

PROSPECTUS SUPPLEMENT
(To Prospectus dated July 2, 2020)**42,857,143 Shares****Common Stock**

We are offering 42,857,143 shares of our common stock.

Our common stock is listed on the Nasdaq Global Select Market under the symbol "PGEN." On January 24, 2023, the last reported sale price of our common stock on the Nasdaq Global Select Market was \$2.19 per share.

See "Underwriting" for details and information regarding the compensation to be paid to the underwriters.

Investing in our securities involves significant risks. Please read the information contained in or incorporated by reference under the heading "Risk Factors" beginning on page S-8 of this prospectus supplement, and under similar headings in other documents filed after the date hereof and incorporated by reference into this prospectus supplement and the accompanying prospectus.

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

	PER SHARE	TOTAL
Public offering price	\$ 1.75	\$75,000,000.25
Underwriting discounts and commissions(1)(2)	\$ 0.105	\$ 3,300,000.06
Proceeds, before expenses, to us	\$ 1.645	\$71,700,000.19

(1) We have agreed to reimburse the underwriters for certain expenses. We refer you to "Underwriting" beginning on page S-18 of this prospectus supplement for additional information regarding total underwriting compensation.

(2) There will be no underwriting discount or commission paid with respect to the 11,428,571 shares of common stock sold to Randal J. Kirk or entities affiliated with him in this offering.

Helen Sabzevari, our Chief Executive Officer, Randal J Kirk, our Chairman of the Board of Directors, and certain funds affiliated with Mr. Kirk and certain other of our officers have agreed to purchase 11,517,712 shares of our common stock in this offering at the public offering price.

We have granted the underwriters an option for a period of 30 days to purchase an additional 6,428,571 shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be \$3,975,000.02 and the total proceeds to us, before expenses, will be \$82,274,999.49.

The underwriters expect to deliver the shares to purchasers in the offering on or about January 27, 2023.

Book-Running Managers

J.P. Morgan**Cantor**

Lead Manager

JMP Securities**A CITIZENS COMPANY**

Co-Manager

H.C. Wainwright & Co.

Prospectus Supplement dated January 24, 2023.

Table of contents

	Page
Prospectus supplement	
About This Prospectus Supplement	S-ii
Market and Industry Data	S-iii
Summary	S-1
Risk Factors	S-8
Special Note Regarding Forward-Looking Statements	S-10
Use of Proceeds	S-12
Dilution	S-13
Material U.S. Federal Income and Estate Tax Consequences for Non-U.S. Holders of our Common Stock	S-15
Underwriting	S-18
Legal Matters	S-29
Experts	S-29
Where You Can Find More Information	S-29
Incorporation by Reference	S-30
Prospectus	
About This Prospectus	1
Where You Can Find More Information	2
Incorporation by Reference	3
The Company	4
Risk Factors	5
Special Note Regarding Forward-Looking Statements	6
Use of Proceeds	8
Description of Capital Stock	9
Description of Debt Securities	13
Description of Warrants	21
Description of Rights	23
Description of Stock Purchase Contracts	24
Description of Units	25
Plan of Distribution	26
Legal Matters	27
Experts	27

About this prospectus supplement

This prospectus supplement and the accompanying prospectus are part of a shelf registration statement on Form S-3 (File No. 333-239366) that we filed with the Securities and Exchange Commission, or SEC, on June 22, 2020 and was declared effective by the SEC on July 2, 2020, pursuant to which we may from time to time offer various securities in one or more offerings.

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference herein or therein. The second part, the accompanying prospectus, including the documents incorporated by reference into the accompanying prospectus, provides more general information.

Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement and the information contained in the accompanying prospectus or any document incorporated by reference herein or therein filed prior to the date of this prospectus supplement, you should refer to the information in this prospectus supplement; provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference in the accompanying prospectus — the statement in the document having the later date modifies or supersedes the earlier statement.

Neither we nor the underwriters have authorized anyone to provide information different from that contained in this prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in this offering. Neither we nor the underwriters take any responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. Neither the delivery of this prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in this offering, nor the sale of our common stock means that information contained in this prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in this offering, is correct after their respective dates. It is important for you to read and consider all information contained in this prospectus supplement and the accompanying prospectus, including the information incorporated by reference into this prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering in making your investment decision.

This prospectus supplement does not contain all of the information that is important to you. You should also read and consider the information in the documents to which we have referred you in the sections entitled “Where You Can Find More Information” and “Incorporation by Reference” in this prospectus supplement. You should assume that the information in this prospectus supplement and the accompanying prospectus, as well as the information we have filed with the SEC and incorporated by reference in this document, is accurate only as of its date or the date which is specified in those documents.

We are offering to sell, and seeking offers to buy, and the underwriters are soliciting offers to buy, these securities only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of the securities in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

This prospectus supplement and the information incorporated herein by reference include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference herein are the property of their respective owners.

When we refer to “Precigen,” “we,” “our,” “us,” and the “Company” in this prospectus supplement, we mean Precigen, Inc., unless otherwise specified.

Market and industry data

This prospectus supplement contains industry and market data that are based on general and industry publications, surveys and studies commissioned or conducted by third parties, some of which may not be publicly available, and our own internal estimates and research. Third-party publications, surveys and studies generally state that they have obtained information from sources believed to be reliable, but do not guarantee the accuracy and completeness of such information. These data involve a number of assumptions and limitations and contain projections and estimates of the future performance of the industries in which we operate that are subject to a high degree of uncertainty. We caution you not to give undue weight to such projections, assumptions and estimates. For example, our estimates of the number of people who have recurrent respiratory papillomatosis, or RRP, the economic burden associated with having RRP and potential market opportunities, are based on our own internal estimates including, commissioned research which reviewed a variety of sources, including scientific literature, surveys of patients, analogous products based on disease severity, prevalent population and efficacy of therapy and other forms of market research. These estimates may be inaccurate or based on imprecise data. As RRP is a rare disease and there are currently no approved therapeutics for RRP, limited research is available regarding its prevalence and market opportunity for a therapeutic. In addition, the addressable market opportunity for PRGN-2012 will depend on, among other things, the final labeling for PRGN-2012 as agreed with the U.S. Food and Drug Administration or comparable regulatory authorities in other jurisdictions, acceptance by the medical community and patient access and drug pricing and reimbursement. The number of patients in the addressable markets may turn out to be lower than expected, patients may not be otherwise amenable to treatment with our product candidate or new patients may become increasingly difficult to identify or gain access to, all of which could materially adversely affect our business, financial condition, results of operations and prospects.

Summary

This summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus supplement and the accompanying prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our common stock. For a more complete understanding of Precigen and this offering, we encourage you to read and consider carefully the more detailed information in this prospectus supplement and the accompanying prospectus, including the information incorporated by reference in this prospectus supplement, and the information included in any free writing prospectus that we have authorized for use in connection with this offering, including the information referred to under the heading “Risk Factors” in this prospectus supplement beginning on page S-8.

Our Company

We are a dedicated discovery and clinical-stage biopharmaceutical company advancing the next generation of gene and cell therapies with the overall goal of improving outcomes for patients with significant unmet medical needs. We are leveraging our proprietary technology platforms to develop product candidates designed to target urgent and intractable diseases in our core therapeutic areas of immuno-oncology, autoimmune disorders, and infectious diseases. We have developed an extensive pipeline of therapies across multiple indications within these core focus areas.

We believe that our array of technology platforms uniquely positions us among other biotechnology companies to advance precision medicine. Precision medicine is the practice of therapeutic product development that takes into account specific genetic variations within populations impacted by a disease to design targeted therapies to improve outcomes for a disease or patient population. Our proprietary and complementary technology platforms provide a strong foundation to realize the core promise of precision medicine by supporting our efforts to construct powerful gene programs to drive efficacy, deliver these programs through viral, non-viral, and microbe-based approaches to drive lower costs, and control gene expression to drive safety. Our therapeutic platforms, including UltraCAR-T, AdenoVerse immunotherapy, and ActoBiotics, are designed to allow us to precisely control the level and physiological location of gene expression and modify biological molecules to control the function and output of living cells to treat underlying disease conditions.

We are actively advancing our lead clinical programs, including: PRGN-3005 and PRGN-3006, which are built on our UltraCAR-T platform; and PRGN-2009 and PRGN-2012, which are based on our AdenoVerse immunotherapy platform. In addition, we have completed a Phase 1b/2a study of AG019, which is built on our ActoBiotics platform. We also have a robust pipeline of preclinical programs that we are pursuing in order to drive long-term value creation.

We have developed a proprietary electroporation device, UltraPorator, designed to further streamline and ensure the rapid and cost-effective manufacturing of UltraCAR-T therapies. UltraPorator has received U.S. Food and Drug Administration, or FDA, clearance for manufacturing UltraCAR-T cells in clinical trials, and since November 2020, we have been dosing patients with UltraCAR-T cells manufactured with UltraPorator in our PRGN-3005 and PRGN-3006 clinical trials.

We exercise discipline in our portfolio management by systematically evaluating data from our preclinical programs in order to make rapid “go” and “no go” decisions. Through this process, we believe we can more effectively allocate resources to programs that we believe show the most promise and advance such programs to clinical trials.

Our Product Pipeline

We are leveraging our suite of technologies along with our internal research and development expertise to develop several preclinical and clinical stage programs.

ADENOVERSE IMMUNOTHERAPY	PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 1B	PHASE 2	PHASE 3		
	PRGN-2009	AdenoVerse	HPV* Solid Tumors								
	PRGN-2012	AdenoVerse	Recurrent Respiratory Papillomatosis (RRP)								
ULTRACAR-T	PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 1B	PHASE 2	PHASE 3		
	PRGN-3005	UltraCAR-T	Ovarian Cancer								
	PRGN-3006	UltraCAR-T	AML, MDS								
	PRGN-3007	UltraCAR-T	ROR1+ Hematological & Solid Tumors								
ACTOBIOTICS	PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 1B	PHASE 2	PHASE 3		
	AG019	ActoBiotics	Type 1 Diabetes								

PRGN-2012

PRGN-2012 is an investigational off-the-shelf, or OTS, AdenoVerse immunotherapy designed to elicit immune responses directed against cells infected with HPV 6 or HPV 11 for treatment of recurrent respiratory papillomatosis, or RRP, a rare, difficult-to-treat and sometimes fatal neoplastic disease of the respiratory tract caused by HPV type 6 or HPV type 11. PRGN-2012 uses our gorilla adenovector technology to elicit immune responses against cells infected with HPV type 6 or HPV type 11. In preclinical models, PRGN-2012 has shown robust HPV type 6- and HPV type 11-specific T-cell response in RRP patient samples *in vitro*. PRGN-2012 has been granted Orphan Drug Designation in patients with RRP by the US Food and Drug Administration (FDA). PRGN-2012 is being developed in collaboration with the Center for Cancer Research at NCI through a CRADA.

We estimate the prevalence of RRP within the US is approximately 10,000 adult cases and approximately 6,000 juvenile cases. We also estimate up to 60,000 active cases of adult RRP outside of the US, based on extrapolating U.S. prevalence rates to populations in the EU, China and Japan. With respect to the economic burden on individual RRP patients, we estimate approximately \$100,000 in annual direct costs as well as additional indirect costs such as loss of income. Based on the chronic status of the disease, we believe RRP may lead to millions of dollars in implied lifetime costs. Based on commissioned internal research that reviewed analogous products on the basis of disease severity, prevalent population and efficacy of therapy, we believe the peak annual market in the U.S. may exceed \$1 billion and that the peak annual market opportunity worldwide may be approximately \$2 billion.

On January 24, 2023, we announced positive Phase 1 dose escalation and expansion cohort data. See “— Recent Developments — PRGN-2012 Update”.

PRGN-2009

PRGN-2009 is an investigational off-the-shelf, or OTS, immunotherapy utilizing the AdenoVerse platform designed to activate the immune system to recognize and target HPV-positive (HPV+) solid tumors. PRGN-2009 is currently under evaluation in a Phase 1/2 clinical trial. The Phase 1 portion of this trial is evaluating safety and response of PRGN-2009 as a monotherapy (Arm A) and in combination with M7824 (bintrafusp alfa), a novel investigational fusion protein (Arm B) in previously treated patients with recurrent or metastatic HPV-associated cancers. Enrollment is complete in the Phase 1 monotherapy dose escalation and in the Phase 1 combination arms in patients with recurrent or metastatic HPV-associated cancers and patient follow up is ongoing. The Company expects Phase 1 monotherapy and combination therapy safety and efficacy data to be presented in the first half of 2023. All patients in the monotherapy arm have received multiple PRGN-2009 administrations to date, and PRGN-2009 has been well-tolerated by these patients with no dose-limiting toxicities. In addition,

preliminary analysis of peripheral blood mononuclear cells show PRGN-2009 can induce an HPV type 16- or HPV type 18-specific T-cell response. Enrollment is nearing completion in the Phase 2 monotherapy arm in newly diagnosed oropharyngeal squamous cell carcinoma (OPSCC) patients. PRGN-2009 is being developed in collaboration with the National Cancer Institute pursuant to a CRADA.

UltraCAR-T Clinical Trials and UltraPorator System

PRGN-3006 is an investigational multigenic, autologous CAR-T therapy that utilizes the UltraCAR-T platform to express a CAR to target CD33 (Siglec-3), mblL 15 and a kill switch gene. UltraCAR-T is under evaluation in a Phase 1b clinical trial for the treatment of patients with relapsed or refractory acute myeloid leukemia (AML) or higher-risk myelodysplastic syndromes (MDS). On December 12, 2022, the complete data for the Phase 1 dose escalation phase were presented at the 64th American Society of Hematology (ASH) Annual Meeting and Exposition. The Phase 1 dose escalation arm was designed to evaluate safety and determine the recommended Phase 2 dose of PRGN-3006 delivered via intravenous (IV) infusion without lymphodepletion (cohort 1) or with lymphodepletion (cohort 2). PRGN-3006 was well-tolerated and overall, there was a low incidence of adverse events following PRGN-3006 infusion both with and without lymphodepletion. An objective response rate (ORR) of 27% (3 out of 11) was reported for heavily pre-treated relapsed or refractory AML patients with poor prognosis (median prior treatments: 4; range: 1-9) in the Phase 1 lymphodepletion cohort. The Phase 1b dose expansion study of PRGN-3006 UltraCAR-T was expanded to Mayo Clinic in Rochester, Minnesota, enhancing the decentralized manufacturing model. The first patient was successfully dosed at the Mayo Clinic with PRGN-3006 UltraCAR-T. Site activation activities are in progress at several additional major cancer centers across the U.S. as part of the multicenter expansion of the study. The Company received FDA clearance to incorporate repeat dosing in the Phase 1b expansion phase of the study, at the discretion of the treating physician. PRGN-3006 has been granted Orphan Drug Designation in patients with AML and Fast Track Designation in patients with relapsed or refractory AML by the FDA.

PRGN-3005 UltraCAR-T is an investigational multigenic, autologous CAR-T cell therapy utilizing the UltraCAR-T platform and designed to express a CAR specifically targeting the unshed portion of MUC16, which is highly expressed on ovarian tumors with limited normal tissue expression, mblL15, and a kill switch. PRGN-3005 is under evaluation in a Phase 1b clinical trial for the treatment of patients with advanced, recurrent platinum-resistant ovarian cancer. Enrollment was completed in the Phase 1 dose escalation cohorts of the intraperitoneal (IP) and intravenous (IV) arms without lymphodepletion as well as in the lymphodepletion cohort in the IV arm. Patient follow up is ongoing. The first patient received a repeat PRGN-3005 dose via IV infusion, following FDA clearance to incorporate repeat dosing in the study protocol. Enrollment is ongoing in the Phase 1b expansion study of PRGN-3005 UltraCAR-T at Dose Level 3 with lymphodepletion prior to IV infusion. Site activation activities are in progress at multiple major cancer centers in the US.

PRGN-3007, based on the next generation of the UltraCAR-T platform, is an investigational multigenic, autologous CAR-T cell therapy engineered to simultaneously express a CAR targeting receptor tyrosine kinase-like orphan receptor 1 (ROR1), mblL15, a kill switch, and a novel mechanism for the intrinsic blockade of PD-1 gene expression. ROR1 is aberrantly expressed in multiple hematological tumors, including chronic lymphocytic leukemia (CLL), mantle cell leukemia (MCL), acute lymphoblastic leukemia (ALL), and diffuse large B-cell lymphoma (DLBCL) and solid tumors, including breast adenocarcinomas such as triple negative breast cancer (TNBC), pancreatic cancer, ovarian cancer, and lung adenocarcinoma. ROR1 is minimally expressed in healthy adult tissues. FDA clearance was received to initiate a Phase 1/1b clinical trial. On December 11, 2022, an abstract titled, "A Phase 1/1b Dose Escalation/Dose Expansion Study of PRGN-3007 UltraCAR-T Cells in Patients with Advanced Hematologic and Solid Tumor Malignancies," was presented at the 64th American Society of Hematology Annual Meeting and Exposition. Tech transfer was completed for initiation of the Phase 1 dose escalation umbrella trial in ROR1+ hematological (CLL, MCL, ALL, DLBCL) and solid tumors (TNBC). The trial is currently open for enrollment.

Recent Developments

PRGN-2012 Update

On January 24, 2023, we presented information regarding Phase 1 data from the PRGN-2012 clinical study and related information. The Phase 1 clinical trial evaluated safety and efficacy of PRGN-2012 as an immunotherapy

following standard-of-care RRP surgery. Trial design included initiation of a 3+3 dose escalation cohort followed by a dose expansion cohort to enroll additional patients at the recommended Phase 2 dose (RP2D). Adult patients with severe, aggressive RRP, defined as greater than or equal to three surgeries in the prior 12 months, were enrolled to the clinical trial. A total of 15 patients were enrolled in the Phase 1 dose escalation and expansion cohorts at Dose Level 1: 1×10^{11} viral particles (vp)/dose (N=3) or Dose Level 2: 5×10^{11} vp/dose (N=12) with patients receiving four PRGN-2012 administrations (on days 1, 15, 43 and 85) via subcutaneous injection.

Patient Characteristics

Baseline patient characteristics of the 15 adult patients included a median age of 51 years (range: 30-73). Ten patients were male and 5 were female. Patients had an average of 6.2 surgeries (range: 3-10) in the last 12 months before enrolling in the trial. Patients were diagnosed with RRP for an average of 15 years prior to enrollment.

Safety Summary

Repeated administrations of PRGN-2012 were well-tolerated with no dose-limiting toxicities and no treatment-related adverse events, or TRAEs, greater than Grade 2 (TABLE 1). All patients received four administrations of PRGN-2012 at the intended dose levels. TRAEs were all mild and reduced in frequency over the treatment interval. The most common TRAE was injection site reaction, which occurred in all of the patients. Most other TRAEs occurring in more than one subject were similar to seasonal vaccines and the most common were fatigue, fever, and chills (TABLE 2). The lack of a significant neutralizing antibody response to gorilla adenovector over time with subsequent additional vaccinations highlights the ability to deliver repeated administrations of PRGN-2012, a differentiating feature of the AdenoVerse platform.

TABLE 1: Treatment-related Adverse Events
Total Patients (N=15)

	Dose Level 1 1×10^{11} vp (N=3)		Dose Level 2 5×10^{11} vp (N=12)		All Subjects (N=15)	
	Subjects (N, %)	Events (N)	Subjects (N, %)	Events (N)	Subjects (N, %)	Events (N)
Grade 1	3 (100%)	7	12 (100%)	105	15 (100%)	112
Grade 2	0 (0%)	0	2 (16.7%)	4	2 (13.3%)	4
Grades 3 – 5	0 (0%)	0	0 (0%)	0	0 (0%)	0

TABLE 2: Treatment-related Adverse Events by Grade
Total Patients (N=15)

	Grade 1		Grade 2	
	Subjects (N, %)	Events (N)	Subjects (N, %)	Events (N)
Chills	10/15 (66.7%)	14	0 (0%)	0
Diarrhea	1/15 (6.7%)	1	0 (0%)	0
Shortness of breath (Dyspnea)	1/15 (6.7%)	1	0 (0%)	0
Excessive sweating (Hyperhidrosis)	2/15 (13.3%)	2	0 (0%)	0
Fatigue	9/15 (60.0%)	20	2/15 (13.3%)	2
Fever	9/15 (60.0%)	17	0 (0%)	0

	Grade 1		Grade 2	
	Subjects (N, %)	Events (N)	Subjects (N, %)	Events (N)
Injection site reaction	15/15 (100%)	46	0 (0%)	0
Muscle aches (Myalgia)	2/15 (13.3%)	2	2/15 (13.3%)	2
Nausea	4/15 (26.7%)	6	0 (0%)	0
Skin itching (Pruritus)	1/15 (6.7%)	1	0 (0%)	0
Vomiting	2/15 (13.3%)	2	0 (0%)	0

Clinical Efficacy Summary

Clinical data show PRGN-2012 treatment significantly reduced the need for surgeries for severe, aggressive RRP patients treated at Dose Level 2. At Dose Level 2, 50% (6 out of 12) patients had a Complete Response, which is defined as no surgeries needed during the 12-month period following PRGN-2012 treatment completion (TABLE 3). All complete responders remained surgery-free as of the cutoff date post PRGN-2012 treatment. Patients in Dose Level 2 had a 58% (7 out of 12) Overall Response Rate, defined as greater than or equal to 50% reduction in the surgeries in 12-months post PRGN-2012 treatment completion compared to 12-months pre-treatment. 83% (10 out of 12) of patients treated at Dose Level 2 had reduced surgeries post PRGN-2012 treatment. The number of RRP surgeries in the patients (N=12) in Dose Level 2 reduced from a median of 6.5 surgeries (range: 3-10) in the 12-months pre-treatment to 0.5 surgeries (range: 0-6) in 12-months post PRGN-2012 treatment completion.

In addition, the average time to recurrence for all patients receiving Dose Level 2 of PRGN-2012 was 338 days, as compared to the average interval between surgeries for these patients in the year prior to dosing, which was 68 days.

Further, PRGN-2012 treatment showed significant improvement in anatomical Derkey scores, a tool used for research purposes to quantify RRP severity based on involvement of laryngeal structures, and voice quality, evaluated using the validated Vocal Handicap Index-10 (VHI-10), at 24-weeks post PRGN-2012 treatment completion compared to baseline.

Phase 1 data show that PRGN-2012 treatment resulted in an increase in HPV 6/11-specific T-cell response in the peripheral blood of RRP patients. Furthermore, the T-cells infiltrating papillomas from patients who had an objective response and a biopsy sample available showed an increase in HPV 6/11-specific T-cells in papillomas after PRGN-2012 treatment.

TABLE 3: Clinical Efficacy Summary
Total Patients (N=15)

	Dose Level 1 (N=3)	Dose Level 2 (N=12)
Complete Response (CR)		
No surgeries needed during 12-months post-treatment	0% (0/3)	50% (6/12)
Overall Response Rate (ORR)		
≥ 50% reduction in surgeries during 12-months post-treatment compared to 12-months pre-treatment	33% (1/3)	58% (7/12)
Decrease in Rate of Surgery		
12-months post-treatment compared to 12-months pre-treatment	100% (3/3)	83% (10/12)

Phase 2 Study

Precigen initiated dosing in the Phase 2 trial at Dose Level 2 and is rapidly enrolling patients, with 20 patients enrolled to date in the Phase 2 trial, bringing the total number of enrolled patients to 32 at Dose Level 2. The Phase 2 clinical trial evaluates PRGN-2012 as an adjuvant immunotherapy following standard-of-care surgical removal of visible papillomas in adult patients with RRP.

Financial Update

As of December 31, 2022, we estimate that we had approximately \$56.0 million of cash, cash equivalents, and short-term and long-term investments. In addition, as of December 31, 2022, we estimate that we had approximately \$43.7 million of restricted cash, of which \$43.4 million was restricted for certain permitted purposes, including the resolution of our outstanding 3.50% convertible senior notes due 2023. We estimate that the face value of such convertible notes outstanding as of December 31, 2022 was \$43.4 million and convertible into approximately 2,542,000 shares of our common stock. This preliminary financial information has been prepared by and is the responsibility of our management. Our independent registered public accounting firm has not audited, reviewed or performed any procedures with respect to this preliminary financial data or the accounting treatment thereof and does not express an opinion or any other form of assurance with respect thereto. We expect to complete our financial statements for the year ended December 31, 2022 subsequent to the completion of this offering. While we are currently unaware of any items that would require us to make adjustments to the financial information set forth above, it is possible that we or our independent registered public accounting firm may identify such items as we complete our annual financial statements and any resulting changes could be material. Accordingly, undue reliance should not be placed on this preliminary result. This preliminary result is not necessarily indicative of any future period and should be read together with "Risk Factors," "Special Note Regarding Forward-Looking Statements," and our consolidated financial statements and related notes incorporated by reference in the registration statement of which this prospectus supplement forms a part.

Corporate Information

We are a Virginia corporation formed in 1998. Our principal executive offices are located at 20374 Seneca Meadows Parkway, Germantown, MD 20876, and our telephone number is (301) 556-9900. Our website address is www.precigen.com. The inclusion of our website address in this prospectus is, in each case, intended to be an inactive textual reference only and not an active hyperlink to our website. The information contained in, or that can be accessed through, our website is not incorporated by reference herein and is not part of this prospectus. We make available free of charge on our website Form 10-Ks, Form 10-Qs, Form 8-Ks and amendments to those reports as soon as reasonably practicable after filing with or furnishing to the SEC.

The Offering

Common stock offered by us	42,857,143 shares.
Option to purchase additional shares	We have granted the underwriters an option for a period of up to 30 days from the date of this prospectus supplement to purchase up to an additional 6,428,571 shares of our common stock.
Common stock to be outstanding after this offering	251,007,164 shares (257,435,735 shares assuming the underwriters exercise in full their option to purchase additional shares).
Use of proceeds	We intend to use the net proceeds from this offering to fund the development of clinical and preclinical product candidates and for working capital and other general corporate purposes. See “Use of Proceeds.”
Risk factors	An investment in our common stock involves a high degree of risk. See “Risk Factors” beginning on page S-8 of this prospectus supplement, and under similar headings in other documents filed after the date hereof and incorporated by reference into this prospectus supplement and the accompanying prospectus.
Nasdaq Global Select Market symbol	PGEN

Outstanding shares

The number of shares of our common stock to be outstanding after this offering is based on 208,150,021 shares of our common stock outstanding as of September 30, 2022, and excludes:

- 15,317,186 shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2022 at a weighted- average exercise price of \$10.60 per share and any exercise after that date;
- 697,815 shares of our common stock issuable upon the vesting of restricted stock units outstanding as of September 30, 2022 and any settlement after that date;
- 4,836,112 shares of our common stock issuable upon the conversion of our 3.50% convertible senior notes due 2023 outstanding as of September 30, 2022;
- 121,888 shares of our common stock issuable upon the exercise of outstanding warrants as of September 30, 2022 at a weighted-average exercise price of \$27.95 per share;
- 12,833,550 shares of our common stock available for future issuance under our 2013 Omnibus Incentive Plan, or the 2013 Plan, as of September 30, 2022; and
- 7,243,025 shares of our common stock available for future issuance under our 2019 Incentive Plan for Non-Employee Service Providers, or the 2019 Plan, as of September 30, 2022.

Except as otherwise indicated herein, all information in this prospectus supplement does not assume or give effect to the exercise of the underwriters’ option to purchase additional shares in this offering.

As of December 31, 2022, we had approximately 2,542,000 shares of our common stock issuable upon the conversion of our 3.50% convertible senior notes due 2023.

Risk factors

Investing in our common stock involves a high degree of risk. You should carefully consider and evaluate all of the information contained in this prospectus and in the documents incorporated by reference in this prospectus before you decide to purchase our common stock. In particular, you should carefully consider and evaluate the risks and uncertainties described in “Part I — Item 1A. Risk Factors” in our [Annual Report on Form 10-K for the year ended December 31, 2021](#), “Part II — Item 1A/ Risk Factors” in the Quarterly Report on Form 10-Qs for the quarters ended [June 30, 2022](#) and [September 30, 2022](#), or the 2021 Annual Report and any additional risks and uncertainties included or incorporated by reference herein. Additional risks and uncertainties that we are unaware of or that we believe are not material at this time could also materially adversely affect our business, financial condition or results of operations. Any of these risks and uncertainties could materially and adversely affect our business, results of operations and financial condition, which in turn could materially and adversely affect the trading price or value of our common stock. As a result, you could lose all or part of your investment.

This prospectus also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks faced by us described below and elsewhere in this prospectus. See “Special Note Regarding Forward-Looking Statements” for information relating to these forward-looking statements.

Risks related to this offering

You will experience immediate and substantial dilution in the net tangible book deficit per share of the common stock you purchase in this offering.

The public offering price per share of our common stock being offered is substantially higher than the net tangible book value per share of our common stock based on the total value of our tangible assets less our total liabilities. Therefore, if you purchase shares of our common stock in this offering at the public offering price of \$1.75 per share, you will experience immediate dilution of \$1.21 per share, the difference between the price per share you pay for our common stock in this offering and our net tangible book value per share as of September 30, 2022, after giving effect to the issuance of 42,857,143 shares of our common stock in this offering. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation. See “Dilution” on page S-13 of this prospectus supplement for a more detailed discussion of the dilution you will incur if you purchase shares of our common stock in this offering.

In addition, as of September 30, 2022, we had outstanding options to acquire 15,317,186 shares of our common stock, outstanding restricted stock units representing 697,815 shares of our common stock, outstanding warrants to purchase 121,888 shares of our common stock, outstanding 3.50% convertible senior notes due 2023 convertible into 4,836,112 shares of our common stock. The issuance of shares of our common stock upon exercise of the stock options or warrants, vesting of the restricted stock units, or conversion of additional convertible notes would result in dilution to the interests of other holders of our common stock and could adversely affect our stock price.

Substantial future sales or other issuances of our common stock could depress the market for our common stock.

Sales of a substantial number of shares of our common stock, or the perception by the market that those sales could occur, could cause the market price of our common stock to decline or could make it more difficult for us to raise funds through the sale of equity in the future. In particular, we may sell additional shares of our common stock to raise capital, including pursuant to our at-the-market Sales Agreement with Cantor Fitzgerald & Co., entered into August 9, 2022, under which we may sell up to \$100,000,000 of our common stock.

In connection with this offering, for a period of 60 days following this offering, we, and, for a period of 90 days following this offering, our directors and executive officers, and certain of their affiliates, have entered into lock-up agreements. We and our directors and executive officers, and certain of their affiliates, may be released from

such lock-up agreements prior to the expiration of the applicable lock-up period at the sole discretion of J.P. Morgan Securities LLC (See “Underwriting” beginning on page S-18 of this prospectus supplement). Upon expiration or earlier release of the lock-up, we and our directors, executive officers and certain of their affiliates may sell shares into the market, which could adversely affect the market price of shares of our common stock. Future issuances of our common stock or our other equity securities could further depress the market for our common stock. We expect to continue to incur preclinical and clinical development and selling, general and administrative costs, and may need to sell additional equity securities to satisfy our funding requirements. The sale or the proposed sale of substantial amounts of our common stock or our other equity securities may adversely affect the market price of our common stock and our stock price may decline substantially. Our shareholders may experience substantial dilution and a reduction in the price that they are able to obtain upon sale of their shares. New equity securities issued may have greater rights, preferences or privileges than our existing common stock.

We have broad discretion in the use of the net proceeds of this offering and our cash reserves and, despite our efforts, we may use the net proceeds and our cash reserves in a manner that does not increase the value of your investment.

We currently intend to use the net proceeds from this offering to fund the development of clinical and preclinical product candidates and for working capital and other general corporate purposes. However, we have not determined the specific allocation of the net proceeds among these potential uses. Our management will have broad discretion over the use and investment of the net proceeds of this offering and our cash resources generally, and, accordingly, investors in this offering will need to rely upon the judgment of our management with respect to the use of proceeds and our cash reserves, with only limited information concerning our specific intentions. These proceeds and our cash resources generally could be applied in ways that do not improve our operating results or increase the value of your investment. Please see the section entitled “Use of Proceeds” on page S-12 of this prospectus supplement for further information.

Special note regarding forward-looking statements

This prospectus supplement and accompanying prospectus may contain forward-looking statements, including with respect to our plans, objectives and expectations for our business, operations and financial performance and condition. All statements, other than statements of historical facts, included in this prospectus supplement and accompanying prospectus, including statements regarding our strategy; future events, including their outcome or timing; future operations; future financial position; future revenue; projected costs; prospects; plans; objectives of management; and expected market growth, are forward-looking statements. The words “aim,” “anticipate,” “assume,” “believe,” “continue,” “could,” “due,” “estimate,” “expect,” “intend,” “may,” “objective,” “plan,” “positioned,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would,” and the negatives of these terms or similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. These statements may relate to, among other things:

- the impact of the COVID-19 pandemic on our clinical trials, businesses, operating results, cash flows, and/or financial condition;
- the timeliness of regulatory approvals;
- our strategy and overall approach to our business model, our efforts to realign our business, and our ability to exercise more control and ownership over the development process and commercialization path;
- our ability to successfully enter new markets or develop additional product candidates, including the expected timing and results of investigational studies and preclinical and clinical trials, including any delays or potential delays as a result of the COVID-19 pandemic, whether with our collaborators or independently;
- our ability to consistently manufacture our product candidates on a timely basis or to establish agreements with third-party manufacturers;
- our ability to successfully enter into optimal strategic relationships with our subsidiaries and operating companies that we may form in the future;
- our ability to hold or generate significant operating capital, including through partnering, asset sales, and operating cost reductions;
- actual or anticipated variations in our operating results;
- our expectations regarding the size of the patient populations amenable to treatment with our product candidates;
- actual or anticipated fluctuations in competitors’ or collaborators’ operating results or changes in their respective growth rates;
- our cash position;
- market conditions in our industry;
- the volatility of our stock price;
- the ability, and the ability of our collaborators, to protect our intellectual property and other proprietary rights and technologies;
- outcomes of pending and future litigation;
- the rate and degree of market acceptance of any products developed by us, our subsidiaries, collaborations, or joint ventures, and competition from existing technologies and products or new technologies and products that may emerge;
- our ability to retain and recruit key personnel;
- expectations related to the use of proceeds from public offerings and other financing efforts;
- estimates regarding expenses, future revenue, capital requirements, and needs for additional financing;

- we have a history of operating losses and management believes there is substantial doubt about our ability to continue as a going concern; and
- our anticipated use of proceeds from this offering.

These statements are based on management's current expectations, estimates, forecasts and projections about our business and industry, are not guarantees of future performance and involve known and unknown risks, uncertainties, and other factors that are in some cases beyond our control and that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from those anticipated by the forward-looking statements. We discuss many of these risks in greater detail in the section of this prospectus supplement entitled "Risk Factors" and elsewhere in this prospectus supplement and in any other documents incorporated herein (including in our 2021 Annual Report and other filings we make with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act). You should read these factors and the other cautionary statements made in this prospectus supplement and accompanying prospectus as being applicable to all related forward-looking statements wherever they appear herein or therein. If one or more of these factors materialize, or if any underlying assumptions prove incorrect, our actual results, levels of activity, performance, or achievements may vary materially from any future results, activity, performance, or achievements expressed or implied by these forward-looking statements. We caution readers not to place undue reliance on any forward-looking statements made by us, which speak only as of the date they were made. We undertake no obligation to publicly update any forward-looking statements after the date of this prospectus, whether as a result of new information, future events or otherwise, except as required by law.

Before deciding to purchase our securities, you should carefully consider the risk factors discussed and incorporated by reference in this prospectus supplement and the accompanying prospectus and in the registration statement of which this prospectus supplement and the accompanying prospectus form a part.

Use of proceeds

We estimate that the net proceeds from our issuance and sale of 42,857,143 shares of our common stock in this offering will be approximately \$71.2 million, or approximately \$81.8 million if the underwriters exercise their option to purchase additional shares in full based on the public offering price of \$1.75 per share of common stock, after deducting the estimated underwriting discounts and commissions and the estimated offering expenses payable by us.

We currently intend to use the net proceeds from this offering to fund the development of clinical and preclinical product candidates and for working capital and other general corporate purposes.

The amounts and timing of our use of the net proceeds from this offering will depend on a number of factors, such as the timing and progress of our research and development efforts, the timing and progress of any partnering efforts, technological advances and the competitive environment for our products. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from the sale of the shares of our common stock offered by us hereunder. Accordingly, our management will have broad discretion in the timing and application of these proceeds. Pending application of the net proceeds as described above, we intend to temporarily invest the proceeds in short-term, interest-bearing instruments.

Dilution

Purchasers of our common stock in this offering will experience immediate dilution to the extent of the difference between the public offering price per share of our common stock and the 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, 2022 was approximately \$63,403,000, or \$0.30 per share of our common stock. Net tangible book value per share of our common stock is determined by dividing total tangible assets less total liabilities, excluding items such as intangible assets and goodwill, by the aggregate number of shares of our common stock outstanding. Dilution per share to new investors represents the difference between the amount per share paid by purchasers for our common stock in this offering and the as adjusted net tangible book value per share of our common stock immediately following the completion of this offering.

After giving effect to the sale of 42,857,143 shares of our common stock in this offering at the public offering price of \$1.75 per share, and after deducting the underwriting discounts and commissions and the estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2022 would have been approximately \$134,603,000, or approximately \$0.54 per share of our common stock. This represents an immediate increase in net tangible book value of \$0.24 per share of our common stock to our existing shareholders and an immediate dilution in net tangible book value of \$1.21 per share of our common stock to purchasers in this offering.

The following table illustrates this calculation on a per share basis:

Public offering price per share	\$1.75
Net tangible book value (deficit) per share as of September 30, 2022	\$0.30
Increase in net tangible book value per share attributable to purchasers in this offering	\$0.24
As adjusted net tangible book value per share immediately after this offering	\$0.54
Dilution per share to purchasers in this offering	\$1.21

If the underwriters exercise their option in full to purchase additional shares of our common stock in this offering at the public offering price of \$1.75 per share, the as adjusted net tangible book value per share after the offering would be \$0.56 per share, the increase in the net tangible book value per share to existing shareholders would be \$0.26 per share and the dilution to purchasers in this offering would be \$1.19 per share.

The above table is based on 208,150,021 shares of our common stock outstanding as of September 30, 2022. Unless specifically stated otherwise, the information in this prospectus supplement is as of September 30, 2022 and excludes:

- 15,317,186 shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2022 at a weighted- average exercise price of \$10.60 per share and any exercise after that date;
- 697,815 shares of our common stock issuable upon the vesting of restricted stock units outstanding as of September 30, 2022 and any settlement after that date;
- 4,836,112 shares of our common stock issuable upon the conversion of our 3.50% convertible senior notes due 2023 outstanding as of September 30, 2022;
- 121,888 shares of our common stock issuable upon the exercise of outstanding warrants as of September 30, 2022 at a weighted-average exercise price of \$27.95 per share;
- 12,833,550 shares of our common stock available for future issuance under the 2013 Plan as of September 30, 2022; and
- 7,243,025 shares of our common stock available for future issuance under the 2019 Plan as of September 30, 2022.

Except as otherwise indicated herein, all information in this prospectus supplement does not assume or give effect to the exercise of the underwriters' option to purchase additional shares in this offering.

To the extent that options are exercised, other equity awards vest, new equity awards are issued under the 2013 Plan or the 2019 Plan or pursuant to inducement awards, convertible notes are converted into common stock, or we issue additional shares of common stock or other securities convertible into or exercisable for common stock in the future, there may be further dilution to investors participating in this offering. In addition, we may choose to raise additional capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our shareholders.

Material U.S. federal income and estate tax consequences for non-U.S. holders of our common stock

The following are the material U.S. federal income and estate tax consequences of your ownership and disposition of our common stock acquired in this offering if you are a “Non-U.S. Holder” (as defined below) that holds our common stock as a “capital asset” within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the “Code”). Subject to the exceptions set forth below, you are a Non-U.S. Holder for U.S. federal income tax purposes if you are a beneficial owner of our common stock and you are:

- a nonresident alien individual;
- a foreign corporation; or
- a foreign estate or trust.

You are not a Non-U.S. Holder, however, if you are a nonresident alien individual who is present in the United States for 183 days or more in the taxable year in which you sell any of our common stock or if you are a former citizen or former resident of the United States for U.S. federal income tax purposes. If you are such a person, you should consult your tax adviser regarding the U.S. federal income tax consequences of the ownership and disposition of our common stock.

If you are a partnership for U.S. federal income tax purposes, the U.S. federal income tax treatment of a partner will generally depend on the status of the partner and your activities.

This discussion is based on the Code, administrative pronouncements, judicial decisions and final, temporary and proposed Treasury regulations as of the date hereof, changes to any of which subsequent to the date hereof may affect the tax consequences described herein, possibly with retroactive effect. This discussion does not address all U.S. federal income tax consequences relevant to you in light of your particular circumstances, including alternative minimum tax and Medicare contribution tax consequences, and does not address any aspect of state, local, or non-U.S. taxation, or any taxes other than income and estate taxes. You should consult your tax adviser regarding the application of the U.S. federal tax laws to your particular situation, as well as any tax consequences arising under the laws of any state, local or non-U.S. taxing jurisdiction.

Dividends

We do not currently expect to make distributions on our common stock. In the event that we do make distributions of cash or other property, those distributions generally 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 our current and accumulated earnings and profits, they will constitute returns of capital, which will first reduce your basis in our common stock, but not below zero, and then will be treated as gain from the sale of our common stock, as described below under “—Gain on Disposition of Our Common Stock.”

Dividends paid to you generally will be subject to U.S. federal withholding tax at a 30% rate or a reduced rate specified by an applicable income tax treaty. In order to obtain a reduced rate of withholding (subject to the discussion below under “—FATCA”), you will be required to provide a properly executed Internal Revenue Service (“IRS”) Form W-8BEN or W-8BEN-E (or other applicable form) certifying your entitlement to benefits under a treaty.

If dividends paid to you are effectively connected with your conduct of trade or business in the United States (and, if required by an applicable income tax treaty, are attributable to a permanent establishment or fixed base maintained by you in the United States), you will generally be taxed on the dividends in the same manner as a U.S. person. In this case, you will be exempt from the withholding tax discussed in the preceding paragraph, although you will be required to provide a properly executed IRS Form W-8ECI in order to claim an exemption from withholding. If you are a corporation, effectively connected dividends may also be subject to an additional “branch profits tax” imposed at a rate of 30% (or a lower treaty rate).

Gain on Disposition of Our Common Stock

You generally will not be subject to U.S. federal income or withholding tax on gain realized on a sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with your conduct of a trade or business in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base maintained by you in the United States), or
- we are or have been a “United States real property holding corporation” (a “USRPHC”) as defined in the Code, at any time within the five-year period preceding the disposition or your holding period, whichever is shorter, and either (i) our common stock has ceased to be regularly traded on an established securities market as defined by applicable Treasury regulations or (ii) you owned, actually and constructively, more than 5% of our common stock throughout the shorter of (x) the five-year period ending on the date of the sale or other taxable disposition and (y) your holding period.

We will be a USRPHC at any time that the fair market value of our “United States real property interests,” as defined in the Code and applicable Treasury regulations, equals or exceeds 50% of the aggregate fair market value of our worldwide real property interests and our other assets used or held for use in a trade or business (all as determined for U.S. federal income tax purposes). We believe that we are not, and do not anticipate becoming, a USRPHC.

If you recognize gain on a sale or other disposition of our common stock that is effectively connected with your conduct of a trade or business in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base maintained by you in the United States), you will generally be taxed on that gain in the same manner as a U.S. person. You should consult your tax adviser regarding other U.S. tax consequences of the disposition of our common stock, including the possible imposition of a branch profits tax at a rate of 30% (or a lower treaty rate) if you are a corporation.

Information Reporting and Backup Withholding

Information returns are required to be filed with the IRS in connection with payments of dividends on our common stock. Unless you comply with certification procedures to establish that you are not a U.S. person, information returns may also be filed with the IRS in connection with the proceeds from a sale or other disposition of our common stock. You may be subject to backup withholding on payments on our common stock or on the proceeds from a sale or other disposition of our common stock unless you comply with certification procedures to establish that you are not a U.S. person or otherwise establish an exemption. Your provision of a properly executed applicable IRS Form W-8 certifying your non-U.S. status will permit you to avoid backup withholding. Amounts withheld under the backup withholding rules are not additional taxes and may be refunded or credited against your U.S. federal income tax liability, provided that the required information is timely furnished to the IRS.

FATCA

Provisions of the Code commonly referred to as “FATCA” require withholding of 30% on payments of dividends on our common stock to “foreign financial institutions” (which is broadly defined for this purpose and in general includes investment vehicles) and certain other non-U.S. entities unless various U.S. information reporting and due diligence requirements (generally relating to ownership by U.S. persons of interests in or accounts with those entities) have been satisfied, or an exemption applies. An intergovernmental agreement between the United States and an applicable foreign country may modify these requirements. In addition, regulations proposed by the U.S. Treasury Department (the preamble to which indicates that taxpayers may rely on the regulations pending their finalization) would eliminate the requirement under FATCA of withholding on gross proceeds. If FATCA withholding is imposed, and you are not a foreign financial institution, you generally may obtain a refund of any amounts withheld by filing a U.S. federal income tax return (which may entail significant administrative burden). You should consult your tax adviser regarding the effects of FATCA on your investment in our common stock.

Federal Estate Tax

Individual Non-U.S. Holders (as specifically defined for U.S. federal estate tax purposes) and entities the property of which is potentially includible in such an individual's gross estate for U.S. federal estate tax purposes (for example, a trust funded by such an individual and with respect to which the individual has retained certain interests or powers) should note that, absent an applicable treaty exemption, our common stock will be treated as U.S.-situs property subject to U.S. federal estate tax.

Underwriting

We are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC is acting as representative 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 common stock listed next to its name in the following table:

Name	Number of Shares
J.P. Morgan Securities LLC	32,142,858
Cantor Fitzgerald & Co.	4,285,714
JMP Securities LLC	4,285,714
H.C. Wainwright & Co., LLC	2,142,857
Total	42,857,143

The underwriters are committed to purchase all the shares of 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 shares of common stock directly to the public at the public offering price set forth on the cover page of this prospectus supplement and to certain dealers at that price less a concession not in excess of \$0.063 per share. Any such dealers may resell shares to certain other brokers or dealers at a discount of up to \$0.021 per share from the public offering price. After the offering of the shares to the public, if all of the shares of common stock are not sold at the 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 6,428,571 additional shares of 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 common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

Helen Sabzevari, our Chief Executive Officer, Randal J Kirk, our Chairman of the Board of Directors, and certain funds affiliated with Mr. Kirk and certain other of our officers have agreed to purchase 11,517,712 shares of our common stock in this offering at the public offering price.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is \$0.105 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	\$ 0.105	\$ 0.105
Total	\$3,330,000.06	\$3,975,000.02

There will be no underwriting discount or commission paid with respect to the 11,428,571 shares of common stock sold to Randal J. Kirk or entities affiliated with him in this offering.

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 \$500,000. We have agreed to reimburse the underwriters for all expenses incurred in connection with the registration or qualification of the shares issued in this offering under state or foreign or blue sky laws (in an amount not to exceed \$30,000). One of the underwriters has agreed to reimburse the company for certain offering expenses incurred by it in this offering.

JMP Securities LLC is also acting as a financial advisor to the company in this offering and will receive customary fees for such services.

A prospectus supplement 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 representative 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 file with, the Securities and Exchange Commission a registration statement under the Securities Act relating to, any shares of our common stock or securities convertible into or exercisable or exchangeable for any shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, loan, disposition or filing (other than filings on Form S-8 relating to outstanding company stock plans that are disclosed in the Prospectus), or (ii) enter into any swap or other arrangement that transfers, in whole or in part, any of the economic consequences of ownership of any shares of common stock or any such other securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of shares of common stock or such other securities, in cash or otherwise, in each case without the prior written consent of J.P. Morgan Securities LLC for a period of 60 days after the date of this prospectus, other than the shares of our common stock to be sold in this offering.

The restrictions on our actions, as described above, do not apply to certain transactions, including (i) the shares to be sold in this offering; (ii) any shares of common stock issued upon the exercise of options granted or to be granted under our stock based compensation plans; (iii) any shares of common stock issued upon the exercise of warrants or conversion of convertible notes outstanding on the date of this prospectus supplement; (iv) sales of shares pursuant to our employee stock purchase plan and grants of equity awards granted or to be granted under our stock based compensation plans, in each case for (i)-(iv) as described in the prospectus supplement and the accompanying prospectus and in the registration statement of which this prospectus supplement and the accompanying prospectus form a part; (v) the issuance of up to that number of shares equal to seven percent (7%) of our outstanding shares of common stock, calculated following the sale of shares hereunder ("Carveout Shares"), in connection with mergers or acquisitions of businesses, entities, property or other assets, joint ventures or strategic alliances, provided that we shall cause each such recipient of Carveout Shares to execute and deliver to the underwriters a lock-up agreement with the underwriters for the balance of the 60-day restricted

period; or (vi) the filing of a shelf registration statement on Form S-3 (and any amendments thereto) with the Securities and Exchange Commission, so long as no sales are made under such registration statement during the 60-day restriction period.

Our directors and executive officers, and certain of their affiliates (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 90 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, (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 common stock or any securities convertible into or exercisable or exchangeable for our common stock (including, without limitation, 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 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 trust for the direct or indirect benefit of the lock-up party or any immediate family member, or if the lock-up party is a trust, to a trustor or beneficiary of the trust or to the estate of a beneficiary of such trust, (iv) to a partnership, limited liability company or other entity of which the lock-up party or its immediate family members are the legal and beneficial owner of all of the outstanding equity securities or similar interests, (v) 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 distribution to members or shareholders of the lock-up party; (vi) by operation of law, such as pursuant to a qualified domestic order, divorce settlement, divorce decree or separation agreement, (vii) to us from an employee upon death, disability or termination of employment of such employee, (viii) to us in connection with the vesting, settlement or exercise of restricted stock units, options, warrants or other rights to purchase shares of our common stock (including, in each case, by way of “net” or “cashless” exercise), including for the payment of exercise price and tax and remittance payments due as a result of the vesting, settlement, or exercise of such restricted stock units, options, warrants or rights, provided that any such shares of common stock received upon such exercise, vesting or settlement shall remain subject to the restrictions in the immediately preceding paragraph, and provided further that any such restricted stock units, options, warrants or rights are held by the lock-up party pursuant to an agreement or equity awards granted under a stock incentive plan or other equity award plan, each such agreement or plan which is described in this prospectus, or (ix) pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction that is approved by our board of directors and made to all shareholders involving a change in 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) exercise of the options, settlement of RSUs or other equity awards, or the exercise of warrants granted pursuant to plans 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; and (c) the establishment by lock-up parties of trading plans under Rule 10b5-1 under the Exchange Act, provided that (1) such plan does not provide for the transfer of lock-up securities during the restricted period and (2) no filing by any party under the Exchange Act or other public announcement shall be required or made voluntarily in connection with such trading plan.

J.P. Morgan Securities LLC, in its 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 of 1933.

Our common stock is listed on the Nasdaq Global Select Market under the symbol "PGEN".

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of 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 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 of 1933, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representative of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representative 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 common stock or preventing or retarding a decline in the market price of the 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 Global Select Market, in the over-the-counter market or otherwise.

Selling Restrictions

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 the European Economic Area and the United Kingdom

In relation to each Member State of the European Economic Area and the United Kingdom (each, a “Relevant State”), 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 other than 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” implementing 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 any 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. References to the Prospectus Regulation includes, in relation to the United Kingdom, the Prospectus Regulation as it forms part of United Kingdom domestic law by virtue of the European Union (Withdrawal) Act 2018.

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, or 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 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, or 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 Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or the 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, us, or 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, or FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or 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 the Dubai International Financial Centre, or DIFC

This document relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority, or DFSA. This document is intended for distribution only to persons of a type specified in the Offered Securities Rules 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 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 Dubai International Financial Centre) other than in compliance with the laws of the United

Arab Emirates (and the Dubai International Financial Centre) 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 Dubai International Financial Centre) 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 Dubai Financial Services Authority.

Notice to prospective investors in Australia

This document:

- does not constitute a disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth), or the Corporations Act;
- has not been, and will not be, lodged with the Australian Securities and Investments Commission, or 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, or Exempt Investors, available under section 708 of the Corporations Act.

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), or the SFO, 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, or the 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

The representative has acknowledged that this prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, the representative 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:

- (i) 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, or the SFA)) pursuant to Section 274 of the SFA; (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA; or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.
- (ii) Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:
- (iii) 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
- (iv) 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:
 - a. to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
 - b. where no consideration is or will be given for the transfer;
 - c. where the transfer is by operation of law;
 - d. as specified in Section 276(7) of the SFA; or
 - e. as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities based Derivatives Contracts) Regulations 2018.

Singapore SFA Product Classification-In connection with Section 309B of the SFA and the CMP Regulations 2018, unless otherwise specified before an offer of the 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).

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 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, or the CMA, pursuant to resolution number 2-11-2004 dated 4 October 2004 as amended by resolution number 1-28-2008, as amended, or the 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 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), or the 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. This prospectus has not been, and will not be, registered with the Financial Services Commission of the British Virgin Islands. No registered prospectus has been or will be prepared in respect of the shares for the purposes of the Securities and Investment Business Act, 2010 or the Public Issuers Code of the British Virgin Islands.

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, or the 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, or the FETL. The shares have not been listed on any of the 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 Malaysia

No prospectus or other offering material or document in connection with the offer and sale of the shares has been or will be registered with the Securities Commission of Malaysia, or the Commission, for the Commission's approval pursuant to the Capital Markets and Services Act 2007. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Malaysia other than (i) a

closed end fund approved by the Commission, (ii) a holder of a Capital Markets Services Licence, (iii) a person who acquires the shares, as principal, if the offer is on terms that the shares may only be acquired at a consideration of not less than RM250,000 (or its equivalent in foreign currencies) for each transaction, (iv) an individual whose total net personal assets or total net joint assets with his or her spouse exceeds RM3 million (or its equivalent in foreign currencies), excluding the value of the primary residence of the individual, (v) an individual who has a gross annual income exceeding RM300,000 (or its equivalent in foreign currencies) per annum in the preceding twelve months, (vi) an individual who, jointly with his or her spouse, has a gross annual income of RM400,000 (or its equivalent in foreign currencies), per annum in the preceding twelve months, (vii) a corporation with total net assets exceeding RM10 million (or its equivalent in a foreign currencies) based on the last audited accounts, (viii) a partnership with total net assets exceeding RM10 million (or its equivalent in foreign currencies), (ix) a bank licensee or insurance licensee as defined in the Labuan Financial Services and Securities Act 2010, (x) an Islamic bank licensee or takaful licensee as defined in the Labuan Financial Services and Securities Act 2010, and (xi) any other person as may be specified by the Commission; provided that, in the each of the preceding categories (i) to (xi), the distribution of the shares is made by a holder of a Capital Markets Services Licence who carries on the business of dealing in securities. The distribution in Malaysia of this prospectus is subject to Malaysian laws. This prospectus does not constitute and may not be used for the purpose of public offering or an issue, offer for subscription or purchase, invitation to subscribe for or purchase any securities requiring the registration of a prospectus with the Commission under the Capital Markets and Services Act 2007.

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 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), or the 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) authorised financial service providers under South African law;
- (v) financial institutions recognised as such under South African law;
- (vi) a wholly-owned subsidiary of any person or entity contemplated in (iii), (iv) or (v), 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 persons in (i) to (vi); or

Section 96(1)(b): the total contemplated acquisition cost of the securities, for a 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

In the State of Israel this prospectus shall not be regarded as an offer to the public to purchase shares under the Israeli Securities Law, 5728-1968, which requires a prospectus to be published and authorized by the Israel Securities Authority, if it complies with certain provisions of Section 15 of the Israeli Securities Law, 5728-1968, including, inter alia, if: (i) the offer is made, distributed or directed to not more than 35 investors, subject to certain conditions, or the Addressed Investors; or (ii) the offer is made, distributed or directed to certain qualified investors defined in the First Addendum of the Israeli Securities Law, 5728-1968, subject to certain conditions, or the Qualified Investors. The Qualified Investors shall not be taken into account in the count of the Addressed Investors and may be offered to purchase securities in addition to the 35 Addressed Investors. The company has not and will not take any action that would require it to publish a prospectus in accordance with and subject to the Israeli Securities Law, 5728-1968. We have not and will not distribute this prospectus or make, distribute or direct an offer to subscribe for our common stock to any person within the State of Israel, other than to Qualified Investors and up to 35 Addressed Investors. Qualified Investors may have to submit written evidence that they meet the definitions set out in of the First Addendum to the Israeli Securities Law, 5728-1968. In particular, we may request, as a condition to be offered common stock, that Qualified Investors will each represent, warrant and certify to us and/or to anyone acting on our behalf: (i) that it is an investor falling within one of the categories listed in the First Addendum to the Israeli Securities Law, 5728-1968; (ii) which of the categories listed in the First Addendum to the Israeli Securities Law, 5728-1968 regarding Qualified Investors is applicable to it; (iii) that it will abide by all provisions set forth in the Israeli Securities Law, 5728-1968 and the regulations promulgated thereunder in connection with the offer to be issued common stock; (iv) that the shares that it will be issued are, subject to exemptions available under the Israeli Securities Law, 5728-1968: (a) for its own account; (b) for investment purposes only; and (c) not issued with a view to resale within the State of Israel, other than in accordance with the provisions of the Israeli Securities Law, 5728-1968; and (v) that it is willing to provide further evidence of its Qualified Investor status. Addressed Investors may have to submit written evidence in respect of their identity and may have to sign and submit a declaration containing, inter alia, the Addressed Investor’s name, address and passport number or Israeli identification number.

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. For example, Cantor Fitzgerald & Co. is our sales agent under the Controlled Equity OfferingSM Sales Agreement, pursuant to which we may offer and sell, from time to time, up to \$100.0 million of our common stock through Cantor Fitzgerald & Co. through an “at the market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act. 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. In addition, in connection with our 3.50% convertible senior notes due 2023, we are party to a Share Lending Agreement dated June 28, 2018 with J.P. Morgan Securities LLC and JPMorgan Chase Bank, National Association, New York Branch.

Steven Frank, a current employee of J.P. Morgan Securities LLC, currently serves as a member of our board of directors.

Legal matters

We are being represented by Davis Polk & Wardwell LLP, New York, New York with respect to certain legal matters as to U.S. federal securities and New York State law. The underwriters are being represented by Goodwin Procter LLP with respect to certain legal matters as to U.S. federal securities and New York State law. The validity of the ordinary shares offered in this offering and legal matters as to Virginia State law will be passed upon for us by Hogan Lovells LLP.

Experts

The financial statements of Precigen, Inc. as of December 31, 2021 and 2020, and for each of the three years in the period ended December 31, 2021, incorporated by reference in this prospectus supplement, and the effectiveness of the Precigen, Inc.'s internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports. Such financial statements are incorporated by reference in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

Where you can find more information

We file reports, proxy statements, and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements, and other information about issuers, such as us, who file electronically with the SEC. The address of that website is www.sec.gov. We make available, free of charge, on our website at www.precigen.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to such reports as soon as reasonably practicable after such reports are electronically filed with, or furnished to, the SEC.

Information on or accessible through our website is not incorporated by reference herein and is not part of this prospectus.

This prospectus supplement and accompanying prospectus are part of a registration statement that we have filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained through the SEC's website, as provided above, or from us, as provided in the section of this prospectus entitled "Incorporation by Reference." Certain documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement or documents incorporated by reference in the registration statement. Statements in this prospectus supplement and accompanying prospectus about these documents are summaries and each statement is subject, and qualified in all respects by reference, to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters.

Incorporation by reference

The SEC allows us to “incorporate by reference” information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The SEC file number for each of the documents incorporated by reference in this prospectus is 001-36042. The documents incorporated by reference into this prospectus contain important information that you should read.

This prospectus supplement and accompanying prospectus incorporate by reference the documents set forth below that have previously been filed with the SEC (other than those documents or the portions of those documents not deemed to be filed):

- the 2021 [Annual Report, filed with the SEC on March 1, 2022](#), including the information incorporated therein by reference from our [definitive proxy statement for our 2022 Annual Meeting of Shareholders filed on April 29, 2022](#);
- our quarterly reports on Form 10-Q for the quarters ended March 31, 2022, June 30, 2022 and September 30, 2022, filed with the SEC on [May 9, 2022](#), [August 8, 2022](#) and [November 9, 2022](#), respectively;
- our current reports on Form 8-K filed with the SEC on [June 14, 2022](#), [July 5, 2022](#), [July 13, 2022](#), [August 9, 2022](#), [August 22, 2022](#), [August 24, 2022](#) and [September 21, 2022](#); and
- the description of our common stock contained in our registration statement on [Form 8-A filed with the SEC on September 24, 2018](#), including any amendment or report filed for the purpose of updating such description, including [Exhibit 4.5](#) to the 2021 Annual Report.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, including those filed after the date of the initial registration statement of which this prospectus is part and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents. We are not, however, incorporating by reference any documents or portions thereof, whether specifically listed above or filed in the future, that are not deemed “filed” with the SEC, including any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this document modifies or supersedes the statement.

You may request, orally or in writing, a copy of any or all of the documents incorporated herein by reference. These documents will be provided to you at no cost, by contacting: Precigen, Inc., 20374 Seneca Meadows Parkway, Germantown, Maryland 20876. Our corporate phone number is (301) 556- 9900. In addition, copies of any or all of the documents incorporated herein by reference may be accessed at our website at www.precigen.com. The information on or accessible through our website is not incorporated by reference herein and is not a part of this prospectus.

PROSPECTUS

**Precigen, Inc.****\$500,000,000**

Common Stock
Preferred Stock
Debt Securities
Warrants
Rights
Stock Purchase Contracts
Units

We may offer and sell up to \$500,000,000 in the aggregate of the securities identified above from time to time in one or more offerings. This prospectus provides you with a general description of the securities we may offer and sell and the general manner in which they may be offered.

Each time we offer securities pursuant to this prospectus, we will provide one or more supplements to this prospectus or free writing prospectuses containing specific information about the offering and the terms of the securities being sold. The prospectus supplement or free writing prospectus may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus, the applicable prospectus supplement, the information incorporated herein and therein by reference, and any free writing prospectus before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers, and agents, or directly to purchasers, or through a combination of these methods. The names of any underwriters, dealers or agents involved in the sale of any of the securities and the terms of the arrangements with them will be set forth in the applicable prospectus supplement or free writing prospectus. See the sections of this prospectus entitled “About this Prospectus” and “Plan of Distribution” for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE SECTION OF THIS PROSPECTUS ENTITLED “Risk Factors” ON PAGE 5 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Our common stock is listed on the Nasdaq Global Select Market under the symbol “PGEN.” On June 19, 2020, the last reported sale price of our common stock on the Nasdaq Global Select Market was \$4.99 per share.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is July 2, 2020.

TABLE OF CONTENTS

About This Prospectus	1
Where You Can Find More Information	2
Incorporation by Reference	3
The Company	4
Risk Factors	5
Special Note Regarding Forward-Looking Statements	6
Use of Proceeds	8
Description of Capital Stock	9
Description of Debt Securities	13
Description of Warrants	21
Description of Rights	23
Description of Stock Purchase Contracts	24
Description of Units	25
Plan of Distribution	26
Legal Matters	27
Experts	27

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the U.S. Securities and Exchange Commission, or the SEC, using a “shelf” registration process. By using a shelf registration statement, we may sell securities from time to time and in one or more offerings up to an aggregate dollar amount of \$500,000,000 of securities as described in this prospectus. Each time that we offer and sell securities, we will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement or free writing prospectus may also add, update or change information contained in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable. Before purchasing any securities, you should carefully read this prospectus, the applicable prospectus supplement, and any applicable free writing prospectuses, together with the additional information described in the sections of this prospectus entitled “Where You Can Find More Information” and “Incorporation by Reference.”

We have not authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus, any applicable prospectus supplement or any free writing prospectuses 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 will not make an offer to sell or solicit an offer to buy these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus and the applicable prospectus supplement is accurate only as of the date on its respective cover, that the information appearing in any applicable free writing prospectus is accurate only as of the date of that free writing prospectus, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations, and prospects may have changed since those dates.

This prospectus, the information incorporated herein by reference, and any prospectus supplement or free writing prospectus contain or may contain references to trademarks, service marks, and trade names owned by us or other companies. Solely for convenience, trademarks, service marks, and trade names, including logos, artwork, and other visual displays, may appear without the ® or ™ 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, service marks, and trade names. We do not intend our use or display of other companies’ trade names, service marks, or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies. Other trademarks, trade names, and service marks appearing in this prospectus are the property of their respective owners.

When we refer to “we,” “our,” “us,” and the “Company” in this prospectus, we mean Precigen, Inc., unless otherwise specified. When we refer to “you,” we mean the potential holders of the applicable series of securities.

WHERE YOU CAN FIND MORE INFORMATION

We file reports, proxy statements, and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements, and other information about issuers, such as us, who file electronically with the SEC. The address of that website is www.sec.gov. We make available, free of charge, on our website at www.precigen.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to such reports as soon as reasonably practicable after such reports are electronically filed with, or furnished to, the SEC.

Information on or accessible through our website is not incorporated by reference herein and does not form a part of this prospectus.

This prospectus and any prospectus supplement are part of a registration statement that we have filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained through the SEC's website, as provided above, or from us, as provided in the section of this prospectus entitled "Incorporation by Reference." Certain documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement or documents incorporated by reference in the registration statement. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is subject, and qualified in all respects by reference, to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters.

INCORPORATION BY REFERENCE

The SEC’s rules allow us to “incorporate by reference” information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in this prospectus or a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or a subsequently filed document incorporated by reference modifies or replaces that statement.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC (other than those documents or the portions of those documents not deemed to be filed):

- our [annual report on Form 10-K for the year ended December 31, 2019, filed with the SEC on March 2, 2020](#), or the 2019 Annual Report, including the information incorporated therein by reference from our [definitive proxy statement for our 2020 Annual Meeting of Shareholders filed on April 29, 2020](#);
- our [quarterly report on Form 10-Q for the quarter ended March 31, 2020, filed with the SEC on May 11, 2020](#);
- our current reports on Form 8-K filed with the SEC on [January 2, 2020](#), [January 7, 2020](#), [February 4, 2020](#) (as amended on [February 6, 2020](#)), [February 6, 2020](#), [June 4, 2020](#), and [June 19, 2020](#); and
- the [description of our Common Stock contained in our Registration Statement on Form 8-A filed with the SEC on September 24, 2018](#), including any amendment or report filed for the purpose of updating such description, including [Exhibit 4.5](#) to the 2019 Annual Report.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, prior to the termination of this offering, including those filed after the date of the initial registration statement of which this prospectus is part and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents. We are not, however, incorporating by reference any documents or portions thereof, whether specifically listed above or filed in the future, that are not deemed “filed” with the SEC, including any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K.

We will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon written or oral request of such person, a copy of any or all of the documents incorporated by reference in this prospectus, other than exhibits to such documents unless such exhibits are specifically incorporated by reference into such documents. Requests may be made in writing or by telephone at:

Precigen, Inc.
20374 Seneca Meadows Parkway
Germantown, Maryland 20876
(301) 556-9900

THE COMPANY

We are a dedicated discovery and clinical-stage biopharmaceutical company advancing the next generation of gene and cell therapies with the overall goal of improving outcomes for patients with significant unmet medical needs. We are leveraging our proprietary technology platforms to develop product candidates designed to target urgent and intractable diseases in our core therapeutic areas of immuno-oncology, autoimmune disorders, and infectious diseases. We have developed an extensive pipeline of therapies across multiple indications within these core focus areas.

We believe that our array of technology platforms uniquely position us among other biotechnology companies to advance precision medicine. Precision medicine is the practice of therapeutic product development that takes into account specific genetic variations within populations impacted by a disease to design targeted therapies to improve outcomes for a disease or patient population. Our proprietary and complementary technology platforms provide a strong foundation to realize the core promise of precision medicine by supporting our efforts to construct powerful gene programs to drive efficacy, deliver these programs through viral, non-viral, and microbe-based approaches to drive lower costs, and control gene expression to drive safety. Our therapeutic platforms, including UltraCAR-T, ActoBiotics, and AdenoVerse Immunotherapy, allow us to precisely control the level and physiological location of gene expression and modify biological molecules to control the function and output of living cells to treat underlying disease conditions.

We are actively advancing our lead programs, including: PRGN-3005 and PRGN-3006, which are built on our UltraCAR-T platform; AG019, which is built on our ActoBiotics platform; and INXN-4001, a non-viral triple-effector plasmid DNA, which is built on our UltraVector platform. In addition, the FDA recently cleared the Investigational New Drug application to initiate a Phase 1/2 trial to study PRGN-2009 in participants with human papillomavirus-positive cancers. We also have a robust pipeline of preclinical programs that we are pursuing in order to drive long-term value creation.

Our healthcare business is operated by our wholly-owned subsidiaries PGEN Therapeutics, Inc., Precigen ActoBio, Inc., and Exemplar Genetics LLC, doing business as Precigen Exemplar, and also includes our majority ownership interest in Triple-Gene LLC, doing business as Precigen Triple-Gene, as well as equity and royalty interests in therapeutics and therapeutic platforms from companies not controlled by us. While our primary focus is in healthcare, we continue to have non-healthcare businesses, including our established bovine genetics company, Trans Ova Genetics, L.C.

We are a Virginia corporation formed in 1998 and our principal executive offices are located at 20374 Seneca Meadows Parkway, Germantown, MD 20876, and our telephone number is (301) 556-9900. Our website address is www.precigen.com. Information on or accessible through our website is not incorporated by reference herein and does not form a part of this prospectus.

RISK FACTORS

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves significant risks. You should carefully consider the risk factors incorporated by reference to the 2019 Annual Report, our [quarterly report on Form 10-Q filed with the SEC on May 11, 2020](#), and any subsequent reports we file with the SEC after the date of this prospectus, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement and any applicable free writing prospectus before making a decision about investing in our securities. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business, financial condition, and results of operations. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, the applicable prospectus supplement and any free writing prospectus may contain forward-looking statements, including with respect to our plans, objectives, and expectations for our business, operations, and financial performance and condition. Any statements contained herein or therein that are not statements of historical facts may be deemed to be forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “aim,” “anticipate,” “assume,” “believe,” “continue,” “could,” “due,” “estimate,” “expect,” “intend,” “may,” “objective,” “plan,” “predict,” “potential,” “positioned,” “seek,” “should,” “target,” “will,” “would,” and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or similar language. Forward-looking statements include, but are not limited to, statements about:

- our ability to successfully enter new markets or develop product candidates, including the expected timing and results of investigational studies and preclinical and clinical trials, and our research and development programs;
- the timing or likelihood of regulatory filings for any product candidates we develop and our ability to obtain and maintain regulatory approvals for such product candidates for any indication;
- our intentions and ability to successfully commercialize our product candidates;
- the rate and degree of market acceptance of any products developed by us;
- our ability to successfully execute and achieve benefits from our recent leadership transition plan and organizational restructuring;
- our efforts to hold or generate significant operating capital, including through partnering, potential asset sales of our non-healthcare assets, and operating cost reductions;
- our cash position;
- any delays or potential delays to our clinical trials as a result of the COVID-19 pandemic;
- our estimates regarding expenses, future revenue, capital requirements, and our need for additional financing;
- our strategy and overall approach to our business model, including our efforts to focus our business in the healthcare industry;
- our ability to adapt to changes in laws, regulations, and policies;
- our reliance on and the performance of third parties, including exclusive channel collaborations and joint ventures;
- competition from existing technologies and products or new technologies and products that may emerge;
- our expectations related to the use of proceeds from our public offerings and other financing efforts;
- actual or anticipated variations in our operating results;
- market conditions in our industry;
- our ability to retain, recruit, and train key personnel, or the loss of key personnel as a result of illness or otherwise;
- our ability to successfully enter into optimal strategic relationships with our subsidiaries and operating companies that we may form in the future;
- the result of litigation proceedings or investigations that we currently face or may face in the future;
- the effects, duration, and severity of the ongoing COVID-19 pandemic and the actions we and others have taken or may take in response; and
- our intended use of the proceeds from sales of securities by us.

These statements are based on management’s current expectations, estimates, forecasts and projections about our business and industry, are not guarantees of future performance and involve known and unknown

risks, uncertainties, and other factors that are in some cases beyond our control and that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from those anticipated by the forward-looking statements. We discuss many of these risks in greater detail in the section of this prospectus entitled "Risk Factors" and elsewhere in this prospectus and any related free writing prospectus, and in any other documents incorporated herein or therein (including in our most recent annual report on Form 10-K, subsequent quarterly reports on Form 10-Q, and other filings we make with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act). You should read these factors and the other cautionary statements made in this prospectus, the applicable prospectus supplement, and any free writing prospectus as being applicable to all related forward-looking statements wherever they appear herein or therein. If one or more of these factors materialize, or if any underlying assumptions prove incorrect, our actual results, levels of activity, performance, or achievements may vary materially from any future results, activity, performance, or achievements expressed or implied by these forward-looking statements. We caution readers not to place undue reliance on any forward-looking statements made by us, which speak only as of the date they were made. We undertake no obligation to publicly update any forward-looking statements after the date of this prospectus, whether as a result of new information, future events or otherwise, except as required by law.

You should read this prospectus, the applicable prospectus supplement and the documents that we reference in this prospectus and have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by the foregoing cautionary statements.

USE OF PROCEEDS

Unless we specify otherwise in a prospectus supplement, we intend to use the net proceeds from sales of securities by us for general corporate purposes. These purposes may include clinical trials, research and development expenditures, expenditures to build our development and commercialization capabilities, capital expenditures, working capital, repayment or redemption of existing indebtedness, and any other corporate purpose. As of the date of this prospectus, we cannot specify with certainty all of the particular uses of the net proceeds from the sale of securities under this prospectus or the amounts to be used for such purposes. Accordingly, we will retain broad discretion over the use of such proceeds. Pending the use of the net proceeds described above, we plan to invest any net proceeds from sales of securities by us in a variety of capital preservation investments, including money market funds and U.S. government debt securities. We will not receive proceeds from sales of securities by persons other than us except as may otherwise be stated in an applicable prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

The following description summarizes certain information about our capital stock. The summary does not purport to be complete and is subject, and qualified in its entirety by reference, to our amended and restated articles of incorporation, or articles of incorporation, and our amended and restated bylaws, or bylaws, each of which is incorporated by reference as an exhibit to the registration statement of which this prospectus is a part, and the applicable provisions of Virginia law.

General

Our authorized capital stock consists of 400,000,000 shares of common stock, no par value per share, and 25,000,000 shares of preferred stock, no par value per share, all of which shares of preferred stock are undesignated. As of May 31, 2020, we had 172,190,152 shares of common stock outstanding and held of record by approximately 288 shareholders. The actual number of shareholders is greater than this number of record holders and includes shareholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include shareholders whose shares may be held in trust by other entities. All outstanding shares of common stock are fully paid and nonassessable. There are no shares of preferred stock outstanding.

Common Stock

Voting rights; Dividends; Liquidation

Holders of our common stock are entitled to:

- cast one vote for each share on all matters submitted to a vote of our shareholders, including the election of directors. Holders of our common stock do not have cumulative voting rights in the election of directors;
- receive dividends if and when dividends are declared by our board of directors out of assets legally available for the payment of dividends, subject to preferential rights of outstanding shares of preferred stock, if any; and
- in the event of our liquidation, dissolution or winding up, whether voluntary or involuntary, after payment of our debts and other liabilities and making provision for the holders of outstanding shares of preferred stock, if any, to share equally and ratably in the remainder of our assets.

Registration Rights

In September 2018, our wholly owned subsidiary Precigen ActoBio, Inc., or ActoBio, issued convertible promissory notes that provide the holders with certain registration rights for shares of our common stock issuable upon conversion thereof. If ActoBio pays any of its obligations under the notes in shares of our common stock, ActoBio is required to cause us to use commercially reasonable efforts to register the resale of such shares by the holders and to maintain the effectiveness of such registration until one year after the noteholder's demand or ActoBio's election to pay.

Other Rights and Preferences

Holders of our common stock have no preemptive, redemption, conversion, or subscription rights and there are no sinking fund provisions applicable to our common stock. The rights, powers, preferences, and privileges of holders of common stock are subject to, and may be impaired by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred Stock

Our board has the authority to designate and issue from time to time one or more series of preferred stock without shareholder approval. Our board may fix and determine the preferences, limitations, and relative rights of each series of preferred stock issued. Because our board has the power to establish the preferences and rights of each series of preferred stock, it may afford the holders of any series of preferred

stock preferences and rights, voting or otherwise, senior to the rights of holders of our common stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock upon the rights of holders of common stock until our board determines the specific rights of the holders of preferred stock. However, the effects might include:

- restricting dividends on our common stock;
- diluting the voting power of our common stock;
- impairing liquidation rights of our common stock; or
- delaying or preventing a change in control of us without further action by our shareholders.

Anti-Takeover Effects of Provisions of our Articles of Incorporation and Bylaws and of Virginia Law

Our articles of incorporation, bylaws, and Virginia law contain provisions that may have the effect of impeding the acquisition of control of us by means of a tender offer, a proxy contest, open market purchases, or otherwise in a transaction not approved by our board of directors. These provisions are designed to reduce, or have the effect of reducing, our vulnerability to coercive takeover practices and inadequate takeover bids. The existence of these provisions could limit the price that investors might otherwise pay in the future for shares of common stock. In addition, these provisions make it more difficult for our shareholders to remove our board of directors or management, should they choose to do so.

Articles of Incorporation and Bylaws

Undesignated preferred stock. Our articles of incorporation authorize our board to establish one or more series of preferred stock and to determine, with respect to any series of preferred stock, the preferences, rights, and other terms of such series. See “Preferred Stock” above for additional information. Under this authority, our board could create and issue a series of preferred stock with rights, preferences or restrictions that have the effect of discriminating against an existing or prospective holder of our capital stock as a result of such holder beneficially owning or commencing a tender offer for a substantial amount of our common stock. One of the effects of authorized but unissued and unreserved shares of preferred stock may be to render it more difficult for, or to discourage an attempt by, a potential acquirer to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, and thereby protect the continuity of our management. The issuance of shares of preferred stock may have the effect of delaying, deferring or preventing a change in control of our Company without any action by our shareholders.

Qualification and election of directors. Our bylaws provide that to be eligible to be a nominee for election to our board of directors, a person must submit a written questionnaire regarding his or her background and qualifications and must agree to other representations as set forth in our bylaws. In addition, we have adopted a director resignation policy. Our bylaws provide that, in uncontested director elections (i.e., an election where the number of nominees is not greater than the number of directors to be elected), a nominee for director will be elected to the board of directors if the votes cast for such nominee’s election exceed the votes cast against such nominee’s election. However, directors will be elected by a plurality of the votes cast at any meeting of the shareholders for which (i) the Secretary receives a notice that a shareholder has nominated a person for election to the board of directors in compliance with the advance notice requirements for shareholder nominees for director set forth in the bylaws, and (ii) such nomination has not been withdrawn by such shareholder on or prior to the 10th day preceding the date we first mail the notice of meeting for such meeting to the shareholders (i.e., if there is a contested director election). If directors are to be elected by a plurality of the votes cast, the shareholders may withhold votes, but will not be permitted to vote against a nominee. Our Corporate Governance Guidelines provide that any nominee for director in an uncontested election who receives a greater number of shareholder votes cast against his or her election than votes for his or her election must promptly tender his or her resignation to the board of directors for consideration. The Nominating and Governance Committee will then evaluate the best interests of the Company and will recommend to the board of directors whether to accept or reject the tendered resignation. Following the board of directors’ receipt of this recommendation and determination as to whether to accept the resignation, we will disclose the board of directors’ decision and an explanation of how the decision was reached.

Board vacancies; removal. Our articles of incorporation provide that any vacancy occurring on our board of directors may be filled by a majority of directors then in office, even if less than a quorum.

Special meetings of shareholders. Our bylaws provide that a special meeting may be called by a vote of shareholders representing in the aggregate not less than 25 percent of the total number of shares of stock entitled to vote on the matter to be brought before the proposed special meeting, and that shareholders may only conduct business at special meetings of shareholders that was specified in the notice of the meeting.

Advance notification of shareholder nominations and proposals. Our bylaws establish advance notice procedures with respect to shareholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of our board.

Exclusive forum provision. Our bylaws provide that unless we consent in writing to the selection of an alternative forum, the United States District Court for the Eastern District of Virginia, Alexandria Division, or in the event that court lacks subject matter jurisdiction to hear such action, the Circuit Court of the County of Fairfax, Virginia, will be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action for breach of duty to the Company or our shareholders by any current or former officer or other employee or agent or director of the Company, (iii) any action against the Company or any current or former officer or other employee or agent or director of the Company arising pursuant to any provision of the Virginia Stock Corporation Act (as it may be amended from time to time) or our articles of incorporation or our bylaws (as either may be amended from time to time), or (iv) any action against the Company or any current or former officer or other employee or agent or director of the Company governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring or holding any interest in shares of our capital stock shall be deemed to have notice of and consented to the forum provisions in our bylaws. It is possible that a court of law could rule that the choice of forum provision contained in our bylaws is inapplicable or unenforceable if it is challenged in a proceeding or otherwise.

Virginia Anti-takeover Statutes

Affiliated transactions statute. Virginia law contains provisions governing affiliated transactions. In general, these provisions prohibit a Virginia corporation from engaging in affiliated transactions with any holder of more than 10 percent of any class of its outstanding voting shares, or an interested shareholder, for a period of three years following the date that such person became an interested shareholder unless:

- a majority of (but not fewer than two) disinterested directors of the corporation and the holders of two-thirds of the voting shares, other than the shares beneficially owned by the interested shareholder, approve the affiliated transaction; or
- before or on the date the person became an interested shareholder, a majority of disinterested directors approved the transaction that resulted in the shareholder becoming an interested shareholder.

Affiliated transactions subject to this approval requirement include mergers, share exchanges, material dispositions of corporate assets not in the ordinary course of business, any dissolution of the corporation proposed by or on behalf of an interested shareholder or any reclassification, including reverse stock splits, recapitalizations or mergers of the corporation with its subsidiaries, which increases the percentage of voting shares owned beneficially by an interested shareholder by more than five percent.

Virginia law permits a corporation to exempt itself from this statutory provision by placing a statement to that effect in its articles of incorporation. Our articles of incorporation do not specifically address the Virginia statute regarding affiliated transactions; therefore, we are subject to this provision.

Control share acquisitions statute. Virginia law also contains provisions relating to control share acquisitions, which are transactions causing the voting strength of any person acquiring beneficial ownership of shares of a Virginia public corporation to meet or exceed certain threshold percentages (20 percent, 33 1/3 percent or 50 percent) of the total votes entitled to be cast for the election of directors. Shares acquired in a control share acquisition have no voting rights unless:

- the voting rights are granted by a majority vote of all outstanding shares entitled to vote in the election of directors, other than those held by the acquiring person or any officer or employee director of the corporation; or

- the articles of incorporation or bylaws of the corporation provide that these Virginia law provisions do not apply to acquisitions of its shares.

The acquiring person may require that a special meeting of the shareholders be held within 50 days of the corporation's receipt of the acquiring person's request to consider the grant of voting rights to the shares acquired in the control share acquisition. If voting rights are not granted and the corporation's articles of incorporation or bylaws permit, the acquiring person's shares may be repurchased by the corporation, at its option, at a price per share equal to the acquiring person's cost. Virginia law grants dissenters' rights to any shareholder who objects to a control share acquisition that is approved by a vote of disinterested shareholders and that gives the acquiring person control of a majority of the corporation's voting shares.

Our articles of incorporation provide that the statutory provisions governing control share acquisitions do not apply to our Company; therefore, we are not subject to this provision.

Authorized but Unissued Shares

The authorized but unissued shares of common stock and preferred stock are available for future issuance without shareholder approval, subject to any limitations imposed by the Nasdaq Stock Market LLC listing rules. These additional shares may be used for a variety of corporate finance transactions, acquisitions, and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could make it more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger, or otherwise.

Listing on the Nasdaq Global Select Market

Our common stock is listed on the Nasdaq Global Select Market under the symbol "PGEN".

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

DESCRIPTION OF DEBT SECURITIES

The following description summarizes certain terms and conditions of the debt securities that we will offer and sell pursuant to this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms and conditions of the series in a prospectus supplement to this prospectus. We will also indicate in the applicable prospectus supplement whether the general terms and conditions described in this prospectus apply to the series of debt securities. The terms and conditions of the debt securities of a series may be different in one or more respects from the terms and conditions described below. If so, those differences will be described in the applicable prospectus supplement. We urge you to read the applicable prospectus supplement and any related free writing prospectus, as well as the indenture, which may be amended or supplemented from time to time, that contains the terms of the debt securities.

The following summary of provisions of the indenture does not purport to be complete and is subject, and qualified in its entirety by reference, to the complete text of the indenture, including, but not limited to, definitions therein of certain terms. This summary may not contain all of the information that you may find useful. The terms and conditions of the debt securities of each series will be set forth in those debt securities and in the indenture and in the applicable prospectus supplement.

The form of indenture has been filed as an exhibit to the registration statement of which this prospectus forms a part. A form of each debt security, reflecting the specific terms and provisions of that series of debt securities, will be filed with the SEC in connection with each offering and will be incorporated by reference in the registration statement of which this prospectus forms a part.

General

We may offer the debt securities from time to time in as many distinct series as we may determine. The indenture does not limit the amount of debt securities that we may issue thereunder. We may, without the consent of the holders of the debt securities of any series, issue additional debt securities ranking equally with, and otherwise similar in all respects to, the debt securities of the series (except for the public offering price and the issue date) so that those additional debt securities will be consolidated and form a single series with the debt securities of the series previously offered and sold.

The debt securities of each series will be issued in fully registered form without interest coupons. We currently anticipate that the debt securities of each series offered and sold pursuant to this prospectus will be issued as global debt securities as described under “Global Debt Securities” and will trade in book-entry form only.

Debt securities denominated in U.S. dollars will be issued in denominations of \$2,000 and any integral multiple of \$1,000 in excess thereof, unless otherwise specified in the applicable prospectus supplement. If the debt securities of a series are denominated in a foreign or composite currency, the applicable prospectus supplement will specify the denomination or denominations in which those debt securities will be issued.

Unless otherwise specified in the applicable prospectus supplement, we will repay the debt securities of each series at 100% of their principal amount, together with any premium and accrued and unpaid interest thereon at maturity, except if those debt securities have been previously redeemed or purchased and cancelled.

Unless otherwise specified in the applicable prospectus supplement, the debt securities of each series will not be listed on any securities exchange.

Provisions of Indenture

A prospectus supplement, the indenture and a supplemental indenture or authorizing resolution of our board of directors (including any related officer’s certificate or Company order), if any, relating to any series of debt securities being offered will include specific terms relating to the offering. These terms will include some or all of the following:

- the form and title of the debt securities;
- the aggregate principal amount of the debt securities and any limit on the aggregate principal amount, provided, however, that such amount may from time to time be increased by a resolution of our board of directors;

- the price or prices at which the debt securities will be sold;
- the person to whom any interest on a debt security of the series will be payable, if other than the person in whose name that debt security is registered;
- the date or dates on which the principal of the debt securities will be payable;
- the rate or rates (fixed or variable, or combination thereof) at which the debt securities will bear interest, if any, or the method of determining such rate or rates;
- the date or dates on which any such interest shall be payable, the date or dates on which payment of any such interest will commence and the record dates, if any, for such payment date or dates, or the method of determining such date or dates, and the basis upon which interest shall be calculated if other than that of a 360-day year of twelve 30-day months, the right, if any, to extend or defer interest payments and the duration of such extension or deferral;
- any optional or mandatory redemption or repayment option, including any sinking fund, amortization or analogous provisions;
- if other than a minimum denomination equal to \$2,000 or an integral multiple of \$1,000 in excess thereof, the denominations in which any debt securities of the series will be issuable;
- any special tax implications of the debt securities, including provisions for original issue discount securities, if offered;
- any provisions granting special rights to holders when a specified event occurs;
- the percentage of the principal amount at which the debt securities will be issued and any payments due if the maturity of the debt securities is accelerated;
- any Events of Default or covenants with respect to the debt securities that differ from, or are in addition to, those set forth in the indenture;
- if other than U.S. dollars, the currency or currencies for which the debt securities will be issued or in which the principal thereof, any premium thereon and any interest thereon will be payable;
- provisions regarding the convertibility or exchangeability of the debt securities;
- provisions pertaining to the issuance of debt securities in the form of global debt securities, as described below;
- provisions relating to the satisfaction and discharge of the indenture;
- the form of and conditions to issuance of debt securities issuable in definitive form, other than as described below;
- if other than the trustee, the identity of any other trustee, the registrar for the debt securities and any paying agent;
- whether the debt securities of the series will be guaranteed by any persons and, if so, the identity of such persons, the terms and conditions upon which such debt securities will be guaranteed and, if applicable, the terms and conditions upon which such guarantees may be subordinated to other indebtedness of the respective guarantors;
- whether the debt securities of the series will be secured by any collateral and, if so, the terms and conditions upon which such debt securities will be secured and, if applicable, upon which such liens may be subordinated to other liens securing other indebtedness of us or of any guarantor;
- whether the debt securities will be issued in a transaction exempt from registration under the Securities Act and any restriction or condition on the transferability of the debt securities of such series;
- the exchanges, if any, on which the debt securities may be listed;
- the terms of any right to convert or exchange debt securities of such series into any other securities or property of ours or of any other corporation or person, and the additions or changes, if any, to the indenture with respect to the debt securities of such series to permit or facilitate such conversion or exchange; and

- any other terms not prohibited by the provisions of the indenture.

Global Debt Securities

Certain series of the debt securities may be issued as permanent global debt securities to be deposited with a depository with respect to that series. Unless otherwise indicated in the applicable prospectus supplement, the following is a summary of the depository arrangements applicable to debt securities issued in permanent global form and for which The Depository Trust Company, or DTC, acts as depository.

Each global debt security will be deposited with, or on behalf of, DTC, as depository, or its nominee and registered in the name of a nominee of DTC. Except under the limited circumstances described below, global debt securities are not exchangeable for definitive certificated debt securities.

Ownership of beneficial interests in a global debt security is limited to institutions that have accounts with DTC or its nominee, or participants, or persons that may hold interests through participants. In addition, ownership of beneficial interests by participants in a global debt security will be evidenced only by, and the transfer of that ownership interest will be effected only through, records maintained by DTC or its nominee for a global debt security. Ownership of beneficial interests in a global debt security by persons that hold through participants will be evidenced only by, and the transfer of that ownership interest within that participant will be effected only through, records maintained by that participant. DTC has no knowledge of the actual beneficial owners of the debt securities. Beneficial owners will not receive written confirmation from DTC of their purchase, but beneficial owners are expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the participants through which the beneficial owners entered the transaction. The laws of some jurisdictions require that certain purchasers of securities take physical delivery of such securities in definitive form. Such laws may impair the ability to transfer beneficial interests in a global debt security.

Payments on debt securities represented by a global debt security registered in the name of or held by DTC or its nominee will be made to DTC or its nominee, as the case may be, as the registered owner and holder of the global debt security representing the debt securities. We expect that upon receipt of any payments with respect to a global debt security, DTC will immediately credit accounts of participants on its book-entry registration and transfer system with payments in amounts proportionate to their respective beneficial interests in the principal amount of that global debt security as shown in the records of DTC. Payments by participants to owners of beneficial interests in a global debt security held through those participants will be governed by standing instructions and customary practices, as is now the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the sole responsibility of those participants, subject to any statutory or regulatory requirements that may be in effect from time to time.

Neither we, any trustee nor any of our respective agents will be responsible for any aspect of the records of DTC, any nominee or any participant relating to, or payments made on account of, beneficial interests in a permanent global debt security or for maintaining, supervising or reviewing any of the records of DTC, any nominee or any participant relating to such beneficial interests.

A global debt security is exchangeable for definitive debt securities registered in the name of, and a transfer of a global debt security may be registered to, any person other than DTC or its nominee, only if:

- DTC notifies us that it is unwilling or unable to continue as depository for that global debt security or at any time DTC ceases to be registered under the Exchange Act, and a successor depository is not appointed by us within 90 days after our receipt of such notice;
- there shall have occurred and be continuing an event of default under the debt securities and the registrar shall have received a request from the depository to issue certificated securities;
- we determine in our sole discretion that the global debt security will be exchangeable for definitive debt securities in registered form; or
- as may be provided in any applicable prospectus supplement.

Any global debt security that is exchangeable pursuant to the preceding sentence will be exchangeable in whole for definitive debt securities in registered form, of like tenor and of an equal aggregate principal

amount as the global debt security. The definitive debt securities will be registered by the registrar in the name or names instructed by DTC. We expect that these instructions may be based on directions received by DTC from its participants with respect to ownership of beneficial interests in the global debt security.

Except as provided above, owners of the beneficial interests in a global debt security will not be entitled to receive physical delivery of debt securities in definitive form and will not be considered the holders of debt securities for any purpose under the indenture. No global debt security will be exchangeable except for another global debt security of like denomination and tenor to be registered in the name of DTC or its nominee. Accordingly, each person owning a beneficial interest in a global debt security must rely on the procedures of DTC and, if that person is not a participant, on the procedures of the participant through which that person owns its interest, to exercise any rights of a holder under the global debt security or the indenture.

We understand that, under existing industry practices, in the event that we request any action of holders, or an owner of a beneficial interest in a global debt security desires to give or take any action that a holder is entitled to give or take under the debt securities or the indenture, DTC would authorize the participants holding the relevant beneficial interest to give or take that action, and those participants would authorize beneficial owners owning through those participants to give or take that action or would otherwise act upon the instructions of beneficial owners owning through them.

DTC is a limited purpose trust company organized under the laws of the State of New York, a “banking organization” within the meaning of the New York Banking Law, a member of the Federal Reserve System, a “clearing corporation” within the meaning of the New York Uniform Commercial Code and a “clearing agency” pursuant to the provisions of Section 17A of the Exchange Act. DTC was created to hold securities of its participants and to facilitate the clearance and settlement of securities transactions among its participants in those securities through electronic book-entry changes in accounts of the participants, thereby eliminating the need for physical movement of securities certificates. DTC’s participants include securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. DTC is a wholly owned subsidiary of The Depository Trust & Clearing Corporation, or DTCC. DTCC is the holding company for DTC, National Securities Clearance Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, such as banks, brokers, dealers, trust companies and clearing corporations that clear through or maintain a custodial relationship with a participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC. More information about DTC can be found at www.dtcc.com; the information contained on that website is not incorporated in this prospectus or in any prospectus supplement.

Certain Covenants

The indenture sets forth limited covenants that will apply to each series of debt securities issued under the indenture, unless otherwise specified in the applicable prospectus supplement. Under the indenture, we will agree to:

- pay the principal of, and interest and any premium on, the debt securities when due;
- maintain a place of payment;
- deliver an officer’s certificate to the trustee within 120 days after the end of each fiscal year regarding our review of compliance with our obligations under the indenture;
- maintain our corporate existence; and
- deposit sufficient funds with any paying agent on or before the due date for any payment of principal, interest or premium.

Consolidation, Merger or Asset Sale

The indenture generally will allow us to consolidate with or merge into any other person, association or entity. The indenture will also allow us to convey, transfer or lease our property and assets as, or substantially as, an entirety to a person, association or entity.

However, we will only consolidate with or merge into any other person, association or entity or convey, transfer or lease our properties and assets as, or substantially as, an entirety according to the terms and conditions of the indenture, including the following requirements:

- (i) we are the surviving person or (ii) the remaining or acquiring person, association or entity is a corporation or partnership organized under the laws of the United States, any state or the District of Columbia and expressly assumes all of our responsibilities and liabilities under the indenture, including the punctual payment of all amounts due on the debt securities and performance of the covenants in the indenture;
- immediately after giving effect to the transaction, no Event of Default, and no event which, after notice or lapse of time or both, would become an Event of Default, as defined below, exists; and
- delivery to the trustee of an officer's certificate and an opinion of counsel, each stating that all related conditions have been satisfied.

The remaining or acquiring person, association or entity will be substituted for us in the indenture with the same effect as if it had been an original party to the indenture. Thereafter, the successor may exercise our rights and powers under the indenture, in our name or in its own name. If we sell or transfer our assets substantially as an entirety, we will be released from all our liabilities and obligations under the indenture and the debt securities. If we lease our assets substantially as an entirety, we will not be released from our obligations under the indenture and the debt securities.

Events of Default

Unless otherwise specified in the applicable prospectus supplement, each of the following events will be an Event of Default under the indenture with respect to any series of debt securities issued under the indenture:

- failure to pay any interest on any debt security of the series when due, continued for 30 days;
- failure to pay principal of (or premium, if any, on) any debt security of the series when due;
- failure to deposit a sinking fund payment when and as due by the terms of a debt security of the series;
- failure to perform or comply with any covenant in the indenture or related supplemental indenture, continued for 90 days after written notice as provided in the indenture;
- certain events in bankruptcy, insolvency or reorganization affecting us; and
- any other Event of Default set forth in the indenture or supplemental indenture relating to the debt securities of that series.

An Event of Default for a particular series of debt securities does not necessarily constitute an Event of Default for any other series of debt securities issued under the indenture. The trustee may withhold notice to the holders of a series of debt securities of any default, except payment defaults of principal or interest or any premium on those debt securities, if it considers such withholding to be in the interest of the holders.

If an Event of Default occurs and is continuing, then the trustee or the holders of 25% in aggregate principal amount of the outstanding debt securities of that series may declare the entire principal amount of the debt securities of that series to be due and payable immediately; provided, however, that the holders of a majority of the aggregate principal amount of the debt securities of that series may, under certain circumstances, rescind and annul the declaration.

Subject to provisions in the indenture relating to its duties in case an Event of Default shall have occurred and be continuing, the trustee will not be under an obligation to exercise any of its rights or powers under the indenture at the request, order or direction of any holders of debt securities then outstanding under the indenture, unless the holders shall have offered to the trustee reasonable indemnity. If such reasonable indemnity is provided, the holders of a majority in aggregate principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any power conferred on the trustee, for any series of debt securities.

Defeasance

Debt securities of a series may be defeased at any time in accordance with their terms and as set forth in the indenture and described briefly below, unless the securities resolutions or supplemental indenture establishing the terms of the series provides otherwise. Any defeasance may terminate all of our obligations (with limited exceptions) with respect to a series of debt securities and the indenture, or legal defeasance, or it may terminate only our obligations under any restrictive covenants which may be applicable to a particular series, or covenant defeasance.

We may exercise our legal defeasance option even though we have also exercised our covenant defeasance option. If we exercise the legal defeasance option with respect to a series of debt securities, that series may not be accelerated because of an Event of Default. If we exercise the covenant defeasance option, that series of debt securities may not be accelerated by reference to any restrictive covenants which may be applicable to that particular series.

To exercise either defeasance option as to a series of debt securities, we must:

- irrevocably deposit in trust with the trustee or another trustee money or U.S. government obligations in an amount to pay and discharge the principal of and any premium and interest on the debt securities on the stated maturities or redemption dates therefor and any mandatory sinking fund payments;
- deliver a certificate from an independent public accountant or financial advisor expressing its opinion that the payments of principal and interest when due on the deposited U.S. government obligations, without reinvestment, plus any deposited money without investment, will provide cash at the times and in the amounts necessary to pay the principal of and premium and interest when due on all debt securities of the series to maturity or redemption, as the case may be, and any mandatory sinking fund payments; and
- comply with certain other conditions, including that there be no Event of Default at the time of deposit or Event of Default due to bankruptcy on or prior to the 90th day after the deposit date. In particular, we must obtain an opinion of tax counsel that the defeasance will not result in recognition of any gain or loss to holders for federal income tax purposes as a result of the deposit.

Discharge

We may discharge all our obligations under the indenture with respect to the notes of any series, other than our obligation to register the transfer of and to exchange notes of that series, when either:

- all outstanding notes of that series (except (i) mutilated, destroyed, lost or stolen notes that have been replaced or paid and notes for whose payment money has been deposited in trust and thereafter repaid to us and (ii) notes for whose payment money has theretofore been deposited in trust or segregated and held in trust by us and thereafter repaid to us or discharged from such trust) have been delivered to the trustee cancelled or for cancellation; or
- all such notes not so delivered for cancellation have either become due and payable or will become due and payable at their stated maturity within one year or are to be called for redemption within one year, and we have deposited with the trustee in trust an amount of cash sufficient to pay the entire indebtedness of such notes, including interest to the stated maturity or applicable redemption date; and
- we have paid all other sums due under the indenture and delivered an officer's certificate and opinion of counsel to the trustee stating that all related conditions have been satisfied.

Modification of the Indenture

Under the indenture, generally we and the trustee may modify our rights and obligations and the rights of the holders with the consent of the holders of not less than a majority in aggregate principal amount of the outstanding debt securities of each series affected by the modification.

No modification of the principal or interest payment terms, no modification reducing the percentage required for any waiver or modifications and no modification impairing the right to institute suit for the enforcement of any payment on debt securities of any series when due, is effective against any holder without its consent.

In addition, we and the trustee may amend the indenture without the consent of any holder of the debt securities to make certain changes, such as:

- curing ambiguities or correcting defects or inconsistencies;
- otherwise adding or changing provisions with respect to matters or questions arising under the indenture relating to a particular series of debt securities that does not adversely affect the rights of any holder in any material respect;
- evidencing the succession of another person to us, and the assumption by that successor of our obligations under the indenture and the debt securities of any series;
- providing for the acceptance of appointment by a successor trustee;
- qualifying the indenture under the Trust Indenture Act, or TIA;
- complying with the rules and regulations of any securities exchange or automated quotation system on which debt securities of any series may be listed or traded or any applicable depository;
- adding, changing or eliminating provisions relating to a particular series of debt securities to be issued, provided that any such addition, change or elimination (1) shall neither (i) apply to any debt security of any series created prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (ii) modify the rights of the holders of any such debt security with respect to such provision or (2) shall become effective only when there is not such debt security outstanding;
- to establish the form or terms of any debt securities of any series under the indenture; or
- to provide for the issuance of additional debt securities of any series.

No Individual Liability of Officers, Directors, Employees or Stockholders

No director, officer, employee or stockholder, as such, of ours or any of our affiliates will have any personal liability in respect of our obligations under the indenture or the debt securities by reason of his, her or its status as such.

Governing Law

The indenture and all the debt securities will be governed by, and construed in accordance with, the laws of the State of New York.

Regarding the Trustee

The indenture provides that there may be more than one trustee thereunder, each with respect to one or more series of debt securities. If there are different trustees for different series of debt securities, each trustee will be a trustee of a trust or trusts separate and apart from the trust or trusts administered by any other trustee under the indenture. Unless otherwise indicated in any applicable prospectus supplement, any action permitted to be taken by a trustee may be taken by such trustee only with respect to the one or more series of debt securities for which it is the trustee under the indenture. Any trustee under the indenture may resign or be removed with respect to one or more series of debt securities. All payments of principal of, and premium, if any, and interest on, and all registration, transfer, exchange, authentication and delivery (including authentication and delivery on original issuance of the debt securities) of, the debt securities of a series will be effected by the trustee with respect to that series at an office designated by the trustee.

We may maintain corporate trust relationships in the ordinary course of business with the trustee. The trustee shall have and be subject to all the duties and responsibilities specified with respect to the indenture trustee under the TIA. Subject to the provisions of the TIA, the trustee is under no obligation to exercise any

of the powers vested in it by the indenture at the request of any holder of debt securities, unless offered satisfactory indemnity by the holder against the costs, expense and liabilities which might be incurred thereby.

Under the TIA, the indenture is deemed to contain limitations on the right of the trustee, should it become a creditor of our company, to obtain payment of claims in some cases or to realize on certain property received in respect of any such claim as security or otherwise. The trustee may engage in other transactions with us. If it acquires any conflicting interest under the TIA relating to any of its duties with respect to the debt securities, however, it must eliminate the conflict or resign as trustee.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of shares of our common stock or preferred stock or of debt securities. We may issue warrants independently or together with other securities, and the warrants may be attached to or separate from any offered securities. Each series of warrants may be issued under a separate warrant agreement to be entered into between us and the investors or a warrant agent. The following description summarizes certain provisions of the warrants and warrant agreements and is subject, and qualified in its entirety by reference, to the complete text of the warrant agreement and warrant certificate applicable to a particular series of warrants. The terms of any warrants offered under a prospectus supplement may differ from the terms described below. We urge you to read the applicable prospectus supplement and any related free writing prospectus, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants.

The particular terms of any issue of warrants will be described in the prospectus supplement relating to the issue. Those terms may include:

- the number of shares of common stock or preferred stock purchasable upon the exercise of warrants to purchase such shares and the price at which such number of shares may be purchased upon such exercise;
- the designation, stated value and terms (including, without limitation, liquidation, dividend, conversion, and voting rights) of the series of preferred stock purchasable upon exercise of warrants to purchase preferred stock;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
- the date, if any, on and after which the warrants and the related debt securities, preferred stock or common stock will be separately transferable;
- the terms of any rights to redeem or call the warrants;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;
- certain United States federal income tax consequences applicable to the warrants; and
- any additional terms of the warrants, including terms, procedures, and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of equity warrants will not be entitled:

- to vote, consent or receive dividends;
- to receive notice as shareholders with respect to any meeting of shareholders for the election of our directors or any other matter; or
- to exercise any rights as shareholders of the Company.

Each warrant will entitle its holder to purchase the principal amount of debt securities or the number of shares of preferred stock or common stock at the exercise price set forth in, or calculable as set forth in, the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

A holder of warrant certificates may exchange them for new warrant certificates of different denominations, present them for registration of transfer and exercise them at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement. Until any warrants to purchase debt securities are exercised, the holder of the warrants will not have any rights of holders of the debt securities that can be purchased upon exercise, including any rights to receive payments of principal, premium or interest on the underlying debt securities or to enforce covenants in the applicable indenture. Until any warrants to purchase common stock or preferred stock are exercised, the holders of the warrants

will not have any rights of holders of the underlying common stock or preferred stock, including any rights to receive dividends or payments upon any liquidation, dissolution or winding up on the common stock or preferred stock, if any.

The description in the applicable prospectus supplement of any warrants that we may offer will not necessarily be complete and will be subject, and qualified in its entirety by reference, to the complete text any applicable warrant agreement and certificate, which will be filed with the SEC.

DESCRIPTION OF RIGHTS

We may issue rights to purchase debt securities, preferred stock, common stock or other securities. These rights may be issued independently or together with any other security offered hereby and may or may not be transferable by the shareholder receiving the rights in such offering. The applicable prospectus supplement may add, update or change the terms and conditions of the rights as described in this prospectus. We urge you to read the applicable prospectus supplement and any related free writing prospectus, as well as the complete rights agreements and rights certificates that contain the terms of the rights.

The applicable prospectus supplement will describe the specific terms of any offering of rights for which this prospectus is being delivered, including the following:

- the price, if any, per right;
- the exercise price payable for debt securities, preferred stock, common stock, or other securities upon the exercise of the rights;
- the number of rights issued or to be issued to each shareholder;
- the number and terms of debt securities, preferred stock, common stock, or other securities which may be purchased per right;
- the extent to which the rights are transferable;
- any other terms of the rights, including the terms, procedures and limitations relating to the exchange and exercise of the rights;
- the date on which the holder's ability to exercise the rights shall commence, and the date on which the rights shall expire;
- the extent to which the rights may include an over-subscription privilege with respect to unsubscribed securities; and
- if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of such rights.

Holders may exercise rights as described in the applicable prospectus supplement. Upon receipt of payment and the rights certificate properly completed and duly executed at the corporate trust office of the rights agent or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the applicable securities purchased upon exercise of the rights. If less than all of the rights issued in any rights offering are exercised, we may offer any unsubscribed securities directly to persons other than shareholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby arrangements with one or more underwriters or other purchasers, pursuant to which the underwriters or other purchasers may be required to purchase any securities remaining unsubscribed for after such offering, as described in the applicable prospectus supplement.

The description in the applicable prospectus supplement of any rights that we may offer will not necessarily be complete and will be subject, and qualified in its entirety by reference, to the applicable rights agreement and rights certificate, which will be filed with the SEC.

DESCRIPTION OF STOCK PURCHASE CONTRACTS

We may issue stock purchase contracts, including contracts obligating holders to purchase from or sell to us, and obligating us to sell to or purchase from the holders, a specified number of shares of common stock, preferred stock or other securities at a future date or dates, which we refer to in this prospectus as stock purchase contracts. The price per share of the securities and the number of shares of the securities may be fixed at the time the stock purchase contracts are issued or may be determined by reference to a specific formula set forth in the stock purchase contracts, and may be subject to adjustment under anti-dilution formulas.

The applicable prospectus supplement will describe the material terms of the stock purchase contracts. We urge you to read the applicable prospectus supplement and any related free writing prospectus, as well as the complete stock purchase contract agreements and stock purchase contracts that contain the terms of the stock purchase contracts. Certain United States federal income tax considerations applicable to the stock purchase contracts will also be discussed in the applicable prospectus supplement.

The description in the applicable prospectus supplement of any stock purchase contracts that we may offer will not necessarily be complete and will be subject, and qualified in its entirety by reference, to the applicable stock purchase contract, and, if applicable, collateral or depositary arrangements relating to the stock purchase contract, which will be filed with the SEC.

DESCRIPTION OF UNITS

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. We will indicate the name and address of any unit agent in the applicable prospectus supplement relating to a particular series of units.

The following description, together with the additional information included in any applicable prospectus supplement, summarizes certain features of the units that we may offer under this prospectus. We urge you to read the applicable prospectus supplement and any related free writing prospectus, as well as the complete unit agreements that contain the terms of the units. If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain United States federal income tax considerations applicable to the units; and
- any other terms of the units and their constituent securities.

The description in the applicable prospectus supplement of any units that we may offer will not necessarily be complete and will be subject, and qualified in its entirety by reference, to the applicable unit agreement, which will be filed with the SEC.

PLAN OF DISTRIBUTION

We may sell the offered securities from time to time:

- through underwriters or dealers;
- through agents;
- directly to one or more purchasers; or
- through a combination of any of these methods of sale.

We will identify the specific plan of distribution, including any underwriters, dealers, agents or direct purchasers and their compensation in the applicable prospectus supplement.

LEGAL MATTERS

Certain legal matters relating to the issuance and sale of the securities offered hereby will be passed upon for us by our counsel, Hogan Lovells US LLP, Baltimore, Maryland. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The financial statements incorporated in this prospectus by reference from the 2019 Annual Report for the year ended December 31, 2019, and the effectiveness of the Company's internal control over financial reporting, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports, which are incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

The financial statements as of December 31, 2018 and for each of the two years in the period ended December 31, 2018 incorporated in this prospectus by reference to the 2019 Annual Report have been so incorporated in reliance on the report (which contains an explanatory paragraph relating to the Company's ability to continue as a going concern as described in Note 1 to the financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

42,857,143 Shares



Common Stock

Prospectus supplement

Book-Running Managers

J.P. Morgan

Cantor

Lead Manager

JMP Securities
A CITIZENS COMPANY

Co-Manager

H.C. Wainwright & Co.
