based upon any performance goals that may be established by the administrator. The below is a summary of the terms currently expected to be implemented under the Executive Incentive Compensation Plan, which are subject to change.

Under our Executive Incentive Compensation Plan, the administrator will determine any performance goals applicable to an award, which goals may include, without limitation, goals related to attainment of research and development milestones; sales bookings; business divestitures and acquisitions; capital raising; cash flow; cash position; contract awards or backlog; corporate transactions; customer renewals; customer retention rates from an acquired company, subsidiary, business unit or division; earnings (which may include any calculation of earnings, including but not limited to earnings before interest and taxes, earnings before taxes, earnings before interest, taxes, depreciation and amortization and net taxes); earnings per share; expenses; financial milestones; gross margin; growth in stockholder value relative to the moving average of the S&P 500 Index or another index; internal rate of return; leadership development or succession planning; license or research collaboration arrangements; market share; net income; net profit; net sales; new product or business development; new product invention or innovation; number of customers; operating cash flow; operating expenses; operating income; operating margin; overhead or other expense reduction; patents; procurement; product defect measures; product release timelines; productivity; profit; regulatory milestones or regulatory-related goals; retained earnings; return on assets; return on capital; return on equity; return on investment; return on sales; revenue; revenue growth; sales results; sales growth; savings; stock price; time to market; total stockholder return; working capital; unadjusted or adjusted actual contract value; unadjusted or adjusted total contract value; and individual objectives such as peer reviews or other subjective or objective criteria. The performance goals may differ from participant to participant and from award to award. The administrator also may determine that a target award or portion of a target award will not have a performance goal associated with it but instead will be granted, if at all, as determined by the administrator.

The administrator of our Executive Incentive Compensation Plan, in its sole discretion and at any time, may increase, reduce or eliminate a participant's actual award, and/or increase, reduce or eliminate the amount allocated to any bonus pool for a particular performance period. The actual award may be below, at or above a participant's target award, in the discretion of the administrator. The administrator may determine the amount of any reduction on the basis of such factors as it deems relevant, and the administrator is not required to establish any allocation or weighting with respect to the factors it considers.

Actual awards generally will be paid in cash (or its equivalent) only after they are earned, and, unless otherwise determined by the administrator, a participant must be employed with us through the date the actual award is paid. The administrator of our Executive Incentive Compensation Plan reserves the right to settle an actual award with a grant of an equity award under our then-current equity compensation plan, which equity award may have such terms

and conditions, including vesting, as determined by the administrator. Payment of awards occurs as soon as administratively practicable after they are earned, but no later than the dates set forth in our Executive Incentive Compensation Plan.

Awards under our Executive Incentive Compensation Plan are subject to any clawback policy we are required to adopt from time to time to comply with the listing standards of any national securities exchange or association on which our securities are listed or as is otherwise required by applicable laws. The administrator also may impose such other clawback, recovery or recoupment provisions with respect an award under our Executive Incentive Compensation Plan as the administrator determines necessary or appropriate, including for example, reduction, cancellation, forfeiture or recoupment upon a termination of a participant's employment for cause. Certain participants may be required to reimburse us for certain amounts paid under an award under our Executive Incentive Compensation Plan in connection with certain accounting restatements we may be required to prepare due to our material noncompliance with any financial reporting requirements under applicable securities laws, as a result of misconduct.

The administrator of our Executive Incentive Compensation Plan will have the authority to amend, alter, suspend or terminate our Executive Incentive Compensation Plan, provided such action does not materially alter or materially impair the existing rights or obligations of any participant with respect to any earned awards. Our Executive Incentive Compensation Plan will remain in effect until terminated in accordance with its terms.

2020 Equity Incentive Plan

Prior to the completion of this offering, our board of directors intends to adopt, and we expect our stockholders will approve, our 2020 Equity Incentive Plan or, the 2020 Plan. We expect that the 2020 Plan will be effective on the business day immediately before the effective date of our registration statement of which this prospectus forms a part. Our 2020 Plan will provide for the grant of incentive stock options, within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended, or, the Code, to our employees and any of our parent or subsidiary corporations' employees, and for the grant of non-statutory stock options, restricted stock, restricted stock units, stock appreciation rights, and performance awards to our employees, directors and consultants and any of our parent or subsidiary corporations' employees and consultants. The below is a summary of the terms currently expected to be implemented, which are subject to change.

Authorized Shares

A total of shares of our Class A common stock will be reserved for issuance pursuant to our 2020 Plan. In addition, the shares reserved for issuance under our 2020 Plan will include (i) a number of shares of our Class A common stock equal to the number of shares of all classes of our common stock subject to awards granted under our 2020 RSU Equity Incentive Plan or 2017 Stock Incentive Plan (each, a Prior Plan) that, on or after the date the applicable Prior Plan is terminated, are terminated, canceled, expire or otherwise terminate without having been exercised in full, are tendered to or withheld by us for payment of an exercise price or for tax withholding obligations, or are forfeited to or repurchased by us due to failure to vest, and (ii) a number of shares of our Class A common stock equal to the number of shares of all classes of our common stock that, as of immediately prior to the termination of each Prior Plan, have been reserved but not issued pursuant to awards granted under each Prior Plan and are not subject to any awards under each Prior Plan (provided that the maximum number of shares that may be added to the 2020 Plan pursuant to this sentence is shares). The number of shares available for issuance under our 2020 Plan also will include an annual increase, or the evergreen feature, on the first day of each of our fiscal years, beginning with our fiscal year 2021, equal to the least of:

- shares;
- a number of shares equal to % of the outstanding shares of all classes of our common stock as of the last day of the immediately preceding fiscal year; or
- such number of shares as our board of directors or its designated committee may determine no later than the last day of our immediately preceding fiscal year.

Shares issuable under our 2020 Plan will be authorized, but unissued, or reacquired shares of our Class A common stock. If an award expires or becomes unexercisable without having been exercised in full, is surrendered pursuant to an exchange program (as described below), or, with respect to restricted stock, restricted stock units, or performance awards, is forfeited to or repurchased due to failure to vest, the unpurchased shares (or for awards other than stock options or stock appreciation rights, the forfeited or repurchased shares) will become available for future grant or sale under the 2020 Plan. With respect to stock appreciation rights, only the net shares actually issued will cease to be available under the 2020 Plan and all remaining shares under stock appreciation rights will remain available for future grant or sale under the 2020 Plan. Shares that actually have been issued under the 2020 Plan under any award will not be returned to the 2020 Plan; except if shares issued pursuant to awards of restricted stock, restricted stock units, or performance awards are repurchased or forfeited, such shares will become available for future grant under the 2020 Plan. Shares used to pay the exercise price of an award or satisfy the tax liabilities or withholding obligations related to an award (which withholdings may be in amounts greater than the minimum statutory amount required to be withheld as determined by the administrator of the 2020 Plan) will become available for future grant or sale under the 2020 Plan. To the extent an award is paid out in cash rather than shares, such cash payment will not result in a reduction in the number of shares available for issuance under the 2020 Plan.

Plan Administration

Our board of directors or one or more committees appointed by our board of directors will have authority to administer our 2020 Plan. We expect that the compensation committee of our board of directors initially will administer our 2020 Plan. In addition, if we determine it is desirable to qualify transactions under our 2020 Plan as exempt under Rule 16b-3 of the Exchange Act, such transactions will be structured to satisfy the requirements for exemption under Rule 16b-3. Subject to the provisions of our 2020 Plan, the administrator has the power to administer our 2020 Plan and make all determinations deemed necessary or advisable for administering the 2020 Plan, including but not limited to, the power to determine the fair market value of our Class A common stock, select the service providers to whom awards may be granted, determine the number of shares or dollar amounts covered by each award, approve forms of award agreements for use under the 2020 Plan, determine the terms and conditions of awards (including, but not limited to, the exercise price, the time or times at which awards may be exercised, any vesting acceleration or waiver or forfeiture restrictions and any restriction or limitation regarding any award or the shares relating thereto), construe and interpret the terms of our 2020 Plan and awards granted under it, prescribe, amend and rescind rules relating to our 2020 Plan, including creating sub-plans, modify or amend each award, and allow a participant to defer the receipt of payment of cash or the delivery of shares that otherwise would be due to such participant under an award. The administrator also has the authority to allow participants the opportunity under an exchange program to transfer outstanding awards granted under the 2020 Plan to a financial institution or other person or entity selected by the administrator, and to institute an exchange program by which outstanding awards granted under the 2020 Plan may be surrendered or cancelled in exchange for awards of the same type, which may have a higher or lower exercise price and/or different terms, awards of a different type and/or cash, or by which the exercise price of an outstanding award granted under the 2020 Plan is increased or reduced. The administrator's decisions, interpretations and other actions are final and binding on all participants and will be given the maximum deference permitted by applicable law.

Stock Options

Stock options may be granted under our 2020 Plan. The exercise price of options granted under our 2020 Plan generally must be equal to at least 100% of the fair market value of a share of our Class A common stock on the date of grant. The term of an option may not exceed ten years. With respect to any participant who owns more than 10% of the voting power of all classes of our (or any of our parent's or subsidiary's) outstanding stock, the term of an incentive stock option granted to such participant must not exceed five years and the per share exercise price must equal at least 110% of the fair market value of a share of our Class A common stock on the grant date. The administrator will determine the methods of payment of the exercise price of an option, which may include cash, certain shares, cashless exercise, net exercise, as well as other types of consideration permitted by applicable law. After the termination of service of an employee, director or consultant, he or she may exercise his or her option for the period of time stated in his or her option agreement. In the absence of a specified time in an award agreement, if termination is due to death or disability, the option will remain exercisable for six months. In all other cases, in the absence of a specified time in an award agreement, the option will remain exercisable for 90 days following the

termination of service, except that in the event a participant's service is terminated by the Company for Cause (as defined in our 2020 Plan), the option will terminate immediately. An option, however, may not be exercised later than the expiration of its term. Subject to the provisions of our 2020 Plan, the administrator determines the terms of options.

Stock Appreciation Rights

Stock appreciation rights may be granted under our 2020 Plan. Stock appreciation rights allow the recipient to receive the appreciation in the fair market value of our Class A common stock between the exercise date and the date of grant. The term of a stock appreciation right may not exceed ten years. After the termination of service of an employee, director or consultant, he or she may exercise his or her stock appreciation right for the period of time stated in his or her stock appreciation rights agreement. In the absence of a specified time in an award agreement, if termination is due to death or disability, the stock appreciation rights will remain exercisable for six months. In all other cases, in the absence of a specified time in an award agreement, the stock appreciation rights will remain exercisable for 90 days following the termination of service. However, in no event may a stock appreciation right be exercised later than the expiration of its term. Subject to the provisions of our 2020 Plan, the administrator determines the terms of stock appreciation rights, including when such rights become exercisable and whether to pay any increased appreciation in cash or with shares of our Class A common stock, or a combination of both, except that the per-share exercise price for the shares to be issued pursuant to the exercise of a stock appreciation right generally will be no less than 100% of the fair market value per share on the date of grant.

Restricted Stock

Restricted stock may be granted under our 2020 Plan. Restricted stock awards (RSAs) are grants of shares of our Class A common stock that may have vesting requirements under any such terms and conditions established by the administrator. The administrator will determine the number of shares of restricted stock granted to any employee, director or consultant and, subject to the provisions of our 2020 Plan, will determine the terms and conditions of such awards. The administrator may impose whatever vesting conditions (if any) it determines to be appropriate (for example, the administrator may set restrictions based on the achievement of specific performance goals or continued service to us), and the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Recipients of RSAs generally will have voting and dividend rights with respect to such shares upon grant, unless the administrator provides otherwise. If such dividends are paid in shares, the shares will be subject to the same restrictions on transferability and forfeitability as the share of restricted stock with respect to which they were paid. Shares of restricted stock that do not vest are subject to our right of repurchase or forfeiture.

Restricted Stock Units

Restricted stock units (RSUs) may be granted under our 2020 Plan. Restricted stock units are bookkeeping entries representing an amount equal to the fair market value of one share of our Class A common stock. Subject to the provisions of our 2020 Plan, the administrator determines the terms and conditions of restricted stock units, including any vesting criteria and the form and timing of payment. The administrator may set vesting criteria based upon the achievement of company-wide, divisional, business unit, or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws or any other basis determined by the administrator in its discretion. The administrator, in its sole discretion, may pay earned restricted stock units in the form of cash, shares, or a combination of both. Notwithstanding the foregoing, the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed.

Performance Awards

Performance awards may be granted under the 2020 Plan. Performance awards are awards that may be earned in whole or in part on the attainment of performance goals or other vesting criteria that the administrator may determine, and that may be denominated in cash or stock. Each performance award will have an initial value that is determined by the administrator. Subject to the terms and conditions of the 2020 Plan, the administrator determines the terms and conditions of performance awards, including any vesting criteria and form and timing of payment. The administrator may set vesting criteria based upon the achievement of company-wide, divisional, business unit, or

individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws or any other basis determined by the administrator in its discretion. The administrator, in its sole discretion, may pay earned performance awards in the form of cash, shares, or a combination of both. Notwithstanding the foregoing, the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed.

Non-Employee Directors

All outside (non-employee) directors will be eligible to receive all types of awards (except for incentive stock options) under our 2020 Plan. Prior to the completion of this offering, we intend to implement a formal Outside Director Compensation Policy pursuant to which our outside directors will be eligible to receive equity awards under our 2020 Plan. Our 2020 Plan will provide that in any given fiscal year, no outside director may be granted awards (the value of which will be based on their grant date fair value) under our 2020 Plan and be provided any other compensation (including without limitation any cash retainers and fees) that in the aggregate exceed $, provided that in the fiscal year of the individual's initial service as a non-employee director, such amount is increased to $. The grant date fair values of awards granted under our 2020 Plan will be determined according to U.S. Generally Accepted Accounting Principles. Any awards or other compensation provided to an individual for his or her services as an employee or a consultant (other than an outside director), or before the effective date of the registration statement of which this prospectus forms a part, will not count toward this limit. This maximum limit provision does not reflect the intended size of any potential grants or a commitment to make grants to our outside directors under our 2020 Plan in the future.

Non-Transferability of Awards

Unless the administrator provides otherwise, our 2020 Plan generally does not allow for the transfer of awards other than by will or the laws of descent and distribution, and only the recipient of an award may exercise an award during his or her lifetime. If the administrator makes an award transferable, such award will contain such additional terms and conditions as the administrator deems appropriate.

Certain Adjustments

In the event of certain changes in our capitalization, such as a dividend or other distribution, recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, reclassification, repurchase or exchange of our shares or other securities or other change in our corporate structure affecting our shares (other than ordinary dividends or other ordinary distributions), to prevent diminution or enlargement of the benefits or potential benefits available under our 2020 Plan, the administrator will adjust the number and class of shares that may be delivered under our 2020 Plan and/or the number, class and price of shares covered by each outstanding award and any numerical share limits set forth in our 2020 Plan.

Dissolution or Liquidation

In the event of our proposed liquidation or dissolution, the administrator will notify participants as soon as practicable and all awards will terminate immediately before the consummation of such proposed transaction.

Merger or Change in Control

Our 2020 Plan provides that in the event of our merger or change in control, as defined in our 2020 Plan, each outstanding award will be treated as the administrator determines, without a participant's consent. The administrator may provide that awards granted under the 2020 Plan will be assumed or substituted by substantially equivalent awards, be terminated immediately before the merger or change in control, become vested and exercisable or payable and be terminated in connection with the merger or change in control, be terminated in exchange for cash, other property or other consideration or any combination of the above. The administrator is not required to treat all awards, all awards held by a participant, all portions of awards, or all awards of the same type, similarly.

If a successor corporation or its parent or subsidiary does not assume or substitute an equivalent award for any outstanding award (or a portion of such award), then such award (or its applicable portion) will fully vest, all

restrictions on such award (or its applicable portion) will lapse, all performance goals or other vesting criteria applicable to such award (or its applicable portion) will be deemed achieved at 100% of target levels and such award (or its applicable portion) will become fully exercisable, if applicable, for a specified period before the transaction, unless specifically provided otherwise under the applicable award agreement or other written agreement authorized by the administrator with the participant. The award (or its applicable portion) will then terminate upon the expiration of the specified period of time. If an option or stock appreciation right is not assumed or substituted, the administrator will notify the participant that such option or stock appreciation right will be exercisable for a period of time determined by the administrator in its sole discretion and the option or stock appreciation right will terminate upon the expiration of such period.

If awards granted to an outside director while such individual was an outside director are assumed or substituted for in our merger or change in control and the service of such outside director is terminated (other than upon his or her voluntary resignation that does not include a resignation at the request of the acquirer) on or following the merger or change in control, all such awards will fully vest, all restrictions on such awards will lapse, all performance goals or other vesting criteria applicable to such awards will be deemed achieved at 100% of target levels and such awards will become fully exercisable, if applicable, unless specifically provided otherwise under the applicable award agreement or other written agreement authorized by the administrator with the outside director.

Clawback

Awards are subject to any clawback policy of which we are required to adopt to comply with the listing standards of any national securities exchange or association on which our securities are listed or as is otherwise required by applicable laws. The administrator also may specify in an award agreement that the participant's rights, payments and benefits with respect to an award will be subject to reduction, cancellation, forfeiture or recoupment upon the occurrence of certain specified events. The administrator may require a participant to forfeit, return or reimburse us all or a portion of the award and any amounts paid under the award in order to comply with any clawback policy of ours as described in the first sentence of this paragraph or with applicable laws.

Amendment; Termination

The administrator has the authority to amend, alter, suspend or terminate our 2020 Plan, provided such action does not materially impair the rights of any participant unless mutually agreed otherwise. Our 2020 Plan will remain in effect for a term of ten years from the date of adoption of the 2020 Plan by our board of directors unless terminated earlier pursuant to the terms of our 2020 Plan.

2020 RSU Equity Incentive Plan

Our 2020 RSU Equity Incentive Plan, or RSU Plan, was adopted by our board of directors in April 2020, and was most recently amended and restated in July 2020, and we expect the RSU Plan to be further amended and restated before the effectiveness of the registration statement of which this prospectus forms a part. Our stockholders last approved our 2020 Plan in August 2020. It is expected that as of one business day before the effectiveness of the registration statement of which this prospectus forms a part, our RSU Plan will be terminated and we will not grant any additional awards under our RSU Plan thereafter. However, our RSU Plan will continue to govern the terms and conditions of the outstanding awards previously granted under our RSU Plan. The below is a summary of the terms currently expected to be implemented under the upcoming amendment and restatement of the RSU Plan, which are subject to change.

Our RSU Plan allows us to grant restricted stock units to employees, directors, officers and consultants of ours and any parent or subsidiary of ours.

As of September 30, 2020, an aggregate of 717,319 shares of our Class A common stock is reserved for issuance under our RSU Plan. As of September 30, 2020, restricted stock unit awards covering an aggregate of 717,319 shares of our Class A common stock were outstanding under our RSU Plan.

Plan Administration

Our board of directors or one or more committees appointed by our board of directors have the authority to administer our RSU Plan. Subject to the provisions of our RSU Plan, the administrator has the power to administer our RSU Plan and make all determinations deemed necessary or advisable for administering the RSU Plan, including but not limited to, the power to determine the fair market value of our Class A common stock, select the service providers to whom awards may be granted, determine the number of shares covered by each award, approve forms of award agreements for use under the RSU Plan, determine the terms and conditions of awards, construe and interpret the terms of our RSU Plan and awards granted under it, prescribe, amend and rescind rules relating to our RSU Plan, including creating sub-plans, modify or amend each award, and allow a participant to defer the receipt of payment of cash or the delivery of shares that otherwise would be due to such participant under an award. The administrator also has the authority to allow participants the opportunity under an exchange program to transfer outstanding awards granted under the RSU Plan to a financial institution or other person or entity selected by the administrator, and to institute an exchange program by which outstanding awards granted under the RSU Plan may be surrendered or cancelled in exchange for awards of the same type, which may have a higher or lower exercise price and/or different terms, awards of a different type and/or cash, or by which the exercise price of an outstanding award granted under the RSU Plan is increased or reduced. The administrator's decisions, interpretations and other actions are final and binding on all participants and will be given the maximum deference permitted by applicable law.

Restricted Stock Units

Restricted stock units may be granted under our RSU Plan. Restricted stock units are bookkeeping entries representing an amount equal to the fair market value of one share of our Class A common stock. Subject to the provisions of our RSU Plan, the administrator determines the terms and conditions of restricted stock units, including any vesting criteria and the form and timing of payment. The administrator may set vesting criteria based upon the achievement of company-wide, business unit, or individual goals (including, but not limited to, continued employment or service), or any other basis determined by the administrator in its discretion. The administrator, in its sole discretion, may pay earned restricted stock units in the form of cash, shares, or a combination of both. Notwithstanding the foregoing, the administrator, in its sole discretion, may at any time reduce or waive any vesting criteria that must be met.

Non-Transferability of Awards

Unless the administrator provides otherwise, our RSU Plan generally does not allow for the transfer of awards other than by will or the laws of descent and distribution. If the administrator makes an award transferable, such award may be transferred only by will, by the laws of descent and distribution, or as permitted by Rule 701 of the Securities Act of 1933.

Certain Adjustments

In the event of certain changes in our capitalization, such as a dividend (other than an ordinary dividend) or other distribution, recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase or exchange of our shares or other securities or other change in our corporate structure affecting our shares, to prevent diminution or enlargement of the benefits or potential benefits available under our RSU Plan, the administrator will adjust the number and class of shares that may be delivered under our RSU Plan and/or the number, class and price of shares covered by each outstanding award. Further, the administrator will make such adjustments to awards as required by Section 25102(o) of the California Corporations Code to the extent the Company is relying upon the exemption afforded thereby with respect to such awards.

Dissolution or Liquidation

In the event of our proposed liquidation or dissolution, the administrator will notify participants as soon as practicable and all awards will terminate immediately before the consummation of such proposed transaction.

Merger or Change in Control

Our RSU Plan provides that in the event of our merger or change in control, as defined in our RSU Plan, each outstanding award will be treated as the administrator determines, without a participant's consent, including, without limitation, that the administrator may provide that awards granted under the RSU Plan will be assumed or substituted by substantially equivalent awards, be terminated upon or immediately before the merger or change in control, become vested and exercisable or payable and be terminated in connection with the merger or change in control, be terminated in exchange for cash, other property or other consideration or any combination of the above. The administrator is not required to treat all awards, all awards held by a participant, or all awards of the same type, similarly.

If a successor corporation does not assume or substitute an equivalent award for any outstanding award (or a portion of such award), then all restrictions on such award (or its applicable portion) will lapse and all performance goals or other vesting criteria applicable to such award (or its applicable portion) will be deemed achieved at 100% of target levels and all other terms and conditions will be considered fulfilled, unless specifically provided otherwise under the applicable award agreement or other written agreement authorized by the administrator of the RSU Plan with the participant.

Clawback

Awards are subject to any clawback policy of ours which we are required to adopt pursuant to comply with applicable rules or laws. The administrator also may impose such other clawback, recovery or recoupment provisions in an award agreement as the administrator determines necessary or appropriate, including but not limited to a reacquisition right regarding previously acquired Shares or other cash or property. Additionally, the administrator may specify in an award agreement that the participant's rights, payments and benefits with respect to an award will be subject to reduction, cancellation, forfeiture or recoupment upon the occurrence of certain specified events.

Amendment; Termination

Our board of directors has the authority to amend, suspend or terminate our RSU Plan, provided such action does not materially impair the rights of any participant unless mutually agreed otherwise. Unless sooner terminated by our board of directors, the RSU Plan will continue in effect for a term of ten (10) years from the later of (a) the effective date of the RSU Plan in April 2020, or (b) the earlier of the most recent board of directors or stockholder approval of an increase in the number of shares reserved for issuance under the RSU Plan. As noted above, it is expected that as of one business day before the effectiveness of the registration statement of which this prospectus forms a part, our RSU Plan will be terminated and we will not grant any additional awards under our RSU Plan thereafter.

2017 Stock Incentive Plan

Our 2017 Stock Incentive Plan, or 2017 Plan, originally was adopted by our board of directors in September 2017 and was most recently amended and restated in May 2020, and we expect the 2017 Plan to be further amended and restated before the effectiveness of the registration statement of which this prospectus forms a part. Our stockholders last approved our 2017 Plan in May 2020. It is expected that as of one business day before the effectiveness of the registration statement of which this prospectus forms a part, our 2017 Plan will be terminated and we will not grant any additional awards under our 2017 Plan thereafter. However, our 2017 Plan will continue to govern the terms and conditions of the outstanding awards previously granted under our 2017 Plan. The below is a summary of the terms currently expected to be implemented under the upcoming amendment and restatement of the 2017 Plan, which are subject to change.

Our 2017 Plan allows us to provide incentive stock options, within the meaning of Section 422 of the Code, non-statutory stock options, and RSAs (each, an "award" and the recipient of such award, a "participant") to employees, directors, officers and consultants or advisors of ours and any parent or subsidiary of ours.

As of September 30, 2020, an aggregate of 25,283,351 shares of our Class A common stock, is reserved for issuance under our 2017 Plan. As of September 30, 2020, awards outstanding under our 2017 Plan consisted of stock options to purchase an aggregate of 16,164,706 shares of our Class A common stock and no RSAs .

Plan Administration

Our 2017 Plan is administered by our board of directors or a committee appointed by our board of directors, or the administrator. The administrator has the authority to make all determinations necessary or advisable to our 2017 Plan, including the authority to authorize the issuance of restricted stock grant stock options, authorize the issuance of shares upon exercise of stock options under the 2017 Plan, construe award agreements and the 2017 Plan, to prescribe, amend and rescind rules and regulations relating to the 2017 Plan, to determine the terms and provisions of awards, and to correct any defect or supply any omission or reconcile any inconsistency in the 2017 Plan or any award agreement. The administrator may accelerate the date or dates on which all or any particular stock option may be exercised or extend the period or periods of time during which all, or any particular, stock option or stock options may be exercised. Subject to the consent of any adversely affected participant, the administrator also has the authority to allow participants the opportunity under an exchange program to transfer outstanding awards granted under the 2017 Plan to a financial institution or other person or entity selected by the administrator, and to institute an exchange program by which outstanding awards granted under the 2017 Plan may be surrendered or cancelled in exchange for awards of the same type, which may have a higher or lower exercise price and/or different terms, awards of a different type and/or cash, or by which the exercise price of an outstanding award granted under the 2017 Plan is increased or reduced. The administrator's construction and interpretation of the terms and provisions of our 2017 Plan is final and conclusive.

Eligibility

Employees, officers, directors and consultants or advisors of ours or our parent or subsidiary companies are eligible to receive awards. Only our employees or employees of our parent or subsidiary companies are eligible to receive incentive stock options.

Stock Options

Stock options have been granted under our 2017 Plan. The administrator determines the exercise price of stock options granted under our 2017 Plan, which may not be less than the fair market value of our Class A common stock on the date of grant. The term of a stock option is stated in the applicable award agreement, but may not exceed ten years from the grant date. With respect to any employee who owns more than 10% of the total combined voting power of all classes of our outstanding stock, the exercise price of an incentive stock option must equal at least 110% of the fair market value on the grant date and the term of an incentive stock option granted to such employee may not exceed five years. The administrator determines the methods of payment of the exercise price of a stock option, which may include cash or check; delivery of shares of our Class A common stock; delivery of a personal recourse note with an interest rate not less than the lowest applicable federal rate; if the Class A common stock is registered under the Securities Exchange Act of 1934, by irrevocable instructions to a broker to deliver payment by cash or check; by reducing the number of shares otherwise issuable by a number of shares having fair market value equal to the aggregate exercise price of the option, or by any combination of the foregoing methods. The administrator determines the time after a participant's termination of employment or provision of services during which a participant may exercise his or her option, which except as otherwise expressly provided in the applicable award agreement, generally will be 90 days (or 180 days in the case of a participant's termination of employment or service due to death or disability). In the event a participant's employment or provision of services to the Company is terminated by the Company for Cause (as defined in our 2017 Plan), the option will terminate immediately. A stock option may not be exercised later than the expiration of its term. The administrator, in its sole discretion, may include in stock option agreements additional provisions not inconsistent with the terms or conditions of the 2017 Plan, providing for, among other items, restrictions on transfer, rights of the Company to repurchase shares acquired upon exercise of the stock option or such other provisions determined by our board of directors.

Restricted Stock

Restricted stock awards have been granted under our 2017 Plan. Such restricted stock are shares of our Class A common stock entitling the recipient to acquire, for a purchase price (if any) and subject to such restrictions and conditions as the administrator may determine at the time of grant, including continued employment and/or achievement of pre-established performance goals and objectives. The administrator determines any purchase price of restricted stock awards at the time of authorizing the issuance of such awards. The administrator, in its sole discretion, may include in restricted stock award agreements additional provisions not inconsistent with the terms or conditions of the 2017 Plan, providing for, among other items, restrictions on transfer and the right of the Company to repurchase shares of restricted stock or such other provisions determined by our board of directors.

Non-transferability of Stock Options

Under our 2017 Plan, stock options are not assignable or transferable by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution. During the life of an optionee, an option may be exercised only by the optionee.

Certain Adjustments

If, through or as a result of any merger, consolidation, sale of all or substantially all of our assets, reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar transaction, outstanding shares of our Class A common stock are increased, decreased or exchanged for a different number or kind of securities or other non-cash assets are distributed with respect to our stock or other securities, an appropriate and proportionate adjustment will be made in the number and kind of shares reserved for issuance under the 2017 Plan, the number and kind of shares or other securities subject to any then outstanding stock options, and the price of shares covered by each outstanding stock option. Except as expressly provided in the 2017 Plan, any issuance by us of shares of stock of any class, or securities convertible into shares of stock of any class, for cash or property or for labor or services, either upon direct sale or exercise of rights or warrants, or upon conversion of shares or obligations of ours convertible into such shares or securities, will not affect or cause an adjustment to the number or price of shares subject to outstanding options under the 2017 Plan. The administrator's determination regarding such adjustments will be final, binding and conclusive.

Effect of Certain Transactions

Our 2017 Plan provides that, unless provided otherwise in an option agreement or restricted stock agreement, in the event of a Change in Control Transaction (as defined in our 2017 Plan), the administrator, or the board of directors of any corporation assuming the obligations of the Company, may, in its discretion, take any one or more of the following actions, as to some or all outstanding awards: (i) provide that stock options will be assumed or substituted for with equivalent awards, (ii) upon written notice, provide that all unexercised stock options will terminate unless exercised, to the extent exercisable, (iii) upon written notice, provide that all unvested shares of restricted stock will be repurchased at cost, (iv) make or provide for a cash payment to optionees equal to the difference between (A) the fair market value of the per share consideration the holder of a share of Class A common stock will receive upon consummation of the Change in Control Transaction (the "Per Share Transaction Price"), *multiplied by* the number of shares of Class A common stock subject to outstanding vested stock options, *less* (B) the aggregate exercise price of such outstanding vested stock options, or (v) provide that all or any outstanding stock options will become exercisable and all or any outstanding restricted stock awards will vest in part or in full immediately prior to such event. If any stock options are exercisable at a price equal to or in excess of the Per Share Transaction Price, the administrator may provide that those stock options will terminate immediately upon the consummation of the Change in Control Transaction without payment. In the event of a business combination or other transaction including a Change in Control Transaction, any securities, cash or other property received in exchange for shares of restricted stock will continue to be governed by the provisions of any restricted stock agreement pursuant to which they were granted, including any provisions regarding vesting, and such securities, cash or other property may be held in escrow on such terms as the administrator may direct. The administrator need not take the same action with respect to all awards.

If a successor corporation does not assume or substitute an equivalent award for any outstanding award (or a portion of such award), then such award (or its applicable portion) will fully vest, all restrictions on such award (or its applicable portion) will lapse, all performance goals or other vesting criteria applicable to such award (or its applicable portion) will be deemed achieved at 100% of target levels and such award (or its applicable portion) will become fully exercisable, if applicable, for a specified period before the transaction, unless specifically provided otherwise under the applicable award agreement or other written agreement authorized by our board of directors with the participant. The award (or its applicable portion) will then terminate upon the expiration of the specified period of time. If an option (or portion of such option) is not assumed or substituted, our board of directors will notify the participant that such option will be exercisable for a period of time determined by our board of directors in its sole discretion and the option will terminate upon the expiration of such period.

Amendment and Termination

Our board of directors may amend or terminate our 2017 Plan at any time. Amendments to our 2017 Plan not requiring shareholder approval will become effective when adopted by our board of directors. Amendments requiring shareholder approval will become effective when adopted by our board of directors, but if shareholder approval is not obtained within twelve months of such adoption, any incentive stock options granted pursuant to such amendment will be deemed to be non-statutory options, provided that such stock options are authorized by our 2017 Plan. Unless sooner terminated by action of our board of directors, the 2017 Plan will terminate upon the close of business on the day next preceding the tenth anniversary of the date of its adoption by our board of directors. As noted above, it is expected that as of one business day before the effectiveness of the registration statement of which this prospectus forms a part, our 2017 Plan will be terminated and we will not grant any additional awards under our 2017 Plan thereafter.

2020 Employee Stock Purchase Plan

Prior to the completion of this offering, we expect that our board of directors will adopt, and our stockholders will approve, our 2020 Employee Stock Purchase Plan (the ESPP). Our ESPP will be effective upon the later of its adoption by our board of directors or one business day immediately before the effective date of the registration statement of which this prospectus forms a part. The below is a summary of the terms currently expected to be implemented under the ESPP, which are subject to change.

Authorized Shares

A total of shares of our Class A common stock will be available for issuance under our ESPP. In addition, our ESPP will provide for annual increases in the number of shares of our Class A common stock available for issuance under our ESPP on the first day of each of our fiscal years beginning with our fiscal year 2021, in an amount equal to the least of:

- shares;
- a number of shares equal to % of the outstanding shares of all classes of our common stock on the last day of our immediately preceding fiscal year; and
- such other number of shares as our board of directors may determine as of no later than the last day of our immediately preceding fiscal year.

Shares issuable under the ESPP will be authorized, but unissued, or reacquired shares of our Class A common stock.

Plan Administration

Our board of directors or a committee appointed by our board of directors may administer the ESPP. We expect that our compensation committee will administer our ESPP. The administrator will have full and exclusive discretionary authority to construe, interpret, and apply the terms of the ESPP, delegate ministerial duties to any of our employees, designate separate offerings under the ESPP, designate our subsidiaries as participating in the ESPP, determine eligibility, adjudicate all disputed claims filed under the ESPP and establish procedures that it deems

necessary or advisable for the administration of the ESPP, including, but not limited to, adopting such procedures, sub-plans, and appendices to the enrollment agreement as are necessary or appropriate to permit participation in the ESPP by employees who are non-U.S. nationals or employed outside the U.S. The administrator's findings, decisions, and determinations are final and binding on all participants to the maximum extent permitted by law.

Eligibility

Generally, any of our employees are eligible to participate in our ESPP if they are customarily employed by us or any of our participating subsidiaries for at least 20 hours per week and more than five months in any calendar year. The administrator, in its discretion, before an enrollment date for all options granted on such enrollment date in an offering, may determine that an employee who (a) has not completed at least two years of service (or a lesser period of time determined by the administrator) since the employee's last hire date, (b) customarily works not more than 20 hours per week (or a lesser period of time determined by the administrator), (c) customarily works not more than five months per calendar year (or a lesser period of time determined by the administrator), (d) is a highly compensated employee within the meaning of Code Section 414(q), or (e) is a highly compensated employee within the meaning of Code Section 414(q) with compensation above a certain level or is an officer or subject to disclosure requirements under Section 16(a) of the Exchange Act, is or is not eligible to participate in an offering. However, an employee may not be granted an option to purchase stock under our ESPP if the employee (i) immediately after the grant, would own stock and/or hold outstanding options to purchase such stock possessing 5% or more of the total combined voting power or value of all classes of our (or any of our parent's or subsidiary's) capital stock; or (ii) holds rights to purchase stock under all of our employee stock purchase plans that accrue at a rate that exceeds $25,000 worth of stock for each calendar year.

Participants may end their participation at any time during an offering period and will be paid their accrued contributions that have not yet been used to purchase shares of our common stock. Participation ends automatically upon termination of employment with us.

Offering Periods and Purchase Periods

Our ESPP includes a component that is intended to qualify as an "employee stock purchase plan" under Code Section 423 (the 423 Component), and a component that does not comply with Code Section 423 (the Non-423 Component). For purposes of this summary, a reference to our ESPP generally will mean the terms and operations of the 423 Component. Upon the administrator's determination that offering periods will commence under our ESPP (the Offer Commencement Approval), our ESPP will provide for six-month offering periods, unless the administrator determines otherwise. Each offering period will have one purchase period with the same duration as the offering period. The offering periods will be scheduled to begin on the first trading day on or after (a) February 15 and August 15 of each year following the date of the Offer Commencement Approval, or, (b) on May 15 and November 15 of each year following the Offer Commencement Approval if either of May 15 or November 15 occurs earlier than February 15 or August 15 in the year of the Offer Commencement Approval. The administrator is authorized to change the duration of future offering periods and purchase periods under our ESPP, including the starting and ending dates of offering periods and purchase periods and the number of purchase periods in any offering periods, provided that no offering period will have a duration exceeding 27 months. If the fair market value of a share of our common stock on a purchase date is less than the fair market value on the first trading day of the offering period, participants in that offering period will be withdrawn from that offering period following their purchase of shares on that purchase date and automatically will be enrolled in a new offering period.

Contributions

Our ESPP permits participants to purchase shares of our common stock through payroll deductions of up to 15% of their eligible compensation, which includes a participant's base straight time gross earnings but excludes payments for overtime and shift premium, incentive compensation, bonuses, commissions, equity compensation and other similar compensation.

Exercise of Purchase Right

Amounts deducted and accumulated by a participant under our ESPP are used to purchase shares of our common stock at the end of each offering period. The purchase price of the shares will be 85% of the lower of (a) the fair market value of a share of our common stock on the first trading day of the offering period or (b) the fair market value of a share of our common stock on the exercise date. A participant will be permitted to purchase a maximum of 2,500 shares during each offering period.

Non-Transferability

A participant may not transfer the contributions credited to his or her ESPP account or rights granted under our ESPP, other than by will or the laws of descent and distribution.

Certain Adjustments

Our ESPP provides that if any dividend or other distribution (whether in the form of cash, our common stock, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split up, spin off, combination, reclassification, repurchase, or exchange of our common stock or other securities of ours, or other change in our corporate structure affecting our common stock occurs (other than any ordinary dividends or other ordinary distributions), the administrator will make adjustments to the number and class of shares that may be delivered under our ESPP and/or the purchase price per share and number of shares covered by each option granted under our ESPP that has not yet been exercised, and the numerical share limits under our ESPP. In the event of our proposed dissolution or liquidation, any offering period in progress will be shortened by setting a new purchase date and will terminate immediately before the completion of such proposed transaction, unless determined otherwise by the administrator.

Merger or Change in Control

In the event of our merger or change in control, as defined in our ESPP, a successor corporation may assume or substitute for each outstanding option. If the successor corporation does not assume or substitute for the options, the offering period then in progress will be shortened, and a new exercise date will be set to occur before the date of the proposed merger or change in control. The administrator will notify each participant that the exercise date has been changed and that the participant's option will be exercised automatically on the new exercise date unless before such date the participant has withdrawn from the offering period or a participant's participation has terminated due to termination of employment.

Amendment; Termination

The administrator has the authority to modify, amend, suspend, or terminate our ESPP except that, subject to certain exceptions described in our ESPP, no such action may adversely affect any outstanding rights to purchase shares of our common stock under our ESPP. Our ESPP will terminate automatically 20 years after the later of the date of the ESPP's adoption by our board of directors or the business day immediately before the effective date of our registration statement of which this prospectus forms a part, unless we terminate it earlier.

401(k) Plan

We maintain a 401(k) retirement savings plan, for the benefit of our employees, including our named executive officers, who satisfy certain eligibility requirements. Our 401(k) plan provides eligible employees with an opportunity to save for retirement on a tax-advantaged basis. Under our 401(k) plan, eligible employees may elect to defer a portion of their compensation, within the limits prescribed by the Code and the applicable limits under the 401(k) plan, on a pre-tax or after-tax (Roth) basis, through contributions to the 401(k) plan. All of a participant's contributions into the 401(k) plan are 100% vested when contributed. The 401(k) plan is intended to qualify under Sections 401(a) and 501(a) of the Code. As a tax-qualified retirement plan, pre-tax contributions to the 401(k) plan

and earnings on those pre-tax contributions are not taxable to the employees until distributed from the 401(k) plan, and earnings on Roth contributions are not taxable when distributed from the 401(k) plan.

Rule 10b5-1 Plan Sales

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our Class A common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or executive officer when entering into the plan, without further direction from them. The director or executive officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material nonpublic information subject to compliance with the terms of our insider trading policy. Without the prior written consent of the representatives of the underwriters, prior to the day following the 180th day after the date of this offering, the sale of any shares under such plan would be subject to the lock-up agreement that the director or executive officer has entered into with the underwriters.

CERTAIN RELATIONSHIPS AND RELATED-PARTY TRANSACTIONS

In addition to the compensation arrangements, including employment, termination of employment and change in control arrangements, discussed in the sections titled "Management" and "Executive Compensation," the following is a description of each transaction since January 1, 2017 and each currently proposed transaction in which:

- we have been or are to be a participant;
- the amount involved exceeded or exceeds $120,000; and
- any of our directors, executive officers or holders of more than 5% of our outstanding capital stock, or any immediate family member of, or person sharing the household with, any of these individuals or entities, had or will have a direct or indirect material interest.

PrognomIQ Transaction

As described in the section "Business—PrognomIQ," on August 21, 2020, we consummated a transaction whereby we spun off our subsidiary PrognomIQ, Inc. through a distribution of shares of Class A common stock, Class B common stock and preferred stock of PrognomIQ to our stockholders. As a result of this transaction, those individuals who were our stockholders as of 5:00 p.m. Eastern Time on August 20, 2020, including certain of our directors and executive officers and venture capital funds that beneficially own more than 5% of our outstanding capital stock and/or are represented on our board of directors, received a distribution of shares of the relevant class of stock of PrognomIQ.

We have non-exclusively licensed our patents and patent applications to PrognomIQ for use in the field of human diagnostics. Pursuant to our agreement with PrognomIQ, we also assigned a patent application related to lung cancer biomarkers to PrognomIQ. As part of the agreement, we also intend to grant PrognomIQ a sublicense to use the BWH patents and patent applications. We will also be providing general transition services and support, including laboratory and office space to PrognomIQ pursuant to a transition services agreement during the transition period.

Philip Ma, Ph.D., our co-Founder and former Chief Business Officer, serves as the Chief Executive Officer of PrognomIQ. While Dr. Ma has transitioned to a full-time employee of PrognomIQ, he will remain a consultant of the Company until April 2021. Our Chief Executive Officer and Chair of our board of directors, Omid Farokhzad, M.D., is the Chair of PrognomIQ's board of directors.

The following table presents the number of shares distributed and equity awards granted in connection with the PrognomIQ transaction to our directors, executive officers and 5% stockholders.

Investor	Class A Common Shares	Class B Common Shares	Preferred Shares
David Hallal	892,776	—	—
Emerson Collective Investments, LLC	—	—	5,326,807
Entities affiliated with aMoon Fund	—	—	10,772,174
Entities affiliated with Fidelity	—	—	6,666,666
Entities affiliated with Maverick Capital Ventures, LLC	—	349,999	11,396,607
Entities affiliated with T. Rowe Price	—	—	5,169,230
Invus Public Equities, L.P.	—	—	10,808,953
Omid Farokhzad, M.D. and affiliated entities	5,918,990	17,545,007	220,240
Philip Ma, Ph.D. and affiliated entity	2,152,360	1,000,000	220,240
Robert Langer, Sc.D.	1,042,150	1,000,000	440,480
Terrance McGuire and affiliated entity	907,031	8,749	110,120

Convertible Preferred Stock Financings

Series D-1 Convertible Preferred Stock Transaction

In May 2020, we issued and sold an aggregate of 14,666,662 shares of our Series D-1 convertible preferred stock at a purchase price of $3.75 per share for an aggregate purchase price of approximately $55.0 million. Purchasers of our Series D-1 convertible preferred stock included venture capital funds that beneficially owned more than 5% of our outstanding share capital and/or are represented on our board of directors. The following table presents the number of shares and the total purchase price paid by these persons.

Investor	Series D-1 Convertible Preferred Shares	Total Purchase Price
Emerson Collective Investments, LLC	373,333	$ 1,399,999
Entities affiliated with aMoon Fund[1]	2,933,333	$ 10,999,999
Entities affiliated with Fidelity[2]	6,666,666	$ 24,999,998
Entities affiliated with Maverick Capital Ventures, LLC[3]	800,000	$ 3,000,000
Entities affiliated with T. Rowe Price[4]	2,400,000	$ 9,000,000
Invus Public Equities, L.P.	533,333	$ 1,999,999

(1) Entities affiliated with aMoon Fund whose shares are aggregated for the purposes of reporting ownership information include aMoon 2 Fund, Limited Partnership and aMoon Co-Investment SPV I, L.P.
(2) Entities affiliated with Fidelity whose shares are aggregated for the purposes of reporting ownership information include Fidelity Growth Company Commingled Pool, Fidelity Mt. Vernon Street Trust: Fidelity Growth Company Fund, Fidelity Mt. Vernon Street Trust: Fidelity Growth Company K6 Fund, Fidelity Mt. Vernon Street Trust: Fidelity Series Growth Company Fund and Fidelity Select Portfolios Select Medical Technology and Devices Portfolio.
(3) Entities affiliated with Maverick Capital Ventures, LLC, whose shares are aggregated for the purpose of reporting ownership information include Maverick Advisors Fund, L.P. and Maverick Ventures Investment Fund, LP. David Singer, a member of our board of directors, is affiliated with Maverick Capital Ventures, LLC.
(4) Entities affiliated with T. Rowe Price include T. Rowe Price Health Sciences Portfolio, TD Mutual Funds - TD Health Sciences Fund, VALIC Company I - Health Sciences Fund and T. Rowe Price Health Sciences Fund, Inc.

Series D Convertible Preferred Stock Transaction

In November 2019 and December 2019, we issued and sold an aggregate of 16,923,077 shares of our Series D convertible preferred stock shares at a purchase price of $3.25 per share for an aggregate purchase price of approximately $55.0 million. Purchasers of our Series D convertible preferred stock included venture capital funds that beneficially owned more than 5% of our outstanding share capital and/or are represented on our board of directors. The following table presents the number of shares and the total purchase price paid by these persons.

Investor	Series D Convertible Preferred Shares	Total Purchase Price
Emerson Collective Investments, LLC	1,133,739	$ 3,684,652
Entities affiliated with aMoon Fund[1]	7,838,841	$ 25,476,233
Entities affiliated with Maverick Capital Ventures, LLC[2]	1,081,688	$ 3,515,486
Entities affiliated with T. Rowe Price[3]	2,769,230	$ 8,999,998
Invus Public Equities, L.P.	1,015,384	$ 3,299,998

(1) Entities affiliated with aMoon Fund whose shares are aggregated for the purposes of reporting ownership information include aMoon 2 Fund, Limited Partnership and aMoon Co-Investment SPV I, L.P.
(2) Entities affiliated with Maverick Capital Ventures, LLC, whose shares are aggregated for the purpose of reporting ownership information include Maverick Advisors Fund, L.P. and Maverick Ventures Investment Fund, LP. David Singer, a member of our board of directors, is affiliated with Maverick Capital Ventures, LLC.
(3) Entities affiliated with T. Rowe Price include T. Rowe Price Health Sciences Portfolio, TD Mutual Funds - TD Health Sciences Fund, VALIC Company I - Health Sciences Fund and T. Rowe Price Health Sciences Fund, Inc.

Series C Convertible Preferred Stock Transaction

In March and April 2019, we issued and sold an aggregate of 7,000,000 shares of our Series C convertible preferred stock at a purchase price of $2.50 per share for an aggregate purchase price of approximately $17.5 million. Purchasers of our Series C convertible preferred stock included venture capital funds that beneficially owned more than 5% of our outstanding share capital and/or are represented on our board of directors. The following table presents the number of shares and the total purchase price paid by these persons.

Investor	Series C Convertible Preferred Shares	Total Purchase Price
Emerson Collective Investments, LLC	520,000	$ 1,300,000
Entities affiliated with Maverick Capital Ventures, LLC[(1)]	880,000	$ 2,200,000
Invus Public Equities, L.P.	800,000	$ 2,000,000

(1) Entities affiliated with Maverick Capital Ventures, LLC, whose shares are aggregated for the purpose of reporting ownership information include Maverick Advisors Fund, L.P. and Maverick Ventures Investment Fund, LP. David Singer, a member of our board of directors, is affiliated with Maverick Capital Ventures, LLC.

Series B Convertible Preferred Stock Transaction

In March 2018, we issued and sold an aggregate of 16,920,470 shares of Series B convertible preferred stock at a purchase price of $1.773 per share for an aggregate purchase price of approximately $30.0 million. Purchasers of our Series B convertible preferred stock included venture capital funds that beneficially owned more than 5% of our outstanding share capital and/or are represented on our board of directors. The following table presents the number of shares and the total purchase price paid by these persons.

Investor	Series B Convertible Preferred Shares	Total Purchase Price
Emerson Collective Investments, LLC	3,299,735	$ 5,850,430
Entities affiliated with Maverick Capital Ventures, LLC[(1)]	4,230,118	$ 7,499,999
Invus Public Equities, L.P.	8,460,236	$ 14,999,998

(1) Entities affiliated with Maverick Capital Ventures, LLC, whose shares are aggregated for the purpose of reporting ownership information include Maverick Advisors Fund, L.P. and Maverick Ventures Investment Fund, LP. David Singer, a member of our board of directors, is affiliated with Maverick Capital Ventures, LLC.

Series A Convertible Preferred Stock Transaction

In December 2017, we issued and sold an aggregate of 6,607,201 shares of our Series A convertible preferred stock at a purchase price of $0.9081 per share for an aggregate purchase price of approximately $6.0 million. Purchasers of our Series A convertible preferred stock included certain of our officers and directors. The following table presents the number of shares and the total purchase price paid by these persons.

Investor	Series A Convertible Preferred Shares	Total Purchase Price
Dynamics Group LLC[(1)]	220,240	$ 200,000
Entities affiliated with Maverick Capital Ventures, LLC[(2)]	4,404,801	$ 4,000,000
Philip Ma, Ph.D.[(3)]	220,240	$ 200,000
Robert Langer, Sc.D.[(4)]	440,480	$ 400,000
Strong Bridge LLC[(5)]	110,120	$ 100,000

(1) Omid Farokhzad, M.D., is our Chief Executive Officer and the chair of our board of directors and is the sole member of Dynamics Group LLC.

(2) Entities affiliated with Maverick Capital Ventures, LLC, whose shares are aggregated for the purpose of reporting ownership information include Maverick Advisors Fund, L.P. and Maverick Ventures Investment Fund, LP. David Singer, a member of our board of directors, is affiliated with Maverick Capital Ventures, LLC.
(3) Philip Ma, Ph.D. is a founder, and, at the time of purchase, was the President and Chief Business Officer of the Company.
(4) Robert Langer, Sc.D. is a member of our board of directors.
(5) Terrance McGuire is a member of our board of directors and is an operating manager of Strong Bridge LLC.

Investors' Rights Agreement

We are party to an amended and restated investors' rights agreement, dated as of May 12, 2020 (IRA), which provides, among other things, that certain holders of our capital stock have the right to demand that we file a registration statement or request that their shares of our capital stock be covered by a registration statement that we are otherwise filing. David Singer, a member of our board of directors, is affiliated with Maverick Capital Ventures, LLC, which is a party to the IRA. See the section titled "Description of Capital Stock—Registration Rights" for additional information regarding these registration rights.

Right of First Refusal

Pursuant to certain of our bylaws, equity compensation plans and certain agreements with our stockholders, including an amended and restated right of first refusal and co-sale agreement, dated as of May 12, 2020, we or our assignees have a right to purchase shares of our capital stock which stockholders propose to sell to other parties. This right will terminate upon completion of this offering. David Singer, a member of our board of directors, is affiliated with Maverick Capital Ventures, LLC, which is a party to the right of first refusal and co-sale agreement.

Voting Agreement

We are party to a voting agreement, dated as of May 12, 2020, under which certain holders of our capital stock have agreed to vote their shares of our capital stock on certain matters, including with respect to the election of directors. Upon completion of this offering, the voting agreement will terminate and none of our stockholders will have any special rights regarding the election or designation of members of our board of directors. David Singer, a member of our board of directors, is affiliated with Maverick Capital Ventures, LLC, which is a party to the voting agreement.

Other Transactions

We have granted stock options, RSAs and RSUs to our executive officers and certain of our directors. See the sections titled "Executive Compensation—Outstanding Equity Awards at Fiscal Year-End" and "Management—Director Compensation" for a description of these stock incentive awards.

Other than as described above under this section titled "Certain Relationships and Related Party Transactions," since January 1, 2017, we have not entered into any transactions, nor are there any currently proposed transactions, between us and a related party where the amount involved exceeds, or would exceed, $120,000, and in which any related person had or will have a direct or indirect material interest. We believe the terms of the transactions described above were comparable to terms we could have obtained in arm's-length dealings with unrelated third parties.

Limitation of Liability and Indemnification of Officers and Directors

We expect to adopt an amended and restated certificate of incorporation, which will become effective immediately prior to the completion of this offering, and which will contain provisions that limit the liability of our directors for monetary damages to the fullest extent permitted by the Delaware General Corporation Law. Consequently, our directors will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as directors, except liability for the following:

- any breach of their duty of loyalty to our company or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;

- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or
- any transaction from which they derived an improper personal benefit.

Any amendment to, or repeal of, these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to that amendment or repeal. If the Delaware General Corporation Law is amended to provide for further limitations on the personal liability of directors of corporations, then the personal liability of our directors will be further limited to the greatest extent permitted by the Delaware General Corporation Law.

In addition, we expect to adopt amended and restated bylaws, which will become effective immediately prior to the completion of this offering, and which will provide that we will indemnify, to the fullest extent permitted by law, any person who is or was a party or is threatened to be made a party to any action, suit or proceeding by reason of the fact that they are or were one of our directors or officers or is or was serving at our request as a director or officer of another corporation, partnership, joint venture, trust or other enterprise. Our amended and restated bylaws are expected to provide that we may indemnify to the fullest extent permitted by law any person who is or was a party or is threatened to be made a party to any action, suit or proceeding by reason of the fact that they are or were one of our employees or agents or is or was serving at our request as an employee or agent of another corporation, partnership, joint venture, trust or other enterprise. Our amended and restated bylaws will also provide that we must advance expenses incurred by or on behalf of a director or officer in advance of the final disposition of any action or proceeding, subject to limited exceptions.

Further, we have entered into or will enter into indemnification agreements with each of our directors and executive officers that may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements require us, among other things, to indemnify our directors and executive officers against liabilities that may arise by reason of their status or service. These indemnification agreements also require us to advance all expenses incurred by the directors and executive officers in investigating or defending any such action, suit or proceeding. We believe that these agreements are necessary to attract and retain qualified individuals to serve as directors and executive officers.

The limitation of liability and indemnification provisions that are expected to be included in our amended and restated certificate of incorporation, amended and restated bylaws and in indemnification agreements that we have entered into or will enter into with our directors and executive officers may discourage stockholders from bringing a lawsuit against our directors and executive officers for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against our directors and executive officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and executive officers as required by these indemnification provisions. At present, we are not aware of any pending litigation or proceeding involving any person who is or was one of our directors, officers, employees or other agents or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, for which indemnification is sought, and we are not aware of any threatened litigation that may result in claims for indemnification.

We have obtained insurance policies under which, subject to the limitations of the policies, coverage is provided to our directors and executive officers against loss arising from claims made by reason of breach of fiduciary duty or other wrongful acts as a director or executive officer, including claims relating to public securities matters, and to us with respect to payments that may be made by us to these directors and executive officers pursuant to our indemnification obligations or otherwise as a matter of law.

Certain of our non-employee directors may, through their relationships with their employers, be insured or indemnified against certain liabilities incurred in their capacity as members of our board of directors.

The underwriting agreement will provide for indemnification by the underwriters of us and our officers and directors for certain liabilities arising under the Securities Act or otherwise.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling our company pursuant to the foregoing provisions, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Policies and Procedures for Related Party Transactions

Following the completion of this offering, our audit committee will have the primary responsibility for reviewing and approving or disapproving "related party transactions," which are transactions between us and related persons in which the aggregate amount involved exceeds or may be expected to exceed $120,000 and in which a related person has or will have a direct or indirect material interest. Upon completion of this offering, our policy regarding transactions between us and related persons will provide that a related person is defined as a director, executive officer, nominee for director or greater than 5% beneficial owner of our common stock, in each case since the beginning of the most recently completed year, and any of their immediate family members. Our audit committee charter that will be in effect upon completion of this offering will provide that our audit committee shall review and approve or disapprove any related party transactions.

PRINCIPAL STOCKHOLDERS

The following table sets forth certain information with respect to the beneficial ownership of our capital stock as of September 30, 2020, and as adjusted to reflect the sale of our Class A common stock in this offering assuming no exercise of the underwriters' option to purchase additional shares of our Class A common stock, for:

- each of our named executive officers;
- each of our directors;
- all of our current directors and executive officers as a group; and
- each person known by us to be the beneficial owner of more than 5% of the outstanding shares of each of our Class A common stock and Class B common stock.

We have determined beneficial ownership in accordance with the rules of the SEC, and thus it represents sole or shared voting or investment power with respect to our securities. Unless otherwise indicated below, to our knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all shares that they beneficially owned, subject to community property laws where applicable. The information does not necessarily indicate beneficial ownership for any other purpose, including for purposes of Sections 13(d) and 13(g) of the Securities Act.

We have based our calculation of the percentage of beneficial ownership prior to this offering on 7,054,694 shares of our Class A common stock and 20,000,000 shares of our Class B common stock outstanding as of September 30, 2020, and 62,117,410 shares of our Class A common stock resulting from the automatic conversion of all outstanding shares of our convertible preferred stock into our Class A common stock immediately prior to the completion of this offering, as if this conversion had occurred as of September 30, 2020. We have based our calculation of the percentage of beneficial ownership after this offering on shares of our Class A common stock issued by us in our initial public offering and 20,000,000 shares of Class B common stock outstanding immediately after the completion of this offering, assuming that the underwriters will not exercise their option to purchase up to an additional shares of our Class A common stock from us in full. We have deemed shares of our Class A common stock subject to stock options that are currently exercisable or exercisable within 60 days of September 30, 2020, or issuable pursuant to RSAs which are subject to vesting and settlement conditions expected to occur within 60 days of September 30, 2020 to be outstanding and to be beneficially owned by the person holding the stock option or RSA for the purpose of computing the percentage ownership of that person. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person.

Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Seer, Inc. 3800 Bridge Parkway, Suite 102, Redwood City, California 94065.

Name of Beneficial Owner	Shares Beneficially Owned				% of Total Outstanding Before Offering	% of Total Voting Power Before Offering#	% of Total Outstanding After Offering	% of Total Voting Power After Offering
	Class A Shares	%	Class B Shares†	%				
Named Executive Officers and Directors:								
Omid Farokhzad, M.D.(1)	6,139,748		17,545,007					
David Hallal(2)	975,039		—					
Catherine J. Friedman(3)	300,000		—					
Robert Langer, Sc.D.(4)	1,482,715		1,000,000					
Terrance McGuire(5)	1,017,219		8,749					
David Singer(6)	11,396,607		349,999					
All executive officers and directors as a group (8 persons)(7)	26,611,452		18,912,504					
5% Stockholders:								
Entities affiliated with Maverick Capital Ventures, LLC(8)	11,396,607		349,999					
Invus Public Equities, L.P.(9)	10,808,953		—					
Entities affiliated with aMoon Fund(10)	10,772,174		—					
Entities affiliated with Fidelity(11)	6,666,666		—					
Emerson Collective Investments LLC(12)	5,326,807		—					
Entities affiliated with T. Rowe Price(13)	5,169,230		—					

† The Class B common stock is convertible at any time by the holder into shares of Class A common stock on a share-for-share basis, such that each holder of Class B common stock beneficially owns an equivalent number of Class A common stock.

Percentage total voting power represents voting power with respect to all shares of our Class A and Class B common stock, as a single class. Each holder of Class B common stock shall be entitled to ten votes per share of Class B common stock and each holder of Class A common stock shall be entitled to one vote per share of Class A common stock on all matters submitted to our stockholders for a vote. The Class A common stock and Class B common stock vote together as a single class on all matters submitted to a vote of our stockholders, except as may otherwise be required by law.

* Represents beneficial ownership of less than one percent (1%) of the outstanding shares of our common stock.

(1) Includes (i) 597,538 shares of Class A common stock held of record by Dr. Farokhzad, of which 552,457 may be repurchased by us at the original exercise price; (ii) 220,240 shares of Class A common stock and 5,545,007 shares of Class B common stock held of record by Dynamics Group LLC for which Dr. Farokhzad serves as the sole member, of which 731,771 may be repurchased by us at the original exercise price; (iii) 6,000,000 shares of Class B shares held of record by SAF-BND Trust for which Dr. Farokhzad's spouse serves as trustee; (iv) 1,109,397 shares of Class A common stock and 6,000,000 shares of Class B common stock held of record by OCF 2014 Trust for which Dr. Farokhzad's spouse serves as the trust advisor; and (v) 4,212,573 shares of Class A common stock subject to options exercisable within 60 days of September 30, 2020, of which 742,221 are fully vested. Dr. Farokhzad disclaims beneficial ownership of the shares held by the SAF-BND Trust and OCF 2014 Trust.

(2) Includes (i) 564,026 shares of Class A common stock held of record by Mr. Hallal, of which 211,511 may be repurchased by us at the original exercise price and (ii) 411,013 shares of Class A common stock subject to options exercisable within 60 days of September 30, 2020, of which 58,078 are fully vested.

(3) Includes 300,000 shares of Class A common stock held of record by Ms. Friedman, all of which may be repurchased by us at the original exercise price.

(4) Includes (i) 781,867 shares of Class A common stock, of which 103,380 may be repurchased by us at the original exercise price and 700,000 shares of Class B common stock held of record by Dr. Langer, of which 41,667 may be repurchased by us at the original exercise price; (ii) 700,848 shares of Class A common stock subject to options exercisable within 60 days of September 30, 2020, of which 215,545 are fully vested; and (iii) 300,000 shares of Class B common stock held of record by The Langer Family 2012 Trust Under Trust Agreement dated December 7, 2012.

(5) Includes (i) 451,507 shares of Class A common stock, of which 113,797 may be repurchased by us at the original exercise price and 8,749 shares of Class B common stock held of record by Strong Bridge, LLC for which Mr. McGuire serves as an operating manager and (ii) 565,712 shares of Class A common stock subject to options exercisable within 60 days of September 30, 2020, of which 204,284 are fully vested.

(6) Includes 11,396,607 shares of Class A common stock and 349,999 shares of Class B common stock disclosed in footnote (8) below that are held of record by entities affiliated with Maverick Capital Ventures, LLC.

(7) Includes (i) 15,788,823 shares of Class A common stock and 18,912,504 shares of Class B common stock beneficially owned by our executive officers and directors and (ii) 10,822,629 shares of Class A common stock subject to options exercisable within 60 days of September 30, 2020 and held by our executive officers and directors, of which 1,350,483 are fully vested.

(8) Includes (i) 7,255,800 shares of Class A common stock and 217,769 shares of Class B common stock held of record by Maverick Ventures Investment Fund, L.P. (Maverick Ventures Fund) and (ii) 4,140,807 shares of Class A common stock and 132,230 shares of Class B common stock held of record by Maverick Advisors Fund, L.P. (Maverick Advisors). Maverick Capital Ventures, LLC (Maverick Ventures) is the general partner of Maverick Ventures Fund and Maverick Advisors. As the Managing Partners of Maverick Ventures, Lee S. Ainslie III and David B. Singer, one of our directors, share voting and dispositive power with respect to the shares held by Maverick Ventures Fund and Maverick Advisors. The address for these entities is c/o Maverick Capital, 1900 N. Pearl Street, 20th Floor, Dallas, Texas 75201.

(9) Includes 10,808,953 shares of Class A common stock held of record by Invus Public Equities, L.P. Invus Public Equities Advisors, LLC, as the general partner of Invus Public Equities, L.P., controls Invus Public Equities, L.P. and, accordingly, may be deemed to beneficially own the shares held by Invus Public Equities, L.P. Artal Treasury Ltd., as the managing member of Invus Public Equities Advisors, LLC, controls Invus Public Equities Advisors, LLC and, accordingly, may be deemed to beneficially own the shares held by Invus Public Equities, L.P. The Geneva branch of Artal International S.C.A. is the sole stockholder of Artal Treasury Ltd. and, accordingly, may be deemed to beneficially own the shares held by Invus Public Equities, L.P. Artal International Management S.A., as the managing partner of Artal International S.C.A., controls Artal International S.C.A. and, accordingly, may be deemed to beneficially own the shares held by Invus Public Equities, L.P. Artal Group, S.A., as the parent company of Artal International Management, S.A., controls Artal International Management S.A. and, accordingly, may be deemed to beneficially own the shares held by Invus Public Equities, L.P. Westend, S.A., as the parent company of Artal Group S.A. controls Artal Group S.A., and, accordingly, may be deemed to beneficially own the shares held by Invus Public Equities, L.P. Stichting Administratiekantoor Westend, as the parent company of Westend S.A., controls Westend S.A. and, accordingly, may be deemed to beneficially own the shares held by Invus Public Equities, L.P. Mr. Pascal Minne, as the sole member of the board of Stichting Administratiekantoor Westend, controls Stichting Administratiekantoor Westend and, accordingly, may be deemed to beneficially own the shares held by Invus Public Equities, L.P. The address for Invus Public Equities, L.P. is 750 Lexington Avenue, 30th Floor, New York, NY 10022.

(10) Includes (i) 8,819,080 shares of Class A common stock held of record by aMoon 2 Fund, Limited Partnership (aMoon 2 Fund) and (ii) 1,953,094 shares of Class A common stock held of record by aMoon Co-Investment SPV I, L.P. (aMoon Co-Investment). aMoon 2 Fund G.P. Limited Partnership (aMoon 2 Fund G.P.) is the sole General Partner of aMoon 2 Fund and aMoon Co-Investment and aMoon General Partner Ltd. (aMoon General Partner) is the sole General Partner of aMoon 2 Fund G.P. Dr. Yair Schindel is the sole shareholder of aMoon General Partner. By virtue of such relationships, aMoon 2 Fund G.P., aMoon General Partner and Dr. Schindel may be deemed to have shared voting and investment power with respect to the capital stock held by aMoon 2 Fund and aMoon Co-Investment. Each of aMoon 2 Fund G.P., aMoon General Partner and Dr. Schindel disclaims beneficial ownership of the shares held by aMoon 2 Fund and aMoon General Partner, except to the extent of its or his pecuniary interest therein, if any. The address for these entities is 34 Yerushalaim Road, Beit Gamla, 6th Floor, Ra-anana, 4350110, Israel.

(11) Includes 6,666,666 shares of Class A common stock held of record by four accounts managed by direct or indirect subsidiaries of FMR LLC. Abigail P. Johnson is a Director, the Chairman, the Chief Executive Officer, and the President of FMR LLC. Members of the Johnson family, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B stockholders have entered into a stockholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the stockholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. Neither FMR LLC nor Abigail P. Johnson has the sole power to vote or direct the voting of the shares owned directly by the various investment companies registered under the Investment Company Act of 1940 (the Fidelity Funds), advised by Fidelity Management & Research Company, a wholly owned subsidiary of FMR LLC, which power resides in the Fidelity Funds' Boards of Trustees. Fidelity Management & Research Company carries out the voting of the shares under written guidelines established by the Fidelity Funds' Boards of Trustees. The address for FMR LLC is 200 Seaport Boulevard V12E, Boston, Massachusetts 02210.

(12) Includes 5,326,807 shares of Class A common stock held of record by Emerson Collective Investments, LLC (ECI). The Laurene Powell Jobs Trust, for which Laurene Powell Jobs serves as trustee, is the managing member of ECI and has voting and dispositive power with respect to the shares held of record by ECI. The address for this entity is P.O. Box 61239, Palo Alto, California 94306.

(13) Includes (i) 4,429,354 shares of Class A common stock held of record by T. Rowe Price Health Sciences Fund, Inc.; (ii) 200,815 shares of Class A common stock held of record by T. Rowe Price Health Sciences Portfolio; (iii) 274,505 shares of Class A common stock held of record by TD Mutual Funds - TD Health Sciences Fund and (iv) 264,556 shares of Class A common stock held of record by VALIC Company I - Health Sciences Fund. The foregoing accounts are advised or sub-advised by T. Rowe Price Associates, Inc. (T. Rowe Price) a registered investment adviser. T. Rowe Price serves as investment adviser or subadviser, as applicable, with power to direct investments and/or sole power to vote the securities owned by the accounts (with the exception of one subadvisory fund that retains its own voting authority). Although T. Rowe Price may be deemed to be the beneficial owner of all the shares listed, T. Rowe Price expressly disclaims beneficial ownership of such securities. T. Rowe Price Investment Services, Inc., or TRPIS, a registered broker-dealer (and FINRA member), is a subsidiary of T. Rowe Price Associates, Inc., the investment adviser or subadviser, as applicable, to the accounts listed above. TRPIS was formed primarily for the limited purpose of acting as the principal underwriter and distributor of shares of the funds in the T. Rowe Price mutual fund family. TRPIS does not engage in underwriting or market-making activities involving individual securities. T. Rowe Price Associates, Inc. is the wholly owned subsidiary of T. Rowe Price Group, Inc., which is a publicly traded financial services holding company. The address for these entities is c/o T. Rowe Price Associates, Inc. 100 East Pratt Street, Baltimore, Maryland 21202, attention Andrew Baek, Vice President.

DESCRIPTION OF CAPITAL STOCK

General

The following description summarizes certain important terms of our capital stock, as they are expected to be in effect immediately prior to the completion of this offering. We expect to adopt an amended and restated certificate of incorporation and amended and restated bylaws that will become effective immediately prior to the completion of this offering, and this description summarizes the provisions that are expected to be included in such documents. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description of the matters set forth in this section titled "Description of Capital Stock," you should refer to our amended and restated certificate of incorporation, amended and restated bylaws and amended and restated investors' rights agreement, which are included as exhibits to the registration statement of which this prospectus forms a part, and to the applicable provisions of Delaware law. Immediately following the completion of this offering, our authorized capital stock will consist of shares of capital stock, $0.00001 par value per share, of which:

- shares are designated as Class A common stock;
- shares are designated as Class B common stock; and
- shares are designated as preferred stock.

As of September 30, 2020, there were 7,054,694 shares of our Class A common stock outstanding, held by 43 stockholders of record, 20,000,000 shares of our Class B common stock outstanding, held by 15 stockholders of record and no shares of our preferred stock outstanding. Pursuant to our amended and restated certificate of incorporation, our board of directors will have the authority, without stockholder approval except as required by the listing standards of Nasdaq, to issue additional shares of our Class A common stock.

Common Stock

We have two classes of authorized common stock, Class A common stock and Class B common stock. The rights of the holders of Class A common stock and Class B common stock are identical, except with respect to voting and conversion.

Dividend Rights

Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of our common stock are entitled to receive dividends out of funds legally available if our board of directors, in its discretion, determines to issue dividends and then only at the times and in the amounts that our board of directors may determine. See the section titled "Dividend Policy" for additional information.

Voting Rights

Holders of Class A common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and holders of our Class B common stock will be entitled to ten votes for each share held, except as otherwise required by law. The holders of our Class A common stock and Class B common stock vote together as a single class, unless otherwise required by law.

Delaware law could require either holders of our Class A common stock and our Class B common stock to vote separately as a single class in the following circumstances:

- if we were to seek to amend our amended and restated certificate of incorporation to increase or decrease the par value of a class of stock, then that class would be required to vote separately to approve the proposed amendment; and
- if we were to seek to amend our amended and restated certificate of incorporation in a manner that alters or changes the powers, preferences, or special rights of a class of stock in a manner that affected its holders adversely, then that class would be required to vote separately to approve the proposed amendment.

Stockholders do not have the ability to cumulate votes for the election of directors. Our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect at the closing of this offering will provide for a classified board of directors consisting of three classes of approximately equal size, each serving staggered three-year terms. Only the directors in one class will be subject to election by a plurality of the votes cast at each annual meeting of stockholders, with the directors in the other classes continuing for the remainder of their respective three-year terms.

No Preemptive or Similar Rights

Our common stock is not entitled to preemptive rights, and is not subject to conversion, redemption or sinking fund provisions.

Right to Receive Liquidation Distributions

If we become subject to a liquidation, dissolution or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our common stock and any participating preferred stock outstanding at that time, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights of and the payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Conversion of Class B Common Stock

Each share of Class B common stock is convertible at any time at the option of the holder into one share of Class A common stock. Following the completion of this offering, shares of Class B common stock will automatically convert into shares of Class A common stock upon sale or transfer of such shares, excluding certain transfers permitted by our amended and restated certificate of incorporation. The Class B common stock will also automatically convert into shares of Class A common stock upon the earlier of the first day following the fifth anniversary of the closing of this offering and December 31, 2025.

Fully Paid and Non-Assessable

In connection with this offering, our legal counsel will opine that the shares of our Class A common stock to be issued in this offering will be fully paid and non-assessable.

Preferred Stock

After the completion of this offering, no shares of our preferred stock will be outstanding. Pursuant to our amended and restated certificate of incorporation that will become effective immediately prior to the completion of this offering, our board of directors will have the authority, subject to limitations prescribed by Delaware law, to issue preferred stock in one or more series, to establish from time to time the number of shares to be included in each series and to fix the designation, powers, preferences and rights of the shares of each series and any of its qualifications, limitations or restrictions, in each case without further vote or action by our stockholders. Our board of directors can also increase or decrease the number of shares of any series of preferred stock, but not below the number of shares of that series then outstanding, without any further vote or action by our stockholders. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of our company and might adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. We have no current plan to issue any shares of preferred stock.

Options

As of December 31, 2019, we had outstanding options to purchase an aggregate of 4,656,931 shares of our Class A common stock, with a weighted-average exercise price of approximately $0.39 per share, under our equity compensation plans.

Restricted Stock Units

As of December 31, 2019, we had no outstanding shares of our Class A common stock subject to RSUs under our equity compensation plans. Subsequently, as of September 30, 2020, we had 717,319 shares of our Class A common stock outstanding, subject to RSUs issued under our equity compensation plans, which will vest upon the satisfaction of a performance-based condition. The performance-based condition for the RSUs will be satisfied on the earlier of (i) the first and second year anniversaries of the effective date of this registration statement; and (ii) the date of a Change in Control (as defined in the relevant equity compensation plan), subject to continued service to the Company.

Registration Rights

After the completion of this offering, certain holders of our Class A common stock will be entitled to rights with respect to the registration of their shares under the Securities Act. These registration rights are contained in our amended and restated investor rights agreement (IRA). We and certain holders of our preferred stock are parties to the IRA. The registration rights set forth in the IRA will expire three years following the completion of this offering, or, with respect to any particular stockholder, when such stockholder is able to sell all of its shares pursuant to Rule 144 of the Securities Act during any three-month period or ceases to hold registrable shares. We will pay the registration expenses (other than underwriting discounts and commissions) of the holders of the shares registered pursuant to the registrations described below. In an underwritten offering, the managing underwriter, if any, has the right, subject to specified conditions, to limit the number of shares such holders may include. We expect that our stockholders will waive their rights under the IRA (i) to receive notice of this offering and (ii) to include their registrable shares in this offering. In addition, in connection with this offering, we expect that each stockholder that has registration rights will agree not to sell or otherwise dispose of any securities without the prior written consent of us and the underwriters for a period of 180 days after the date of this prospectus, subject to certain terms and conditions. See the section titled "Shares Eligible for Future Sale—Lock-Up and Market Standoff Agreements" for additional information regarding such restrictions.

Demand Registration Rights

After the completion of this offering, the holders of up to 63,224,477 shares of our Class A common stock will be entitled to certain demand registration rights. At any time after the earlier of five years after the date of the IRA or 180 days after the effective date of this offering, the holders of at least 40% of registrable shares then outstanding may make a written request that we register the offer and sale of their shares. If we determine that it would be seriously detrimental to us and our stockholders to effect such a demand registration, we have the right to defer such registration, not more than twice in any 12-month period, for a period of up to 90 days.

Piggyback Registration Rights

After the completion of this offering, if we propose to register the offer and sale of our Class A common stock under the Securities Act, in connection with the public offering of such Class A common stock the holders of up to 63,224,477 shares of our Class A common stock will be entitled to certain "piggyback" registration rights allowing the holders to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, other than with respect to (i) a registration related to the sale of securities to our employees pursuant to any employee benefit plan, (ii) a registration relating to a corporate reorganization or other transaction covered by Rule 145 promulgated under the Securities Act, (iii) a registration on any registration form that does not include substantially the same information as would be required to be included in a registration statement covering the public offering of our Class A common stock or (iv) a registration in which the only Class A common stock being registered is Class A common stock issuable upon conversion of debt securities that are also being registered, the holders of these shares are entitled to notice of the registration and have the right, subject to certain limitations, to include their shares in the registration.

S-3 Registration Rights

After the completion of this offering, the holders of up to 63,224,477 shares of our Class A common stock will be entitled to certain Form S-3 registration rights. The holders of at least 30% of registrable shares then outstanding

may make a written request that we register the offer and sale of their shares on a registration statement on Form S-3 if we are eligible to file a registration statement on Form S-3, so long as the request covers securities the anticipated aggregate offering price of which, net of underwriting discounts and commissions and other selling expenses, is at least $5,000,000. These stockholders may make an unlimited number of requests for registration on Form S-3; however, we will not be required to effect a registration on Form S-3 if we have effected two such registrations within the 12-month period preceding the date of the request. Additionally, if we determine that it would be seriously detrimental to us and our stockholders to effect such a registration, we have the right to defer such registration, not more than twice in any 12-month period, for a period of up to 90 days.

Anti-Takeover Provisions

Certain provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws, which will become effective immediately prior to the completion of this offering, which are summarized below, may have the effect of delaying, deferring or discouraging another person from acquiring control of us. They are also designed, in part, to encourage persons seeking to acquire control of us to negotiate first with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us because negotiation of these proposals could result in an improvement of their terms.

Delaware Law

We will be governed by the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a public Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:

- the transaction was approved by the board of directors prior to the time that the stockholder became an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding shares owned by directors who are also officers of the corporation and shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to the time the stockholder became an interested stockholder, the business combination was approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

In general, Section 203 defines a "business combination" to include mergers, asset sales and other transactions resulting in financial benefit to a stockholder and an "interested stockholder" as a person who, together with affiliates and associates, owns, or within three years did own, 15% or more of the corporation's outstanding voting stock. These provisions may have the effect of delaying, deferring or preventing changes in control of our company.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaw Provisions

Our amended and restated certificate of incorporation and our amended and restated bylaws, which will become effective immediately prior to the completion of this offering, will include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of our board of directors or management team, including the following:

Board of Directors Vacancies. Our amended and restated certificate of incorporation and amended and restated bylaws will authorize only our board of directors to fill vacant directorships, including newly created seats. In addition, the number of directors constituting our board of directors will be permitted to be set only by a resolution

adopted by a majority vote of our entire board of directors. These provisions would prevent a stockholder from increasing the size of our board of directors and then gaining control of our board of directors by filling the resulting vacancies with its own nominees. This will make it more difficult to change the composition of our board of directors and will promote continuity of management.

Classified Board. Our amended and restated certificate of incorporation and amended and restated bylaws will provide that our board of directors is classified into three classes of directors. A third party may be discouraged from making a tender offer or otherwise attempting to obtain control of us as it is more difficult and time consuming for stockholders to replace a majority of the directors on a classified board of directors. See the section titled "Management—Board Composition."

Stockholder Action; Special Meeting of Stockholders. Our amended and restated certificate of incorporation will provide that our stockholders may not take action by written consent, but may only take action at annual or special meetings of our stockholders. As a result, a holder controlling a majority of our capital stock would not be able to amend our amended and restated bylaws or remove directors without holding a meeting of our stockholders called in accordance with our amended and restated bylaws. Our amended and restated bylaws will further provide that special meetings of our stockholders may be called only by a majority of our board of directors, the chairperson of our board of directors, our Chief Executive Officer or our President, thus prohibiting a stockholder from calling a special meeting. These provisions might delay the ability of our stockholders to force consideration of a proposal or for stockholders controlling a majority of our capital stock to take any action, including the removal of directors.

Advance Notice Requirements for Stockholder Proposals and Director Nominations. Our amended and restated bylaws will provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders. Our amended and restated bylaws will also specify certain requirements regarding the form and content of a stockholder's notice. These provisions might preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders if the proper procedures are not followed. We expect that these provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

No Cumulative Voting. The Delaware General Corporation Law provides that stockholders are not entitled to cumulate votes in the election of directors unless a corporation's certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation does not provide for cumulative voting.

Directors Removed Only for Cause. Our amended and restated certificate of incorporation will provide that stockholders may remove directors only for cause.

Amendment of Charter Provisions. Any amendment of the above provisions in our amended and restated certificate of incorporation would require approval by holders of at least % of our then outstanding capital stock.

Issuance of Undesignated Preferred Stock. Our board of directors will have the authority, without further action by our stockholders, to issue up to shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by our board of directors. The existence of authorized but unissued shares of preferred stock would enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or other means.

Exclusive Forum. Our amended and restated bylaws will provide that, unless we consent to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding under Delaware statutory or common law brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty, (iii) any action asserting a claim arising pursuant to the Delaware General Corporation Law, (iv) any action regarding our amended and restated certificate of incorporation or amended and restated bylaws, or (v) any action asserting a claim against us that is governed by the internal affairs doctrine. This exclusive forum provision will not apply to any causes of action arising under the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. Section 22 of the Securities Act, creates

concurrent jurisdiction for federal and state courts over all Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated bylaws will also provide that the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

Any person or entity purchasing or otherwise acquiring any interest in our securities shall be deemed to have notice of and consented to this provision. Although we believe these provisions benefit us by providing increased consistency in the application of Delaware law for the specified types of actions and proceedings, the provisions may have the effect of discouraging lawsuits against us or our directors and officers.

Transfer Agent and Registrar

Upon the completion of this offering, the transfer agent and registrar for our Class A common stock will be Computershare Trust Company, N.A. The transfer agent and registrar's address is 250 Royal Street, Canton, Massachusetts 02021.

Limitations of Liability and Indemnification

See the section titled "Certain Relationships and Related Party Transactions—Limitation of Liability and Indemnification of Officers and Directors."

Listing

We intend to apply for the listing of our Class A common stock on the Nasdaq Stock Market under the symbol "SEER."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our Class A common stock, and we cannot predict the effect, if any, that market sales of shares of our Class A common stock or the availability of shares of our Class A common stock for sale will have on the market price of our Class A common stock prevailing from time to time. Future sales of our Class A common stock in the public market, or the availability of such shares for sale in the public market, could adversely affect market prices prevailing from time to time. As described below, only a limited number of shares of our Class A common stock will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nevertheless, sales of our Class A common stock in the public market after such restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price at such time and could impair our ability to raise equity capital in the future.

Following the completion of this offering, based on the number of shares of our capital stock outstanding as of September 30, 2020 we will have a total of shares of our Class A common stock outstanding and shares of our Class B common stock outstanding. Of these outstanding shares, all of the shares of our Class A common stock sold in this offering will be freely tradable, except that any shares purchased in this offering by our affiliates, as that term is defined in Rule 144 under the Securities Act, would only be able to be sold in compliance with the Rule 144 limitations described below.

The remaining outstanding shares of our Class A common stock will be deemed "restricted securities" as defined in Rule 144 under the Securities Act. Restricted securities may be sold in the public market only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rule 144 or Rule 701 under the Securities Act, which rules are summarized below. As a result of the lock-up and market standoff agreements described below and the provisions of our IRA described under the section titled "Description of Capital Stock—Registration Rights," and subject to the provisions of Rule 144 or Rule 701, shares of our Class A common stock will be available for sale in the public market as follows:

- beginning on the date of this prospectus, all shares of our Class A common stock sold in this offering will be immediately available for sale in the public market; and
- beginning 181 days after the date of this prospectus (subject to the terms of the lock-up and market standoff agreements described below) additional shares will become eligible for sale in the public market, of which shares will be held by affiliates and subject to the volume and other restrictions of Rule 144, as described below.

Lock-Up and Market Standoff Agreements

We will agree that we will not (i) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise dispose of, directly or indirectly, or file with the SEC a registration statement under the Securities Act relating to, any shares of our capital stock or securities convertible into or exchangeable or exercisable for any shares of our capital stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (ii) enter into any swap or other arrangement that transfers all or a portion of the economic consequences associated with the ownership of any shares of capital stock or any such other securities (regardless of whether any of these transactions are to be settled by the delivery of shares of capital stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC and BofA Securities, Inc. for a period of 180 days after the date of this prospectus, other than the shares of our Class A common stock to be sold hereunder and certain other exceptions.

Our directors, our executive officers and holders of substantially all of our capital stock and securities convertible into our capital stock have entered or will enter into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons or entities, with limited exceptions, for a period of 180 days after the date of this prospectus, may not, without the prior written consent of J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC and BofA Securities, Inc., (1) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of our

capital stock or any securities convertible into or exercisable or exchangeable for our capital stock (including, without limitation, Class A common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers and stockholders in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant) or (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the capital stock or such other securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of capital stock or such other securities, in cash or otherwise, or (3) make any demand for or exercise any right with respect to the registration of any shares of our capital stock or any security convertible into or exercisable or exchangeable for our capital stock. For more information, see the section titled "Underwriting."

In addition, our executive officers, directors, and holders of substantially all of our capital stock and securities convertible into or exchangeable for our capital stock have entered into market standoff agreements with us under which they have agreed that, subject to certain exceptions, for a period of 180 days after the date of this prospectus, they will not, without our prior written consent, dispose of or hedge any shares or any securities convertible into or exchangeable for shares of our capital stock.

Rule 144

In general, Rule 144 provides that once we have been subject to the public company reporting requirements of Section 13 or Section 15(d) of the Exchange Act for at least 90 days, a person who is not deemed to have been one of our affiliates for purposes of the Securities Act at any time during the 90 days preceding a sale and who has beneficially owned the shares of our Class A common stock proposed to be sold for at least six months is entitled to sell those shares without complying with the manner of sale, volume limitation or notice provisions of Rule 144, subject to compliance with the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then that person would be entitled to sell those shares without complying with any of the requirements of Rule 144.

In general, Rule 144 provides that our affiliates or persons selling shares of our Class A common stock on behalf of our affiliates are entitled to sell upon expiration of the market standoff agreements and lock-up agreements described above, within any three-month period, a number of shares of our Class A common stock that does not exceed the greater of:

- 1% of the number of shares of our capital stock then outstanding, which will equal shares immediately after the completion of this offering; or
- the average weekly trading volume of our Class A common stock during the four calendar weeks preceding the filing of a notice on Form 144 with respect to that sale.

Sales of our Class A common stock made in reliance upon Rule 144 by our affiliates or persons selling shares of our Class A common stock on behalf of our affiliates are also subject to certain manner of sale provisions and notice requirements and to the availability of current public information about us.

Rule 701

Rule 701 generally allows a stockholder who purchased shares of our capital stock pursuant to a written compensatory plan or contract and who is not deemed to have been an affiliate of our company during the immediately preceding 90 days to sell these shares in reliance upon Rule 144, but without being required to comply with the public information, holding period, volume limitation or notice provisions of Rule 144. Rule 701 also permits affiliates of our company to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. All holders of Rule 701 shares, however, are required to wait until 90 days after the date of this prospectus before selling those shares pursuant to Rule 701.

Registration Rights

Pursuant to our IRA, after the completion of this offering, the holders of up to 63,224,477 shares of our Class A common stock, or certain transferees, will be entitled to certain rights with respect to the registration of the offer and sale of those shares under the Securities Act. See the section titled "Description of Capital Stock—Registration Rights" for a description of these registration rights. If the offer and sale of these shares of our Class A common stock are registered, the shares will be freely tradable without restriction under the Securities Act, subject to the Rule 144 limitations applicable to affiliates, and a large number of shares may be sold into the public market.

Registration Statement

We intend to file a registration statement on Form S-8 under the Securities Act promptly after the completion of this offering to register shares of our Class A common stock subject to RSUs and options outstanding, as well as reserved for future issuance, under our equity compensation plans. The registration statement on Form S-8 is expected to become effective immediately upon filing, and shares of our Class A common stock covered by the registration statement will then become eligible for sale in the public market, subject to the Rule 144 limitations applicable to affiliates, vesting restrictions and any applicable market standoff agreements and lock-up agreements. See the section titled "Executive Compensation—Employee Benefit and Stock Plans" for a description of our equity compensation plans.

MATERIAL U.S. FEDERAL INCOME AND TAX CONSIDERATIONS FOR NON-U.S. HOLDERS OF OUR COMMON STOCK

The following is a summary of material U.S. federal income tax considerations of the ownership and disposition of our Class A common stock acquired in this offering by a "non-U.S. holder" (as defined below) but does not purport to be a complete analysis of all the potential tax considerations relating thereto. This summary is based upon the provisions of the Code, Treasury Regulations promulgated thereunder and administrative rulings and judicial decisions, all as of the date hereof. These authorities may be changed, possibly retroactively, so as to result in U.S. federal income tax considerations different from those set forth below. We have not sought, and do not intend to seek, any ruling from the Internal Revenue Service, or the IRS, with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

This summary also does not address the tax considerations arising under the laws of any non-U.S., state or local jurisdiction or under U.S. federal gift and estate tax rules, or the effect, if any, of the Medicare contribution tax on net investment income. In addition, this discussion does not address tax considerations applicable to an investor's particular circumstances or to investors that may be subject to special tax rules, including, without limitation:

- banks, insurance companies, regulated investment companies, real estate investment trusts or other financial institutions;
- persons subject to the alternative minimum tax;
- tax-exempt organizations;
- pension plans and tax-qualified retirement plans;
- controlled foreign corporations, passive foreign investment companies and corporations that accumulate earnings to avoid U.S. federal income tax;
- entities or arrangements classified as partnerships for U.S. federal income tax purposes or other pass through entities such as subchapter S corporations (or investors in such entities or arrangements);
- brokers or dealers in securities or currencies;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons who own, or are deemed to own, more than five percent of our capital stock (except to the extent specifically set forth below);
- certain former citizens or long-term residents of the United States;
- persons who hold our Class A common stock as a position in a hedging transaction, "straddle," "conversion transaction," or other risk reduction transaction;
- persons who hold or receive our Class A common stock pursuant to the exercise of any option or otherwise as compensation;
- persons who do not hold our Class A common stock as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment);
- persons deemed to sell our Class A common stock under the constructive sale provisions of the Code; or
- persons that own, or are deemed to own, our Class B common stock.

In addition, if a partnership (or other entity or arrangement classified as a partnership for U.S. federal income tax purposes) holds our Class A common stock, the tax treatment of a partner in the partnership generally will depend on the status of the partner and upon the activities of the partnership. A partner in a partnership that will hold

our Class A common stock should consult his, her or its own tax advisor regarding the tax considerations of the purchase, ownership and disposition of our common stock through a partnership.

You are urged to consult your tax advisor with respect to the application of the U.S. federal income tax laws to your particular situation, as well as any tax considerations of the purchase, ownership and disposition of our Class A common stock arising under the U.S. federal gift or estate tax rules or under the laws of any state, local, non-U.S. or other taxing jurisdiction or under any applicable tax treaty.

Non-U.S. Holder Defined

For purposes of this discussion, you are a "non-U.S. holder" if you are a beneficial owner of our common stock that, for U.S. federal income tax purposes, is neither a partnership nor:

- an individual who is a citizen or resident of the United States;
- a corporation or other entity taxable as a corporation created or organized in the United States or under the laws of the United States or any political subdivision thereof, or otherwise treated as such for U.S. federal income tax purposes;
- an estate whose income is subject to U.S. federal income tax regardless of its source; or
- a trust (x) whose administration is subject to the primary supervision of a U.S. court and that has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (y) that has made a valid election under applicable Treasury Regulations to be treated as a U.S. person.

Distributions

As described in the section titled "Dividend Policy," we have never declared or paid cash dividends on our common stock, and we do not anticipate paying any dividends on our common stock following the completion of this offering. However, if we do make distributions on our Class A common stock, those payments will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed both our current and our accumulated earnings and profits, the excess will constitute a return of capital and will first reduce your basis in our Class A common stock, but not below zero, and then will be treated as gain from the sale of stock as described below under "—Gain on Disposition of Class A Common Stock."

Subject to the discussions below regarding effectively connected income, backup withholding and Foreign Account Tax Compliance Act, or FATCA, withholding, any dividend paid to you generally will be subject to U.S. federal withholding tax either at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty between the United States and your country of residence. In order to receive a reduced treaty rate, you must provide us or the applicable paying agent with an IRS Form W-8BEN or W-8BEN-E or other appropriate version of IRS Form W-8 certifying qualification for the reduced rate. We may withhold up to 30% of the gross amount of the entire distribution even if the amount constituting a dividend, as described above, is less than the gross amount to the extent provided for in the Treasury Regulations. A non-U.S. holder of shares of our Class A common stock may obtain a refund of any excess amounts withheld by filing an appropriate claim for refund with the IRS. If the non-U.S. holder holds our Class A common stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our paying agent, either directly or through other intermediaries.

Dividends received by you that are treated as effectively connected with your conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, that are attributable to a permanent establishment or fixed base maintained by you in the United States) are generally exempt from the 30% U.S. federal withholding tax, subject to the discussions below regarding backup withholding and FATCA withholding. In order to obtain this exemption, you must provide us with a properly executed IRS Form W-8ECI or other applicable IRS Form W-8 properly certifying such exemption. Such effectively connected dividends, although not subject to U.S. federal

withholding tax, generally are taxed at the same rates applicable to U.S. persons, net of certain deductions and credits. In addition, if you are a corporate non-U.S. holder, dividends you receive that are effectively connected with your conduct of a U.S. trade or business may also be subject to a branch profits tax at a rate of 30% or such lower rate as may be specified by an applicable income tax treaty between the United States and your country of residence. You should consult your tax advisor regarding the tax consequences of the ownership and disposition of our Class A common stock, including the application of any applicable tax treaties that may provide for different rules.

Gain on Disposition of Class A Common Stock

Subject to the discussions below regarding backup withholding and FATCA withholding, you generally will not be required to pay U.S. federal income tax on any gain realized upon the sale or other disposition of our Class A common stock unless:

- the gain is effectively connected with your conduct of a U.S. trade or business (and, if an applicable income tax treaty so provides, the gain is attributable to a permanent establishment or fixed base maintained by you in the United States);
- you are an individual who is present in the United States for a period or periods aggregating 183 days or more during the calendar year in which the sale or disposition occurs and certain other conditions are met; or
- our Class A common stock constitutes a U.S. real property interest by reason of our status as a "U.S. real property holding corporation," or a USRPHC, for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding your disposition of, or your holding period for, our Class A common stock.

We believe that we are not currently and will not become a USRPHC for U.S. federal income tax purposes, and the remainder of this discussion so assumes. However, because the determination of whether we are a USRPHC depends on the fair market value of our U.S. real property interests relative to the fair market value of our U.S. and worldwide real property interests plus our other assets used or held for use in a trade or business, there can be no assurance that we will not become a USRPHC in the future. Even if we become a USRPHC, however, as long as our Class A common stock is regularly traded on an established securities market, your Class A common stock will be treated as U.S. real property interests only if you actually (directly or indirectly) or constructively hold more than five percent of such regularly traded Class A common stock at any time during the shorter of the five-year period preceding your disposition of, or your holding period for, our Class A common stock.

If you are a non-U.S. holder described in the first bullet above, you generally will be required to pay tax on the gain derived from the sale (net of certain deductions and credits) under regular U.S. federal income tax rates applicable to U.S. persons, and a corporate non-U.S. holder described in the first bullet above also may be subject to the branch profits tax at a 30% rate, or such lower rate as may be specified by an applicable income tax treaty. If you are an individual non-U.S. holder described in the second bullet above, you will be subject to tax at 30% (or such lower rate specified by an applicable income tax treaty) on the gain derived from the sale, which gain may be offset by U.S. source capital losses for the year, provided you have timely filed U.S. federal income tax returns with respect to such losses. You should consult your tax advisor regarding any applicable income tax or other treaties that may provide for different rules.

Backup Withholding and Information Reporting

Generally, we must report annually to the IRS the amount of dividends paid to you, your name and address and the amount of tax withheld, if any. A similar report will be sent to you. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in your country of residence.

Payments of dividends on or of proceeds from the disposition of our Class A common stock made to you may be subject to backup withholding at the applicable statutory rate (currently, 24%) unless you establish an exemption, for example, by properly certifying your non-U.S. status on a properly completed IRS Form W-8BEN or W-8BEN-E or another appropriate version of IRS Form W-8. Notwithstanding the foregoing, backup withholding and

information reporting may apply if either we or our paying agent has actual knowledge, or reason to know, that you are a U.S. person.

Backup withholding is not an additional tax; rather, the U.S. federal income tax liability of persons subject to backup withholding will be reduced by the amount of tax withheld. If withholding results in an overpayment of taxes, a refund or credit may generally be obtained from the IRS, provided that the required information is furnished to the IRS in a timely manner.

Additional Withholding Requirements under the Foreign Account Tax Compliance Act

Sections 1471 through 1474 of the Code and the Treasury Regulations and other official IRS guidance issued thereunder, or collectively FATCA, generally impose a U.S. federal withholding tax of 30% on dividends on, and, subject to the discussion below regarding the proposed regulations, the gross proceeds from a sale or other disposition of, our Class A common stock, paid to a "foreign financial institution" (as specially defined under these rules), unless such institution enters into an agreement with the U.S. government to, among other things, withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding the U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are non-U.S. entities with U.S. owners) or otherwise establishes an exemption. FATCA also generally imposes a U.S. federal withholding tax of 30% on dividends on, and the gross proceeds from a sale or other disposition of, our Class A common stock paid to a "non-financial foreign entity" (as specially defined under these rules) unless such entity provides the withholding agent with a certification identifying the substantial direct and indirect U.S. owners of the entity, certifies that it does not have any substantial U.S. owners, or otherwise establishes an exemption.

The withholding obligations under FATCA generally apply to dividends on our Class A common stock and to the payment of gross proceeds of a sale or other disposition of our Class A common stock. However, the U.S. Treasury Department has issued proposed regulations that, if finalized in their present form, would eliminate FATCA withholding on gross proceeds of the sale or other disposition of our Class A common stock (but not on payments of dividends). The preamble of such proposed regulations state that they may be relied upon by taxpayers until final regulations are issued or until such proposed regulations are rescinded. The withholding tax will apply regardless of whether the payment otherwise would be exempt from withholding tax, including under the exemptions described above. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. An intergovernmental agreement between the United States and the non-U.S. holder's country of residence may modify the requirements described in this section. Prospective investors should consult with their own tax advisors regarding the application of FATCA withholding to their investment in, and ownership and disposition of, our Class A common stock.

The preceding discussion of U.S. federal income tax considerations is for general information only. It is not tax advice to investors in their particular circumstances. Each prospective investor should consult its own tax advisor regarding the particular U.S. federal, state and local and non-U.S. tax considerations of purchasing, owning and disposing of our Class A common stock, including the consequences of any proposed change in applicable laws.

UNDERWRITING

We are offering the shares of Class A common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC, BofA Securities, Inc. and Cowen and Company, LLC are acting as joint book-running managers of the offering and J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC and BofA Securities, Inc. are acting as representatives of the underwriters. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus, the number of shares of Class A common stock listed next to its name in the following table:

Name	Number of Shares
J.P. Morgan Securities LLC	
Morgan Stanley & Co. LLC	
BofA Securities, Inc.	
Cowen and Company, LLC	
Total	

The underwriters are committed to purchase all the Class A common stock offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the common stock directly to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of $ per share. After the initial offering of the shares to the public, if all of the shares of Class A common stock are not sold at the initial public offering price, the underwriters may change the offering price and the other selling terms. Sales of any shares made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to additional shares of Class A common stock from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus to exercise this option to purchase additional shares. If any shares are purchased with this option to purchase additional shares, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of Class A common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriters do not expect to sell more than 5% of the shares of Class A common stock in the aggregate to accounts over which they exercise discretionary authority.

The underwriting fee is equal to the public offering price per share of Class A common stock less the amount paid by the underwriters to us per share of Class A common stock. The underwriting fee is $ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without option to purchase additional shares exercise	With full option to purchase additional shares exercise
Per Share	$	$
Total	$	$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately $. We have also agreed to reimburse the underwriters for reasonable fees and expenses of

counsel related to the review by the Financial Industry Regulatory Authority of the terms of sale of the shares of Class A common stock offered hereby in an amount not to exceed $.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, or submit to, or file with, the Securities and Exchange Commission a registration statement under the Securities Act relating to, any shares of our Class A common stock or securities convertible into or exercisable or exchangeable for any shares of our Class A common stock, or publicly disclose the intention to make any offer, sale, pledge, loan, disposition or filing, or (ii) enter into any swap or other arrangement that transfers all or a portion of the economic consequences associated with the ownership of any shares of Class A common stock or any such other securities (regardless of whether any of these transactions are to be settled by the delivery of shares of Class A common stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC and BofA Securities, Inc. for a period of 180 days after the date of this prospectus, other than the shares of our Class A common stock to be sold in this offering.

Our directors and executive officers, and substantially all of our stockholders (such persons, the "lock-up parties") have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each lock-up party, with limited exceptions, for a period of 180 days after the date of this prospectus (such period, the "restricted period"), may not (and may not cause any of their direct or indirect affiliates to), without the prior written consent of J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC and BofA Securities, Inc., (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of our Class A common stock or any securities convertible into or exercisable or exchangeable for our Class A common stock (including, without limitation, Class A common stock or such other securities which may be deemed to be beneficially owned by such lock-up parties in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant (collectively with the Class A common stock, the "lock-up securities")), (2) enter into any hedging, swap or other agreement or transaction that transfers, in whole or in part, any of the economic consequences of ownership of the lock-up securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of lock-up securities, in cash or otherwise, (3) make any demand for or exercise any right with respect to the registration of any lock-up securities, or (4) publicly disclose the intention to do any of the foregoing. Such persons or entities have further acknowledged that these undertakings preclude them from engaging in any hedging or other transactions or arrangements (including, without limitation, any short sale or the purchase or sale of, or entry into, any put or call option, or combination thereof, forward, swap or any other derivative transaction or instrument, however described or defined) designed or intended, or which could reasonably be expected to lead to or result in, a sale or disposition or transfer (by any person or entity, whether or not a signatory to such agreement) of any economic consequences of ownership, in whole or in part, directly or indirectly, of any lock-up securities, whether any such transaction or arrangement (or instrument provided for thereunder) would be settled by delivery of lock-up securities, in cash or otherwise.

The restrictions described in the immediately preceding paragraph and contained in the lock-up agreements between the underwriters and the lock-up parties do not apply, subject in certain cases to various conditions, to certain transactions, including (a) transfers of lock-up securities: (i) as bona fide gifts, or for bona fide estate planning purposes, (ii) by will or intestacy, (iii) to any member of the lock-up party's immediate family or any trust for the direct or indirect benefit of the lock-up party or the immediate family of the lock-up party, (iv) to a partnership, limited liability company or other entity of which the lock-up party and the immediate family of the lock-up party are the legal and beneficial owner of all of the outstanding equity securities or similar interests, (v) to a nominee or custodian of a person or entity to whom a disposition or transfer would be permissible under clauses (i) through (iv), (vi) in the case of a corporation, partnership, limited liability company, trust or other business entity, (A) to another corporation, partnership, limited liability company, trust or other business entity that is an affiliate of

the lock-up party, or to any investment fund or other entity controlling, controlled by, managing or managed by or under common control with the lock-up party or its affiliates, or (B) as part of a disposition, transfer or distribution to members, limited partners or shareholders of the lock-up party, (vii) by operation of law, such as pursuant to a qualified domestic order, divorce settlement, divorce decree or separation agreement or similar court order, (viii) to us in connection with any contractual arrangement that provides for the repurchase of lock-up securities by us upon death, disability or termination of service, in each case, of such service provider, (ix) acquired from the underwriters in this offering or in open market transactions after the closing date of this offering, (x) to us in connection with the vesting, settlement, or exercise of restricted stock units, options, warrants or other rights to purchase shares of our Class A common stock (including "net" or "cashless" exercise), including for the payment of exercise price and tax and remittance payments, or (xi) pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction approved by our board of directors and made to all stockholders involving a change of control, provided that if such transaction is not completed, all such lock-up securities would remain subject to the restrictions in the immediately preceding paragraph; (b) the exercise of the options, settlement of RSUs or other equity awards, or the exercise of warrants granted pursuant to plans or agreements described in this prospectus, provided that any lock-up securities received upon such exercise, vesting or settlement would be subject to restrictions similar to those in the immediately preceding paragraph; (c) the conversion of outstanding preferred stock, warrants to acquire preferred stock or convertible securities into shares of our Class A common stock or warrants to acquire shares of our Class A common stock; provided that any Class A common stock or warrant received upon such conversion shall be subject to restrictions similar to those in the immediately preceding paragraph; and (d) the establishment by lock-up parties of trading plans under Rule 10b5-1 under the Exchange Act for the transfer of shares of lock-up securities; provided that such plan does not provide for the transfer of lock-up securities during the restricted period.

J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC and BofA Securities, Inc., in their sole discretion, may release the securities subject to any of the lock-up agreements with the underwriters described above, in whole or in part at any time.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act.

We will apply to have our Class A common stock approved for listing on the Nasdaq Stock Market under the symbol "SEER."

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of Class A common stock in the open market for the purpose of preventing or retarding a decline in the market price of the Class A common stock while this offering is in progress. These stabilizing transactions may include making short sales of Class A common stock, which involves the sale by the underwriters of a greater number of shares of Class A common stock than they are required to purchase in this offering, and purchasing shares of Class A common stock on the open market to cover positions created by short sales. Short sales may be "covered" shorts, which are short positions in an amount not greater than the underwriters' option to purchase additional shares referred to above, or may be "naked" shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the Class A common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the Class A common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase Class A common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the Class A common stock or preventing or retarding a decline in the market price of the Class A common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the Nasdaq Stock Market, in the over-the-counter market or otherwise.

Prior to this offering, there has been no public market for our Class A common stock. The initial public offering price will be determined by negotiations between us and the representatives of the underwriters. In determining the initial public offering price, we and the representatives of the underwriters expect to consider a number of factors including:

- the information set forth in this prospectus and otherwise available to the representatives;
- our prospects and the history and prospects for the industry in which we compete;
- an assessment of our management;
- our prospects for future earnings;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of, and demand for, publicly traded Class A common stock of generally comparable companies; and
- other factors deemed relevant by the underwriters and us.

Neither we nor the underwriters can assure investors that an active trading market will develop for our Class A common stock, or that the Class A common stock will trade in the public market at or above the initial public offering price.

Other Relationships

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

Selling Restrictions

General

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the

Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to Prospective Investors in the European Economic Area and United Kingdom

In relation to each Member State of the European Economic Area and the United Kingdom (Relevant States), no shares have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that offers of shares may be made to the public in that Relevant State at any time under the following exemptions under the Prospectus Regulation:

a. to any legal entity which is a qualified investor as defined under the Prospectus Regulation;

b. to fewer than 150 natural or legal persons (other than qualified investors as defined under the Prospectus Regulation), subject to obtaining the prior consent of the underwriters; or

c. in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of shares shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation and each person who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with each of the underwriters and us that it is a "qualified investor" within the meaning of Article 2(e) of the Prospectus Regulation. In the case of any shares being offered to a financial intermediary as that term is used in the Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant State to qualified investors as so defined or in circumstances in which the prior consent of the underwriters have been obtained to each such proposed offer or resale.

For the purposes of this provision, the expression an "offer to the public" in relation to shares in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression "Prospectus Regulation" means Regulation (EU) 2017/1129.

Notice to Prospective Investors in the United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Regulation) (i) who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling

within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons") or otherwise in circumstances which have not resulted and will not result in an offer to the public of the shares in the United Kingdom within the meaning of the Financial Services and Markets Act 2000.

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland. This document does not constitute a prospectus within the meaning of, and has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in Australia

This prospectus:

- does not constitute a disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth) (Corporations Act);
- has not been, and will not be, lodged with the Australian Securities and Investments Commission (ASIC), as a disclosure document for the purposes of the Corporations Act and does not purport to include the information required of a disclosure document for the purposes of the Corporations Act; and
- may only be provided in Australia to select investors who are able to demonstrate that they fall within one or more of the categories of investors, available under section 708 of the Corporations Act (Exempt Investors).

The shares may not be directly or indirectly offered for subscription or purchased or sold, and no invitations to subscribe for or buy the shares may be issued, and no draft or definitive offering memorandum, advertisement or other offering material relating to any shares may be distributed in Australia, except where disclosure to investors is not required under Chapter 6D of the Corporations Act or is otherwise in compliance with all applicable Australian laws and regulations. By submitting an application for the shares, you represent and warrant to us that you are an Exempt Investor.

As any offer of shares under this document will be made without disclosure in Australia under Chapter 6D.2 of the Corporations Act, the offer of those securities for resale in Australia within 12 months may, under section 707 of the Corporations Act, require disclosure to investors under Chapter 6D.2 if none of the exemptions in section 708 applies to that resale. By applying for the shares you undertake to us that you will not, for a period of 12 months from the date of issue of the shares, offer, transfer, assign or otherwise alienate those shares to investors in Australia except in circumstances where disclosure to investors is not required under Chapter 6D.2 of the Corporations Act or where a compliant disclosure document is prepared and lodged with ASIC.

Notice to Prospective Investors in Japan

The shares have not been and will not be registered pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Act. Accordingly, none of the shares nor any interest therein may be offered or sold, directly or indirectly, in Japan or to, or for the benefit of, any "resident" of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to or for the benefit of a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Act and any other applicable laws, regulations and ministerial guidelines of Japan in effect at the relevant time.

Notice to Prospective Investors in Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) (the "SFO") of Hong Kong and any rules made thereunder; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong) (CO) or which do not constitute an offer to the public within the meaning of the CO. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made thereunder.

Notice to Prospective Investors in Singapore

Singapore SFA Product Classification — In connection with Section 309B of the SFA and the CMP Regulations 2018, unless otherwise specified before an offer of shares, we have determined, and hereby notify all relevant persons (as defined in Section 309A(1) of the SFA), that the shares are "prescribed capital markets products" (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Each underwriter has acknowledged that this prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each underwriter has represented and agreed that it has not offered or sold any shares or caused the shares to be made the subject of an invitation for subscription or purchase and will not offer or sell any shares or cause the shares to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this prospectus or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares, whether directly or indirectly, to any person in Singapore other than:

a. to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended from time to time (SFA)) pursuant to Section 274 of the SFA;

b. to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA and in accordance with the conditions specified in Section 275 of the SFA; or

c. otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

a. a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

b. a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor, securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

c. to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 276(4)(i)(B) of the SFA;

d. where no consideration is or will be given for the transfer;

e. where the transfer is by operation of law;

f. as specified in Section 276(7) of the SFA; or

g. as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

Notice to Prospective Investors in China

This prospectus will not be circulated or distributed in the PRC and the shares will not be offered or sold, and will not be offered or sold to any person for re-offering or resale directly or indirectly to any residents of the PRC except pursuant to any applicable laws and regulations of the PRC. Neither this prospectus nor any advertisement or other offering material may be distributed or published in the PRC, except under circumstances that will result in compliance with applicable laws and regulations.

Notice to Prospective Investors in Korea

The shares have not been and will not be registered under the Financial Investments Services and Capital Markets Act of Korea and the decrees and regulations thereunder (FSCMA), and the shares have been and will be offered in Korea as a private placement under the FSCMA. None of the shares may be offered, sold or delivered directly or indirectly, or offered or sold to any person for re-offering or resale, directly or indirectly, in Korea or to any resident of Korea except pursuant to the applicable laws and regulations of Korea, including the FSCMA and the Foreign Exchange Transaction Law of Korea and the decrees and regulations thereunder (FETL). The shares have not been listed on any of securities exchanges in the world including, without limitation, the Korea Exchange in Korea. Furthermore, the purchaser of the shares shall comply with all applicable regulatory requirements (including but not limited to requirements under the FETL) in connection with the purchase of the shares. By the purchase of the shares, the relevant holder thereof will be deemed to represent and warrant that if it is in Korea or is a resident of Korea, it purchased the shares pursuant to the applicable laws and regulations of Korea.

Notice to Prospective Investors in Taiwan

The shares have not been and will not be registered with the Financial Supervisory Commission of Taiwan pursuant to relevant securities laws and regulations and may not be sold, issued or offered within Taiwan through a public offering or in circumstances which constitutes an offer within the meaning of the Securities and Exchange Act of Taiwan that requires a registration or approval of the Financial Supervisory Commission of Taiwan. No person or entity in Taiwan has been authorized to offer, sell, give advice regarding or otherwise intermediate the offering and sale of the shares in Taiwan.

Notice to Prospective Investors in Saudi Arabia

This document may not be distributed in the Kingdom of Saudi Arabia except to such persons as are permitted under the Offers of Securities Regulations as issued by the board of the Saudi Arabian Capital Market Authority (CMA) pursuant to resolution number 2-11-2004 dated 4 October 2004 as amended by resolution number 1-28-2008, as amended (CMA Regulations). The CMA does not make any representation as to the accuracy or completeness of this document and expressly disclaims any liability whatsoever for any loss arising from, or

incurred in reliance upon, any part of this document. Prospective purchasers of the securities offered hereby should conduct their own due diligence on the accuracy of the information relating to the securities. If you do not understand the contents of this document, you should consult an authorized financial adviser.

Notice to Prospective Investors in the Dubai International Financial Centre (DIFC)

This document relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority (DFSA). This document is intended for distribution only to persons of a type specified in the Markets Rules 2012 of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for this document. The securities to which this document relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this document you should consult an authorized financial advisor.

In relation to its use in the DIFC, this document is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. The interests in the securities may not be offered or sold directly or indirectly to the public in the DIFC.

Notice to Prospective Investors in the United Arab Emirates

The shares have not been, and are not being, publicly offered, sold, promoted or advertised in the United Arab Emirates (including the DIFC) other than in compliance with the laws of the United Arab Emirates (and the DIFC) governing the issue, offering and sale of securities. Further, this prospectus does not constitute a public offer of securities in the United Arab Emirates (including the DIFC) and is not intended to be a public offer. This prospectus has not been approved by or filed with the Central Bank of the United Arab Emirates, the Securities and Commodities Authority or the DFSA.

Notice to Prospective Investors in Bermuda

Shares may be offered or sold in Bermuda only in compliance with the provisions of the Investment Business Act of 2003 of Bermuda which regulates the sale of securities in Bermuda. Additionally, non-Bermudian persons (including companies) may not carry on or engage in any trade or business in Bermuda unless such persons are permitted to do so under applicable Bermuda legislation.

Notice to Prospective Investors in the British Virgin Islands

The shares are not being, and may not be offered to the public or to any person in the British Virgin Islands for purchase or subscription by or on behalf of the Company. The shares may be offered to companies incorporated under the BVI Business Companies Act, 2004 (British Virgin Islands) (BVI Companies), but only where the offer will be made to, and received by, the relevant BVI Company entirely outside of the British Virgin Islands.

Notice to Prospective Investors in South Africa

Due to restrictions under the securities laws of South Africa, no “offer to the public” (as such term is defined in the South African Companies Act, No. 71 of 2008 (as amended or re-enacted) (South African Companies Act))is being made in connection with the issue of the shares in South Africa. Accordingly, this document does not, nor is it intended to, constitute a “registered prospectus” (as that term is defined in the South African Companies Act) prepared and registered under the South African Companies Act and has not been approved by, and/or filed with, the South African Companies and Intellectual Property Commission or any other regulatory authority in South Africa. The shares are not offered, and the offer shall not be transferred, sold, renounced or delivered, in South Africa or to

a person with an address in South Africa, unless one or other of the following exemptions stipulated in section 96 (1) applies:

Section 96 (1)(a)	the offer, transfer, sale, renunciation or delivery is to: (i) persons whose ordinary business, or part of whose ordinary business, is to deal in securities, as principal or agent; (ii) the South African Public Investment Corporation; (iii) persons or entities regulated by the Reserve Bank of South Africa; (iv) authorized financial service providers under South African law; (v) financial institutions recognized as such under South African law; (vi) a wholly-owned subsidiary of any person or entity contemplated in (c), (d) or (e), acting as agent in the capacity of an authorized portfolio manager for a pension fund, or as manager for a collective investment scheme (in each case duly registered as such under South African law); or (vii) any combination of the person in (i) to (vi); or
Section 96 (1)(b)	the total contemplated acquisition cost of the securities, for any single addressee acting as principal is equal to or greater than ZAR1,000,000 or such higher amount as may be promulgated by notice in the Government Gazette of South Africa pursuant to section 96(2)(a) of the South African Companies Act.

Information made available in this prospectus should not be considered as "*advice*" as defined in the South African Financial Advisory and Intermediary Services Act, 2002.

Notice to Prospective Investors in Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, (Israeli Securities Law), and has not been filed with or approved by the Israel Securities Authority. In Israel, this prospectus is being distributed only to, and is directed only at, and any offer of the shares of common stock is directed only at, (i) a limited number of persons in accordance with the Israeli Securities Law and (ii) investors listed in the first addendum (the "Addendum"), to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and "qualified individuals," each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case, purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors are required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

LEGAL MATTERS

The validity of the issuance of our Class A common stock offered in this prospectus will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Davis Polk & Wardwell LLP, Menlo Park, California, is representing the underwriters in connection with this offering. Wilson Sonsini Goodrich & Rosati, P.C. and certain of its members are associated with WS Investment Company, LLC (2017A) and WS Investment Company, LLC (2018A). Upon the completion of the offering, WS Investment Company (2017A) and WS Investment Company (2018A) will directly or indirectly own less than 0.1% of the outstanding shares of our common stock.

EXPERTS

The financial statements of Seer, Inc. as of December 31, 2018 and 2019, and for each of the two years in the period ended December 31, 2019, included in this Prospectus have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report appearing elsewhere herein. Such financial statements are included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of Class A common stock offered by this prospectus. This prospectus, which constitutes a part of the registration statement, does not include all of the information contained in the registration statement, some of which is contained in exhibits to the registration statement as permitted by the rules and regulations of the SEC. You should refer to the registration statement and its exhibits for additional information. Whenever we make references in this prospectus to any of our contracts, agreements or other documents, such references are not necessarily complete and you should refer to the exhibits attached to the registration statement for copies of the actual contract, agreement or other document.

You can read our SEC filings, including the registration statement and its exhibits, over the Internet at the SEC's website at www.sec.gov.

When we complete this offering, we will be subject to the information reporting requirements of the Exchange Act, and we will file annual, quarterly and special reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available at the website of the SEC referred to above. We also maintain a website at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained on our website is not a part of this prospectus.

SEER, INC.
INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Seer, Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Seer, Inc. (the "Company") as of December 31, 2018 and 2019, the related statements of operations and comprehensive loss, changes in stockholders' equity, and cash flows for each of the two years in the period ended December 31, 2019, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2019, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ DELOITTE & TOUCHE LLP

San Francisco, California
September 25, 2020

We have served as the Company's auditor since 2018.

SEER, INC.
Balance Sheets
(in thousands, except share and per share amounts)

	December 31, 2018	December 31, 2019	September 30, 2020	Pro forma September 30, 2020
			(unaudited)	
ASSETS				
Current assets:				
Cash and cash equivalents	$ 30,953	$ 17,485	$ 17,706	
Investments	—	68,535	103,800	
Other receivables	69	326	326	
Other receivables, related parties	—	—	905	
Prepaid expenses and other current assets	190	460	588	
Total current assets	31,212	86,806	123,325	
Property and equipment, net	2,360	5,687	8,635	
Restricted cash	—	343	343	
Other assets	124	400	1,587	
Total assets	$ 33,696	$ 93,236	$ 133,890	
LIABILITIES AND STOCKHOLDERS' EQUITY				
Current liabilities:				
Accounts payable	$ 2,625	$ 701	$ 670	
Accrued expenses	905	2,119	4,079	
Accrued research and development	157	650	517	
Deferred revenue	—	175	425	
Deferred rent, current	4	170	183	
Total current liabilities	3,691	3,815	5,874	
Deferred rent, net of current portion	—	1,673	1,916	
Other noncurrent liabilities	30	69	564	
Total liabilities	3,721	5,557	8,354	
Commitments (Note 10)				
Stockholders' equity:				
Convertible preferred stock, $0.00001 par value; 23,527,671 and 47,450,748 shares authorized, issued and outstanding as of December 31, 2018 and 2019, respectively, 62,117,414 shares authorized and 62,117,410 shares issued and outstanding as of September 30, 2020 (unaudited); aggregate liquidation preference of $36,000, $108,500, and $163,500 as of December 31, 2018 and 2019, and September 30, 2020 (unaudited), respectively; no shares issued and outstanding, pro forma (unaudited)	35,812	107,953	162,849	—

SEER, INC.
Balance Sheets
(in thousands, except share and per share amounts)

Class A common stock, $0.00001 par value; 60,000,000, 91,500,000, and 120,000,000 shares authorized as of December 31, 2018 and 2019, and September 30, 2020 (unaudited), respectively; 6,118,051, 6,094,516, and 7,054,694 shares issued and outstanding as of December 31, 2018 and 2019, and September 30, 2020 (unaudited), respectively; 69,172,104 shares issued and outstanding as of September 30, 2020, pro forma (unaudited)	—	—	—	1
Class B common stock, $0.00001 par value; 20,000,000 shares authorized as of December 31, 2018 and 2019, and September 30, 2020 (unaudited), respectively; 20,000,000 shares issued and outstanding as of December 31, 2018 and 2019, and September 30, 2020 (unaudited), respectively; 20,000,000 shares issued and outstanding as of September 30, 2020, pro forma (unaudited)	—	—	—	—
Additional paid-in capital	711	2,288	4,969	167,992
Accumulated other comprehensive income	—	24	143	143
Accumulated deficit	(6,548)	(22,586)	(42,425)	(42,600)
Total stockholders' equity	29,975	87,679	125,536	125,536
Total liabilities and stockholders' equity	$ 33,696	$ 93,236	$ 133,890	

The accompanying notes are an integral part of these financial statements.

SEER, INC.
Statements of Operations and Comprehensive Loss
(in thousands, except share and per share amounts)

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
			(unaudited)	
Revenue:				
Research revenue	$ —	$ 58	$ 58	$ —
Grant revenue	—	58	—	320
Total revenue	—	116	58	320
Operating expenses:				
Research and development	3,776	12,393	8,580	13,520
General and administrative	2,982	4,606	2,963	7,408
Total operating expenses	6,758	16,999	11,543	20,928
Loss from operations	(6,758)	(16,883)	(11,485)	(20,608)
Other income (expense):				
Interest income	451	850	597	778
Interest expense	—	(5)	(4)	—
Other expense	—	—	—	(9)
Total other income	451	845	593	769
Net loss	$ (6,307)	$ (16,038)	$ (10,892)	$ (19,839)
Other comprehensive income:				
Unrealized gain on available-for-sale securities	—	24	15	119
Comprehensive loss	$ (6,307)	$ (16,014)	$ (10,877)	$ (19,720)
Net loss per share attributable to common stockholders, basic and diluted	$ (0.74)	$ (1.08)	$ (0.78)	$ (0.95)
Weighted-average common shares outstanding, basic and diluted	8,502,926	14,878,157	13,987,682	20,778,317
Pro forma net loss per common share, basic and diluted (unaudited)		$ (0.35)		$ (0.26)
Pro forma weighted-average common shares used to compute basic and diluted net loss per common share (unaudited)		45,913,238		75,804,154

The accompanying notes are an integral part of these financial statements.

SEER, INC.
Statements of Changes in Stockholders' Equity
(in thousands, except share amounts)

	Convertible Preferred Stock		Class A and Class B Common Stock		Additional Paid in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total
	Shares	Amount	Shares	Amount				
Balance at December 31, 2017	6,607,201	$ 5,918	22,387,500	$ —	$ 38	$ (241)	$ —	$ 5,715
Issuance of Class A common stock from exercise of options	—	—	1,809,821	—	—	—	—	—
Issuance of restricted Class A common stock	—	—	1,920,730	—	—	—	—	—
Vesting of early exercised stock options and restricted common stock	—	—	—	—	1	—	—	1
Issuance of Series B convertible preferred stock, net of issuance costs of $106	16,920,470	29,894	—	—	—	—	—	29,894
Stock-based compensation	—	—	—	—	672	—	—	672
Net loss	—	—	—	—	—	(6,307)	—	(6,307)
Balance at December 31, 2018	23,527,671	35,812	26,118,051	—	711	(6,548)	—	29,975
Issuance of Class A common stock from exercise of options	—	—	286,465	—	—	—	—	—
Repurchase of Class A common stock	—	—	(310,000)	—	—	—	—	—
Vesting of early exercised stock options and restricted common stock	—	—	—	—	20	—	—	20
Issuance of Series C convertible preferred stock, net of issuance costs of $153	7,000,000	17,347	—	—	—	—	—	17,347
Issuance of Series D convertible preferred stock, net of issuance costs of $206	16,798,459	54,389	—	—	—	—	—	54,389
Issuance of Series D convertible preferred stock upon extinguishment of convertible notes	124,618	405	—	—	—	—	—	405
Stock-based compensation	—	—	—	—	1,557	—	—	1,557
Other comprehensive income	—	—	—	—	—	—	24	24
Net loss	—	—	—	—	—	(16,038)	—	(16,038)
Balance at December 31, 2019	47,450,748	$ 107,953	26,094,516	$ —	$ 2,288	$ (22,586)	$ 24	$ 87,679

SEER, INC.
Statements of Changes in Stockholders' Equity
(in thousands, except share amounts)

	Convertible Preferred Stock		Class A and Class B Common Stock		Additional Paid in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total
	Shares	Amount	Shares	Amount				
Balance at December 31, 2018	23,527,671	$ 35,812	26,118,051	$ —	$ 711	$ (6,548)	$ —	$ 29,975
Issuance of Class A common stock from exercise of options (unaudited)	—	—	270,840	—	—	—	—	—
Repurchase of Class A common stock (unaudited)	—	—	(310,000)	—	—	—	—	—
Vesting of early exercised stock options and restricted common stock (unaudited)	—	—	—	—	16	—	—	16
Issuance of Series C convertible preferred stock, net of issuance costs of $153 (unaudited)	7,000,000	17,347	—	—	—	—	—	17,347
Stock-based compensation (unaudited)	—	—	—	—	1,156	—	—	1,156
Other comprehensive income (unaudited)	—	—	—	—	—	—	15	15
Net loss (unaudited)	—	—	—	—	—	(10,892)	—	(10,892)
Balance at September 30, 2019 (unaudited)	30,527,671	$ 53,159	26,078,891	$ —	$ 1,883	$ (17,440)	$ 15	$ 37,617
Balance at December 31, 2019	47,450,748	$ 107,953	26,094,516	$ —	$ 2,288	$ (22,586)	$ 24	$ 87,679
Issuance of Class A common stock from exercise of options (unaudited)	—	—	1,420,792	—	94	—	—	94
Repurchase of Class A common stock (unaudited)	—	—	(460,614)	—	—	—	—	—
Vesting of early exercised stock options and restricted common stock (unaudited)	—	—	—	—	63	—	—	63
Issuance of Series D-1 convertible preferred stock, net of issuance costs of $104 (unaudited)	14,666,662	54,896	—	—	—	—	—	54,896
Distribution of PrognomIQ shares	—	—	—	—	(40)	—	—	(40)
Stock-based compensation (unaudited)	—	—	—	—	2,564	—	—	2,564
Other comprehensive income (unaudited)	—	—	—	—	—	—	119	119
Net loss (unaudited)	—	—	—	—	—	(19,839)	—	(19,839)
Balance at September 30, 2020 (unaudited)	62,117,410	$ 162,849	27,054,694	$ —	$ 4,969	$ (42,425)	$ 143	$ 125,536

The accompanying notes are an integral part of these financial statements.

SEER, INC.
Statements of Cash Flows
(in thousands)

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
			(unaudited)	
OPERATING ACTIVITIES				
Net loss	$ (6,307)	$ (16,038)	$ (10,892)	$ (19,839)
Adjustments to reconcile net loss to net cash used in operating activities:				
Stock-based compensation	672	1,557	1,156	2,564
Depreciation and amortization	31	701	493	1,132
Net amortization of premium (accretion of discount) on available-for-sale securities	—	(259)	(241)	185
Non-cash interest expense and other adjustments	—	5	4	10
Changes in operating assets and liabilities:				
Other receivables	(69)	(257)	(49)	(330)
Prepaid expenses and other current assets	(190)	(270)	(330)	(128)
Other assets	(124)	(276)	(305)	(18)
Accounts payable	323	218	(297)	(60)
Deferred revenue	—	175	175	250
Deferred rent	—	66	1	256
Accrued expenses	1,013	1,255	636	605
Other noncurrent liabilities	—	50	(1)	30
Net cash used in operating activities	(4,651)	(13,073)	(9,650)	(15,343)
INVESTING ACTIVITIES				
Purchases of property and equipment	(168)	(4,131)	(3,785)	(4,407)
Purchase of available-for-sale securities	—	(92,002)	(42,265)	(75,624)
Proceeds from maturities of available-for-sale securities	—	23,750	17,500	40,250
Investment in equity method investee	—	—	—	(50)
Net cash used in investing activities	(168)	(72,383)	(28,550)	(39,831)
FINANCING ACTIVITIES				
Proceeds from issuance of restricted stock	51	—	—	—
Repurchase of Class A common stock	—	(6)	(6)	(6)
Proceeds from exercise of Class A common stock options including early exercised options	—	6	6	578
Proceeds from issuance of Series B convertible preferred stock, net of issuance costs	29,894	—	—	—
Proceeds from issuance of Series C convertible preferred stock, net of issuance costs	—	17,347	17,347	—
Proceeds from issuance of Series D convertible preferred stock, net of issuance costs	—	54,584	—	—
Proceeds from issuance of Series D-1 convertible preferred stock, net of issuance costs	—	—	—	54,896
Proceeds from issuance of convertible notes	—	400	400	—
Payments of deferred offering costs	—	—	—	(73)
Net cash provided by financing activities	29,945	72,331	17,747	55,395
Net increase (decrease) in cash, cash equivalents and restricted cash	25,126	(13,125)	(20,453)	221
Cash, cash equivalents and restricted cash, beginning of period	5,827	30,953	30,953	17,828
Cash, cash equivalents and restricted cash, end of period	$ 30,953	$ 17,828	$ 10,500	$ 18,049

SEER, INC.
Statements of Cash Flows
(in thousands)

SUPPLEMENTAL DISCLOSURE OF NON-CASH INVESTING AND FINANCING ACTIVITIES				
Property and equipment purchases included in accounts payable	$ 2,223	$ 81	$ —	$ 20
Property and equipment purchases included in accrued expenses	$ —	$ 266	$ —	$ —
Issuance of Series D convertible preferred stock upon extinguishment of convertible notes	$ —	$ 405	$ —	$ —
Convertible preferred stock issuance costs included in accrued expenses	$ —	$ 195	$ —	$ —
Tenant improvements paid by landlord	$ —	$ 1,787	$ —	$ —
Deferred offering costs in accounts payable	$ —	$ —	$ —	$ 90
Deferred offering costs in accrued expenses	$ —	$ —	$ —	$ 1,006

The accompanying notes are an integral part of these financial statements.

1. ORGANIZATION AND DESCRIPTION OF THE BUSINESS

Seer, Inc. (the Company) was incorporated in Delaware on March 16, 2017, and is based in Redwood City, California. The Company is a life sciences company focused on capturing deep molecular insights from the proteome to enable novel insights and breakthroughs in the understanding of biology and disease. Since inception, the Company has devoted its efforts principally to research and development of its technology and product candidates, recruiting management and technical staff, acquiring operating assets, and raising capital.

The Company is subject to a number of risks, similar to other early-stage life science companies, including, but not limited to, raising additional capital, development and commercialization of its products, development by its competitors of new technological innovations, protection of its intellectual property, and market acceptance of its products.

The accompanying financial statements have been prepared assuming the Company will continue as a going concern, which contemplates the realization of assets and liabilities and commitments in the normal course of business. In the course of its development activities, the Company has incurred significant losses since inception, including a net loss of approximately $6.3 million and $16.0 million for the years ended December 31, 2018 and 2019, respectively, and a net loss of approximately $10.9 million and $19.8 million during the nine months ended September 30, 2019 and 2020 (unaudited), respectively, and expects net losses to continue for the foreseeable future. As of December 31, 2018 and 2019, and September 30, 2020 (unaudited), the Company's accumulated deficit was approximately $6.5 million, $22.6 million, and $42.4 millions, respectively. To date, the Company has funded its operations primarily through issuances of convertible preferred stock. Management believes that currently available resources will provide sufficient funds to enable the Company to meet its obligations for at least one year past the issuance date of these financial statements. Future capital requirements will depend on many factors, including the timing and extent of spending on research and development and the market acceptance of the Company's products.

The Company's ability to fund its operations will require additional capital to be raised, which may be through a combination of public equity or private offerings, debt financings, collaborations, strategic alliances, licensing arrangements, and other marketing distribution arrangements. There can be no assurance that, in the event the Company requires additional financing, such financing will be available at terms acceptable to the Company, if at all. Failure to generate sufficient cash flows from operations, raise additional capital, and reduce discretionary spending should additional capital not become available could have a material adverse effect on the Company's ability to achieve its intended business objectives and on the Company's future financial results, financial position, and cash flows.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND BASIS OF PRESENTATION

Basis of Presentation

The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP). The Company has issued shares of Class A common stock herein referred to as "Class A common stock" or "Class A" and Class B common stock herein referred to as "Class B common stock" or "Class B," and collectively as "common stock."

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of expenses during the reporting period. On an ongoing basis, the Company evaluates its estimates and assumptions, including, but not limited to, those related to the fair value of common stock, stock-based compensation, accrued research and development expenses, useful lives and valuation of property and equipment, income tax uncertainties, and tax valuation allowances.

Management bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying

values of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from those estimates.

Unaudited Pro Forma Information

Unaudited Pro Forma Balance Sheet

The unaudited pro forma balance sheet information as of September 30, 2020, assumes all shares of convertible preferred stock had automatically converted into an aggregate of 62,117,410 shares of the Company's Class A common stock upon the completion of a qualifying initial public offering (IPO). The unaudited pro forma balance sheet does not include the shares of Class A common stock expected to be sold in, and the related proceeds to be received from, the IPO.

The Company granted certain employees RSUs, which vest upon satisfaction of both a service condition and a performance condition that is satisfied upon the closing of the IPO. Assuming the IPO occurred on September 30, 2020, the unaudited pro forma balance sheet assumes the recognition of stock-based compensation of $0.2 million associated with such RSUs as an increase to additional paid-in capital and accumulated deficit. No RSUs have been included in the unaudited pro forma balance sheet disclosure of shares outstanding as the awards do not begin vesting until the closing of the IPO.

Unaudited Pro Forma Net Loss Per Share

Pro forma basic and diluted net loss per common share has been computed to give effect to the conversion of all outstanding convertible preferred stock into shares of Class A common stock as if the conversion had occurred on the later of the beginning of the period or the issuance date of the convertible preferred stock. The unaudited pro forma net loss per common share does not include the shares of Class A common stock expected to be sold in, and related proceeds to be received from, the IPO.

The numerator in the pro forma basic and diluted net loss per common share calculation has not been adjusted for stock-based compensation associated with the RSUs, which would have been $0.2 million had the IPO occurred on September 30, 2020. There is no adjustment to the denominator for the RSUs as no awards would have vested as of September 30, 2020 had the IPO occurred on the later of the beginning of the period or the issuance date of the RSUs.

Unaudited Interim Financial Information

The accompanying interim balance sheet as of September 30, 2020, the interim statements of operations and comprehensive loss, statements of changes in stockholders' equity and statements of cash flows for the nine months ended September 30, 2019 and 2020 and the related footnote disclosures are unaudited. The unaudited interim financial statements have been prepared on the same basis as the annual financial statements and include, in the opinion of management, all adjustments, consisting of normal recurring adjustments, that are necessary for the fair presentation of the Company's financial position as of September 30, 2020 and results of operations and cash flows for the nine months ended September 30, 2019 and 2020. The results as of and for the nine months ended September 30, 2020 are not necessarily indicative of the results to be expected for the year ending December 31, 2020 or any other future periods.

Concentration of Credit Risk and Other Risks and Uncertainties

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash, cash equivalents, and available-for-sale securities. The Company maintains bank deposits in federally insured financial institutions, and these deposits may exceed federally insured limits. The Company is exposed to credit risk in the event of default by the financial institutions holding its cash and cash equivalents and issuers of investments to the extent recorded in the balance sheets.

The Company is subject to a number of risks similar to other early-stage life science companies, including, but not limited to, the need to obtain adequate additional funding, its reliance on third parties to obtain its clinical samples, competitors developing new technological innovations, the need to successfully commercialize and gain

market acceptance of the Company's products, protection of its proprietary technology, and the need to secure and maintain adequate manufacturing arrangements with third parties. If the Company does not successfully commercialize or partner any of its products, it will be unable to generate product revenue or achieve profitability.

Impact of the COVID-19 Pandemic

As a result of the COVID-19 pandemic (COVID-19), the Company's operations experienced disruptions and restrictions on employees' ability to work and on the hiring of additional personnel, particularly as a result of preventive and precautionary measures taken by the Company and some of its suppliers and other service providers. In particular, some of the Company's laboratory material and equipment suppliers, collaborators, and service providers used in the performance of its research activities have been similarly impacted by COVID-19, which may limit the Company's ability to achieve its planned progress. COVID-19 has adversely affected the broader economy and financial markets, resulting in an economic downturn that could affect the Company's financing prospects. Continued disruptions from COVID-19 could harm the Company's operations and the Company cannot anticipate all the ways in which it could be adversely impacted by health epidemics such as COVID-19.

The COVID-19 pandemic has mainly impacted the progress of research and development activities due to the limited ability of the Company's employees to access laboratories during times of statewide quarantine and on some of its suppliers who have experienced a surge in demand for their products resulting in supply delays for critical hardware, instrumentation and medical and testing supplies used for product development. The Company continues to monitor and assess the effects of the COVID-19 pandemic on its business, financial condition, results of operations and cash flows.

Variable Interest Entities and Voting Interest Entities

The Company consolidates those entities in which it has direct, or indirect controlling financial interest based on either the Variable Interest Entity (VIE) model or the Voting Interest Entity (VOE) model.

VIEs are primarily entities that, by design, either lack sufficient equity-at-risk to finance their activities without additional subordinated financial support from other parties or whose equity-at-risk holders, as a group, lack one or more of the following characteristics: (i) direct or indirect ability to make decisions (ii) obligation to absorb expected losses or (iii) right to receive expected residual returns. VIEs must be evaluated quantitatively and qualitatively to determine the primary beneficiary, which is the reporting entity that has (a) the power to direct activities of a VIE that most significantly impact the VIE's economic performance and (b) the obligation to absorb losses of the VIE that could potentially be significant to the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE. The primary beneficiary of a VIE is required to consolidate the assets and liabilities of the VIE. To determine a VIE's primary beneficiary, the Company performs a qualitative assessment to determine which party, if any, has the power to direct activities of the VIE and the obligation to absorb its losses or receive its benefits. This assessment involves identifying the activities that most significantly impact the VIE's economic performance and determining whether the Company, or another party, have the power to direct those activities.

To assess whether the Company has the power to direct the activities of a VIE that most significantly impact the VIE's economic performance, the Company considers all the facts and circumstances, including its role in establishing the VIE and its ongoing rights and responsibilities. In general, the parties that make the most significant decisions affecting the VIE (management and representation on the board of directors) and have the right to unilaterally remove those decision-makers are deemed to have the power to direct the activities of a VIE.

To assess whether the Company has the obligation to absorb losses of the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE, the Company considers all of its economic interests, which typically include equity investments in preferred and common stock that are deemed to be variable interests in the VIE. This assessment requires the Company to apply judgment in determining whether these interests, in the aggregate, are considered potentially significant to the VIE. Factors considered in assessing the significance include: the design of the VIE, including its capitalization structure; subordination of interests; payment priority; relative share of interests held across various classes within the VIE's capital structure; and the reasons why the interests are held by the Company.

At the VIE's inception, the Company determines whether it is the primary beneficiary and if the VIE should be consolidated based on the facts and circumstances. The Company then performs on-going reassessments of the VIE based on reconsideration events and reevaluates whether a change to the consolidation conclusion is required at each reporting period.

Entities that do not qualify as a VIE are assessed for consolidation under the VOE model. Under the VOE model, the Company consolidates the entity if it determines that it, directly or indirectly, has greater than 50% of the voting shares and that other equity holders do not have substantive voting, participating or liquidation rights.

Equity Method Investments

The Company utilizes the equity method to account for investments when it possesses the ability to exercise significant influence, but not control, over the operating and financial decisions of the investee.

In applying the equity method, the Company records the investment at cost and subsequently increases or decreases the carrying amount of the investment by its proportionate share of the net earnings or losses and other comprehensive income of the investee based on its percentage of common stock ownership during the respective reporting period. Payments to investees such as additional investments and payments from investees such as dividends are recorded as adjustments to the carrying value of the investment. In the event that net losses of the investee reduce the carrying amount to zero, no additional net losses are recorded unless the Company makes additional investment in the investee, has guaranteed obligations of the investee, or is otherwise committed to provide further financial support for the investee.

As of September 30, 2020 (unaudited), the Company has an equity method investment in PrognomIQ. Refer to Note 11 for additional information.

Cash, Cash Equivalents and Restricted Cash

The Company considers all highly liquid investments with an original maturity of three months or less at the date of purchase to be cash equivalents. As of December 31, 2018, 2019 and September 30, 2020 (unaudited), all amounts recorded as cash and cash equivalents consist of money market funds and are stated at fair value.

Restricted cash as of December 31, 2019 and September 30, 2020 (unaudited) represents cash held by a financial institution as security for a letter of credit issued to the lessor for one of the Company's operating leases and is classified as non-current based on the term of the underlying lease.

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the balance sheets that sum to the total of the same amounts shown in the statements of cash flows (in thousands):

	December 31,		September 30,
	2018	2019	2020
			(unaudited)
Cash and cash equivalents	$ 30,953	$ 17,485	$ 17,706
Restricted cash	—	343	343
Total cash, cash equivalents and restricted cash	$ 30,953	$ 17,828	$ 18,049

Segment Information

The Company operates as a single operating segment. The Company's chief operating decision maker, its Chief Executive Officer, manages the Company's operations on a consolidated basis for the purposes of allocating resources, making operating decisions and evaluating financial performance.

Investments

The Company has designated all investments, which includes U.S. Treasury securities, as available-for-sale, and therefore, such investments are reported at fair value, with unrealized gains and losses excluded from earnings and

reported as a component of other comprehensive loss. The cost of available-for-sale securities is adjusted for the amortization of premiums and accretion of discounts to expected maturity. Such amortization and accretion are included in other income (expense) on the statements of operations and comprehensive loss. Realized gains and losses and interest income on available-for-sale securities are also included in other income (expense). The cost of securities sold is based on the specific identification method. The Company includes all of its available-for-sale securities in current assets. The Company determines the appropriate classification of its investments in debt securities at the time of purchase and reevaluates such designation at each balance sheet date. Available-for-sale securities with original maturities beyond three months at the date of purchase are classified as current based on their availability for use in current operations.

All of the Company's investments are subject to a periodic impairment review. The Company recognizes an impairment charge when a decline in the fair value of its investments below the cost basis is judged to be other than temporary. Factors considered in determining whether a loss is temporary include the length of time and extent to which an investment's fair value has been less than its cost basis, the financial condition and near-term prospects of the investee, extent of the loss related to credit of the issuer, the expected cash flows from the security, the Company's intent to sell the security and whether or not the Company will be required to sell the security before the recovery of its amortized cost. During the years ended December 31, 2018 and 2019 the Company did not recognize any impairment charges on its investments.

Effective January 1, 2020, any unrealized losses on available-for-sale debt securities that are attributed to credit risk are recorded to the statements of operations and comprehensive loss through an allowance for credit losses. During the nine months ended September 30, 2020 (unaudited), the Company did not recognize any such impairment charges on its investments.

Property and Equipment

Property and equipment are recorded at cost, net of accumulated depreciation and amortization. Depreciation is recorded using the straight-line method over the estimated useful lives of the assets, generally three to five years. When assets are retired or otherwise disposed of, the cost and related accumulated depreciation and amortization are removed from the balance sheet and any resulting gain or loss is included as a part of income (loss) from operations within the statements of operations and comprehensive loss. Leasehold improvements are capitalized and amortized over the shorter of the lease term or the estimated useful life of the related asset. Major replacements and improvements are capitalized, while general repairs and maintenance are expensed as incurred. Construction-in-process assets consist primarily of tools and equipment that have not yet been placed in service. These assets are stated at cost and are not depreciated. Once the assets are placed into service, assets are reclassified to the appropriate asset class on their nature and depreciated in accordance with the useful lives above.

Impairment of Long-Lived Assets

The Company evaluates the carrying amount of its long-lived assets whenever events or changes in circumstances indicate that the assets may not be recoverable. If indicators of impairment exist and the undiscounted future net cash flows expected to be generated by such assets are less than the carrying amount of the asset, an impairment loss is recorded to write the asset down to its estimated fair value based on a discounted future cash flow approach or quoted market values. There have been no such impairment losses for the periods presented.

Leases

The Company may enter into lease agreements that are classified as either operating or capital leases. The Company enters into lease agreements for its administrative and laboratory facilities, which are classified as operating leases. When lease agreements include rent abatement and rent escalation clauses, the Company records a deferred rent liability. The Company records rent expense on a straight-line basis over the term of the lease from the date that it obtains the legal right to use and control the leased space and records the difference between cash rent payments and the recognition of rent expense as a deferred rent liability.

Lease agreements may also include tenant improvement allowances from landlords. The Company recognizes these allowances as a leasehold incentive obligation included in deferred rent on the balance sheets and amortizes it

on a straight-line basis over the life of the lease. Building improvements made with lease incentives or tenant allowances are capitalized as leasehold improvements and included in property and equipment on the balance sheets.

Revenue Recognition

Research Revenue

The Company recognizes revenue when control of the services is transferred to its customers in an amount that reflects the consideration it expects to receive from its customers in exchange for those products and services. This process involves identifying the contract with a customer, determining the performance obligations in the contract, determining the contract price, allocating the contract price to the distinct performance obligations in the contract, and recognizing revenue when the performance obligations have been satisfied. A performance obligation is considered distinct from other obligations in a contract when it provides a benefit to the customer either on its own or together with other resources that are readily available to the customer and is separately identified in the contract. The Company considers a performance obligation satisfied once it has transferred control of a good or service to the customer, meaning the customer has the ability to use and obtain the benefit of the good or service.

The Company recognizes revenue for research and development services contracts when control is transferred, which is upon completion of the services and when results of the services have been transferred to the customer. Upfront payments and fees received are recorded as deferred revenue until the Company performs its obligations under its arrangements. Amounts payable to the Company are recorded as other receivables when its right to consideration is unconditional. The Company does not assess whether a contract has a significant financing component if the expectation at contract inception is such that the period between payment by the customer and the transfer of the promised goods or services to the customer will be one year or less.

Grant Revenue

Grant revenue represents funding under cost reimbursement programs from federal foundation sources for qualified research and development activities performed by the Company and are not based on estimates that are subject to change. Grants received are assessed to determine if the agreement should be accounted for as an exchange transaction or a contribution. An agreement is accounted for as a contribution if the resource provider does not receive commensurate value in return for the assets transferred. Such amounts are recorded as revenue as grant-funded activities are performed up to the amount of expenses incurred. Any advance funding payments are recorded as deferred revenue until the activities are performed.

Research and Development Expenses

Research and development costs, which includes cost associated with performing services under research and development service contracts and research and development of the Company's technology and product candidates, are expensed as incurred. Research and development expenses primarily consist of employee compensation, including stock-based compensation, and related benefits, laboratory supplies, consulting costs, costs related to clinical studies for the collection of biological samples for research use and allocated costs, including rent, depreciation, information technology, and utilities. Advance payments for goods or services for future research and development activities are deferred as prepaid expenses and expensed as the goods are delivered or the related services are performed. Subsequent to the issuance of the December 31, 2019 financial statements, the Company identified $0.3 million and $0.5 million of legal expenses incurred during the years ended December 31, 2018 and 2019, respectively, associated with patents were classified as research and development expenses rather than general and administrative expenses. These classifications have been corrected in the accompanying statements of operations and comprehensive loss and management has concluded that this correction is not material.

Accrued Research and Development Expenses

Goods or services for research and development activities that have not yet been invoiced are recorded as liabilities within accrued research and development on the balance sheets. The Company estimates clinical discovery studies expenses based on the services performed related to clinical studies for the collection of biological samples for research use. In accruing service fees, the Company estimates the period over which services will be performed

and the level of effort to be expended in each period. These estimates are based on communications with the service provider and the Company's estimates of services performed based on information available at each balance sheet date determined through analysis with internal personnel and external service providers as to the progress or stage of completion of the associated services. Although the Company does not expect its estimates to be materially different from amounts actually incurred, the Company's estimate of the status and timing of services performed relative to the actual status and timing of services performed may vary. Through December 31, 2019 and September 30, 2020 (unaudited), there have been no material differences from the Company's estimated accrued research and development expenses to actual expenses.

General and Administrative

General and administrative expenses include employee compensation, including stock-based compensation, and related benefits for executive management, finance administration and human resources, allocated costs, including rent, depreciation, information technology, utilities, professional service fees, and other general overhead costs to support the Company's operations.

Stock-Based Compensation

The Company accounts for stock-based compensation, including from restricted common stock awards (RSAs), grants of restricted stock units (RSUs), and stock options that may be settled in shares of our common stock, based on the fair values of the equity instruments issued. The fair value is determined on the measurement date, which is generally the date of grant. The fair value for our RSAs is their intrinsic value, which is the difference between the fair value of the underlying stock at the measurement date and the purchase price. The fair value of our RSUs is the fair value of the underlying stock at the measurement date. The fair value for our stock option awards is determined at the grant date using the Black-Scholes valuation model. The fair value of share-based payment awards is recognized as expense on a straight-line basis over the requisite service period in which the awards are expected to vest. Forfeitures are accounted for in the period in which they occur. Share-based payment awards that include a service condition and a performance condition are expected to vest when the performance condition is probable of being met.

The Black-Scholes model considers several variables and assumptions in estimating the fair value of stock-based awards that require judgment, for which changes if they occur can materially affect the resulting estimates of fair value. These assumptions include the per share fair value of the underlying common stock, exercise price, expected term, risk-free interest rate, expected annual dividend yield, and the expected stock price volatility over the expected term as follows:

Fair Value of Common Stock

The grant-date fair market value of the shares of common stock underlying stock options has historically been determined by the Company's Board of Directors with assistance of third-party valuation specialists. Because there has been no public market for the Company's common stock, the Board of Directors exercises reasonable judgment and considers a number of objective and subjective factors to determine the best estimate of the fair market value, which include important developments in the Company's operations, the prices at which the Company sold shares of its convertible preferred stock, the rights, preferences and privileges of the Company's convertible preferred stock relative to those of the Company's common stock, actual operating results, financial performance, external market conditions in the life sciences industry, general U.S. market conditions, equity market conditions of comparable public companies, and the lack of marketability of the Company's common stock.

Expected Volatility

As there is no trading history for the Company's common stock, the Company has used the historical volatility of the stock price of similar publicly traded peer companies. The historical volatility is calculated based on a period of time commensurate with the expected term assumptions.

Expected Term

For stock options granted to employees and directors, the expected term is calculated using the simplified method for "plain vanilla" stock option awards.

Risk-Free Interest Rate

The risk-free interest rate is based on the yield available on U.S. Treasury zero-coupon issues similar in duration to the expected term of the equity-settled award.

Expected Dividends

The expected dividend yield is assumed to be zero as the Company has never paid dividends and has no current plans to pay dividends on its common stock.

Stock-based compensation related to awards to non-employees is recognized based on the then-current fair value at each measurement date when earned over the requisite service period of the award, which is generally the vesting term. The fair value of non-employee stock options is estimated using the Black-Scholes valuation model with assumptions generally consistent with those used for employee stock options, with the exception of the expected term, which is the remaining contractual life at each measurement date.

Deferred Offering Costs

Deferred offering costs, consisting of legal, accounting and filing fees relating to the IPO, are capitalized. The deferred offering costs will be offset against offering proceeds upon the completion of the offering. In the event the offering is terminated or delayed, deferred offering costs will be expensed. As of December 31, 2018 and 2019, there were no capitalized deferred offering costs in the balance sheets. As of September 30, 2020 (unaudited), the Company recorded deferred offering costs of $1.2 million as other assets on the balance sheet.

Income Taxes

The Company accounts for income taxes using the asset and liability method. The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse.

A valuation allowance is recorded for deferred tax assets if it is more likely than not that some portion or all of the deferred tax assets will not be realized. In evaluating the ability to recover its deferred income tax assets, the Company considers all available positive and negative evidence, including its operating results, ongoing tax planning, and forecasts of future taxable income on a jurisdiction-by-jurisdiction basis. In the event the Company determines that it would be able to realize its deferred income tax assets in the future in excess of their net recorded amount, it would make an adjustment to the valuation allowance that would reduce the provision for income taxes. Conversely, in the event that all or part of the net deferred tax assets are determined not to be realizable in the future, an adjustment to the valuation allowance would increase the provision for income taxes in the period when such determination is made.

The Company records uncertain tax positions in accordance with ASC 740 on the basis of a two-step process in which (1) we determine whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (2) for those tax positions that meet the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is more likely than 50 percent likely to be realized. Interest and penalties related to unrecognized tax benefits are included within the provision for income tax. At both December 31, 2018 and 2019, there were no interest and penalties.

Net Loss Per Share Attributable to Common Stockholders

Net loss per share of common stock is computed using the two-class method required for multiple classes of common stock and participating securities based upon their respective rights to receive dividends as if all income for the period has been distributed. The rights, including the liquidation and dividend rights and sharing of losses, of the Class A and Class B common stock are identical, other than voting rights. As the liquidation and dividend rights and sharing of losses are identical, the undistributed earnings are allocated on a proportionate basis and the resulting net loss per share attributed to common stockholders is therefore the same for Class A and Class B common stock on an individual or combined basis.

The Company's participating securities include the Company's convertible preferred stock, as the holders are entitled to receive noncumulative dividends on a pari passu basis in the event that a dividend is paid on common stock. The Company also considers any shares issued on the early exercise of stock options subject to repurchase to be participating securities because holders of such shares have non-forfeitable dividend rights in the event a dividend is paid on common stock. The holders of convertible preferred stock, as well as the holders of early exercised shares subject to repurchase, do not have a contractual obligation to share in losses.

Basic net loss per share attributable to common stockholders is calculated by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period, adjusted for outstanding shares that are subject to repurchase.

Diluted net loss per share is computed by giving effect to all potentially dilutive securities outstanding for the period using the treasury stock method or the if-converted method based on the nature of such securities. For periods in which the Company reports net losses, diluted net loss per common share attributable to common stockholders is the same as basic net loss per common share attributable to common stockholders, because potentially dilutive common shares are not assumed to have been issued if their effect is anti-dilutive.

Commitments and Contingencies

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, penalties, and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred.

Comprehensive Loss

Comprehensive loss is comprised of net loss and changes in accumulated other comprehensive income on the Company's available-for-sale investments related to unrealized gains and losses.

Fair Value Measurement

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability, or an exit price, in the principal or most advantageous market for that asset or liability in an orderly transaction between market participants on the measurement date. Fair value measurement establishes a fair value hierarchy that requires an entity to maximize the use of observable inputs, where available, and minimize the use of unobservable inputs when measuring fair value.

The Company determined the fair value of financial assets and liabilities using the fair value hierarchy that describes three levels of inputs that may be used to measure fair value, as follows:

Level 1—Quoted prices in active markets for identical assets and liabilities;

Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

The carrying amount of the Company's other receivables, prepaid expenses, other current assets, accounts payable, and accrued expenses approximate fair value due to their short maturities.

Recently Adopted Accounting Pronouncements

In March 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2016-09, *Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting*. This ASU simplifies several aspects of the accounting for share-based payment award transactions, including, the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. Under ASU No. 2016-09, entities are permitted to make an accounting policy election to either estimate forfeiture on share-based payment awards, as previously required, or to recognize forfeitures as they occur. The Company made an accounting policy election to account for forfeitures as they occur. The Company adopted this standard as of January 1, 2018, using the modified retrospective approach, which did not have a material impact on its financial statements as of the adoption date.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, and further updated through ASU No. 2016-12. This standard is based on the principle that revenue is recognized to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. This standard also requires additional disclosure about the nature, amount, timing, and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. The Company adopted this standard as of January 1, 2019, using the modified retrospective approach, which did not have a material impact on its financial statements as of the adoption date.

In November 2016, the FASB issued ASU No. 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash,* which requires restricted cash and restricted cash equivalents to be included with cash and cash equivalents in the statements of cash flows. The Company adopted this standard as of January 1, 2019, and has applied the standard on a retrospective basis to all periods presented, which did not have a material impact on its financial statements.

The Company adopted the following accounting standards during the nine months ended September 30, 2020 (unaudited).

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments,* which requires that financial assets measured at amortized cost be presented at the net amount expected to be collected. Unrealized losses on available-for-sale debt securities that are attributed to credit risk are recorded through earnings rather than to other comprehensive income. Credit losses relating to available-for-sale debt securities are now recorded through an allowance for credit losses. The Company adopted this standard as of January 1, 2020, and the adoption of this standard did not result in a cumulative effect adjustment as of the date of the adoption.

In August 2018, the FASB issued ASU No. 2018-13, *Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement,* which amends Accounting Standards Codification 820, Fair Value Measurement. This standard modifies the disclosure requirements for fair value measurements by removing, modifying, or adding certain disclosures. The Company adopted this standard as of January 1, 2020, which did not have a material impact on its financial statements.

Recently Issued Accounting Pronouncements Not Yet Adopted

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*. This ASU clarifies the definition of a lease and requires a lessee to recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-to-use asset representing its right to use the underlying asset for the lease term. In November 2019, the FASB issued ASU No. 2019-10 which extends the effective date of ASU No. 2016-02 for non-public business entities, including smaller reporting companies, to fiscal years beginning after December 15, 2020, and interim periods within fiscal years beginning after December 15, 2021. While the Company has not yet quantified the impact, these adjustments will increase total assets and total liabilities relative to such amounts reported prior to adoption.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments,* which requires that financial assets measured at amortized cost be presented at the net amount expected to be collected. The measurement of expected credit losses is based on historical experience, current conditions, and reasonable and supportable forecasts that affect collectability. This standard also eliminates the concept of "other-than-temporary" impairment when evaluating available-for-sale debt securities and instead focuses on determining whether any impairment is a result of a credit loss or other factors. An entity will recognize an allowance for credit losses on available-for-sale debt securities rather than an other-than-temporary impairment that reduces the cost basis of the investment. This standard is effective for fiscal years beginning after December 15, 2022, and interim periods within those fiscal years. Early adoption is permitted. The Company is currently assessing the impact of this standard on its financial statements and related disclosures.

On June 20, 2018, the FASB issued ASU No. 2018-07, *Compensation—Stock Compensation (Topic 718): Improvements to Non-employee Share-Based Payment Accounting,* to reduce cost and complexity and to improve financial reporting for share-based payments issued to non-employees. The standard is effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020, with early adoption permitted, but no earlier than the adoption of Topic 606. The Company is currently evaluating the impact this standard will have on the Company's financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement,* which amends Accounting Standards Codification 820, Fair Value Measurement. This standard modifies the disclosure requirements for fair value measurements by removing, modifying, or adding certain disclosures. The effective date is the first quarter of fiscal year 2020, with early adoption permitted for the removed disclosures and delayed adoption until fiscal year 2020 permitted for the new disclosures. The removed and modified disclosures will be adopted on a retrospective basis and the new disclosures will be adopted on a prospective basis. The Company is currently assessing the impact of this standard on its financial statements and related disclosures.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes,* which is intended to simplify the accounting for income taxes. The standard removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing standards to improve consistent application. The amendments in this ASU are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. Early adoption of the amendments is permitted, including adoption in any interim period for which financial statements have not yet been issued. An entity that elects to early adopt the amendments in an interim period should reflect any adjustments as of the beginning of the annual period that includes that interim period. Additionally, an entity that elects early adoption must adopt all the amendments in the same period. The Company is currently assessing the impact of this standard on its financial statements and related disclosures.

3. FAIR VALUE MEASUREMENTS AND FAIR VALUE OF FINANCIAL INSTRUMENTS

The following tables set forth the fair value of the Company's financial assets that were measured at fair value on a recurring basis by level within the fair value hierarchy (in thousands).

		December 31, 2018			
		Level 1	Level 2	Level 3	Total
Assets:	Classification:				
Money market funds	Cash and cash equivalents	$ 30,953	$ —	$ —	$ 30,953
Total assets measured at fair value		$ 30,953	$ —	$ —	$ 30,953

		December 31, 2019			
		Level 1	Level 2	Level 3	Total
Assets:	Classification:				
Money market funds	Cash and cash equivalents	$ 17,485	$ —	$ —	$ 17,485
U.S. Treasury securities	Investments	—	68,535	—	68,535
Total assets measured at fair value		$ 17,485	$ 68,535	$ —	$ 86,020

		September 30, 2020 (unaudited)			
		Level 1	Level 2	Level 3	Total
Assets:	Classification:				
Money market funds	Cash and cash equivalents	$ 17,706	$ —	$ —	$ 17,706
U.S. Treasury securities	Investments	—	103,800	—	103,800
Total assets measured at fair value		$ 17,706	$ 103,800	$ —	$ 121,506

There were no financial liabilities measured at fair value. The Company classifies money market funds within Level 1 of the fair value hierarchy because they are valued using bank balances or quoted market prices. The Company classifies its investments in U.S. Treasury securities (Treasury bills, Treasury notes, and Treasury bonds) as Level 2 instruments and obtains fair value from an independent pricing service, which may use quoted market prices for identical or comparable instruments or model-driven valuations using observable market data or inputs corroborated by observable market data.

There were no transfers between Levels 1, 2, or 3 for the periods presented.

The following is a summary of the Company's cash equivalents and investments and the gross unrealized holding gains and losses (in thousands):

	December 31, 2019			
	Amortized Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
Assets:				
Money market funds	$ 17,485	$ —	$ —	$ 17,485
U.S. Treasury securities	68,511	27	(3)	68,535
Total	$ 85,996	$ 27	$ (3)	$ 86,020

	September 30, 2020 (unaudited)			
	Amortized Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
Assets:				
Money market funds	$ 17,706	$ —	$ —	$ 17,706
U.S. Treasury securities	103,656	144	—	103,800
Total	$ 121,362	$ 144	$ —	$ 121,506

As of December 31, 2019, unrealized losses on available-for-sale investments are not attributable to credit risk and are considered to be temporary. The Company believes it is more likely than not that investments in an unrealized loss position will be held until maturity or the recovery of the cost basis of the investment. To date, the Company has not recorded any impairment charges on marketable securities related to other-than-temporary declines in market value. As of December 31, 2018 and 2019, the weighted-average remaining maturity of the Company's investment portfolio was less than one year.

During the nine months ended September 30, 2020 (unaudited), the Company has not recorded any impairment charges on marketable securities related to other-than-temporary declines in market value or deterioration in credit risk. As of September 30, 2020 (unaudited), the weighted-average remaining maturity of the Company's investment portfolio was less than one year.

4. OTHER FINANCIAL STATEMENT INFORMATION

Other Receivables

Other receivables consist of the following (in thousands):

	December 31,		September 30,
	2018	2019	2020
			(unaudited)
Interest receivable	$ 57	$ 313	$ 309
Grant receivable	—	13	—
Other	12	—	17
Total other receivables	$ 69	$ 326	$ 326

Property and Equipment, Net

Property and equipment, net consists of the following (in thousands):

	December 31,		September 30,
	2018	2019	2020
			(unaudited)
Laboratory equipment	$ 1,304	$ 3,788	$ 7,827
Computer equipment and software	47	113	150
Furniture and fixtures	12	236	241
Leasehold improvements	—	2,295	2,294
Construction in process	1,028	—	—
Property and equipment	2,391	6,432	10,512
Less: accumulated depreciation and amortization	31	745	1,877
Total property and equipment, net	$ 2,360	$ 5,687	$ 8,635

Depreciation and amortization expense related to property and equipment was less than $0.1 million and $0.7 million for the years ended December 31, 2018 and 2019, respectively, and $0.5 million and $1.1 million for the nine months ended September 30, 2019 and 2020 (unaudited), respectively.

Accrued Expenses

Accrued expenses consist of the following (in thousands):

	December 31,		September 30,
	2018	2019	2020
			(unaudited)
Accrued compensation	$ 722	$ 1,336	$ 1,565
Accrued professional services	64	349	1,858
Accrued property and equipment	—	266	—
Restricted stock liability, current	—	—	495
Other	119	168	161
Total accrued expenses	$ 905	$ 2,119	$ 4,079

5. REVENUE AND DEFERRED REVENUE

As of December 31, 2019 and September 30, 2020 (unaudited), the Company recorded $0.2 million and $0.4 million of deferred revenue related to the following agreements.

Research Agreements

In February 2019, the Company entered into a sponsored research agreement with a biotechnology company under which the Company is required to execute certain research and development activities as well as optional research and development activities if elected by the customer for total consideration payable of $0.4 million. During the year ended December 31, 2019 and nine months ended September 30, 2020 (unaudited), the Company recognized research revenue of $0.1 million and nil with respect to the research agreement.

In March 2020, the Company entered into a sponsored research agreement with a pharmaceutical company under which the Company is required to execute certain research and development activities for total consideration payable of $0.5 million, of which $0.3 million was received and recorded as deferred revenue as of September 30, 2020 (unaudited). During the nine months ended September 30, 2020 (unaudited), the Company did not recognize any research revenue with respect to the research agreement.

NIH Grant

In August 2019, the Company received a notice of award from the National Institutes of Health, which will provide funding of approximately $1.1 million to the Company for its development of research applications. In June 2020, the Company received a notice that additional grant consideration of $0.9 million will be awarded. During the year ended December 31, 2019 and nine months ended September 30, 2020 (unaudited), the Company recognized grant revenue of $0.1 million and $0.3 million with respect to the award.

6. CONVERTIBLE NOTES

In May 2019, the Company issued an aggregate of $0.4 million in convertible promissory notes (Notes) that accrue interest at a rate of 2.37% per annum and mature 10 years from the date of issuance. Upon the closing of the Company's Series D convertible preferred stock offering in November 2019, the Notes were redeemed whereby all of the outstanding principal and accrued interest were converted into 124,618 shares of Series D convertible preferred stock at a conversion price of $3.25 per share, which was the issuance price of the Series D convertible preferred stock. The redemption of the Notes was accounted for as a debt extinguishment, and there was no gain or loss on extinguishment recorded.

7. CAPITAL STOCK AND STOCKHOLDERS' EQUITY

As of December 31, 2019, the Company is authorized to issue 158,950,748 shares of capital stock consisting of 91,500,000 shares of Class A common stock, 20,000,000 shares of Class B common stock, and 47,450,748 shares of convertible preferred stock.

As of September 30, 2020 (unaudited), the Company is authorized to issue 202,117,414 shares of capital stock consisting of 120,000,000 shares of Class A common stock, 20,000,000 shares of Class B common stock, and 62,117,414 shares of convertible preferred stock.

Convertible Preferred Stock

Convertible preferred stock consists of the following:

	December 31, 2018				
	Issue Price	Shares Authorized	Shares Issued and Outstanding	Net Carrying Value	Aggregate Liquidation Preference
	(in thousands, except share and per share data)				
Series A	$ 0.9081	6,607,201	6,607,201	$ 5,918	$ 6,000
Series B	1.7730	16,920,470	16,920,470	29,894	30,000
Total		23,527,671	23,527,671	$ 35,812	$ 36,000

	December 31, 2019				
	Issue Price	Shares Authorized	Shares Issued and Outstanding	Net Carrying Value	Aggregate Liquidation Preference
	(in thousands, except share and per share data)				
Series A	$ 0.9081	6,607,201	6,607,201	$ 5,918	$ 6,000
Series B	1.7730	16,920,470	16,920,470	29,894	30,000
Series C	2.5000	7,000,000	7,000,000	17,347	17,500
Series D	3.2500	16,923,077	16,923,077	54,794	55,000
Total		47,450,748	47,450,748	$ 107,953	$ 108,500

	September 30, 2020 (unaudited)				
	Issue Price	Shares Authorized	Shares Issued and Outstanding	Net Carrying Value	Aggregate Liquidation Preference
	(in thousands, except share and per share data)				
Series A	$ 0.9081	6,607,201	6,607,201	$ 5,918	$ 6,000
Series B	1.7730	16,920,470	16,920,470	29,894	30,000
Series C	2.5000	7,000,000	7,000,000	17,347	17,500
Series D	3.2500	16,923,077	16,923,077	54,794	55,000
Series D-1	3.7500	14,666,666	14,666,662	54,896	55,000
Total		62,117,414	62,117,410	$ 162,849	$ 163,500

In March and April 2019, the Company issued 7,000,000 shares of its Series C convertible preferred stock at a price per share of $2.50 for net proceeds of $17.3 million.

In November and December 2019, the Company issued 16,798,459 shares of its Series D convertible preferred stock at a price per share of $3.25 for net proceeds of $54.4 million, with such amounts not including the redemption of the Notes (see Note 6).

During the nine months ended September 30, 2020 (unaudited), the Company issued 14,666,662 shares of its Series D-1 convertible preferred stock in May 2020 at a price per share of $3.75 for net proceeds of $54.9 million.

The holders of convertible preferred stock have various rights and preferences, including the following:

Liquidation Rights

In the event of any liquidation event, either voluntary or involuntary, the holders of convertible preferred stock shall be entitled to receive, out of the assets of the Company, the applicable liquidation preference specified for each share of convertible preferred stock then held by them before any payment shall be made or any assets distributed to the holders of common stock. Liquidation preference is $0.9081 per share for Series A convertible preferred stock, $1.7730 per share for Series B convertible preferred stock, $2.50 per share of Series C convertible preferred stock, $3.25 per share of Series D convertible preferred stock, and $3.75 per share of Series D-1 convertible preferred stock, each adjusted for any stock splits, combinations, and reorganizations, plus all declared and unpaid dividends on each such share.

If upon the liquidation event, the assets to be distributed among the holders of the convertible preferred stock are insufficient to permit the payment to such holders of the full liquidation preference for their shares, then the holders of shares of convertible preferred stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts, which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid the full preferential amount.

After the payment to the holders of convertible preferred stock of the full preferential amount specified above, any remaining assets of the Company shall be distributed pro rata among the holders of common stock.

A liquidation event requires approval by the holders of at least a majority of the outstanding shares of convertible preferred stock.

Optional Conversion Rights

Shares of any series of convertible preferred stock shall be convertible, at the option of the holder thereof and without payment, at any time after the date of issuance of such share into that number of fully-paid and nonassessable shares of Class A common stock that is equal to the original issue price for such series divided by the conversion price for such series, as adjusted for any stock splits, combinations, reorganizations and applicable dilutive issuances, in effect on the date of the conversion. In addition, the conversion price for each series of convertible preferred stock will be reduced upon certain issuances by the Company of common stock for consideration per share that is less than the conversion price applicable to such series. The Company's convertible preferred stock is convertible into the Company's shares of Class A common stock on a one-for-one basis.

Automatic Conversion Rights

Each share of convertible preferred stock shall automatically be converted into shares of Class A common stock at the then effective conversion price for such share immediately upon (i) the affirmative vote or written consent of the holders of at least a majority of the outstanding shares of convertible preferred stock, voting together as a single class, or (ii) the closing of a firmly underwritten initial public offering with gross proceeds to the Company of at least $50,000,000.

Dividend Rights

The holders of shares of Series A convertible preferred stock, Series B convertible preferred stock, Series C convertible preferred stock, Series D convertible preferred stock, and Series D-1 convertible preferred stock shall be entitled to receive dividends of $0.0545, $0.1064, $0.15, $0.195, and $0.225 respectively, per annum on each outstanding share of Series A convertible preferred stock, Series B convertible preferred stock, Series C convertible preferred stock, Series D convertible preferred stock, and Series D-1 convertible preferred stock, payable in cash at the election of the Board of Directors, out of any assets at the time legally available therefor, when, as and if declared by the Board of Directors, on an equal basis according to the number of shares of convertible preferred stock held by such holders, prior and in preference to the common stock and shall be noncumulative.

Voting Rights

Each holder of convertible preferred stock shall be entitled to the number of votes equal to the number of shares of common stock into which such shares of convertible preferred stock held by such holder could then be converted as of the record date.

The holders of convertible preferred stock, voting as a single class, have the right to elect one director to the Company's Board of Directors. The holders of common stock, as a separate class, have the right to elect three directors to the Board of Directors. The holders of convertible preferred stock and common stock, voting as a single class, have the right to elect one director to the Company's Board of Directors. Any remaining directors, of which there were two as of December 31, 2019 and September 30, 2020 (unaudited), are elected by the holders of common stock and of any other class or series of voting stock, including convertible preferred stock, as a single class.

Redemption Rights

There are no redemption rights afforded to the holders of convertible preferred stock. Upon certain change in control events, including liquidation, sale, or transfer of control of the Company, the convertible preferred stock is contingently redeemable.

Common Stock

Common stock issued and outstanding is as follows:

	December 31,		September 30,
	2018	2019	2020
			(unaudited)
Class A common stock	6,118,051	6,094,516	7,054,694
Class B common stock	20,000,000	20,000,000	20,000,000
Total common stock issued and outstanding	26,118,051	26,094,516	27,054,694

Class A and Class B common stock have a par value of $0.00001 per share. Holders of Class A common stock are entitled to one vote per share and holders of Class B common stock are entitled to 10 votes per share. Class B common shares are convertible to Class A common shares at any time at the option of the holder on a one-for-one basis. Holders of common stock are entitled to dividends as declared by the Board of Directors, subject to rights of holders of all classes of stock outstanding having priority rights as to dividends. There have been no dividends declared to date.

8. EQUITY INCENTIVE PLANS

In 2017, the Company adopted the 2017 Stock Incentive Plan (2017 Plan), which provided for the granting of awards to employees, directors, and consultants of the Company. Awards issuable under the Plan include incentive stock options (ISO), nonqualified stock options (NSO), and restricted stock awards. During the nine months ended September 30, 2020 (unaudited), the Company adopted the 2020 RSU Equity Incentive Plan (2020 RSU Plan), which provided for the granting of RSUs to certain employees of the Company.

Stock options to purchase the Company's Class A common stock may be granted at a price not less than the fair market value of the Company's Class A common stock at the date of grant in the case of both NSOs and ISOs, except for grants of stock options to an employee or non-employee with options who owns more than 10% of the voting power of all classes of stock of the Company, in which case the exercise price shall be no less than 110% of the fair market value per Class A common stock on the grant date. The exercise price for ISO cannot be less than the fair market value of the Class A common stock on the grant date. Stock options granted under the 2017 Plan generally vest over four years and expire no later than 10 years from the date of grant. As of December 31, 2019, and September 30, 2020 (unaudited), the Company has reserved 19,442,199 and 25,283,351 shares of Class A common stock for issuance under the 2017 Plan, respectively.

Stock option activity under the 2017 Plan is as follows:

	Options Outstanding	Weighted Average Exercise Price	Weighted Average Remaining Term (Years)	Aggregate Intrinsic Value (in thousands)
Balance - December 31, 2017	263,915	$ 0.00001		
Options granted	4,850,473	0.02		
Options exercised	(1,809,821)	0.02		
Options cancelled and forfeited	(146,540)	0.00001		
Balance - December 31, 2018	3,158,027	$ 0.02	9.46	$ 3,005
Options granted	1,786,827	0.99		
Options exercised	(286,465)	0.02		
Options cancelled and forfeited	(1,458)	0.02		
Balance - December 31, 2019	4,656,931	$ 0.39	8.86	$ 4,051
Options granted (unaudited)	13,757,666	1.38		
Options exercised (unaudited)	(1,420,792)	0.78		
Options cancelled and forfeited (unaudited)	(829,099)	0.95		
Balance - September 30, 2020 (unaudited)	16,164,706	$ 1.17	9.22	$ 41,230
Vested and exercisable, December 31, 2019	1,448,931	$ 0.15	8.55	$ 1,600
Vested and exercisable, September 30, 2020 (unaudited)	2,126,058	$ 0.49	8.20	$ 6,863

The weighted-average grant-date fair value of stock options granted to employees during the years ended December 31, 2018 and 2019, was $0.77 and $0.75 per share, respectively, and was $0.75 and $0.88 per share for the nine months ended September 30, 2019 and 2020 (unaudited), respectively. The total intrinsic value of stock options exercised during the years ended December 31, 2018 and 2019, was nil and $0.2 million, respectively, and was $0.2 million and $1.2 million during the nine months ended September 30, 2019 and 2020 (unaudited), respectively.

In connection with the PrognomIQ transaction (see Note 11) and pursuant to the anti-dilution provisions included in the 2017 Plan, certain adjustments were made to the number and exercise price of the outstanding awards granted to the Company's employees and directors to maintain the aggregate intrinsic value of the awards at the date of the transaction, which were accounted for as a modification of the awards. Except for the number of the adjusted awards, the material terms of the awards remained unchanged, and the awards continue to vest over their original vesting period. The impact of these adjustments did not have a material impact on the Company's financial statements during the nine months ended September 30, 2020 (unaudited).

Determination of Fair Value

The fair value of stock options granted to employees and directors is calculated using the Black-Scholes option pricing model using the following assumptions:

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
			(unaudited)	
Risk-free interest rate	2.8% - 3.1%	1.8% - 2.6%	1.8% - 2.6%	0.3%-1.5%
Expected volatility	77.6% - 77.9%	74.7% - 77.5%	74.7% - 77.5%	62.2%-69.2%
Expected term (in years)	6.08	5.28 - 6.08	5.28 - 6.08	5.21-6.22
Expected dividend yield	—	—	—	—

The fair value of the stock options granted to non-employees is calculated at each reporting date using the Black-Scholes option pricing model using the following assumptions:

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
			(unaudited)	
Risk-free interest rate	2.7%	1.8% - 1.9%	1.5%-1.9%	0.5%-0.7%
Expected volatility	77.5%	77.7%	73.7%	68.8%
Expected term (in years)	8.73 – 9.88	7.73 – 9.49	8.39-9.82	7.38-9.87
Expected dividend yield	—	—	—	—

Restricted Stock

Certain stock options granted under the 2017 Plan provide stock option holders the right to exercise unvested stock options in exchange for restricted shares of Class A common stock. The Company has also issued restricted shares of Class A common stock to employees and directors under the Plan. The restricted shares of Class A common stock related to early exercised stock options and restricted shares of Class A common stock awards are subject to repurchase by the Company at the original purchase price in the event that the optionee's employment is terminated prior to the shares vesting. The consideration received for early exercised stock options and for shares sold pursuant to restricted stock purchase agreements is recorded as a liability on the balance sheets and reclassified to stockholders' equity as the shares vest.

The activity of restricted shares of Class A common stock under the 2017 Plan is as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value
Unvested at December 31, 2017	2,119,792	$ —
Granted	3,619,147	0.51
Vested	(612,899)	0.04
Unvested at December 31, 2018	5,126,040	0.35
Granted	279,695	0.78
Repurchased	(310,000)	0.77
Vested	(1,886,347)	0.35
Unvested at December 31, 2019	3,209,388	0.35
Granted (unaudited)	886,975	1.44
Repurchased (unaudited)	(460,614)	0.31
Vested (unaudited)	(1,083,673)	0.41
Unvested at September 30, 2020 (unaudited)	2,552,076	0.69

The fair value of the restricted shares of Class A common stock that vested during the years ended December 31, 2018 and 2019, was $0.2 million and $0.3 million, respectively, and was $0.4 million for nine months ended September 30, 2020 (unaudited).

Amounts due from the Company's employees, directors and consultants for the exercise of stock options and related tax withholding of $0.7 million are recorded as other receivables, related parties on the balance sheet as of September 30, 2020 (unaudited), all of which were received by the Company in October 2020.

RSUs

During the nine months ended September 30, 2020 (unaudited), the Company granted certain employees 717,319 RSUs under the 2020 RSU Plan that entitle the holder to receive shares of Class A common stock upon vesting. The Company has not recognized any stock-based compensation for these RSUs, which vest upon satisfaction of both a service condition and a performance condition that is satisfied upon the closing of the IPO and is not considered probable until such event occurs. Stock-based compensation will be recognized using the accelerated attribution method from the grant date upon achievement of the performance condition. 50% of the

RSUs vest upon the one-year anniversary of the IPO and the remaining 50% vest upon the two-year anniversary of the IPO. The weighted-average grant date fair value of the RSUs was $1.58 per share.

If the performance condition had been achieved as of September 30, 2020, the Company would have recognized $0.2 million in additional stock-based compensation related to the RSUs for the service period rendered from the date of grant through September 30, 2020.

Stock-Based Compensation

Total stock-based compensation is as follows (in thousands):

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
			(unaudited)	
Stock options granted to employees and directors	$ 236	$ 523	$ 396	$ 1,970
Stock options granted to non-employees	194	534	403	495
Restricted shares of Class A common stock	242	500	357	99
Total stock-based compensation	$ 672	$ 1,557	$ 1,156	$ 2,564

The following table summarizes the components of stock-based compensation recognized in the Company's statements of operations and comprehensive loss (in thousands):

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
			(unaudited)	
Research and development	$ 287	$ 766	$ 584	$ 561
General and administrative	385	791	572	2,003
Total stock-based compensation	$ 672	$ 1,557	$ 1,156	$ 2,564

As of December 31, 2019 and September 30, 2020 (unaudited), the total unrecognized stock-based compensation related to unvested stock options and restricted stock awards was $3.8 million and $14.7 million, which the Company expects to recognize over a remaining weighted-average period of 2.71 years and 1.71 years, respectively.

The Company granted 127,500 shares of performance-based stock options in February 2018 through June 2019, of which 7,500 shares have vested or been determined to be probable to vest as of December 31, 2019. There is $0.1 million in unrecognized stock-based compensation associated with options not determined to be probable of vesting as of December 31, 2019.

9. EMPLOYEE BENEFIT PLANS

The Company sponsors a qualified 401(k) defined contribution plan covering eligible employees. Participants may contribute a portion of their annual compensation limited to a maximum annual amount set by the Internal Revenue Service. There were no employer contributions under this plan for fiscal 2018 and 2019 or during the nine months ended September 30, 2020 (unaudited).

10. COMMITMENTS

Facility Lease Agreement

On March 1, 2018, the Company entered into an 18-month sublease agreement for its facility in South San Francisco, California. In March 2019, the Company extended the lease term until December 31, 2019.

On January 4, 2019, the Company entered into a new lease agreement for office and laboratory space in Redwood City, California. The lease term commenced in November 2019 and ends on September 30, 2029. As of

December 31, 2019, the Company has moved into this facility and no longer occupies the facility in South San Francisco. In connection with the lease, the Company maintains a letter of credit issued to the lessor in the amount of $0.3 million, which is secured by restricted cash that is classified as non-current based on the term of the underlying lease.

During the nine months ended September 30, 2020 (unaudited), the Company entered into an amendment to the lease agreement with respect to its facility in Redwood City, California in June 2020. The amendment is accounted for as a new operating lease. The amendment makes certain changes to the original lease, including (i) additional office and laboratory space in the same building (Expansion Premises) and (ii) an extension of the expiration date of the original lease to 127.5 months following the delivery date of the Expansion Premises, which is estimated to be July 1, 2021.

The amendment provides for annual base rent for the Expansion Premises of approximately $0.9 million in the first year of the lease term (subject to an abatement period of nine months), which increases on an annual basis to approximately $1.2 million in the final year of the lease term. The amendment also provides for tenant incentives in the amount of $2.4 million. Under the amendment, the Company retains its original option to renew the lease for an additional five-year term, at then-current market rates.

During the period from the lease amendment commencement until the earlier of one month after occupancy of the Expansion Premises or September 2021, the Company will be provided with temporary space. The Company is not required to pay additional rent for the temporary space, but is required to pay property taxes, insurance and normal maintenance costs with respect to the temporary space.

Rent expense was $0.4 million and $0.6 million for the years ended December 31, 2018 and 2019, respectively, and was $0.4 million and $0.5 million for the nine months ended September 30, 2019 and 2020 (unaudited). The Company is required to pay property taxes, insurance, and normal maintenance costs for the facility and will be required to pay any increases over the base year of these expenses.

As of December 31, 2019, future minimum commitments under the Company's non-cancelable facility operating lease are as follows:

Years ending December 31:	**(in thousands)**
2020	$ 453
2021	795
2022	814
2023	835
2024	856
Thereafter	5,035
Total	$ 8,788

As of September 30, 2020 (unaudited), future minimum commitments under the Company's non-cancelable facility operating lease are as follows:

Years ending December 31:	**(in thousands)**
2020 (three months remaining)	$ 195
2021	795
2022	1,436
2023	1,788
2024	1,838
Thereafter	14,728
Total	$ 20,780

Guarantees and Indemnifications

In the normal course of business, the Company enters into agreements that contain a variety of representations and provide for general indemnification. The Company's exposure under these agreements is unknown because it involves claims that may be made against the Company in the future. The Company has entered into indemnification agreements with certain directors and officers that require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of the status or service as directors or officers. To date, the Company has not paid any claims or been required to defend any action related to its indemnification obligations. As of December 31, 2018 and 2019, and September 30, 2020 (unaudited), the Company does not have any material indemnification claims that were probable or reasonably possible and consequently has not recorded related liabilities.

Contingencies

From time to time, the Company may become involved in legal proceedings arising in the ordinary course of business. The Company is not currently a party to any material legal proceedings.

11. PROGNOMIQ, INC. (UNAUDITED)

As discussed in Note 14, in August 2020, the Company formed a new entity, PrognomIQ, Inc. (PrognomIQ), and entered into a stock purchase agreement with PrognomIQ, pursuant to which the Company transferred to PrognomIQ certain assets that comprise the Company's human diagnostics activities in exchange for all the outstanding equity interests of PrognomIQ. The Company subsequently completed a pro-rata distribution to its stockholders of most of the shares of capital stock of PrognomIQ.

Following the distribution in August 2020, and a subsequent $55.0 million equity financing of PrognomIQ by outside investors, the Company retained a non-controlling equity interest consisting of all the outstanding shares of PrognomIQ's common stock and representing approximately 19% of total equity interests of PrognomIQ as of September 30, 2020. The Company has accounted for the transfer of certain assets to PrognomIQ as a common control transaction based on the carrying value of the net assets transferred and therefore there was no gain or loss recorded. The carrying value of the net assets transferred to PrognomIQ was nil, except for a cash contribution of $0.1 million.

The Company has concluded that as of the time of the transaction and as of the $55.0 million equity financing of PrognomIQ by outside investors, which was determined to be a VIE reconsideration event, PrognomIQ is a VIE due to its reliance on future financing and insufficient equity investment at risk. However, the Company is not the primary beneficiary of the VIE as it does not have the power to direct the activities that most significantly impact the economic performance of PrognomIQ and does not have control over the PrognomIQ board of directors. In performing this analysis, the Company considered its explicit and implicit arrangements with PrognomIQ, a related party, and determined its maximum financial statement exposure related to the investment was its initial investment of $0.1 million.

The Company has determined that it has the ability to exercise significant influence over PrognomIQ and therefore has accounted for its investment in PrognomIQ using the equity method. During the nine months ended September 30, 2020, the carrying value of the Company's investment in PrognomIQ was reduced to nil after recognizing net losses based on its percentage of ownership in PrognomIQ.

In connection with the transaction, Omid Farokhzad, the Company's Chief Executive Officer and Chairman of the Board, was appointed as the chair of PrognomIQ's board of directors. Additionally, Philip Ma resigned from his position as the Company's Chief Business Officer and transitioned to the full-time Chief Executive Officer of PrognomIQ, effective October 15, 2020.

PrognomIQ constitutes a related party and as of September 30, 2020, the Company recorded $0.2 million in other receivables, related parties on the balance sheet representing amounts due for general transition services and support provided.

The Company's pro-rata distribution to its stockholders of most of the shares of capital stock of PrognomIQ resulted in a taxable gain of $6.4 million in August 2020. Due to the net loss incurred during the nine months ended September 30, 2020, the Company's net operating loss carryforwards, and the full valuation allowance recorded against the Company's net deferred tax assets, there is no income tax expense reflected on the statement of operations and comprehensive loss for the nine months ended September 30, 2020 related to this distribution.

12. NET LOSS PER SHARE ATTRIBUTABLE TO COMMON STOCKHOLDERS

The following table shows the computation of basic and diluted net loss per share (in thousands, except share and per share data):

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
			(unaudited)	
Numerator:				
Net loss attributable to common stockholders	$ (6,307)	$ (16,038)	$ (10,892)	$ (19,839)
Denominator:				
Weighted-average common shares used in computing net loss per share attributable to common stockholders, basic and diluted	8,502,926	14,878,157	13,987,682	20,778,317
Net loss per share attributable to common stockholders, basic and diluted	$ (0.74)	$ (1.08)	$ (0.78)	$ (0.95)

The following outstanding shares of potentially dilutive securities were excluded from the computation of diluted net loss per share attributable to common stockholders for the periods presented, because including them would have been anti-dilutive (on an as-converted basis):

	December 31,		September 30,	
	2018	2019	2019	2020
			(unaudited)	
Convertible preferred stock	23,527,671	47,450,748	30,527,671	62,117,410
Class A common stock options issued and outstanding	3,158,027	4,656,931	4,674,014	16,164,706
Restricted common stock subject to future vesting	14,499,738	7,602,182	9,187,975	3,367,188
Restricted stock units	—	—	—	717,319
Total	41,185,436	59,709,861	44,389,660	82,366,623

Unaudited Pro Forma Net Loss per Share

Unaudited pro forma basic and diluted loss per share is computed as follows (in thousands, except share and per share data):

	Year Ended December 31, 2019	Nine Months Ended September 30, 2020
		(unaudited)
Numerator:		
Pro forma net loss attributable to common stockholders	$ (16,038)	$ (19,839)
Denominator:		
Weighted-average common shares used in computing net loss per share attributable to common stockholders, basic and diluted	14,878,157	20,778,317
Adjustment to reflect the assumed conversion of convertible preferred stock	31,035,081	55,025,837
Pro forma weighted-average common shares used to compute net loss per share, basic and diluted	45,913,238	75,804,154
Pro forma net loss per share attributable to common stockholders, basic and diluted	$ (0.35)	$ (0.26)

13. INCOME TAXES

Income tax expense differs from the amount computed by applying the statutory federal income tax rate due to the following:

	Year Ended December 31,	
	2018	2019
Federal tax benefits at statutory rate	$ (1,169)	$ (3,347)
State taxes, net of federal benefit	5	(1,264)
Change in valuation allowance	1,363	4,760
Permanent differences	29	204
Research and development credits	(243)	(246)
Other	15	(107)
Total income tax expense	$ —	$ —

Deferred income tax reflects the tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The categories that give rise to components of the deferred tax assets are as follows:

	December 31,	
	2018	2019
Deferred tax assets:		
Net operating loss carryforwards	$ 1,046	$ 4,991
Fixed assets and intangibles	36	—
Accrued expenses and reserves	108	788
Research and development credits	243	470
Stock-based compensation	1	442
Other	1	13
Gross deferred tax assets	1,435	6,704
Less valuation allowance	(1,435)	(6,195)
Net deferred tax assets	$ —	$ 509
Deferred tax liabilities:		
Fixed assets and intangibles	—	(509)
Gross deferred tax liabilities	—	(509)
Total net deferred tax assets (liabilities)	$ —	$ —

The tax benefit of net operating losses, temporary differences, and credit carryforwards are recorded as an asset to the extent that management assesses that realization is “more likely than not.” Management assesses the available positive and negative evidence to estimate whether sufficient future taxable income will be generated to permit use of existing deferred. A significant piece of objective negative evidence evaluated was the cumulative loss incurred since our incorporation in 2017. Such objective evidence limits the ability to consider other subjective evidence, such as our projections for future growth. On the basis of this evaluation, as of December 31, 2018 and 2019, a full valuation allowance has been recorded against our net deferred tax assets. The amount of the net deferred tax assets considered realizable, could be adjusted as estimates of future taxable income during the carryforward period are reduced or increased or if objective negative evidence in the form of cumulative losses is no longer present and additional weight is given to subjective evidence such as our projections for growth. As of December 31, 2018 and 2019, the Company had net deferred tax assets of $1.4 million and $6.2 million, respectively. For the years ended December 31, 2018 and 2019, the net changes in the net valuation allowance were an increase of $1.4 million and an increase of $4.8 million, respectively.

As of December 31, 2018 and 2019, the Company had federal net operating loss carryforwards of approximately $5.0 million and $18.4 million, respectively, which do not expire. At December 31, 2018 and 2019, the Company had state net operating loss carryforwards of approximately $0.3 million and $16.7 million, respectively, which will begin to expire in 2031 for state tax purposes.

As of December 31, 2018 and 2019, the Company had federal research and development credit carryforwards of approximately $0.2 million and $0.4 million, respectively, which begin to expire in 2037 and state research and development credit carryforwards of approximately $0.2 million and $0.5 million, respectively, which will carry forward indefinitely.

Utilization of the Company’s federal and state net operating loss and tax credit carryforwards may be subject to an annual limitation in the event that there is a change in ownership as provided by Section 382 of the Internal Revenue Code and similar state codes. Such limitation could result in a deferral or expiration of the utilization of the net operating loss and tax credit carryforwards. The Company has not performed a Section 382 analysis of its prior ownership changes to date.

As of December 31, 2018 and 2019, the Company had unrecognized tax benefits of approximately $0.1 million and $0.3 million, respectively. The amount of unrecognized tax benefits is not expected to significantly change over

the next 12 months. No amounts would impact the effective tax rate on continuing operations as any change would offset with a corresponding adjustment to the valuation allowance. The beginning and ending unrecognized tax benefits amounts is as follows (in thousands):

	December 31,	
	2018	2019
Beginning balance	$ —	$ 89
Change related to prior year provisions	—	(59)
Change related to current year provisions	89	234
Ending balance	$ 89	$ 264

It is the Company's policy to include any assessed penalties and interest expense related to income taxes as a component of other expense and interest expense, respectively, as necessary. Management determined that no accrual for interest and penalties was required as of December 31, 2019.

All tax returns will remain open for examination by the federal and state taxing authorities for three and four years, respectively, from the date of utilization of any net operating loss carryforwards or research and development credits.

For the nine months ended September 30, 2019 and 2020 (unaudited), the Company did not record an income tax expense. The Company will continue to maintain a full valuation allowance against its deferred tax assets as the Company believes it is more likely than not that the related deferred tax asset will not be realized. As a result, the Company's income tax expense will remain at nil as no items that are either estimated or discrete items would impact the tax expense for the period.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security (CARES) Act was enacted and signed into law. U.S. GAAP requires recognition of the tax effects of new legislation during the reporting period that includes the enactment date. The CARES Act includes changes to the tax provisions that benefits business entities and makes certain technical corrections to the 2017 Tax Cuts and Jobs Act. The tax relief measures for businesses include a five-year net operating loss carryback, suspension of the annual deduction limitation of 80% of taxable income from net operating losses generated in a tax year beginning after December 31, 2017, changes to the deductibility of interest, acceleration of alternative minimum tax credit refunds, payroll tax relief, and a technical correction to allow accelerated deductions for qualified improvement property. The CARES Act also provides other non-tax benefits to assist those impacted by the COVID-19 pandemic. The Company evaluated the impact of the CARES Act and determined that its adoption did not have a material impact to the income tax provision for the nine months ended September 30, 2020.

14. SUBSEQUENT EVENTS

The Company evaluated events subsequent from December 31, 2019 through September 25, 2020, the date at which the financial statements as of and for the years ended December 31, 2018 and 2019 were available to be issued.

In March 2020, the Company entered into a sponsored research agreement with a pharmaceutical company under which the Company is required to execute certain research and development activities for total consideration of $0.5 million.

In May 2020, the Company issued 14,666,662 shares of its Series D-1 convertible preferred stock at a price per share of $3.75 for gross proceeds of $55.0 million.

COVID-19 Pandemic

In December 2019, an outbreak of a novel strain of coronavirus (COVID-19) originated in Wuhan, China, and has since spread globally. On March 11, 2020, the World Health Organization characterized COVID-19 as a pandemic and, on March 13, 2020, the United States declared a national emergency with respect to COVID-19.

As a result of COVID-19, the Company's operations experienced disruptions and restrictions on employees' ability to work, particularly as a result of preventive and precautionary measures taken by the Company and some of its suppliers and other service providers. In particular, some of the Company's laboratory material and equipment suppliers, collaborators, and service providers used in the performance of its research activities are located in the areas impacted by COVID-19, which may limit the Company's ability to achieve planned progress. COVID-19 has adversely affected the broader economy and financial markets, resulting in an economic downturn that could affect the Company's financing prospects. Continued disruptions from COVID-19 could harm the Company's operations and the Company cannot anticipate all the ways in which it could be adversely impacted by health epidemics such as COVID-19.

As of the date of the issuance of these financial statements, the COVID-19 pandemic has mainly impacted the progress of research and development activities due to the limited ability of the Company's employees to access laboratories during times of statewide quarantine and on some of its suppliers who have experienced a surge in demand for their products resulting in supply delays for critical hardware, instrumentation and medical and testing supplies used for product development. In addition, the Company temporarily suspended its recruiting and hiring activities during the second quarter of 2020 as a result of the COVID-19 pandemic. The Company continues to monitor and assess the effects of the COVID-19 pandemic on its business, financial condition, results of operations and cash flows.

Lease Amendment

In June 2020, the Company entered into an amendment to the lease agreement with respect to its facility in Redwood City, California. The amendment makes certain changes to the original lease, including (i) the addition of approximately 13,638 square feet of office and laboratory space in the same building (Expansion Premises) and (ii) an extension of the expiration date of the original lease to 127.5 months following the delivery date of the expansion premises, which is estimated to be July 1, 2021.

The amendment provides for annual base rent for the Expansion Premises of approximately $0.9 million in the first year of the lease term (subject to an abatement period of nine months), which increases on an annual basis to approximately $1.2 million in the final year of the lease term. The amendment also provides for tenant incentives in the amount of $2.4 million. The Company is required to pay property taxes, insurance, and normal maintenance costs for the Expansion Premises, on the same terms as the existing facility. Under the amendment, the Company retains its original option to renew the lease for an additional five-year term, at then-current market rates.

During the period from the lease amendment commencement until the earlier of one month after occupancy of the Expansion Premises or September 2021, the Company will be provided with approximately 12,700 square feet of temporary space located in an adjacent building. The Company is not required to pay additional rent for the temporary space, but is required to pay property taxes, insurance and normal maintenance costs with respect to the temporary space.

PrognomIQ Transaction

In August 2020, the Company transferred certain assets related to disease testing to PrognomIQ, Inc. (PrognomIQ), a new wholly-owned subsidiary, in exchange for all of its outstanding equity interests. Following the transfer, the Company completed a pro-rata distribution to its stockholders of most of the shares of capital stock of PrognomIQ. Following the distribution and a subsequent $55.0 million equity financing of PrognomIQ, the Company holds approximately 19% of the outstanding capital stock in PrognomIQ. The PrognomIQ transaction will be accounted for as a common control transaction and will, therefore, be recorded using carryover basis. The Company does not expect it to have a material impact to the financial statements.

Omid Farokhzad, Chief Executive Officer, serves as the Chair of PrognomIQ's board of directors. Philip Ma resigned from his position as the Company's Chief Business Officer and transitioned to the full-time Chief Executive Officer of PrognomIQ, effective October 15, 2020.

Furthermore, pursuant to the anti-dilution provisions included in the Company's stock incentive plan, certain adjustments were made to the number and exercise price of the outstanding stock-based compensation awards

granted to the Company's employees and directors to maintain the aggregate intrinsic value of the awards at the date of the spin-off. Except for these adjustments, the material terms of the awards remained unchanged, and the awards will continue to vest over their original vesting period. The Company is still evaluating the accounting for these adjustments and its impact on our results of operations and financial position.

15. SUBSEQUENT EVENTS (UNAUDITED)

The Company evaluated subsequent events from December 31, 2019 through October 30, 2020, the date at which the unaudited financial statements as of September 30, 2020 and for the nine months ended September 30, 2019 and 2020 were issued.

Shares

Seer, Inc.

Class A Common Stock

PRELIMINARY PROSPECTUS

J.P. Morgan **Morgan Stanley** **BofA Securities** **Cowen**

, 2020

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the expenses to be incurred in connection with the offering described in this Registration Statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimates except the Securities and Exchange Commission's registration fee, the filing fee of the Financial Industry Regulatory Authority, Inc., or FINRA, and the Nasdaq Stock Market LLC, or Nasdaq, listing fee.

	AMOUNT PAID OR TO BE PAID
SEC Registration Fee	$ *
FINRA filing fee	*
Nasdaq listing fee	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees	*
Miscellaneous expenses	*
Total	$ *

* To be completed by amendment.

Item 14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law, or DGCL, empowers a corporation to indemnify its directors and officers and to purchase insurance with respect to liability arising out of their capacity or status as directors and officers, provided that the person acted in good faith and in a manner the person reasonably believed to be in our best interests, and, with respect to any criminal action, had no reasonable cause to believe the person's actions were unlawful. The DGCL further provides that the indemnification permitted thereunder shall not be deemed exclusive of any other rights to which the directors and officers may be entitled under the corporation's bylaws, any agreement, a vote of stockholders or otherwise. The certificate of incorporation of the registrant to be in effect upon the completion of this offering provides for the indemnification of the registrant's directors and officers to the fullest extent permitted under the DGCL. In addition, the bylaws of the registrant to be in effect upon the completion of this offering require the registrant to fully indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (whether civil, criminal, administrative or investigative) by reason of the fact that such person is or was a director or officer of the registrant, or is or was a director or officer of the registrant serving at the registrant's request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, to the fullest extent permitted by applicable law.

Section 102(b)(7) of the DGCL permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except (1) for any breach of the director's duty of loyalty to the corporation or its stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) for payments of unlawful dividends or unlawful stock repurchases or redemptions or (4) for any transaction from which the director derived an improper personal benefit. The registrant's certificate of incorporation to be in effect upon the completion of this offering provides that the registrant's directors shall not be personally liable to it or its stockholders for monetary damages for breach of fiduciary duty as a director and that if the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors,

then the liability of the registrant's directors shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Section 174 of the DGCL provides, among other things, that a director who willfully or negligently approves of an unlawful payment of dividends or an unlawful stock purchase or redemption may be held liable for such actions. A director who was either absent when the unlawful actions were approved, or dissented at the time, may avoid liability by causing his or her dissent to such actions to be entered in the books containing minutes of the meetings of the board of directors at the time such action occurred or immediately after such absent director receives notice of the unlawful acts.

As permitted by the DGCL, the registrant intends to enter into separate indemnification agreements with each of the registrant's directors and certain of the registrant's officers which would require the registrant, among other things, to indemnify them against certain liabilities which may arise by reason of their status as directors, officers or certain other employees.

The registrant expects to obtain and maintain insurance policies under which its directors and officers are insured, within the limits and subject to the limitations of those policies, against certain expenses in connection with the defense of, and certain liabilities which might be imposed as a result of, actions, suits or proceedings to which they are parties by reason of being or having been directors or officers. The coverage provided by these policies may apply whether or not the registrant would have the power to indemnify such person against such liability under the provisions of the DGCL.

These indemnification provisions and the indemnification agreements intended to be entered into between the registrant and the registrant's officers and directors may be sufficiently broad to permit indemnification of the registrant's officers and directors for liabilities (including reimbursement of expenses incurred) arising under the Securities Act.

The underwriting agreement between the registrant and the underwriters to be filed as Exhibit 1.1 to this registration statement provides for the indemnification by the underwriters of the registrant's directors and officers and certain controlling persons against specified liabilities, including liabilities under the Securities Act with respect to information provided by the underwriters specifically for inclusion in the registration statement.

Item 15. Recent Sales of Unregistered Securities

Since January 1, 2017, we have issued the following unregistered securities:

Issuances of Convertible Preferred Stock

- On December 20, 2017, we sold 6,607,201 shares of Series A convertible preferred stock to eleven accredited investors at a price of $0.9081 per share, for aggregate proceeds of approximately $6,000,000.
- On March 23, 2018, we sold 16,920,470 shares of Series B convertible preferred stock to eleven accredited investors at a price of $1.773 per share, for aggregate proceeds of approximately $30,000,000.
- On March 7, 2019 and April 12, 2019, we sold 4,000,000 and 3,000,000 shares of Series C convertible preferred stock, respectively, to eight accredited investors at a price of $2.50 per share, for total aggregate proceeds of approximately $17,500,000.
- On May 7, 2019, we issued convertible promissory notes in the aggregate principal amount of $400,000 to two accredited investors.
- On November 15, 2019 and December 13, 2019, we sold 15,238,082 and 1,684,995 shares of Series D convertible preferred stock, respectively, to 18 accredited investors at a price of $3.25 per share, for total aggregate proceeds of approximately $55,000,000, which consideration included $400,000 in cancellation of indebtedness.

- On May 12, 2020, we sold 14,666,662 shares of Series D-1 convertible preferred stock to 21 accredited investors at a price of $3.75 per share, for aggregate proceeds of approximately $55,000,000.

Option, RSU and Common Stock Issuances

Since January 1, 2017, we have issued the following unregistered securities:

- From September 20, 2017 to September 11, 2020, we granted to our directors, officers, employees, consultants and other service providers options to purchase an aggregate of 20,658,881 shares of our Class A common stock under our equity compensation plans, at exercise prices ranging from approximately $0.01 to $1.62 per share.

- From September 20, 2017 to July 28, 2020, we issued and sold to our officers, directors, employees (including awards assumed through acquisitions), consultants and other service providers an aggregate of 2,844,160 shares of our Class A common stock upon the exercise of options under our equity compensation plans at exercise prices ranging from $0.01 to $1.62 per share, for a weighted-average exercise price of $0.22 per share.

- From April 1, 2020 to August 21, 2020, we granted to our directors, officers, employees, consultants and other service providers an aggregate of 717,319 RSUs to be settled in shares of our Class A common stock under our equity compensation plans.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering. Except as set forth below, we believe the offers, sales and issuances of the above securities were exempt from registration under the Securities Act (or Regulation D or Regulation S promulgated thereunder) by virtue of Section 4(a)(2) of the Securities Act because the issuance of securities to the recipients did not involve a public offering, or in reliance on Rule 701 because the transactions were pursuant to compensatory benefit plans or contracts relating to compensation as provided under such rule. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed upon the stock certificates issued in these transactions. All recipients had adequate access, through their relationships with us, to information about us. The sales of these securities were made without any general solicitation or advertising.

Item 16. Exhibit and Financial Statement Schedules

(a) ***Exhibits.***

See the Exhibit Index immediately preceding the signature page hereto for a list of exhibits filed as part of this registration statement on Form S-1, which Exhibit Index is incorporated herein by reference.

(b) ***Financial Statement Schedules.***

Schedules have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreements, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is

asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933 shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

EXHIBIT INDEX

Exhibit Number	Description
1.1*	Form of Underwriting Agreement.
3.1^	Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect.
3.2*	Form of Amended and Restated Certificate of Incorporation of the Registrant, to be in effect upon completion of this offering.
3.3^	Amended and Restated Bylaws of the Registrant, as amended, as currently in effect.
3.4*	Form of Amended and Restated Bylaws of the Registrant, to be in effect upon completion of this offering.
4.1*	Form of common stock certificate of the Registrant.
4.2^	Amended and Restated Investors' Rights Agreement, by and among the Registrant and certain holders of its capital stock, dated as of May 12, 2020.
5.1*	Opinion of Wilson Sonsini Goodrich & Rosati, P.C.
10.1+	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers.
10.2+*	2020 Equity Incentive Plan and related form agreements.
10.3^+	2017 Equity Incentive Plan and related form agreements.
10.4^+	2020 RSU Equity Incentive Plan and related form agreements.
10.5+*	2020 Employee Stock Purchase Plan.
10.6+*	Key Executive Change in Control and Severance Plan, and form of Participation Agreement thereunder.
10.7+*	Confirmatory Offer Letter between the Registrant and Dr. Omid Farokhzad, effective as of , 2020.
10.8+*	Confirmatory Offer Letter between the Registrant and Omead Ostadan, effective as of , 2020.
10.9+*	Confirmatory Offer Letter between the Registrant and David Horn, effective as of , 2020.
10.10+*	CEO Change in Control and Severance Agreement between the Registrant and Dr. Omid Farokhzad, effective as of , 2020.
10.11+*	Confirmatory Offer Letter between the Registrant and Dr. Omid Farokhzad, effective as of , 2020.
10.12+*	Form of Change in Control and Severance Agreement.
10.13+*	Outside Director Compensation Policy.
10.14^#	Umbrella Development & Supply Agreement between the Registrant and Hamilton Company, dated March 9, 2020.
10.15#	Exclusive Patent License Agreement between the Registrant and The Brigham and Women's Hospital, Inc., dated December 18, 2017.
23.1*	Consent of Deloitte & Touche LLP, independent registered public accounting firm.
23.2*	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1).
24.1*	Power of Attorney (included on page II-7).

* To be filed by amendment.
^ Previously submitted.
+ Indicates management contract or compensatory plan.
# Portions of the exhibit, marked by brackets and asterisk [***], have been omitted because the omitted information (i) is not material and (ii) would likely cause competitive harm to the registrant if publicly disclosed.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Redwood City, State of California, on , 2020.

SEER, INC.

By: _____

Omid Farokhzad, M.D.
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Omid Farokhzad, M.D. and David Horn as his true and lawful attorneys-in-fact and agents, with full power of substitution and substitution, for him or her and in his or her name, place and stead, in any and all capacities (including his or her capacity as a director and/or officer of Seer, Inc.) to sign any or all amendments (including post-effective amendments) to this registration statement and any and all additional registration statements pursuant to Rule 462(b) of the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as they, he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agents or any of them, or their, his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

SIGNATURE	TITLE	DATE
Omid Farokhzad, M.D.	Chief Executive Officer and Chair of the Board of Directors (*Principal Executive Officer*)	
David R. Horn	Chief Financial Officer (*Principal Financial Officer and Accounting Officer*)	
David Hallal	Lead Independent Director	
Catherine Friedman	Director	
Robert Langer, Sc.D.	Director	
Terrance McGuire	Director	
Omead Ostadan	Director	
David Singer	Director	

SEER, INC.

INDEMNIFICATION AGREEMENT

This Indemnification Agreement (this "***Agreement***") is dated as of [_____, 2020] and is between Seer, Inc., a Delaware corporation (the "***Company***"), and [*insert name of indemnitee*] ("***Indemnitee***").

RECITALS

A. Indemnitee's service to the Company substantially benefits the Company.

B. Individuals are reluctant to serve as directors or officers of corporations or in certain other capacities unless they are provided with adequate protection through insurance or indemnification against the risks of claims and actions against them arising out of such service to and activities on behalf of the Company.

C. Indemnitee does not regard the protection currently provided by applicable law, the Company's governing documents and any insurance as adequate under the present circumstances, and Indemnitee may not be willing to serve as a director or officer without additional protection.

D. In order to induce Indemnitee to continue to provide services to the Company, it is reasonable, prudent and necessary for the Company to contractually obligate itself to indemnify, and to advance expenses on behalf of, Indemnitee as permitted by applicable law.

E. This Agreement shall supersede any prior indemnification agreement between the Company and the Indemnitee, which is hereby terminated.

F. This Agreement is a supplement to and in furtherance of the indemnification provided in the Company's certificate of incorporation and bylaws, and any resolutions adopted pursuant thereto, and this Agreement shall not be deemed a substitute therefor, nor shall this Agreement be deemed to limit, diminish or abrogate any rights of Indemnitee thereunder.

G. In light of the considerations referred to in the preceding recitals, it is the Company's intention and desire that the provisions of this Agreement be construed liberally, subject to their express terms, to maximize the protections to be provided to Indemnitee hereunder.

In consideration of Indemnitee's agreement to serve as a director or officer of the Company after the date hereof, the parties hereto agree as follows:

1. **Definitions**.

(a) A "***Change in Control***" shall be deemed to occur upon the earliest to occur after the date of this Agreement of any of the following events:

(i) *Acquisition of Stock by Third Party*. Any Person (as defined below) is or becomes the Beneficial Owner (as defined below), directly or indirectly, of securities of the Company representing fifteen percent (15%) or more of the combined voting power of the Company's then outstanding securities;

(ii) *Change in Board Composition*. During any period of two consecutive years (not including any period prior to the execution of this Agreement), individuals who at the beginning of such period constitute the Company's board of directors, and any new directors (other than a director designated by a person who has entered into an agreement with the Company to effect a transaction described in Sections 1(a)(i), 1(a)(iii) or 1(a)(iv)) whose election by the board of directors or nomination for election by the Company's stockholders was approved by a vote of at least two-thirds of the directors then still in office who either were directors at the beginning of the period or whose election or nomination for election was previously so approved, cease for any reason to constitute at least a majority of the members of the Company's board of directors;

(iii) *Corporate Transactions*. The effective date of a merger or consolidation of the Company with any other entity, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior to such merger or consolidation continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or its ultimate parent, as applicable) more than 50% of the combined voting power of the voting securities of the surviving entity or its ultimate parent, as applicable, outstanding immediately after such merger or consolidation and with the power to elect at least a majority of the board of directors or other governing body of such surviving entity or its ultimate parent, as applicable;

(iv) *Liquidation*. The approval by the stockholders of the Company of a complete liquidation of the Company or an agreement for the sale or disposition by the Company of all or substantially all of the Company's assets; and

(v) *Other Events*. Any other event of a nature that would be required to be reported in response to Item 6(e) of Schedule 14A of Regulation 14A (or in response to any similar item on any similar schedule or form) promulgated under the Securities Exchange Act of 1934, as amended, whether or not the Company is then subject to such reporting requirement.

For purposes of this Section 1(a), the following terms shall have the following meanings:

(1) "***Person***" shall have the meaning as set forth in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended; *provided*, *however*, that "***Person***" shall exclude (i) the Company, (ii) any trustee or other fiduciary holding securities under an employee benefit plan of the Company, and (iii) any corporation owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their ownership of stock of the Company.

(2) "***Beneficial Owner***" shall have the meaning given to such term in Rule 13d-3 under the Securities Exchange Act of 1934, as amended; *provided*, *however*,

that "***Beneficial Owner***" shall exclude any Person otherwise becoming a Beneficial Owner by reason of (i) the stockholders of the Company approving a merger of the Company with another entity or (ii) the Company's board of directors approving a sale of securities by the Company to such Person.

(b) "***Corporate Status***" describes the status of a person who is or was a director, trustee, general partner, managing member, officer, employee, agent or fiduciary of the Company or any other Enterprise.

(c) "***DGCL***" means the General Corporation Law of the State of Delaware.

(d) "***Disinterested Director***" means a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

(e) "***Enterprise***" means the Company, including without limitation any direct or indirect subsidiary of the Company, and any other corporation, partnership, limited liability company, joint venture, trust, employee benefit plan or other enterprise of which Indemnitee is or was serving at the request of the Company as a director, trustee, general partner, managing member, officer, employee, agent or fiduciary.

(f) "***Expenses***" include all reasonable attorneys' fees, retainers, court costs, transcript costs, fees and costs of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, or otherwise participating in, a Proceeding. Expenses also include (i) Expenses incurred in connection with any appeal resulting from any Proceeding, including without limitation the premium, security for, and other costs relating to any cost bond, supersedeas bond or other appeal bond or their equivalent, and (ii) for purposes of Section 13(d), Expenses incurred by Indemnitee in connection with the interpretation, enforcement or defense of Indemnitee's rights under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

(g) "***Independent Counsel***" means a law firm, or a partner or member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent (i) the Company or Indemnitee in any matter material to either such party (other than as Independent Counsel with respect to matters concerning Indemnitee under this Agreement, or other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "***Independent Counsel***" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee's rights under this Agreement.

(h) "***Proceeding***" means any threatened, pending or completed action, suit, arbitration, mediation, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or proceeding, whether brought in the right of the Company or otherwise and whether of a civil, criminal, administrative or investigative nature, including any appeal therefrom and including without limitation any such Proceeding pending as of the date of this Agreement, in which Indemnitee was, is or will be involved as a party, a potential party, a non-party witness or otherwise by reason of (i) the fact that Indemnitee is or was a director or officer of the Company, (ii) any action taken by Indemnitee or any action or inaction on Indemnitee's part while acting as a director or officer of the Company, or (iii) the fact that he or she is or was serving at the request of the Company as a director, trustee, general partner, managing member, officer, employee, agent or fiduciary of the Company or any other Enterprise, in each case whether or not serving in such capacity at the time any liability or Expense is incurred for which indemnification or advancement of expenses can be provided under this Agreement.

(i) Reference to "***other enterprises***" shall include employee benefit plans; references to "***fines***" shall include any excise taxes assessed on a person with respect to any employee benefit plan; references to "***serving at the request of the Company***" shall include any service as a director, officer, employee or agent of the Company which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner he or she reasonably believed to be in the best interests of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "***not opposed to the best interests of the Company***" as referred to in this Agreement.

2. **Indemnity in Third-Party Proceedings**. The Company shall indemnify Indemnitee in accordance with the provisions of this Section 2 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding, other than a Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 2, Indemnitee shall be indemnified to the fullest extent permitted by applicable law against all Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee or on his or her behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner he or she reasonably believed to be in or not *opposed to the best* interests of the Company and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was unlawful.

3. **Indemnity in Proceedings by or in the Right of the Company**. The Company shall indemnify Indemnitee in accordance with the provisions of this Section 3 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 3, Indemnitee shall be indemnified to the fullest extent permitted by applicable law against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Company. No indemnification for Expenses shall be made under this Section 3 in respect of any claim, issue or

matter as to which Indemnitee shall have been adjudged by a court of competent jurisdiction to be liable to the Company, unless and only to the extent that the Delaware Court of Chancery or any court in which the Proceeding was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnification for such expenses as the Delaware Court of Chancery or such other court shall deem proper.

4. **Indemnification for Expenses of a Party Who is Wholly or Partly Successful**. To the extent that Indemnitee is a party to or a participant in and is successful (on the merits or otherwise) in defense of any Proceeding or any claim, issue or matter therein, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection therewith. To the extent permitted by applicable law, if Indemnitee is not wholly successful in such Proceeding but is successful, on the merits or otherwise, in defense of one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with (a) each successfully resolved claim, issue or matter, and (b) any claim, issue or matter related to any such successfully resolved claim, issue or matter. For purposes of this section, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

5. **Partial Indemnification**. If Indemnitee is entitled under any provision of this Agreement to indemnification by the Company for some or a portion of Expenses, but not, however, for the total amount thereof, the Company shall nevertheless indemnify Indemnitee for the portion thereof to which Indemnitee is entitled.

6. **Indemnification for Expenses of a Witness**. To the extent that Indemnitee is, by reason of his or her Corporate Status, a witness in any Proceeding to which Indemnitee is not a party, Indemnitee shall be indemnified to the extent permitted by applicable law against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection therewith.

7. **Additional Indemnification**.

(a) Notwithstanding any limitation in Sections 2, 3 or 4, the Company shall indemnify Indemnitee to the fullest extent permitted by applicable law if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding (including a Proceeding by or in the right of the Company to procure a judgment in its favor) against all Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee or on his or her behalf in connection with the Proceeding or any claim, issue or matter therein.

(b) For purposes of Section 7(a), the meaning of the phrase "***to the fullest extent permitted by applicable law***" shall include, but not be limited to:

(i) the fullest extent permitted by the provision of the DGCL that authorizes or contemplates additional indemnification by agreement, or the corresponding provision of any amendment to or replacement of the DGCL; and

(ii) the fullest extent authorized or permitted by any amendments to or replacements of the DGCL adopted after the date of this Agreement that increase the extent to which a corporation may indemnify its officers and directors.

8. **Exclusions**. Notwithstanding any provision in this Agreement, the Company shall not be obligated under this Agreement to make any indemnity in connection with any Proceeding (or any part of any Proceeding):

(a) for which payment has actually been made to or on behalf of Indemnitee under any statute, insurance policy, indemnity provision, vote or otherwise, except with respect to any excess beyond the amount paid;

(b) for an accounting or disgorgement of profits pursuant to Section 16(b) of the Securities Exchange Act of 1934, as amended, or similar provisions of federal, state or local statutory law or common law, if Indemnitee is held liable therefor;

(c) for any reimbursement of the Company by Indemnitee of any bonus or other incentive-based or equity-based compensation or of any profits realized by Indemnitee from the sale of securities of the Company, as required in each case under the Securities Exchange Act of 1934, as amended (including any such reimbursements that arise from an accounting restatement of the Company pursuant to Section 304 of the Sarbanes‑Oxley Act of 2002 (the "***Sarbanes-Oxley Act***"), or the payment to the Company of profits arising from the purchase and sale by Indemnitee of securities in violation of Section 306 of the Sarbanes‑Oxley Act), if Indemnitee is held liable therefor;

(d) initiated by Indemnitee and not by way of defense, including any Proceeding (or any part of any Proceeding) initiated by Indemnitee against the Company or its directors, officers, employees, agents or other indemnitees, unless (i) the Company's board of directors authorized the Proceeding (or the relevant part of the Proceeding) prior to its initiation, (ii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law, (iii) otherwise authorized in Section 13(d) or (iv) otherwise required by applicable law; or

(e) if prohibited by applicable law.

9. **Advances of Expenses**.

(a) The Company shall advance the Expenses incurred by Indemnitee in connection with any Proceeding prior to its final resolution, and such advancement shall be made as soon as reasonably practicable, but in any event no later than 60 days, after the receipt by the Company of a written statement or statements requesting such advances from time to time (which shall include invoices received by Indemnitee in connection with such Expenses but, in

the case of invoices in connection with legal services, any references to legal work performed or to expenditure made that would cause Indemnitee to waive any privilege accorded by applicable law shall not be included with the invoice). Advances shall be unsecured and interest free and made without regard to Indemnitee's ability to repay such advances. Indemnitee hereby undertakes to repay any advance to the extent that it is ultimately determined that Indemnitee is not entitled to be indemnified by the Company. This Section 9 shall not apply to the extent advancement is prohibited by law and shall not apply to any Proceeding for which indemnity is not permitted under this Agreement, but shall apply to any Proceeding referenced in Section 8(b) or 8(c) prior to a determination that Indemnitee is not entitled to be indemnified by the Company.

10. **Procedures for Notification and Defense of Claim**.

(a) Indemnitee shall notify the Company in writing of any matter with respect to which Indemnitee intends to seek indemnification or advancement of Expenses as soon as reasonably practicable following the receipt by Indemnitee of notice thereof. The written notification to the Company shall include, in reasonable detail, a description of the nature of the Proceeding and the facts underlying the Proceeding. The failure or delay by Indemnitee to notify the Company will not relieve the Company from any liability which it may have to Indemnitee hereunder or otherwise than under this Agreement, except to the extent that such failure or delay materially prejudices the Company.

(b) If, at the time of the receipt of a notice of a Proceeding pursuant to the terms hereof, the Company has directors' and officers' liability insurance in effect, the Company shall give prompt notice of the commencement of the Proceeding to the insurers in accordance with the procedures set forth in the applicable policies. The Company shall thereafter take all commercially-reasonable action to cause such insurers to pay, on behalf of Indemnitee, all amounts payable as a result of such Proceeding in accordance with the terms of such policies.

(c) In the event the Company may be obligated to make any indemnity in connection with a Proceeding, the Company shall be entitled to assume the defense of such Proceeding with counsel approved by Indemnitee, which approval shall not be unreasonably withheld. After the retention of such counsel by the Company, the Company will not be liable to Indemnitee for any fees or expenses of counsel subsequently incurred by Indemnitee with respect to the same Proceeding. Notwithstanding the Company's assumption of the defense of any such Proceeding, the Company shall be obligated to pay the fees and expenses of Indemnitee's separate counsel to the extent (i) the employment of separate counsel by Indemnitee is authorized by the Company, (ii) counsel for the Company or Indemnitee shall have reasonably concluded that there is a conflict of interest between the Company and Indemnitee in the conduct of any such defense such that Indemnitee needs to be separately represented, (iii) the fees and expenses are non-duplicative and reasonably incurred in connection with Indemnitee's role in the Proceeding despite the Company's assumption of the defense; (iv) the Company is not financially or legally able to perform its indemnification obligations, or (v) the Company shall not have retained, or shall not continue to retain, such counsel to defend such Proceeding. The Company shall have the right to conduct such defense as it sees fit in its sole discretion. Regardless of any provision in this Agreement, Indemnitee shall have the right to employ

counsel in any Proceeding at Indemnitee's personal expense. The Company shall not be entitled, without the consent of Indemnitee, to assume the defense of any claim brought by or in the right of the Company.

(d) Indemnitee shall give the Company such information and cooperation in connection with the Proceeding as may be reasonably appropriate.

(e) The Company shall not be liable to indemnify Indemnitee for any settlement of any Proceeding (or any part thereof) without the Company's prior written consent, which shall not be unreasonably withheld.

(f) The Company shall not settle any Proceeding (or any part thereof) in a manner that imposes any penalty or liability on Indemnitee without Indemnitee's prior written consent, which shall not be unreasonably withheld.

11. **Procedures upon Application for Indemnification**.

(a) To obtain indemnification, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee *and as is reasonably* necessary to determine whether and to what extent Indemnitee is entitled to indemnification following the final disposition of the Proceeding. Any delay in providing the request will not relieve the Company from its obligations under this Agreement, except to the extent such delay is prejudicial.

(b) Upon written request by Indemnitee for indemnification pursuant to Section 11(a), a determination with respect to Indemnitee's entitlement thereto shall be made in the specific case (i) if a Change in Control shall have occurred, by Independent Counsel in a written opinion to the Company's board of directors, a copy of which shall be delivered to Indemnitee or (ii) if a Change in Control shall not have occurred, if required by applicable law (A) by a majority vote of the Disinterested Directors, even though less than a quorum of the Company's board of directors, (B) by a committee of Disinterested Directors designated by a majority vote of the Disinterested Directors, even though less than a quorum of the Company's board of directors, (C) if there are no such Disinterested Directors or, if such Disinterested Directors so direct, by Independent Counsel in a written opinion to the Company's board of directors, a copy of which shall be delivered to Indemnitee or (D) if so directed by the Company's board of directors, by the stockholders of the Company. If it is determined that Indemnitee is entitled to indemnification, payment to Indemnitee shall be made within ten days after such determination. Indemnitee shall cooperate with the person, persons or entity making the determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information that is not privileged or otherwise protected from disclosure and that is reasonably available to Indemnitee and reasonably necessary to such determination. Any costs or expenses (including attorneys' fees and disbursements) reasonably incurred by Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company, to the extent permitted by applicable law.

(c) In the event the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 11(b), the Independent Counsel shall be selected as provided in this Section 11(c). If a Change in Control shall not have occurred, the Independent Counsel shall be selected by the Company's board of directors, and the Company shall give written notice to Indemnitee advising him or her of the identity of the Independent Counsel so selected. If a Change in Control shall have occurred, the Independent Counsel shall be selected by Indemnitee (unless Indemnitee shall request that such selection be made by the Company's board of directors, in which event the preceding sentence shall apply), and Indemnitee shall give written notice to the Company advising it of the identity of the Independent Counsel so selected. In either event, Indemnitee or the Company, as the case may be, may, within ten days after such written notice of selection shall have been given, deliver to the Company or to Indemnitee, as the case may be, a written objection to such selection; *provided*, *however*, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 1 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If such written objection is so made and substantiated, the Independent Counsel so selected may not serve as Independent Counsel unless and until such objection is withdrawn or a court has determined that such objection is without merit. If, within 20 days after the later of (i) submission by Indemnitee of a written request for indemnification pursuant to Section 11(a) hereof and (ii) the final disposition of the Proceeding, the parties have not agreed upon an Independent Counsel, either the Company or Indemnitee may petition a court of competent jurisdiction for resolution of any objection which shall have been made by the Company or Indemnitee to the other's selection of Independent Counsel and for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 11(b) hereof. Upon the due commencement of any judicial proceeding or arbitration pursuant to Section 13(a) of this Agreement, the Independent Counsel shall be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing). The Company shall pay the reasonable fees and expenses of any Independent Counsel.

12. **Presumptions and Effect of Certain Proceedings**.

(a) In making a determination with respect to entitlement to indemnification hereunder, the person, persons or entity making such determination shall, to the fullest extent not prohibited by law, presume that Indemnitee is entitled to indemnification under this Agreement, and the Company shall, to the fullest extent not prohibited by law, have the burden of proof to overcome that presumption.

(b) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of *nolo contendere* or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself create a presumption that Indemnitee did not act in good faith and in a manner which he or she

reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that his or her conduct was unlawful.

(c) Neither the knowledge, actions nor failure to act of any other director, officer, agent or employee of the Enterprise shall be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement.

13. **Remedies of Indemnitee**.

(a) Subject to Section 13(e), in the event that (i) a determination is made pursuant to Section 11 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 9 or 13(d) of this Agreement, (iii) no determination of entitlement to indemnification shall have been made pursuant to Section 11 of this Agreement within 90 days after the later of the receipt by the Company of the request for indemnification or the final disposition of the Proceeding, (iv) payment of indemnification pursuant to this Agreement is not made (A) within ten days after a determination has been made that Indemnitee is entitled to indemnification or (B) with respect to indemnification pursuant to Sections 4, 5 and 13(d) of this Agreement, within 30 days after receipt by the Company of a written request therefor, or (v) the Company or any other person or entity takes or threatens to take any action to declare this Agreement void or unenforceable, or institutes any litigation or other action or proceeding designed to deny, or to recover from, Indemnitee the benefits provided or intended to be provided to Indemnitee hereunder, Indemnitee shall be entitled to an adjudication by a court of competent jurisdiction of his or her entitlement to such indemnification or advancement of Expenses. Alternatively, Indemnitee, at his or her option, may seek an award in arbitration with respect to his or her entitlement to such indemnification or advancement of Expenses, to be conducted by a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association. Indemnitee shall commence such proceeding seeking an adjudication or an award in arbitration within 180 days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 13(a); *provided*, *however*, that the foregoing clause shall not apply in respect of a proceeding brought by Indemnitee to enforce his or her rights under Section 4 of this Agreement. The Company shall not oppose Indemnitee's right to seek any such adjudication or award in arbitration in accordance with this Agreement.

(b) Neither (i) the failure of the Company, its board of directors, any committee or subgroup of the board of directors, Independent Counsel or stockholders to have made a determination that indemnification of Indemnitee is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor (ii) an actual determination by the Company, its board of directors, any committee or subgroup of the board of directors, Independent Counsel or stockholders that Indemnitee has not met the applicable standard of conduct, shall create a presumption that Indemnitee has or has not met the applicable standard of conduct. In the event that a determination shall have been made pursuant to Section 11 of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding or arbitration *commenced pursuant* to this Section 13 shall be conducted in all respects as a *de novo*

trial, or arbitration, on the merits, and Indemnitee shall not be prejudiced by reason of that adverse determination. In any judicial proceeding or arbitration commenced pursuant to this Section 13, the Company shall, to the fullest extent not prohibited by law, have the burden of proving Indemnitee is not entitled to indemnification or advancement of Expenses, as the case may be.

(c) To the fullest extent not prohibited by law, the Company shall be precluded from asserting in any judicial proceeding or arbitration commenced pursuant to this Section 13 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court or before any such arbitrator that the Company is bound by all the provisions of this Agreement. If a determination shall have been made pursuant to Section 11 of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding or arbitration commenced pursuant to this Section 13, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statements not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) To the extent not prohibited by law, the Company shall indemnify Indemnitee against all Expenses that are incurred by Indemnitee in connection with any action for indemnification or advancement of Expenses from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company, unless the court (or arbitrator) finds that each material argument or defense advanced by Indemnitee in such action or arbitration was either frivolous or not made in good faith. Further, if requested by Indemnitee, the Company shall (as soon as reasonably practicable, but in any event no later than 60 days, after receipt by the Company of a written request therefor) advance such Expenses to Indemnitee, subject to the provisions of Section 8, subject to Indemnitee's agreement to repay the sums advanced if the court (or arbitrator) finds that each material argument or defense advanced by Indemnitee in such action or arbitration was either frivolous or not made in good faith.

(e) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement to indemnification shall be required to be made prior to the final disposition of the Proceeding.

14. **Contribution**. To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amounts incurred by Indemnitee, whether for Expenses, judgments, fines or amounts paid or to be paid in settlement, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the events and transactions giving rise to such Proceeding; and (ii) the relative fault of Indemnitee and the Company (and its other directors, officers, employees and agents) in connection with such events and transactions.

15. **Non-exclusivity**. The rights of indemnification and to receive advancement of Expenses as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Company's certificate of incorporation or bylaws, any agreement, a vote of stockholders or a resolution of directors, or otherwise. To the extent that a change in Delaware law, whether by statute or judicial decision, permits greater indemnification or advancement of Expenses than would be afforded currently under the Company's certificate of incorporation and bylaws and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change, subject to the restrictions expressly set forth herein or therein. Except as expressly set forth herein, no right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. Except as expressly set forth herein, the *assertion* or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

16. **Primary Responsibility**. The Company acknowledges that to the extent Indemnitee is serving as a director on the Company's board of directors at the request or direction of a venture capital fund or other entity and/or certain of its affiliates (collectively, the "***Secondary Indemnitors***"), Indemnitee may have certain rights to indemnification and advancement of expenses provided by such Secondary Indemnitors. The Company agrees that, as between the Company and the Secondary Indemnitors, the Company is primarily responsible for amounts required to be indemnified or advanced under the Company's certificate of incorporation or bylaws or this Agreement and any obligation of the Secondary Indemnitors to provide indemnification or advancement for the same amounts is secondary to those Company obligations. To the extent not in contravention of any insurance policy or policies providing liability or other insurance for the Company or any director, trustee, general partner, managing member, officer, employee, agent or fiduciary of the Company or any other Enterprise, the Company waives any right of contribution or subrogation against the Secondary Indemnitors with respect to the liabilities for which the Company is primarily responsible under this Section 16. In the event of any payment by the Secondary Indemnitors of amounts otherwise required to be indemnified or advanced by the Company under the Company's certificate of incorporation or bylaws or this Agreement, the Secondary Indemnitors shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee for indemnification or advancement of expenses under the Company's certificate of incorporation or bylaws or this Agreement or, to the extent such subrogation is unavailable and contribution is found to be the applicable remedy, shall have a right of contribution with respect to the amounts paid. The Secondary Indemnitors are express third-party beneficiaries of the terms of this Section 16.

17. **No Duplication of Payments**. The Company shall not be liable under this Agreement to make any payment of amounts otherwise indemnifiable hereunder (or for which advancement is provided hereunder) if and to the extent that Indemnitee has otherwise actually received payment for such amounts under any insurance policy, contract, agreement or otherwise.

18. **Insurance**. To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, trustees, general partners, managing members, officers, employees, agents or fiduciaries of the Company or any other Enterprise, Indemnitee shall be covered by such policy or policies to the same extent as the most favorably-insured persons under such policy or policies in a comparable position.

19. **Subrogation**. In the event of any payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

20. **Services to the Company**. Indemnitee agrees to serve as a director or officer of the Company or, at the request of the Company, as a director, trustee, general partner, managing member, officer, employee, agent or fiduciary of another Enterprise, for so long as Indemnitee is duly elected or appointed or until Indemnitee tenders his or her resignation or is removed from such position. Indemnitee may at any time and for any reason resign from such position (subject to any other contractual obligation or any obligation imposed by operation of law), in which event the Company shall have no obligation under this Agreement to continue Indemnitee in such position. This Agreement shall not be deemed an employment contract between the Company (or any of its subsidiaries or any Enterprise) and Indemnitee. Indemnitee specifically acknowledges that any employment with the Company (or any of its subsidiaries or any Enterprise) is at will, and Indemnitee may be discharged at any time for any reason, with or without cause, with or without notice, except as may be otherwise expressly provided in any executed, written employment contract between Indemnitee and the Company (or any Enterprise), any existing formal severance policies adopted by the Company's board of directors or, with respect to service as a director or officer of the Company, the Company's certificate of incorporation or bylaws or the DGCL. No such document shall be subject to any oral modification thereof.

21. **Duration**. This Agreement shall continue until and terminate upon the later of (a) ten years after the date that Indemnitee shall have ceased to serve as a director or officer of the Company or as a director, trustee, general partner, managing member, officer, employee, agent or fiduciary of any other Enterprise, as applicable; or (b) one year after the final termination of any Proceeding, including any appeal, then pending in respect of which Indemnitee is granted rights of indemnification or advancement of Expenses hereunder and of any proceeding commenced by Indemnitee pursuant to Section 13 of this Agreement relating thereto.

22. **Successors and Assigns**. This Agreement shall be binding upon the Company and its successors and assigns, including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business or assets of the Company, and shall inure to the benefit of Indemnitee and Indemnitee's personal or legal representatives, heirs, executors, administrators, distributees, legatees and other successors. The Company shall require and cause any successor (whether direct or indirect by purchase, merger, consolidation or

otherwise) to all or substantially all of the business or assets of the Company, by written agreement, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no such succession had taken place.

23. **Severability**. Nothing in this Agreement is intended to require or shall be construed as requiring the Company to do or fail to do any act in violation of applicable law. The Company's inability, pursuant to court order or other applicable law, to perform its obligations under this Agreement shall not constitute a breach of this Agreement. If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (i) the validity, legality and enforceability of the remaining provisions of this Agreement (including without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby and shall remain enforceable to the fullest extent permitted by law; (ii) such provision or provisions shall be deemed reformed to the extent necessary to conform to applicable law and to give the maximum effect to the intent of the parties hereto; and (iii) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested thereby.

24. **Enforcement**. The Company expressly confirms and agrees that it has entered into this Agreement and assumed the obligations imposed on it hereby in order to induce Indemnitee to serve as a director or officer of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as a director or officer of the Company.

25. **Entire Agreement**. This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof; *provided*, *however*, that this Agreement is a supplement to and in furtherance of the Company's certificate of incorporation and bylaws and applicable law.

26. **Modification and Waiver**. No supplement, modification or amendment to this Agreement shall be binding unless executed in writing by the parties hereto. No amendment, alteration or repeal of this Agreement shall adversely affect any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in his or her Corporate Status prior to such amendment, alteration or repeal. No waiver of any of the provisions of this Agreement shall constitute or be deemed a waiver of any other provision of this Agreement nor shall any waiver constitute a continuing waiver.

27. **Notices**. All notices and other communications required or permitted hereunder shall be in writing and shall be mailed by registered or certified mail, postage prepaid, or otherwise delivered by hand, messenger or courier service addressed:

(a) if to Indemnitee, to Indemnitee's address, as shown on the signature page of this Agreement or in the Company's records, as may be updated in accordance with the provisions hereof; or

(b) if to the Company, to the attention of the Chief Executive Officer or Chief Financial Officer of the Company at 3800 Bridge Parkway, Suite 102, Redwood City, California 94065, or at such other current address as the Company shall have furnished to Indemnitee, with a copy (which shall not constitute notice) to Tony Jeffries and Christina Poulsen at Wilson Sonsini Goodrich & Rosati, P.C., 650 Page Mill Road, Palo Alto, California 94304.

Each such notice or other communication shall for all purposes of this Agreement be treated as effective or having been given (i) if delivered by hand, messenger or courier service, when delivered (or if sent *via* a nationally-recognized overnight courier service, freight prepaid, specifying next-business-day delivery, one business day after deposit with the courier), or (ii) if sent *via* mail, at the earlier of its receipt or five days after the same has been deposited in a regularly-maintained receptacle for the deposit of the United States mail, addressed and mailed as aforesaid.

28. **Applicable Law and Consent to Jurisdiction**. This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. Except with respect to any arbitration commenced by Indemnitee pursuant to Section 13(a) of this Agreement, or except as mutually agreed by the parties in writing, the Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Delaware Court of Chancery, and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court of Chancery for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) appoint, to the extent such party is not otherwise subject to service of process in the State of Delaware, The Corporation Trust Company, Wilmington, Delaware as its agent in the State of Delaware as such party's agent for acceptance of legal process in connection with any such action or proceeding against such party with the same legal force and validity as if served upon such party personally within the State of Delaware, (iv) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court of Chancery, and (v) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court of Chancery has been brought in an improper or inconvenient forum.

29. **Counterparts**. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement. This Agreement may also be executed and delivered by facsimile signature and in counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement. Only one such

counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

30. **Captions**. The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

(*signature page follows*)

The parties are signing this Indemnification Agreement as of the date stated in the introductory sentence.

SEER, INC.

_____

(Signature)

_____

(Print Name)

_____

(Title)

INDEMNITEE

_____

(Signature)

_____

(Print Name)

_____

(Street address)

_____

(City, State, and ZIP)

[***] Certain information in this document has been excluded pursuant to Regulation S-K, Item 601(b)(10). Such excluded information is not material and would likely cause competitive harm to the registrant if publicly disclosed.

THE BRIGHAM AND WOMEN'S HOSPITAL, INC.

EXCLUSIVE PATENT LICENSE AGREEMENT

BWH Agreement No: [***]
BWH Cases Nos: [***], [***], [***] and [***]

This License Agreement (‘“Agreement”) is made as of the 18th day of December, 2017 (“Effective Date”), by and between Seer Biosciences, Inc., a Delaware corporation, having a principal place of business at [***] (“Company”‘) and The Brigham and Women's Hospital, Inc., a not-for-profit Massachusetts corporation, with a principal place of business at 75 Francis Street, Boston, Massachusetts 02115 (“Hospital”), each referred to herein individually as a “Party” and collectively as the “Parties”.

RECITALS

Hospital, as a center for patient care, research and education, is the owner of certain Patent Rights (defined below) and desires to grant a license of those Patent Rights to Company in order to benefit the public by disseminating the results of its research via the commercial development, manufacture, distribution and use of Products and Processes (defined below).

Company has the capability to commercially develop, manufacture, distribute and use Products and Processes for public use and benefit and desires to license such Patent Rights.

For good and valuable consideration, the sufficiency of which is hereby acknowledged, the Parties hereby agree as follows:

1. CERTAIN DEFINITIONS

As used in this Agreement, the following terms shall have the following meanings, unless the context requires otherwise.

1.1 “Affiliate” with respect to either Party shall mean any corporation or other legal entity other than that Party in whatever country organized, controlling, controlled by or under common control with that Party. The term “control” shall mean (i) in the case of Company, direct or indirect ownership of fifty percent (50%) or more of the voting securities having the right to elect directors, and (ii) in the case of Hospital, the power, direct or indirect, to elect or appoint fifty percent (50%) or more of the directors or trustees, or to cause direction of management and policies, whether through the ownership of voting securities, by contract or otherwise.

1.2 “Claim” shall mean any pending or issued claim of any Patent Right that has not expired or been permanently revoked, nor held unenforceable or invalid by a decision of a court or other governmental agency of competent jurisdiction that is unappealable, or unappealed in the time allowed for appeal, but shall exclude any such claim (a) that has been pending without issuance for more than [***], or (b) in an

application from which no claims have issued for [***]. For any claim that is covered by (a) or (b), licensed rights to such claim shall revert back to the Hospital.

1.3 "Distributor" shall mean any third party entity to whom Company, a Company Affiliate or a Sublicensee has granted, express or implied, the right to distribute any Product or Process pursuant to Section 2.1(b)(ii).

1.4 "Excluded Patent License Field 2" shall mean (i) [***] and (ii) the [***].

1.5 "FDA" shall mean the United States Food and Drug Administration or any comparable governmental agency outside of the U.S.A.

1.6 "First Commercial Sale" shall mean the initial Sale anywhere in the applicable License Territory of a Product or Process.

1.7 "Immune Switching of Lymphocyte Subclasses" shall mean switching lymphocyte subclasses from T-helper cells Th2 to Thl.

1.8 "Immune Tolerance" shall mean down-regulation of immune responses against a specified endogenous or exogenous antigen.

1.9 "IND" shall mean Investigational New Drug Application, as defined by the FDA or foreign equivalent.

1.10 "Invention" shall mean any new and useful discovery (i) disclosed to Hospital's Office of Innovation by [***], and (ii) related to a [***].

1.11 "License Field" shall mean Patent Family 1 License Field and Patent Family 2 License Field.

1.12 "License Territory" shall mean worldwide.

1.13 "NDA" shall mean a New Drug Application, as defined by the FDA or foreign equivalent.

1.14 "Net Sales" shall be calculated as set forth in this Section 1.14.

(a) Subject to the conditions set forth below, "Net Sales" shall mean:

(i) the gross amount billed or invoiced, or, if no such bill or invoice is issued, the amount received, whichever is greatest, by Company and its Affiliates and Sublicensees for or on account of Sales of Products and Processes;

(ii) less:

(A) the following amounts actually paid by Company and its Affiliates and Sublicensees in effecting such Sale:

1. amounts repaid or credited by reason of rejection or return of applicable Products or Processes;

2. reasonable and customary trade, quantity or cash rebates or discounts to the extent allowed and taken;

3. discounts or rebates or other payments required by law to be made under Medicaid, Medicare or other governmental • medical assistance programs, to the extent actually allowed and taken;

4. to the extent separately stated on the bill or invoice, amounts for outbound transportation, insurance, handling and shipping;

5. to the extent separately stated on the bill or invoice, taxes, customs duties and other governmental charges levied on or measured by Sales of Products or Processes, whether paid by or on behalf of Company so long as Company's price is reduced thereby, but not franchise or income taxes of any kind whatsoever; and

6. any invoiced amounts that are not collected by Company, its Affiliates or Sublicensees, including bad debts, up to a maximum of five percent (5%) of gross sales received in any given year.

If there is an overlap between any of the deductions described in 1 through 4 above, each individual item shall only be deducted once in the overall Net Sales calculation.

(B) the gross amount billed or invoiced, or if no such bill or invoice is issued the amount received, whichever is greatest, by Company and its Affiliates and Sublicensees for or on account of Sales of Products and Processes to Hospital and Hospital's Affiliates.

(b) Specifically excluded from the definition of "Net Sales" are amounts attributable to any Sale of any Product or Process between or among Company and any Company Affiliate and/or Sublicensee, unless the transferee is the end purchaser, user or consumer of such Product or Process.

(c) No deductions shall be made for any commissions paid to any individuals or for any costs or expenses of collections.

(d) Net Sales shall be deemed to have occurred and the applicable Product or Process "Sold" on the earlier to occur of receipt of payment or 60 days after billing or invoicing.

(e) Subject to Section 1.14(a)(ii)(A)(2) above, if any Product or Process is Sold at a discounted price that is lower than the customary price charged, or for non-cash consideration (whether or not at a discount), Net Sales shall be calculated based on the non-discounted cash amount charged to an independent third party for the Product or Process during the same Reporting Period or, in the absence of such transaction, on the fair market value of the Product or Process. Non-cash consideration that could affect any payment due to Hospital hereunder shall not be accepted without the prior written consent of Hospital.

1.15 “Patent Family 1” shall mean Patent Rights identified by Hospital’s Cases No. [***]; No. [***]; and No. [***], each as further described in **Appendix A**.

1.16 “Patent Family 1 License Field” shall mean all fields of use, [***].

1.17 “Patent Family 2” shall mean Patent Rights identified Hospital’s Case No. [***], as further described in **Appendix A**.

1.18 “Patent Family 2 License Field” shall mean all fields of use, [***], provided that Patent Family 2 License Field excludes Excluded Patent License Field 2.

1.19 “Patent Rights” shall mean Hospital’s rights in the U.S. Patent Applications under Patent Family 1 and Patent Family 2 and/or the equivalent of such applications including any division, continuation, and continuation-in-part (but only to the extent of claims directed to the subject matter claimed in the parent application) and/or any foreign patent application and/or Letters Patent, and/or the equivalent thereof issuing thereon, and/or reissue, reexamination and/or extension thereof, as may be further described in **Appendix A.**

1.20 “Phase II Clinical Trial” shall mean a clinical study of the Product in any country that would satisfy the requirements of 21 C.F.R. 312.21(b), as amended from time to time, or a comparable regulation if the study is conducted in a jurisdiction outside of the United States.

1.21 “Phase III Clinical Trial” shall mean a clinical study of the Product in any country that would satisfy the requirements of 21 C.F.R. 312.21(c), as amended from time to time, or a comparable regulation if the study is conducted in a jurisdiction outside of the United States.

1.22 “Process” shall mean any process, method or service the use or performance of which, in whole or in part, absent the license granted hereunder, would infringe one or more Claims.

1.23 “Product” shall mean any article, device or composition, the manufacture, use, or sale of which, in whole or in part, absent the license granted hereunder, would infringe one or more Claims.

1.24 “Reporting Period” shall mean each three month period ending March 31, June 30, September 30 and December 31.

1.25 “Sell” (and “Sale” and “Sold” as the case may be) shall mean to sell or have sold, to lease or have leased, to import or have imported or otherwise to transfer or have transferred a Product or Process for valuable consideration (in the form of cash or otherwise), and further in the case of a Process, to use or perform such Process for the benefit of a third party, other than in connection with research, development or obtaining regulatory approval.

1.26 “Sublicense Income” shall mean consideration in any form received by Company and/or Company’s Affiliate(s) in connection with or in exchange for a grant of a sublicense or any other right, license, privilege or immunity (regardless of whether such grantee is a “Sublicensee” as defined in this Agreement) under the Patent Rights to make, have made, use, have used, Sell or have Sold Products or Processes, but excluding consideration included within Net Sales. Sublicense Income shall include without limitation any license signing fee, license maintenance fee, unearned portion of any minimum royalty payment, distribution or joint marketing fee, research and development funding in excess of the cost of performing such research and development, and any consideration received for an equity interest

in, extension of credit to or other investment in Company or Company's Affiliates to the extent such consideration exceeds the fair market value of the equity or other interest received as determined by an independent valuation advisor engaged by the Company and approved in writing by Hospital to perform valuation services. For the avoidance of doubt, Sublicense Income shall not include royalties or other consideration based on Net Sales, payments funding the costs of bona fide research and development activities, reimbursement for patent prosecution or enforcement expenses, proceeds from the sale of securities, or consideration received in connection with an assignment of this Agreement in accordance with Section 12.5.

1.27 "Sublicensee" shall mean any sublicensee of rights granted in accordance with Section 2.1(a)(iii). For purpose of this Agreement, a Distributor of a Product or Process shall not be included in the definition of Sublicensee unless such Distributor (i) is granted any right to make, have made, use or have used Products or Processes in accordance with Section 2.1(a)(iii), or (ii) has agreed to pay to Company or its Affiliate(s) royalties on such Distributor's sales of Products or Processes, in which case such Distributor shall be a Sublicensee for all purposes of this Agreement. For the avoidance of doubt, if the Company assigns this Agreement in accordance with Section 12.5, then the assignee shall not be a Sublicensee.

1.28 "Third-Party Licensee" shall mean a third party that obtains a license from Hospital under Patent Family 2.

2. LICENSE

2.1 Grant of License.

(a) Subject to the terms of this Agreement and Hospital's rights in Patent Rights, Hospital hereby grants to Company and Company's Affiliates in the License Territory:

(i) an exclusive, royalty-bearing license under Patent Family 1 in the Patent Family 1 License Field to develop, have developed, make, have made, use, have used, offer for Sale, Sell and have Sold, import, have imported, export, and have exported Products and Processes; and

(ii) an exclusive, royalty-bearing license under Patent Family 2 in the Patent Family 2 License Field to develop, have developed, make, have made, use, have used, offer for Sale, Sell and have Sold, import, have imported, export, and have exported Products and Processes; and

(iii) the right to grant sublicenses under the rights granted in Sections 2.l(a)(i) and (ii), and in accordance with Section 2.2, to Sublicensees, provided that in each case Company shall be responsible for the performance of any obligations of Sublicensees relevant to this Agreement as if such performance were carried out by Company itself, including, without limitation, the payment of any royalties or other payments provided for hereunder, regardless of whether the terms of any sublicense provide for such amounts to be paid by the Sublicensee directly to Hospital.

(b) The licenses granted in Section 2.1(a) above include:

(i) the right to grant to the final purchaser, user or consumer of Products the right to use such purchased Products in a method coming within the scope of Patent Rights within the applicable License Field and License Territory; and

(ii) the right to grant to a Distributor the right to Sell (but not to make, have made, use or have used) such Products and/or Processes for or on behalf of Company, its Affiliates and Sublicensees in a manner consistent with this Agreement.

(c) All rights granted to Company this Section 2 are also granted to each Affiliate of Company, provided that such Affiliate shall assume the same obligations as those of Company and be subject to the same terms and conditions hereunder; and further provided that Company shall be responsible for the performance of all of such obligations and for compliance with all of such terms and conditions by Affiliate. Company shall be responsible for any obligation of Affiliates to make any payment to Hospital or provide a report to Hospital.

(d) Company acknowledges that Hospital may grant to a Third-Party Licensee a license under Patent Family 2 in a field of use that does not include the Patent Family 2 License Field.

2.2 Sublicenses. Each sublicense granted hereunder shall be subject to the prior written approval of Hospital, which approval shall not be unreasonably withheld, conditioned or delayed.

(a) Company shall require that each sublicense is consistent with and subject to the terms and conditions of the License, including without limitation terms and conditions regarding indemnification, insurance, disclaimers of warranty, and limitations of liability.

(b) Prior to signing a sublicense agreement or any amendment thereto, Company shall provide to Hospital a draft of such agreement or amendment. Company may redact such draft, but only to redact content that is unrelated to the grant of Patent Rights under this Agreement. If Hospital has any comments, it shall provide such comments to Company within [***] days after its receipt of the draft. If Hospital does not provide any comments during such period, the agreement shall be deemed to be approved. If Company receives comments from Hospital, it shall negotiate same with the proposed sublicensee and then deliver a revised draft to Hospital. Hospital shall have [***] days, following receipt, to approve or reject the revised draft. If Hospital does not reject the revised license within such [***]-day period, the sublicense agreement shall be deemed to be approved.

(c) Company shall provide to Hospital a fully signed copy of all sublicense agreements and amendments thereto, including all exhibits, attachments and related documents, within [***] days after executing the same. Company may redact such copy, but only to redact content that is unrelated to the grant of Patent Rights under this Agreement. For the avoidance of doubt, Company need not provide Hospital copies of agreements with contract research (including academic or non-profit research, development, manufacturing, and/or sales) organizations.

(d) Upon termination of this Agreement or any license granted hereunder for any reason, any sublicenses shall be addressed in accordance with Section 10.7. Any sublicense which is not in accordance with the forgoing provisions shall be null and void.

2.3 Retained Rights: Requirements. Any and all licenses granted hereunder are subject to:

(a) the right of Hospital and Hospital's Affiliates and academic, government and not-for-profit institutions to make and to use the subject matter described and/or claimed in the Patent Rights for research and educational purposes; and

(b) for Patent Rights supported by federal funding, the rights, conditions and limitations imposed by U.S. law (see 35 U.S.C. § 202 et seg. and regulations pertaining thereto), including without limitation:

(i) the royalty-free non-exclusive license granted to the U.S. government; and

(ii) to the extent required by applicable law, the requirement that any Products used or sold in the United States shall be manufactured substantially in the United States.

2.4 No Additional Rights. It is understood that nothing in this Agreement shall be construed to grant Company or any of its Affiliates a license, express or implied, under any patent owned solely or jointly by Hospital other than the Patent Rights expressly licensed hereunder. Hospital shall have the right to license any Patent Rights to any other party for any purpose outside of the License Fields or the License Territory.

3. DUE DILIGENCE OBLIGATIONS

3.1. Diligence Requirements. Company shall use, and shall cause its Affiliates and Sublicensees, as applicable, to use, commercially reasonable efforts to develop and make available to the public Products and Processes throughout the License Territory in the License Fields. Such efforts shall include achieving the following objectives within the time periods designated below following the Effective Date:

(a) Within [***] months after the Effective Date and annually thereafter, submission of a research and development plan to Hospital (the "Development Plan"):

(b) Within [***] months after the Effective Date, Company will have raised cumulative funding of not less than $[***];

(c) Within [***] months after the Effective Date, Company will have raised cumulative funding of not less than $[***];

(d) By [***], Company will have raised cumulative funding of not less than $[***];

(e) By [***], Company will [***];

(f) By [***], Company will [***]; and

(g) By [***], Company will [***].

Achievement of the foregoing objectives, by Company, its Affiliates or Sublicensees, shall be deemed to satisfy Company's obligations to use commercially reasonable efforts under this Section 3.1.

3.2. Diligence Failures. If Hospital determines that Company has failed to fulfill any of its obligations under Section 3.1, then Hospital may treat such failure as a default and may terminate this Agreement and/or any license granted hereunder in accordance with Section 10.4.

3.3. Diligence Reports. Company shall provide all reports with respect to its obligations under Section 3.1 as set forth in Section 5.

4. PAYMENTS AND ROYALTIES

4.1 License Issue Fee. Company shall pay Hospital a non-refundable up-front fee of $[***] payable as follows: (i) $[***] on the Effective Date and (ii) $[***] on the first anniversary of the Effective Date.

4.2 Patent Cost Reimbursement. Company shall reimburse Hospital for all costs associated with the preparation, filing, prosecution and maintenance of all Patent Rights ("Patent Costs"') as follows:

(a) Patent Family 1: Company shall reimburse Hospital for all costs incurred by Hospital (as incurred) for prosecution, maintenance or defense (including interference, oppositions, revocations etc.) of the Patent Rights in Patent Family 1;

(b) Patent Family 2: Company shall reimburse Hospital for [***]% of all costs (for so long as a Third Party Licensee has a license under Patent Family 2) incurred by Hospital (as incurred) including, without limitation, prosecution, maintenance and defense (including interference, oppositions, revocations etc.) of the Patent Rights in Patent Family 2, and reimbursement of costs incurred prior to the Effective Date.

With respect to costs incurred by Hospital prior to the Effective Date (estimated currently at a total of $[***] for Patent Family 1 (Case [***] $[***], Case [***] $[***], and Case [***] $[***]), and at a total of $[***] for Patent Family 2 (Case [***]), Company shall pay [***]% of such costs on the Effective Date, another [***]% on the [***] anniversary of the Effective Date and the balance on the [***] anniversary of the Effective Date.

Company shall pay to Hospital, or at Hospital's request directly to patent counsel, all other Patent Costs within [***] days of Company's receipt of an invoice for such Patent Costs either from Hospital or Hospital's patent counsel. Company agrees to indemnify, defend and hold Hospital harmless from and against any and all liabilities, damages, costs and expenses arising from the failure of Company to timely pay Patent Costs reflected in such invoices. Hospital shall instruct patent counsel to provide copies to Hospital for Hospital's administrative files of all invoices detailing Patent Costs which are sent directly to Company. If Company pays any Patent Costs directly, Company shall advise patent counsel that Hospital is and shall remain patent counsel's client.

4.3 Annual License Fee: Annual Minimum Royalty.

(a) Before First Commercial Sale. Prior to the First Commercial Sale, Company shall pay to Hospital the following non-refundable amounts as an annual license fee within [***] days after each of the following anniversaries of the Effective Date:

(i) $[***] on the [***], [***] and [***] anniversaries of the Effective Date (note that a total of $[***] is due on the [***] anniversary because of the $[***] fee payable in accordance with Section 4.1);

(ii) $[***] per year on the [***], [***] and [***] anniversaries of the Effective Date; and

(iii) $[***] on each subsequent anniversary of the Effective Date;

(b) After First Commercial Sale. The Annual Minimum Payments shall be credited against royalties subsequently due on Net Sales made during such calendar year, if any, but shall not be credited against royalties due on Net Sales made in any other year.

4.4 Milestone Payments. In addition to the payments set forth in Sections 4.1 through 4.3 above, Company shall pay Hospital milestone payments for the first Product or Process using Patent Rights of Patent Family 1, and for the first Product or Process using Patent Rights of Patent Family 2, as follows:

(a) [***] dollars ($[***]) within sixty (60) days after [***];

(b) [***] dollars ($[***]) within sixty (60) days after [***];

(c) [***] dollars ($[***]) within sixty (60) days after [***];

(d) [***] dollars ($[***]) within sixty (60) days after [***]; and

(e) [***] dollars ($[***]), less [***], within sixty (60) days after [***].

Notwithstanding the forgoing, if the [***].

4.5 Royalties on Net Sales and Sublicense Income.

(a) Beginning with the First Commercial Sale in any country in the License Territory, Company shall pay Hospital a royalty of [***]% on Net Sales (as defined in Section 1.14).

If more than one product or service that could have been sold separately are combined for sale at a single offering price, the total gross amount invoiced for purposes of determining Net Sales shall be calculated by multiplying the revenue for said combined sale by the fraction A/(A+B), where A is the sum of the offering prices of each product and service that independently constitutes a Product or Process if sold separately, and B is the sum of the offering prices of each other product or service combined therewith at said single offering price, provided however, royalties on Net Sales shall not be lower than [***]%.

(b) Company shall pay Hospital, at the time set forth in Section 4.5(c) below, the Applicable Percentage (as defined below) of any and all Sublicense Income to the extent attributable to a Product or Process.

For purposes of this provision, the "Applicable Percentage" shall be: (i) [***]% during the period between the Effective Date and the [***] anniversary of the Effective Date; (ii) [***]% during the period between the [***] anniversary of the Effective Date and the date that Company has raised $[***] from all sources including sales of securities, grants and sublicense income (the "$[***] Funding Threshold"); provided, however, that if the $[***] Funding Threshold is achieved prior to the [***] anniversary of the Effective Date, then skip clauses (i) and (ii) and proceed to clause (iii)); (iii) [***]% during the period between (A) the earlier to occur of the [***] anniversary of the Effective Date and the $[***] Funding Threshold and (B) the date the Company has raised $[***]; (iv) [***]% during the period after the Company has raised $[***] and before it has raised $[***]; and (v) [***]% during the period after the Company has raised $[***].

(c) All payments due to Hospital under this Section 4.5 shall be due and payable by Company within [***] days after the end of each Reporting Period, and shall be accompanied by a report as set forth in Sections 5.3 and 5.4.

4.6 Form of Payment. All payments due under this Agreement shall be drawn on a United States bank and shall be payable in United States dollars. Each payment shall reference this Agreement and its BWH Agreement Number and identify the obligation under this Agreement that the payment satisfies. Conversion of foreign currency to U.S. dollars shall be made at the conversion rate existing in the United States, as reported in The Wall Street Journal, on the last working day of the applicable Reporting Period. Such payments shall be without deduction of exchange, collection or other charges, and, specifically, without deduction of withholding or similar taxes or other government imposed fees or taxes, except as permitted in the definition of Net Sales.

Checks for all payments due to the Hospital under this Agreement shall be made payable to the Hospital and addressed as set forth below:

Brigham and Women's Hospital

BOA-Lockbox Services
PCSR Lockbox #[***]
[***]
2 Morrissey Blvd
Dorchester, MA 02125

Reference Agreement #: [***]

Payments via wire transfer should be made as follows:

ACH Credit: [***]
Federal Reserve Wire: [***]
SWIFT Code: [***]
Account #[***]
Brigham and Women's Hospital
Bank of America
100 Federal Street
Boston, MA 02110

Reference Agreement #: [***]

4.7 Overdue Payments. The payments due under this Agreement shall, if overdue, bear interest beginning on the first day following the Reporting Period to which such payment was incurred and until payment thereof at a per annum rate equal to [***] above the prime rate in effect on the due date as reported by The Wall Street Journal, such interest rate being compounded on the last day of each Reporting Period, not to exceed the maximum permitted by law. Any such overdue payments when made shall be accompanied by all interest so accrued. Said interest and the payment and acceptance thereof shall not preclude Hospital from exercising any other rights it may have as a consequence of the lateness of any payment.

5. REPORTS AND RECORDS

5.1 Diligence Reports. Within [***] days after the end of each calendar year, Company shall report in writing to Hospital on progress made toward the objectives set forth in Section 3.1 during such preceding 12-month period, including, without limitation, progress on research and development, status of applications for regulatory approvals, manufacturing, sublicensing and the number of sublicenses entered into and marketing.

5.2 Milestone Achievement Notification. Company shall report to Hospital the dates on which it achieves the milestones set forth in Section 4.4 within [***] days of each such occurrence.

5.3 Sales Reports. Company shall report to Hospital the date on which it achieves the First Commercial Sale in each country of the License Territory within [***] days after each such occurrence. Following the First Commercial Sale, Company shall deliver reports to Hospital within [***] days after the end of each Reporting Period. Each report under this Section 5.3 shall have substantially the format outlined in **Appendix B**, shall be certified as correct by an officer of Company and shall contain at least the following information as may be pertinent to a royalty accounting hereunder for the immediately preceding Reporting Period:

(a) the number of Products and Processes Sold by Company, its Affiliates and Sublicensees in each country;

(b) the amounts billed, invoiced and received by Company, its Affiliates and Sublicensees for each Product and Process, in each country, and total billings or payments due or made for all Products and Processes;

(c) calculation of Net Sales for the applicable Reporting Period in each country, including, to the extent reasonably possible, an itemized listing of permitted offsets and deductions;

(d) total royalties payable on Net Sales in U.S. dollars, together with the exchange rates used for conversion; and

any other payments due to Hospital under this Agreement.

If no amounts are due to Hospital for any Reporting Period, the report shall so state.

5.4 Sublicense Income Reports. Company shall, along with delivering payment as set forth in Section 4.6, report to Hospital within [***] days after the end of each Reporting Period the amount of all

Sublicense Income received by Company during such Reporting Period, and Company's calculation of the amount due and paid to Hospital from such income, including an itemized listing of the source of income comprising such consideration, and the name and address of each entity making such payments in substantially the format outlined in **Appendix C**.

5.5 Audit Rights. Company shall maintain, and shall cause each of its Affiliates and Sublicensees to maintain, complete and accurate records relating to the rights and obligations under this Agreement and any amounts payable to Hospital in relation to this Agreement, which records shall contain sufficient information to permit Hospital and its representatives to confirm the accuracy of any payments and reports delivered to Hospital and compliance in all other respects with this Agreement. Company shall retain and make available, and shall cause each of its Affiliates and Sublicensees to retain and make available, such records for at least [***] years following the end of the calendar year to which they pertain, to Hospital and/or its independent certified public accountant ("Auditor"'), no more than once in a calendar year and upon at least fifteen (15) days' advance written notice, for inspection during normal business hours, to verify any reports and payments made and/or compliance in other respects under this Agreement. If any examination conducted by Hospital or its Auditor pursuant to the provisions of this Section show an underreporting or underpayment of [***] or more in any payment due to Hospital hereunder, Company shall reimburse Hospital the full cost associated with engaging such Auditor and shall remit any amounts due to Hospital (including interest due in accordance with Section 4.7) within [***] days of receiving notice thereof from Hospital.

5.6 Confidentiality of Reports. Hospital agrees to treat all reports prepared or delivered under this Section 5, and all information contained therein, as Confidential Information in accordance with the provisions of **Appendix D**.

6. PATENT PROSECUTION AND MAINTENANCE

6.1 Prosecution. Hospital shall be responsible for the preparation, filing, prosecution and maintenance of all patent applications and patents included in Patent Rights. Company shall reimburse Hospital for Patent Costs incurred by Hospital relating thereto in accordance with Section 4.2.

6.2 Copies of Documents. Company shall have the right to review and provide input on all prosecution and maintenance activities related to the Patent Rights. With respect to any Patent Right licensed hereunder, Hospital shall instruct the patent counsel prosecuting such Patent Right to (i) promptly copy Company on patent prosecution documents that are received from or filed with the United States Patent and Trademark Office and foreign equivalent, as applicable; (ii) provide Company with copies of draft submissions to the USPTO sufficiently prior to filing to permit reasonable review and commentary; and (iii) give due consideration to the comments and requests of Company and its patent counsel. Notwithstanding the foregoing, for so long as a Third-Party Licensee has a license under Patent Family 2, Company shall have no right to provide input to Hospital on the prosecution of Patent Family 2.

6.3 Company's Election Not to Proceed. Company may elect to surrender any patent or patent application in Patent Rights in any country upon sixty (60) days advance written notice to Hospital. Such notice shall relieve Company from the obligation to pay for future Patent Costs associated with such surrendered Patent Right(s) but shall not relieve Company from responsibility to pay Patent Costs incurred prior to the expiration of the sixty (60) day notice period. Such U.S. or foreign patent application or patent shall thereupon cease to be a Patent Right hereunder. Company shall have no further

rights therein and Hospital shall be free to license its rights to that particular U.S. or foreign patent application or patent to any other party on any terms.

6.4 Confidentiality of Prosecution and Maintenance Information. Company agrees to treat all information related to prosecution and maintenance of Patent Rights as Confidential Information in accordance with the provisions of **Appendix D**.

6.5 Improvements. For any Invention disclosed to Hospital's Office of Innovation (or any successor office) within 24 months after the Effective Date, Hospital shall use reasonable efforts to notify Company of such any Invention within 30 days after such disclosure.

7. THIRD PARTY INFRINGEMENT AND LEGAL ACTIONS

7.1 Hospital Right to Prosecute. Hospital shall have the first right, at its sole discretion, to prosecute infringers of the Patent Rights in either License Field in the License Territory, with reasonable notice to and consideration of input from Company; Company has the second right. Hospital will protect its Patent Rights from infringement and prosecute infringers when, in its sole judgment, such action may be reasonably necessary, proper and justified. If Company shall have supplied Hospital with written evidence demonstrating to Hospital's reasonable satisfaction prima facie infringement of a claim of a Patent Right in either License Field in the License Territory by a third party which poses a material threat to Company's rights under this Agreement, Company may by notice request Hospital to take steps to protect such Patent Right. Hospital shall notify Company within [***] months of the receipt of such notice whether Hospital intends to prosecute the alleged infringement. If Hospital notifies Company that it intends to so prosecute, Hospital shall, within [***] months of its notice to Company either (i) cause such infringement to terminate, or (ii) initiate legal proceedings against the infringer.

7.2 Company Right to Prosecute. In the event Hospital notifies Company that Hospital does not intend to prosecute infringement identified under Section 7.1, Company may, upon notice to Hospital, initiate legal proceedings against the infringer at Company's expense with respect to a claim of a Patent Right in the applicable License Field in the License Territory. Before commencing such action, Company and, as applicable, any Affiliate, shall consult with Hospital, concerning, among other things, Company's standing to bring suit, the advisability of bringing suit, the selection of counsel and the jurisdiction for such action (provided Company must have Hospital's prior written consent with respect to selection of jurisdiction for any action in which Hospital may be joined as a party-plaintiff) and shall use reasonable efforts to accommodate the views of Hospital regarding the proposed action, including without limitation with respect to potential effects on the public interest. Company shall be responsible for all costs, expenses and liabilities in connection with any such action and shall indemnify and hold Hospital harmless therefrom, regardless of whether Hospital is a party-plaintiff, except for the expense of any independent counsel retained by Hospital in accordance with Section 7.5 below.

7.3 Hospital Joined as Party-Plaintiff. If Company elects to commence an action as described in Section 7.2 above, Hospital shall have, in its sole discretion, the option to join such action as a party-plaintiff. If Hospital is required by law to join such action as a party-plaintiff (i.e. Company could not proceed without such joinder), then Hospital may either, in its sole discretion, permit itself to be joined as a party-plaintiff at the sole expense of Company, or assign to Company all of Hospital's right, title and interest in and to the Patent Right which is the subject of such action (subject to all of Hospital's obligations to the government under law and any other rights that others may have in such Patent Right). If Hospital makes such an assignment, such action by Company shall thereafter be brought or continued

without Hospital as a party; provided, however, that Hospital shall continue to have all rights of prosecution and maintenance with respect to Patent Rights and Company shall continue to meet all of its obligations under this Agreement as if the assigned Patent Right were still licensed to Company hereunder.

7.4 Notice of Actions; Settlement. Each Party shall promptly inform the other Party of any action or suit relating to Patent Rights and shall not enter into any settlement, consent judgment or other voluntary final disposition of any action relating to Patent Rights, including but not limited to appeals, without the prior written consent of said other Party.

7.5 Cooperation. Each Party agrees to cooperate reasonably in any action under Section 7 which is controlled by the other Party, provided that the controlling party reimburses the cooperating party for any costs and expenses incurred by the cooperating party in connection with providing such assistance, except for the expense of any independent counsel retained by the cooperating party in accordance with this Section 7.5. Such controlling party shall keep the cooperating party informed of the progress of such proceedings and shall make its counsel available to the cooperating party. The cooperating party shall also be entitled to independent counsel in such proceedings but at its own expense, said expense to be offset against any damages received by the Party bringing suit in accordance with Section 7.6.

7.6 Recovery. All settlements require written prior approval of Hospital. All damages or settlement awards paid by an infringer will be allocated between Company and Hospital as follows:

(a) [***];

(b) [***]; and

(c) [***].

8. INDEMNIFICATION AND INSURANCE

8.1 Indemnification.

(a) Company shall indemnify, defend and hold harmless Hospital and its Affiliates and their respective trustees, directors, officers, medical and professional staff, employees, and agents and their respective successors, heirs and assigns (the "Indemnitees"), against any liability, damage, loss or expense (including reasonable attorney's fees and expenses of litigation) incurred by or imposed upon the Indemnitees or any one of them in connection with any claims, suits, actions, demands or judgments ("Action") arising out of any theory of product liability (including, but not limited to, actions in the form of contract, tort, warranty, or strict liability) concerning any product, process or service made, used, or sold or performed pursuant to any right or license granted under this Agreement.

(b) Company shall indemnify, defend and hold harmless Indemnitees against any liability, damage, loss or expense (including reasonable attorney's fees and expenses of litigation) incurred by or imposed upon the Indemnitees or any one of them in connection with any Action arising out of any dispute between Company and a Third-Party Licensee relating to their respective rights under Patent Family 2.

(c) Company agrees, at its own expense, to provide attorneys reasonably acceptable to the Hospital to defend against any actions brought or filed against any party indemnified hereunder with respect to the subject of indemnity contained herein, whether or not such actions are rightfully brought; provided, however, that any Indemnitee shall have the right to retain its own counsel, at the expense of Company, if representation of such Indemnitee by counsel retained by Company would be inappropriate because of conflict of interests of such Indemnitee and any other party represented by such counsel. Company agrees to keep Hospital informed of the progress in the defense and disposition of such Action and to consult with Hospital prior to any proposed settlement.

(d) This section 8.1 shall survive expiration or termination of this Agreement.

8.2 Insurance.

(a) Beginning at such time as any such product, process, or service is being commercially distributed, sold, leased or otherwise transferred, or performed or used (other than for the purpose of obtaining regulatory approvals), by Company, an Affiliate or Sublicensee, Company shall, at its sole cost and expense, procure and maintain commercial general liability insurance in amounts not less than $[***] per incident and $[***] annual aggregate and naming the Indemnitees as additional insureds. Such commercial general liability insurance shall provide (i) product liability coverage and (ii) broad form contractual liability coverage for Company's indemnification under Section 8.1 of this Agreement. If Company elects to self-insure all or part of the limits described above (including deductibles or retentions which are in excess of $[***] annual aggregate) such self-insurance program must be acceptable to the Hospital and the Risk Management Foundation. The minimum amounts of insurance coverage required under this Section 8.2 shall not be construed to create a limit of Company's liability with respect to its indemnification under Section 8.1 of this Agreement.

(b) Company shall provide Hospital with written evidence of such insurance upon request of Hospital. Company shall provide Hospital with written notice at least [***] days prior to the cancellation, non-renewal or material change in such insurance; if Company does not obtain replacement insurance providing comparable coverage prior to the expiration of such [***] day period, Hospital shall have the right to terminate this Agreement effective at the end of such [***] day period without notice or any additional waiting periods.

(c) Company shall maintain such commercial general liability insurance beyond the expiration or termination of this Agreement during (i) the period that any such product, process, or service is being commercially distributed, sold, leased or otherwise transferred, or performed or used (other than for the purpose of obtaining regulatory approvals), by Company or by a licensee, affiliate or agent of Company and (ii) a reasonable period after the period referred to in (c) (i) above which in no event shall be less than [***] years.

(d) This section 8.2 shall survive expiration or termination of this Agreement.

9. DISCLAIMER OF WARRANTIES; LIMITATION OF LIABILITY

9.1 Title to Patent Rights. To the best knowledge of Hospital's Innovation office, Hospital represents that it is the owner by assignment from [***] of the Patent Rights and has the authority to enter into this Agreement and license the Patent Rights to Company hereunder.

9.2 Limited Warranties.

(a) HOSPITAL SHALL REPRESENT THAT, TO THE BEST OF ITS KNOWLEDGE, AS OF THE EFFECTIVE DATE OF THE LICENSE, IT OWNS THE PATENT RIGHTS AND HAS NOT GRANTED ANY LICENSES THAT CONFLICT WITH THE LICENES GRANTED HEREUNDER. HOSPITAL SHALL OTHERWISE MAKE NO WARRANTIES REGARDING THE PATENT RIGHTS AND RIGHTS GRANTED UNDER THE LICENSE, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONJNFRINGEMENT OR VALIDITY OF PATENT RIGHTS. HOSPITAL MAKES NO ADDITIONAL REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, CONCERNING THE PATENT RIGHTS AND THE RIGHTS GRANTED HEREUNDER, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, VALIDITY OF PATENT RIGHTS CLAIMS, WHETHER ISSUED OR PENDING, AND THE ABSENCE OF LATENT OR OTHER DEFECTS, WHETHER OR NOT DISCOVERABLE, AND HEREBY DISCLAIMS THE SAME. SPECIFICALLY, AND NOT TO LIMIT THE FOREGOING, HOSPITAL MAKES NO WARRANTY OR REPRESENTATION (i) REGARDING THE VALIDITY OR SCOPE OF ANY OF THE CLAIM(S), WHETHER ISSUED OR PENDING, OF ANY OF THE PATENT RIGFITS, AND (ii) THAT THE EXPLOITATION OF THE PATENT RIGHTS OR ANY PRODUCT WILL NOT INFRINGE ANY PATENTS OR OTHER INTELLECTUAL PROPERTY RIGHTS OF HOSPITAL OR OF ANY THIRD PARTY.

(b) COMPANY REPRESENTS AND WARRANTS THAT PATENT FAMILY 2 LICENSE FIELD SPECIFICALLY EXCLUDES THE EXCLUDED PATENT LICENSE FIELD 2.

9.3 Limitation of Liability. IN NO EVENT SHALL EITHER PARTY OR ANY OF ITS AFFILIATES OR ANY OF THEIR RESPECTIVE TRUSTEES, DIRECTORS, OFFICERS, MEDICAL OR PROFESSIONAL STAFF, EMPLOYEES AND AGENTS BE LIABLE TO THE OTHER PARTY OR ANY OF ITS AFFILIATES, LICENSEES, SUBLICENSEES OR DISTRIBUTORS FOR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND ARISING IN ANY WAY OUT OF THIS AGREEMENT OR THE LICENSE OR RIGHTS GRANTED HEREUNDER, HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, INCLUDING WITHOUT LIMITATION ECONOMIC DAMAGES OR INJURY TO PROPERTY OR LOST PROFITS, REGARDLESS OF WHETHER SUCH PARTY SHALL BE ADVISED, SHALL HAVE OTHER REASON TO KNOW, OR IN FACT SHALL KNOW OF THE POSSIBILITY OF THE FOREGOING. PROVIDED, HOWEVER, NOTHING IN THIS SECTION 9.3 SHALL BE CONSTRUED TO LIMIT COMPANY'S OBLIGATION TO INDEMNIFY HOSPITAL UNDER SECTION 8 OF THIS AGREEMENT. This Section 9.3 shall not restrict Hospital's liability to the extent any damages are directly attributable to such party's gross negligence or willful misconduct.

10. TERM AND TERMINATION

10.1 Term. The term of this Agreement shall commence on the Effective Date and shall remain in effect until the date on which all Claims within the Patent Rights have expired or been abandoned unless this Agreement is terminated earlier in accordance with any of the other provisions of Section 10.

10.2 Termination for Failure to Pay. If Company fails to make any payment due hereunder. Hospital shall have the right to terminate this Agreement upon [***] business days written notice, unless Company makes such payments plus any interest due, as set forth in Section 4.7, within said [***] day notice period. If payments are not made, Hospital may immediately terminate this Agreement at the end of said [***] day period. Company shall be entitled to only one such cure period in a calendar year; for a second failure to make payment on time. Hospital shall have the right to terminate this Agreement immediately upon written notice.

10.3 Termination for Insurance and Insolvency.

(a) Insurance. Hospital shall have the right to terminate this Agreement in accordance with Section 8.2(b) if Company fails to maintain the insurance required by Section 8.2.

(b) Insolvency and other Bankruptcy Related Events. Hospital shall have the right to terminate this Agreement immediately upon written notice to Company with no further notice obligation or opportunity to cure if Company: (i) shall make an assignment for the benefit of creditors; or (ii) or shall have a petition in bankruptcy filed for or against it (provided that, in the case of a petition in bankruptcy filed against it. Hospital shall not have the right to terminate this Agreement if such petition is stayed or dismissed within [***] days following the filing of such petition).

10.4 Termination for Non-Financial Default. Hospital has the right to terminate the License for Company's breach, including failure to pay and failure to satisfy diligence requirements, upon failure to cure within [***] days of receipt of written notice specifying the breach. Company has the right to terminate the License upon [***] days' advance written notice. If Company, any of its Affiliates or any Sublicensee shall default in the performance of any of its other obligations under this Agreement not otherwise covered by the provisions of Section 10.2 and 10.3, and if such default has not been cured within [***] days after notice by Hospital in writing of such default, Hospital may immediately terminate this Agreement, and/or any license granted hereunder with respect to the country or countries in which such default has occurred, at the end of said [***] day cure period. Hospital shall also have the right to terminate this Agreement and/or any such license immediately, upon written notice, in the event of repeated defaults even if cured within such [***] day periods.

10.5 Challenging Validity. During the term of this Agreement, Company shall not challenge, and shall restrict Company's Affiliates and Sublicensees from challenging, the validity of the Patent Rights and in the event of any breach of this provision Hospital shall have the right to terminate this Agreement and any license granted hereunder immediately. In addition, if the Patent Rights are upheld Company shall reimburse Hospital for its reasonable legal costs and expenses incurred in defending any such challenge.

10.6 Termination by Company. Company shall have the right to terminate this Agreement by giving [***] days advance written notice to Hospital and upon such termination shall immediately cease all use and Sales of Products and Processes, subject to Section 10.9.

10.7 Effect of Termination on Sublicenses. If (i) this Agreement is terminated, (ii) the Company entered into a sublicense agreement prior to termination, (iii) the Sublicensee is in compliance with its obligations under such sublicense agreement at the time of termination of this Agreement, and (iv) Company or the Sublicensee provides Hospital with an unredacted copy of such agreement within [***] days after termination of Agreement, then such sublicense granted by Company under this Agreement will provide for assignment to Hospital of Company's interest therein, effective as of the time of such termination, provided however that such assignment shall only be in respect to rights to Patent Rights granted under this Agreement. Under such assignment, both Sublicensee and Hospital shall maintain and/or assume all terms, conditions, and obligations related to Patent Rights in such sublicense agreement.

10.8 Effects of Termination of Agreement. Upon termination of this Agreement or any of the licenses hereunder for any reason, final reports in accordance with Section 5 shall be submitted to Hospital and all royalties and other payments, including without limitation any unreimbursed Patent Costs, accrued or due to Hospital as of the termination date shall become immediately payable. Following termination (but not expiration) of this Agreement, Company shall cease, and shall cause its Affiliates and Sublicensees to cease under any sublicense granted by Company, all Sales and uses of Products and Processes upon such termination, subject to Section 10.9. The termination or expiration of this Agreement or any license granted hereunder shall not relieve Company, its Affiliates or Sublicensees of obligations arising before such termination or expiration.

10.9 Inventory. Upon early termination of this Agreement other than for Company default, Company, Company Affiliates and Sublicensees may complete and sell any work-in-progress and inventory of Products and Processes that exist as of the effective date of termination provided that (i) Company pays Hospital the applicable running royalty or other amounts due on such Net Sales in accordance with the terms and conditions of this Agreement, and (ii) Company, Company Affiliates and Sublicensees shall complete and sell all work-in-progress and inventory of Products and Processes within [***] months after the effective date of termination. Upon expiration of this Agreement, Company shall pay to Hospital the royalties set forth in Section 4.5(a) for Sales of any Product that was in inventory or was a work-in-progress on the date of expiration of the Agreement.

Notwithstanding the foregoing, the Company's obligation to pay the milestone payment, as described in Section 4.4(e), will survive termination of the License.

11. COMPLIANCE WITH LAW

11.1 Compliance. Company shall have the sole obligation for Company's compliance with, and shall ensure that any Affiliates and Sublicensees comply with, all government statutes and regulations that relate to Products and Processes, including, but not limited to, those of the Food and Drug Administration and the Export Administration, as amended, and any applicable laws and regulations of any other country in the License Territory. As between the Parties, Company agrees that it shall be solely responsible for obtaining any necessary licenses to export, re-export, or import Products or Processes covered by Patent Rights and/or Confidential Information. Company shall indemnify and hold harmless Hospital for any breach of Company's obligations under this Section 11.1.

11.2 Patent Numbers. Company shall cause all Products sold in the United States to be marked with all applicable U.S. Patent Numbers, to the full extent required by United States law. Company shall

similarly cause all Products shipped to or sold in any other country to be marked in such a manner as to conform with the patent laws and practices of such country.

12. MISCELLANEOUS

12.1 Entire Agreement. This Agreement (including the appendices) constitutes the entire understanding between the Parties with respect to the subject matter hereof and supersedes the Term Sheet between the Parties dated [***].

12.2 Notices. Any notices, reports, waivers, correspondences or other communications required under or pertaining to this Agreement shall be in writing and shall be delivered by hand, or sent by a reputable overnight mail service (e.g., Federal Express), or by first class mail (certified or registered), or by facsimile confirmed by one of the foregoing methods, to the other party. Notices will be deemed effective (a) three (3) working days after deposit, postage prepaid, if mailed, (b) the next day if sent by overnight mail, or (c) the same day if sent by facsimile and confirmed as set forth above or delivered by hand. Unless changed in writing in accordance with this Section, the notice addresses shall be:

For Hospital:

Chief Innovation Officer, Innovation
Brigham and Women's Hospital
215 First Street, Suite 500
Cambridge, MA 02142

For Company:

Seer Biosciences, Inc.
[***]
Attn: [***]
Fax No. [***]

12.3 Amendment; Waiver. This Agreement may be amended and any of its terms or conditions may be waived only by a written instrument executed by an authorized signatory of the Parties or, in the case of a waiver, by the Party waiving compliance. The failure of either Party at any time or times to require performance of any provision hereof shall in no manner affect its rights at a later time to enforce the same. No waiver by either Party of any condition or term shall be deemed as a further or continuing waiver of such condition or term or of any other condition or term.

12.4 Binding Effect. This Agreement shall be binding upon and inure to the benefit of and be enforceable by the Parties hereto and their respective permitted successors and assigns.

12.5 Assignment. Company shall not assign this Agreement or any of its rights or obligations under this Agreement without the prior written consent of Hospital; provided, however, that if Company has fulfilled its diligence obligations as set forth in Section 3, no such consent will be required to assign this Agreement to a successor of the Company's business to which this Agreement pertains or to a purchaser of substantially all of the Company's assets related to this Agreement, so long as such successor or purchaser shall agree in writing to be bound by all of the terms and conditions hereof prior to such assignment. Company shall notify Hospital in writing of any such assignment and provide a copy of all assignment documents and related agreements to Hospital within [***] days of such assignment. Failure

of an assignee to agree to be bound by the terms hereof or failure of Company to notify hospital and provide copies of assignment documentation shall be grounds for termination of this Agreement for default in accordance with Section 10.4 of this Agreement. Further, neither any rights granted under this Agreement nor any sublicense may be assigned by any Sublicensee without the prior written consent of Hospital.

12.6 Force Majeure. Neither Party shall be responsible for delays resulting from causes beyond the reasonable control of such Party, including without limitation fire, explosion, flood, war, sabotage, strike or riot, provided that the nonperforming Party uses commercially reasonable efforts to avoid or remove such causes of nonperformance and continues performance under this Agreement with reasonable dispatch whenever such causes are removed.

12.7 Use of Name. Neither Party shall use the name, trademark, service mark, logo or other identifying characteristic ("Name") of the other Party or of any trustee, director, officer, staff member, employee, student or agent of the other Party or any adaptation thereof in any advertising, promotional or sales literature, publicity or in any document employed to obtain funds or financing without the prior written approval of the Party or individual whose Name is to be used. For Hospital, such approval shall be given solely by its Public Affairs Department. Notwithstanding the foregoing, Company may make factual statements publicly (a) concerning the Company's license of the Patent Rights from Hospital and (b) that one of its founders. Dr. Omid Farokhzad, is a professional staff member of the Hospital, provided that in each case, such usage (i) is limited to reporting factual events or occurrences only, (ii) is not promotional in nature, and (iii) is made in a manner that could not reasonably constitute an endorsement by Hospital, Hospital's affiliates, or any of their respective directors, trustees, officers, appointees, employees, staff, representatives or agents of Company or of any Company program, product or service. The foregoing restriction shall not apply to any information required by law to be disclosed to any governmental entity.

12.8 Governing Law. This Agreement shall be governed by and construed and interpreted in accordance with the laws of the Commonwealth of Massachusetts, excluding with respect to conflict of laws, except that questions affecting the construction and effect of any patent shall be determined by the law of the country in which the patent shall have been granted. Each Party agrees to submit to the exclusive jurisdiction of the Superior Court for Suffolk County, Massachusetts, and the United States District Court for the District of Massachusetts with respect to any claim, suit or action in law or equity arising in any way out of this Agreement or the subject matter hereof.

12.9 Hospital Policies. Company acknowledges that Hospital's employees and medical and professional staff members and the employees and staff members of Hospital's Affiliates are subject to the applicable policies of Hospital and such Affiliates, including, without limitation, policies regarding conflicts of interest, intellectual property and other matters. Company shall provide Hospital with any agreement it proposes to enter into with any employee or staff member of Hospital or any of Hospital's Affiliates for Hospital's prior review and shall not enter into any oral or written agreement with such employee or staff member which conflicts with any such policy. Hospital shall provide Company, at Company's request, with copies of any such policies applicable to any such employee or staff member.

12.10 Severability. If any provision(s) of this Agreement are or become invalid, are ruled illegal by any court of competent jurisdiction or are deemed unenforceable under then current applicable law from time to time in effect during the term hereof, it is the intention of the parties that the remainder of this Agreement shall not be effected thereby. It is further the intention of the parties that in lieu of each such

provision which is invalid, illegal or unenforceable, there be substituted or added as part of this Agreement a provision which shall be as similar as possible in economic and business objectives as intended by the parties to such invalid, illegal or enforceable provision, but shall be valid, legal and enforceable.

12.11 Survival. In addition to any specific survival references in this Agreement, Sections 1, 2.4, 4.2 (with respect to costs incurred before termination or expiration), 4.4(e), 4.6, 4.7, 5.2 (with respect to 4.2(e)), 5.3 and 5.4 (with respect to Sales or Sublicense Income recognized within 12 months after termination or expiration), 5.5, 6.4, 8.1, 8.2, 9.2, 9.3, 10.7, 10.8, 10.9 12.1, 12.2, 12.3, 12.4, 12.7, 12.8, 12.9, 12.10, 12.11, 12.12 and 12.13 shall survive termination or expiration of this Agreement. Any other rights, responsibilities, obligations, covenants and warranties which by their nature should survive this Agreement shall similarly survive and remain in effect.

12.12 Interpretation. The parties hereto are sophisticated, have had the opportunity to consult legal counsel with respect to this transaction and hereby waive any presumptions of any statutory or common law rule relating to the interpretation of contracts against the drafter.

12.13 Headings. All headings are for convenience only and shall not affect the meaning of any provision of this Agreement.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the Parties have caused this Exclusive Patent License Agreement to be executed by their duly authorized representatives as of the Effective Date first written above.

SEER BIOSCIENCES, INC.	**THE BRIGHAM AND WOMEN'S HOSPITAL, INC.**
By: /s/ Nelson K. Stacks	By:
Name: Nelson K. Stacks	Name:
TITLE: President	TITLE:
DATE: 12/18/17	DATE:

IN WITNESS WHEREOF, the Parties have caused this Exclusive Patent License Agreement to be executed by their duly authorized representatives as of the Effective Date first written above.

SEER BIOSCIENCES, INC.	**THE BRIGHAM AND WOMEN'S HOSPITAL, INC.**
By: _____	By: /s/ Daniel Castro
Name:	Name: Daniel Castro
TITLE: _____	TITLE: Managing Director, Licensing Partners HealthCare Innovation
DATE: _____	DATE: 12/18/17

Appendix A

DESCRIPTION OF PATENT RIGHTS

Patent Family 1:

1. [***].
2. [***].
3. [***].
4. [***]
5. [***].
6. [***].

Patent Family 2:

1. [***].

Appendix B

SALES REPORTS

AGREEMENT INCOME REPORT Royalty Income

[MGH] [BWH] Agreement # - _____

Licensee - _____

Sub-Licensee - _____

Separate reports must be filed for

1. ***Each Product sold.***
2. ***Each country of sale, if different deductions or royalty rates apply.***

Product Name: _____

Report Time Period:

From *mm/dd/yyyy* _____

To *mm/dd/yyyy* _____

Country of Sale			
Quantity Sold			
Gross Sales (USD)	$	$	$
Exchange Rate			
Deductions (Itemize)			

Please list each deduction separately. Use same definition as appears in Agreement and include the contract paragraph as a reference (Std Section 1.17(a)(ii) line item deductions listed below).

Al.			
A2.			
A3.			
A4.			
B.			
Total Deductions	( )	( )	( )
Net Sales			
Royalty Percentage			
Credits (itemize)	( )	( )	( )

Royalties Due	$ _____	$ _____	$ _____

PLEASE ATTACH DETAIL SALES REPORTS AS REQUIRED

Appendix C

AGREEMENT INCOME REPORT — Sublicense Income

[MGH] [BWH] Agreement # -
Licensee -
Sub-Licensee -

Separate reports must be filed for Payments associated with each Product:

Product Name:

Report Time Period:

From *mm/dd/yyyy*
To *mm/dd/yyyy*

		Detailed Explanation of Payment Required for "Other Payment"
Annual Fees/Minimum Royalties	***$.***	
Milestone Payments	***$.***	
Sublicense Fees and Royalties	***$.***	
Other Payment	***$.***	
Other Payment	***$.***	
Other Payment	***$.***	
TOTAL	***$.***	

PLEASE ATTACH DETAIL AS REQUIRED

Appendix D

CONFIDENTIALITY TERMS AND CONDITIONS

1. Definition of Confidential Information. "Confidential Information" shall mean any information, including but not limited to data, techniques, protocols or results, or business, financial, commercial or technical information, disclosed by one Party (each a "Discloser" as applicable) to the other Party (each a "Recipient" as applicable) in connection with the terms of that certain Exclusive License Agreement dated December 18, 2017 (the "License Agreement") and identified as confidential in the License Agreement or at the time of disclosure (the "Purpose"). Hospital's Confidential Information shall also include all information disclosed by Hospital to Company in connection with the Patent Rights. Capitalized terms used in this Appendix that are not otherwise defined herein have the meanings ascribed in the License Agreement to which this Appendix is attached and made a part thereof.

2. Exclusions. "Confidential Information" under this Agreement shall not include any information that (i) is or becomes publicly available through no wrongful act of Recipient; (ii) was known by Recipient prior to disclosure by Discloser, as evidenced by tangible records; (iii) is disclosed to Recipient by a third party having an apparent bona fide right to disclose it; (iv) is independently developed or discovered by Recipient without use of Discloser's Confidential Information, as evidenced by tangible records; or (v) is disclosed to another party not subject to obligations of confidentiality by Discloser without restriction on further disclosure. The obligations of confidentiality set forth in this Agreement shall be suspended solely in the event that Recipient is required to disclose or produce Discloser's Confidential Information pursuant to applicable law, court order or other valid legal process, provided that Recipient promptly notifies Discloser prior to such required disclosure, discloses such information only to the extent so required, and cooperates reasonably with Discloser's efforts to contest or limit the scope of such disclosure. Information disclosed pursuant to the foregoing sentence shall remain Confidential Information for all other purposes.

3. Permitted Purpose. Recipient shall have the right to, and agrees that it will, use Discloser's Confidential Information solely as permitted in the License Agreement (the "Purpose"), except as may be otherwise specified in a separate definitive written agreement negotiated and executed between the parties.

4. Restrictions. For the term of the License Agreement and a period of five (5) years thereafter (and indefinitely with respect to any individually identifiable health information disclosed by Hospital to Company, if any), each Recipient agrees that: (i) it will not use such Confidential Information for any purpose other than as specified herein, including without limitation for its own benefit or the benefit of any other person or entity; and (ii) it will use reasonable efforts (but no less than the efforts used to protect its own confidential and/or proprietary information of a similar nature) not to disclose such Confidential Information to any other person or entity except as expressly permitted hereunder. Recipient may, however, disclose Discloser's Confidential Information only on a need-to-know basis to its and its Affiliates' employees, staff members and agents ("Receiving Individuals"-) who are directly participating in the Purpose and who are informed of the confidential nature of such information, provided Recipient shall be responsible for compliance by Receiving Individuals with the terms of this Agreement and any breach thereof. This Section 4 shall survive termination or expiration of this Agreement.

5. Omitted.

6. Ownership. All Confidential Information disclosed pursuant to this Agreement, including without limitation all written and tangible forms thereof, shall be and remain the property of the Discloser. Upon termination of this Agreement, if requested by Discloser, Recipient shall return or destroy at Discloser's discretion all of Discloser's Confidential Information, provided that Recipient shall be entitled to keep one copy of such Confidential Information in a secure location solely for the purpose of complying with Recipient's legal obligations under the License Agreement.

7. No License. Nothing in this Agreement shall be construed as granting or conferring, expressly or impliedly, any rights by license or otherwise, under any patent, copyright, or other intellectual property rights owned or controlled by Discloser relating to Confidential Information, except as specifically set forth in the License Agreement.

8. Remedies. Each party acknowledges that any breach of this Agreement by it may cause irreparable harm to the other party and that each party is entitled to seek injunctive relief and any other remedy available at law or in equity.

9. General. These Confidentiality Terms and Conditions, along with the License Agreement, contain the entire understanding of the parties with respect to the subject matter hereof, and supersede any prior oral or written understandings between the parties relating to confidential treatment of information. Sections 1, 2, 4, 6, 8 and 9 of these Confidentiality Terms and Conditions shall survive any expiration or termination of the License Agreement.