Registration No. 333-228031

As filed with the Securities and Exchange Commission on September 14, 2020

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

POST-EFFECTIVE AMENDMENT NO. 2
ON
FORM S-1
TO
FORM S-4 (FILE NO. 333-228031)

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Predictive Oncology Inc.
(Exact name of registrant as specified in its charter)

Delaware	**3842**	**33-1007393**
(State or jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

2915 Commers Drive, Suite 900
Eagan, Minnesota 55121
(651) 389-4800
(Address and telephone number of registrant's principal executive offices and principal place of business)

Bob Myers
Chief Financial Officer
Predictive Oncology Inc.
2915 Commers Drive, Suite 900
Eagan, Minnesota 55121
(651) 389-4800
(Name, address and telephone number of agent for service)

Copy to:
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Approximate date of commencement of proposed sale to the public: From time to time on or after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box: ☒

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

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

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

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

Large accelerated filer ☐
Non-accelerated filer ☒
Emerging growth company ☐

Accelerated filer ☐
Smaller reporting company ☒

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

EXPLANATORY NOTE

This Post-Effective Amendment No. 2 on Form S-1 ("Post-Effective Amendment No. 2") is being filed pursuant to Section 10(a)(3) of the Securities and Exchange Act of 1933, as amended, to update the Registration Statement on Form S-4 (File No. 333-228031), which became effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, on February 13, 2019. More specifically, this Post-Effective Amendment No. 2 reflects an amendment to the terms of the Exchange Warrants (as defined below). No additional securities are being registered under this Post-Effective Amendment No. 2. All applicable registration fees were paid at the time of the original filing of the Registration Statement.

In connection with its merger transaction (the "Merger") with Helomics Holding Corporation ("Helomics"), which was completed on April 4, 2019, Predictive Oncology Inc. (the "Company") consummated an exchange offer with certain of Helomics' existing investors that included, among other things, the exchange of warrants to purchase shares of Helomics common stock held by such investors (the "Helomics Warrants") for warrants (the "Exchange Warrants") to purchase shares of the Company's common stock, par value $0.01 per share ("Common Stock"), at an exercise price of $10.00 per share (as adjusted for a one-for-ten (1:10) reverse stock split that was effective on October 29, 2019 (the "2019 Reverse Split")). This Post-Effective Amendment No. 2 is being filed to reflect an amendment to the Exchange Warrants to reduce the exercise price as provided in this Post-Effective Amendment No. 2. This Post-Effective Amendment No. 2 also updates the Registration Statement on Form S-4 to incorporate by reference current financial information and other information required under Section 10(a)(3) of the Securities Act of 1933, as amended.

Up to 1,424,506 shares of Common Stock, as adjusted for the 2019 Reverse Split, are issuable upon the exercise of the Exchange Warrants. Pursuant to Rule 416 under the Securities Act of 1933, as amended, this Registration Statement also covers an indeterminate amount of additional shares of Common Stock that may hereafter be offered or issued with respect to the shares registered hereby resulting from stock splits, stock dividends, recapitalizations or certain other capital adjustments.

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

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

PRELIMINARY PROSPECTUS, SUBJECT TO COMPLETION - DATED SEPTEMBER 14, 2020

PREDICTIVE ONCOLOGY INC.

Warrants to Purchase 1,424,506 Shares of Common Stock

This prospectus relates to the issuance by us of up to 1,424,506 shares of our common stock, par value $0.01 per share ("Common Stock") issuable upon the exercise of certain warrants (the "Exchange Warrants") to purchase shares of Common Stock issued in connection with our merger transaction (the "Merger") with Helomics Holding Corporation, which was completed on April 4, 2019. In order to obtain the shares of Common Stock, the Exchange Warrant holders must pay an exercise price equal to $0.845 per share, equal to last reported per share price of Common Stock on the Nasdaq Capital Market on September 11, 2020, the last trading day before the date of this prospectus.

We will not receive any proceeds from the sale of the shares of Common Stock covered by this prospectus other than proceeds from the exercise of the Exchange Warrants. Our common stock is listed on the Nasdaq Capital Market under the symbol "POAI." On September 11, 2020, the last reported per share price of our common stock on the Nasdaq Capital Market was $0.845 per share.

Investing in Common Stock involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks that we have described beginning on page 8 of this prospectus under the caption "Risk Factors" and in the documents incorporated by reference into this prospectus.

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

The date of this prospectus is [●], 2020.

Table of Contents

ABOUT THIS PROSPECTUS

This document, which forms part of a post-effective amendment on Form S-1 to a registration statement on Form S-4 filed with the Securities and Exchange Commission (the "SEC") by Predictive Oncology Inc., formerly known as Precision Therapeutics Inc. (the "Company") (File No. 333-228031), constitutes a prospectus of the Company under Section 5 of the U.S. Securities Act of 1933, as amended (the "Act"), with respect to the shares of Common Stock to be issued upon exercise of the Exchange Warrants. You should not assume that the information contained in this prospectus is accurate on any date subsequent to the date set forth on the front cover of this prospectus or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus is delivered or securities are sold or otherwise disposed of on a later date. It is important for you to read and consider all information contained in this prospectus, including the Information Incorporated by Reference herein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you under the captions "Where You Can Find More Information" and "Incorporation of Information by Reference" in this prospectus.

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus. You should not rely upon any information or representation not contained or incorporated by reference in this prospectus. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any of our securities other than the securities covered hereby, nor does this prospectus constitute an offer to sell or the solicitation of an offer to buy any securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. Persons who come into possession of this prospectus in jurisdictions outside the United States are required to inform themselves about, and to observe, any restrictions as to the offering and the distribution of this prospectus applicable to those jurisdictions.

We further note that the representations, warranties and covenants made in any agreement that is filed as an exhibit to any document that is incorporated by reference in the prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

Unless the context otherwise requires, references in this prospectus to "Predictive," the "Company," "we," "us," and "our" refer to Predictive Oncology Inc.

You should rely only on the information contained or incorporated by reference, as applicable, in this prospectus, any prospectus supplement, or other offering materials related to an offering of securities described in this prospectus. We have not authorized anyone to provide you with different or additional information. If anyone provides you with different or additional information, you should not rely on it.

You should not assume that the information contained or incorporated by reference, as applicable, in this prospectus, any prospectus supplement, or other offering materials related to an offering of securities described in this prospectus is accurate as of any date other than the date of that document. Neither the delivery of this prospectus, any prospectus supplement or other offering materials related to an offering of securities described in this prospectus, nor any distribution of securities pursuant to this prospectus, any such prospectus supplement, or other offering materials shall, under any circumstances, create any implication that there has been no change in the information set forth or incorporated by reference, as applicable, in this prospectus, any such prospectus supplement or other offering materials since the date of each such document. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus does not constitute, and any prospectus supplement or other offering materials related to an offering of securities described in this prospectus will not constitute, an offer to sell, or a solicitation of an offer to purchase, the offered securities in any jurisdiction to or from any person to whom or from whom it is unlawful to make such offer or solicitation in such jurisdiction.

PROSPECTUS SUMMARY

This summary contains basic information about us. You should read the entire prospectus carefully, especially the risks of investing in our securities discussed under "Risk Factors." Some of the statements contained in this prospectus supplement, including statements under this summary and "Risk Factors" are forward-looking statements and may involve a number of risks and uncertainties. We note that our actual results and future events may differ significantly based upon a number of factors. You should not put undue reliance on the forward-looking statements in this document, which speak only as of the date on the cover of this prospectus. For a more complete understanding of the Company 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 accompanying prospectus, and the information included in any free writing prospectus that we have authorized for use in connection with this offering. References to "we," "our," "us," the "Company," or "Predictive" refer to Predictive Oncology Inc., a Delaware corporation.

Company Overview

Predictive Oncology Inc. (NASDAQ: POAI) operates in two primary business areas: first, application of artificial intelligence ("AI") in our precision medicine business, to provide AI-driven predictive models of tumor drug response to improve clinical outcomes for patients and to assist pharmaceutical, diagnostic, and biotech industries in the development of new personalized drugs and diagnostics; and second, production of the United States Food and Drug Administration ("FDA")-cleared STREAMWAY® System for automated, direct-to-drain medical fluid disposal and associated products.

We have three operating segments: domestic, international, and Helomics. Domestic and international consist of the STREAMWAY System product sales. The Helomics segment consists of clinical testing and contract research. Our TumorGenesis subsidiary is included within corporate. Going forward, we have determined that we will focus our resources on the Helomics segment and our primary mission of applying AI to precision medicine and drug discovery. Our recent acquisitions of substantially all of the assets of Soluble Therapeutics, Inc., BioDtech, Inc., and Quantitative Medicine LLC, as described in greater detail below, align with this mission.

Precision Medicine Business

Our precision medicine business, conducted in our Helomics division, is committed to improving the effectiveness of cancer therapy using our proprietary, multi-omic tumor profiling platform, one-of-a-kind database of historical tumor data, and the power of AI to build predictive models of tumor drug response.

Helomics' mission is to improve clinical outcomes for patients by partnering with pharmaceutical, diagnostic, and academic organizations to bring innovative clinical products and technologies to the marketplace. In addition to our proprietary patient-derived ("PDx") tumor profiling platform for oncology, Helomics offers: 1) data and AI driven contract research organization ("CRO") services for clinical and translational research that leverage PDx tumor models, 2) a wide range of multi-omics assays (genomics, proteomics, and biochemical), and 3) AI driven predictive models to drive the discovery of targeted therapies.

Contract Research Organization (CRO) and AI-Driven Business

We believe leveraging our unique, historical database of the drug responses of over 150,000 patient tumors to build AI and data-driven multi-omic predictive models of tumor drug response and outcome will provide actionable insights critical to both new drug development and individualizing patient treatment. Our large historical database of tumors and related data, plus our ability to obtain the associated patient outcome data is a significant competitive advantage. Cancer treatments require at least 5 years of testing to provide sufficient information on progression-free survival rates. While competitors must wait for this data, we can leverage it today. These AI-driven predictive models, coupled with the PDx platform will create a unique service to drive revenue generating projects with pharma, diagnostic and biotech companies in areas such as biomarker discovery, drug screening, drug repurposing, and clinical trials. The AI-driven models will, once validated, also provide clinical decision support to help oncologists individualize treatment.

Our CRO/AI business is committed to improving the process of targeted therapy discovery. Our proprietary, TruTumor™ multi-omic PDx profiling and AI platform coupled to our vast multi-omic database of biochemical and clinical information on patients with cancer, uses deep learning to understand the association between the mutational profile of a patient's tumor and the drug response profile of the tumor that is grown in the lab. This approach is used to build an AI-driven predictive model that offers actionable insights of which mutations in the tumor are associated with drugs to which the tumor is sensitive and which will lead to the optimal outcome for the patient.

Our CRO services business applies these AI-driven predictive models coupled with our unique proprietary TruTumor PDx model to address a range of needs from discovery through clinical and translational research, to clinical trials and diagnostic development and validation as noted below:

Research

- Biomarker discovery
- Drug discovery
- Drug-repurposing

Development

- Patient enrichment & selection for trials
- Clinical trial optimization
- Adaptive trials

Clinical Decision Support

- Patient stratification
- Treatment selection

We believe this market segment has significant growth potential and we believe we are differentiated from traditional CRO's and other precision medicine and AI companies through these unique assets:

- clinically validated PDx platform;
- database of over 150,000 tumor cases;
- experienced AI team and AI platform;
- ability to access outcome data going back over ten years for over 120,000 of the tumor cases in our database.

Industry and Market Background and Analysis – Precision Medicine Business

Precision medicine is an emerging approach for disease treatment and prevention that considers individual variability in genes, disease, environment, and lifestyle for each case to develop effective therapies. This approach allows doctors and researchers to predict more accurately which treatment, dose, and therapeutic regimen could provide the best possible outcome. The global precision medicine market is estimated to reach $141.7 billion by 2026, up from $43.6 billion in 2016. This growth is supported by the industry's investment in precision medicine, with leading biopharmaceutical companies doubling their investments in the technology over the last five years, with the potential to increase by an additional 33% over the next five years (Source: BIS Research's Global Precision Medicine Market to Reach $141.70 Billion by 2026, December 2017).

Over the past several decades, researchers have identified molecular patterns that are useful in defining the prognosis of a given cancer, determining the appropriate treatments, and designing targeted treatments to address specific molecular alterations. The objective of precision medicine as directed towards cancer therapy is to develop treatments tailored to the genetic changes in each person's cancer, intended to improve the effectiveness of the therapeutic regimen and minimize the treatment's effects on healthy cells. However, for a majority of patients the reality is that while many mutations in the patient's tumor can be identified most are not actionable with current protocols. As a result, the impact of targeted therapies is low, and uptake in clinical practice is inconsistent.

There is now a growing realization that genomics alone will not be enough to achieve the promise of personalized therapeutics, especially for cancer. A multi-omic approach (e.g. assessing the genome, transcriptome, epigenome, proteome, responseome, and microbiome) provides researchers and clinicians the comprehensive information necessary for new drug development and individualized therapy. Comparatively, the multi-omic approach provides a three-dimensional, 360-degree view of the cancer, while genomics alone is just a flat, one-dimensional view. However, multi-omic data is difficult to access quickly as it is both costly and time consuming to initiate prospective data collection, and few comprehensive, multi-omic datasets exist, especially specific to cancer.

Clinical Testing

Via our Helomics subsidiary, we offer a group of clinically relevant, cancer-related tumor profiling and biomarker tests for gynecological cancers that determine how likely the patient is to respond to various types of chemotherapy and which therapies might be indicated by relevant tumor biomarkers.

Clinical testing is comprised of ChemoFx and BioSpeciFx tests. The ChemoFx test determines how a patient's tumor specimen responds to a panel of various chemotherapy drugs, while the BioSpeciFx test evaluates the expression of a specific genes, or biomarkers, in the patient's tumor. Our proprietary TruTumor™ PDx tumor platform provides us with the ability to work with actual live tumor cells to study the unique biology of the patient's tumor in order to understand how the patient responds to treatment.

Testing involves obtaining tumor tissue during biopsy or surgery which is then sent to our Clinical Laboratory Improvement Amendments ("CLIA") certified laboratory using a special collection kit. Two samples of the tumor tissue are obtained, fixed and live. The fixed tumor tissue is tested for a panel of biomarkers using a combination of Immunohistochemistry and Quantitative Polymerase Chain Reactions. The live tumor tissue is grown in the lab and used to test the drug response of the tumor to a panel of standard-of-care drugs. When testing is complete a report is provided back to the clinician with recommended therapies based on the drug response and biomarker profiles. Helomics integrates the drug response with other genomic and molecular data and compares it with historical data in our database to generate a roadmap that provides additional context to help the oncologist personalize patient treatment.

Recently Completed Acquisitions

In May 2020, the Company completed the purchase of substantially all of the assets of Soluble Therapeutics, Inc. and BioDtech, Inc. The Company is operating the assets acquired within its new direct subsidiary, Soluble Biotech, which offers services to pharmaceutical and biotech companies to screen proteins for both solubility and stability, with possible applications to vaccines, antibodies and other proteins used in disease treatment. The acquired technologies also specialize in removing, identifying, and isolating endotoxins from products that are used by researchers to culture cells and to help identify endotoxins that maybe hidden within a protective matrix.

On July 1, 2020, the Company entered into an Asset Purchase Agreement with Quantitative Medicine LLC, a Delaware limited liability company ("Quantitative") and its owners and simultaneously completed the acquisition of substantially all of the assets owned by Quantitative. Quantitative is a biomedical analytics and computational biology company which has developed its novel, computational drug-discovery platform CoRE™. CoRE is designed to dramatically reduce the time, cost, and financial risk of discovering new therapeutic drugs by predicting the main effects of drugs on target molecules that mediate disease. By coupling CoRE, with Helomics' TruTumor™ PDx tumor platform, Helomics multi-omic database of biochemical and clinical information on patients with cancer, and AI-driven predictive models, we will offer a novel, one-of-a-kind capability for discovery of precision therapies that are expected to have considerable value to the industry.. In the acquisition, the Company provided consideration in the form of 954,719 shares of common stock (the "Transaction Shares"), which, when issued, had a market value of approximately $1,750,000. Half of the Transaction Shares, representing 477,359 shares were deposited and held in escrow in connection with the sellers' indemnification obligations, while 207,144 of the remaining Transaction Shares were issued to Carnegie Mellon University ("CMU") in satisfaction of all pre-closing amounts owed to CMU by Seller under a technology licensing agreement between CMU and Seller that was assumed by the Company on the Closing Date. The remaining Transaction Shares were issued to Quantitative, subject to certain restrictions.

Business Strategy for Precision Medicine Business

We are a data and AI-driven discovery services company that provides AI-driven predictive models of tumor drug response to improve clinical outcomes for patients by leveraging our two primary unique assets:

- A clinically validated PDx tumor profiling platform, TruTumor, that can generate drug response profiles and other multi-omic data. Over $200 million has been invested in this platform and was clinically validated in ovarian cancer.

- Data on the drug response profiles of over 150,000 tumors across 137 cancer types tested using the PDx platform in over 10+ years of clinical testing. We call this database TumorSpace™.

Over 38,000 of the more than 150,000 clinically validated cases in our TumorSpace™ database are specific to ovarian cancer. The data in TumorSpace is highly differentiated, having both drug response data, biomarkers and access to historical outcome data from those patient samples. We intend to generate additional data (genomics and transcriptomics) from these tumor samples to deliver a multi-omic approach to the pharmaceutical industry. Through our Helomics subsidiary, we will utilize both this historical data and the PDx platform to build AI-driven predictive models of tumor drug response and outcome through our CancerQuest 2020 ("CCQ2020") initiative, which is still ongoing. Once validated, we will commercialize these AI-driven predictive models in revenue generating service projects with pharmaceutical, biotech, and diagnostic companies.

A key part of our commercialization strategy for the CCQ2020 initiative is the understanding that our AI-driven models of tumor drug response serves a key unmet need of pharmaceutical, diagnostic, and biotech industries for actionable multi-omic insights on cancer. In collaboration with these companies, using the predictive models, we will accelerate the search for more individualized and effective cancer treatments, through revenue generating projects in biomarker discovery, drug screening, drug repurposing, and clinical trials.

Our commercial strategy has identified a portfolio of revenue generating project types that leverage the predictive models, our AI expertise, PDx tumor profiling, and CLIA laboratory to provide custom solutions utilizing our full array of assets and expertise.

The CCQ2020 initiative will focus initially on ovarian cancer, which is where we have the most expertise, samples, data, and access to outcomes. However, we intend to expand the initiative to include cancers of the lung, breast, colon, and prostate, and will actively seek partners to assist in that effort.

Within the clinical sector, we will utilize these predictive models (once validated) for new clinical decision support tools for individualizing therapy for patients with cancer. These clinical decision support tools are a longer revenue horizon than the research projects with pharmaceutical companies but, importantly, will provide a steady stream of additional data generation to refine the predictive models for both clinical and research applications.

Skyline Medical – The STREAMWAY System

Sold through our subsidiary, Skyline Medical, Inc ("Skyline Medical"), the STREAMWAY System virtually eliminates staff exposure to blood, irrigation fluid and other potentially infectious fluids found in the healthcare environment. Antiquated manual fluid handling methods that require hand carrying and emptying filled fluid canisters present both an exposure risk and potential liability. Skyline Medical's STREAMWAY System fully automates the collection, measurement, and disposal of waste fluids and is designed to: 1) reduce overhead costs to hospitals and surgical centers; 2) improve compliance with the Occupational Safety and Health Administration ("OSHA") and other regulatory agency safety guidelines; 3) improve efficiency in the operating room and radiology and endoscopy departments, thereby leading to greater profitability; and 4) provide greater environmental stewardship by helping to eliminate the approximately 50 million potentially disease-infected canisters that go into landfills each year in the United States.

In December 2019, we announced that we had received indications of interest from several parties for the possible acquisition of our Skyline Medical division, and we reaffirmed that we are focusing our resources on our precision medicine business. We continue to operate the Skyline Medical business with a focus on maximizing our strategic opportunities with respect to this division. As of the date of this Registration Statement, we have no definitive agreement in place.

Industry and Market Background and Analysis - Infectious and Bio-hazardous Waste Management

There has long been recognition of the collective potential for ill effects to healthcare workers from exposure to infectious/bio-hazardous materials. Federal and state regulatory agencies have issued mandatory guidelines for the control of such materials, and in particular, bloodborne pathogens. OSHA's Bloodborne Pathogens Standard (29 CFR 1910.1030) requires employers to adopt engineering and work practice controls that would eliminate or minimize employee exposure from hazards associated with bloodborne pathogens. In 2001, in response to the Needlestick Safety and Prevention Act, OSHA revised the Bloodborne Pathogens Standard. The revised standard clarifies and emphasizes the need for employers to select safer needle devices and to involve employees in identifying and choosing these devices. The revised standard also calls for the use of "automated controls" as it pertains to the minimization of healthcare exposure to bloodborne pathogens.

Most surgical procedures produce potentially infectious materials that must be disposed with the lowest possible risk of cross-contamination to healthcare workers. Current standards of care allow for these fluids to be retained in canisters and located in the operating room where they can be monitored throughout the surgical procedure. Once the procedure is complete these canisters and their contents are disposed using a variety of methods, all of which include manual handling and result in a heightened risk to healthcare workers for exposure to their contents. Canisters are the most prevalent means of collecting and disposing of infectious fluids in hospitals today. Traditional, non-powered canisters and related suction and fluid disposable products are exempt and do not require FDA clearance.

We believe that our virtually hands free direct-to-drain technology (1) significantly reduces the risk of healthcare worker exposure to these infectious fluids by replacing canisters, (2) further reduces the risk of worker exposure when compared to powered canister technology that requires transport to and from the operating room, (3) reduces the cost per procedure for handling these fluids, and (4) enhances the surgical team's ability to collect data to accurately assess the patient's status during and after procedures. In addition to the traditional canister method of waste fluid disposal, several other powered medical devices have been developed that address some of the deficiencies described above. Most of these competing products continue to utilize some variation on the existing canister technology, and while not directly addressing the canister, most have been successful in eliminating the need for an expensive gel and its associated handling and disposal costs. Our existing competitors with products already on the market have a clear competitive advantage over us in terms of brand recognition and market exposure. In addition, many of our competitors have extensive marketing and development budgets that could overpower an emerging growth company like ours.

We expect the hospital surgery market to continue to increase due to population growth, the aging of the population, and expansion of surgical procedures to new areas (for example, use of the endoscope) which requires more fluid management and new medical technology.

STREAMWAY System Product Sales

Our domestic and international segments consist primarily of sales of the STREAMWAY System, as well as sales of the proprietary cleaning fluid and filters for use with the STREAMWAY System. We manufacture an environmentally conscious system for the collection and disposal of infectious fluids resulting from surgical and other medical procedures. We have been granted patents for the STREAMWAY System in the United States, Canada, and Europe. We distribute our products to medical facilities where bodily and irrigation fluids produced during medical procedures must be contained, measured, documented, and disposed. Our products minimize the exposure potential to the healthcare workers who handle such fluids. In addition to simplifying the handling of these fluids, our goal is to create products that dramatically reduce staff exposure without significant changes to established operative procedures, historically a major industry stumbling block to innovation and product introduction.

The STREAMWAY System is a wall-mounted fully automated system that disposes of an unlimited amount of suction fluid providing uninterrupted performance for physicians while virtually eliminating healthcare workers' exposure to potentially infectious fluids collected during surgical and other patient procedures. The STREAMWAY System also provides an innovative way to dispose of ascites and pleural fluid with no evac bottles, suction canisters, transport, or risk of exposure. We also manufacture and sell two disposable products required for the operation of the STREAMWAY System: a bifurcated dual port procedure filter with tissue trap and a single use bottle of cleaning solution. Both items are utilized on a single procedure basis and must be discarded after use. The STREAMWAY disposables are a critical component of our business model. Recurring revenues from the sale of the disposables are expected to be significantly higher over time than the revenues from the initial sale of the unit. We have exclusive distribution rights to the disposable solution.

We sell our medical device products directly to hospitals and other medical facilities using employed sales representatives, independent contractors and distributors.

TumorGenesis Division

Our subsidiary, TumorGenesis, is pursuing a new rapid approach to growing tumors in the laboratory, which essentially "fools" the cancer cells into thinking they are still growing inside the patient. We have also announced a proposed joint venture with GLG Pharma focused on using their combined technologies to bring personalized medicines and testing to ovarian and breast cancer patients, especially those who present with ascites fluid (over one-third of patients).

Ability to Continue as a Going Concern

We have suffered recurring losses from operations, and we have significant debt repayment obligations that are due within the current year. Although we have been able to fund our current working capital requirements, principally through debt and equity financing, there is no assurance that we will be able to do so in the future. As a result of our capital needs for operations and debt repayment, we need to raise significant capital, and there is no assurance that we will be successful in raising sufficient capital. As a result management has substantial doubt about our ability to continue as a going concern.

Corporate Information

We were originally incorporated on April 23, 2002 and reincorporated in Delaware in 2013. We changed our name from Skyline Medical, Inc. to Precision Therapeutics, Inc. on February 1, 2018 and to Predictive Oncology, Inc. on June 13, 2019.

Our address is 2915 Commers Drive, Suite 900, Eagan, Minnesota 55121. Our telephone number is (651) 389-4800, and our website address is www.predictive-oncology.com. The information contained on, or that can be accessed through, our website is not part of this prospectus.

Recent Developments

On July 8, 2020, Andrew P. Reding resigned from the Board of Directors of the Company, effective immediately. Effective July 9, 2020, the Board elected Chuck Nuzum, Nancy Chung-Welch, Ph.D., and Gregory S. St.Clair to the Board. They were chosen to fill the vacancies created by the resignations of Pam Prior, Gerald J. Vardzel, Jr. and Andrew P. Reding, respectively. Mr. Nuzum was also chosen to chair the Board's Audit Committee. As a Class I director, his term will expire at the 2022 annual meeting of the Company's stockholders, while Dr. Chung-Welch's and Mr. St.Clair's terms will expire at the 2020 annual meeting of the Company's stockholders (as with the other Class II directors).

The annual meeting of the Company's stockholders was held on September 3, 2020. At the Annual Meeting, among other matters, the stockholders took the following actions: elected three directors – J. Melville Engle, Gregory S. St.Clair, Sr., and Dr. Nancy Chung-Welch; approved the repricing of outstanding stock options issued under the Company's Amended and Restated 2012 Stock Incentive Plan and held by current officers or employees of the Company which had an exercise price higher than $1.54 per share, to an exercise price of $1.54; and approved an Amended and Restated 2012 Stock Incentive Plan, including an increase in the reserve of shares of common stock authorized for issuance thereunder by 750,000, to 1,750,000.

Risk Factors

Our business is subject to numerous risks. For a discussion of the risks you should consider before purchasing our securities, see "Risk Factors" on page 8 of this prospectus.

Description of the Offering

Pursuant to that certain Amended and Restated Agreement and Plan of Merger, dated as of October 26, 2018 by and among the Company, Helomics Acquisition, Inc. ("Merger Sub"), a wholly owned subsidiary of the Company, and Helomics Holding Corporation ("Helomics"), Helomics merged with and into Merger Sub, with Merger Sub, which was subsequently renamed Helomics Holding Corporation, surviving as a wholly-owned subsidiary of the Company (the "Merger").

In connection with the Merger, which was completed on April 4, 2019, the Company consummated an exchange offer with certain of Helomics' existing investors that included, among other things, the exchange of warrants to purchase shares of Helomics common stock held by such investors (the "Helomics Warrants") for warrants (the "Exchange Warrants") to purchase shares of Common Stock at an exercise price of $10.00 per share (as adjusted for a one-for-ten (1:10) reverse stock split that was effective on October 29, 2019). Up to 1,424,506 shares of Common Stock are issuable upon the exercise of the Exchange Warrants.

Effective on the date of this prospectus, the Company is notifying the holders of the Exchange Warrants that the Company will accept an exercise price therefor of $0.845, equal to the last reported per share price of Common Stock on the Nasdaq Capital Market on September 11, 2020.

RISK FACTORS

An investment in our securities involves a number of risks. Before deciding to invest in our securities, you should carefully consider the risks described below and discussed under the section captioned "Risk Factors" contained in our Annual Report on Form 10-K for the year ended December 31, 2019, and our Quarterly Report on Form 10-Q for the quarter ended June 30, 2020, which are incorporated by reference in this prospectus, the information and documents incorporated by reference herein, and in any prospectus supplement or free writing prospectus that we have authorized for use in connection with an offering. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. The risks described in the documents referenced above are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements made in this prospectus are "forward-looking statements" that indicate certain risks and uncertainties related to the Company, many of which are beyond the Company's control. The Company's actual results could differ materially and adversely from those anticipated in such forward-looking statements as a result of certain factors, including those set forth below and elsewhere in this report. Important factors that may cause actual results to differ from projections include:

- We may not be able to continue operating without additional financing;
- Current negative operating cash flows;
- Our capital needs to accomplish our goals, including any further financing, which may be highly dilutive and may include onerous terms;
- Significant debt repayments due in September 2020, which the Company will likely need to extend or restructure, with no assurance that this will be possible;
- Risks related to the recent and future acquisitions, including;
  1) significant goodwill could result in further impairment;
  2) possible failure to realize anticipated benefits of the transactions;
  3) costs associated with the transactions may be higher than expected;
  4) the transactions may result in the disruption of our existing businesses; and
  5) distraction of management and diversion of resources;
- Risks related to our partnerships with other companies, including the need to negotiate the definitive agreements; possible failure to realize anticipated benefits of these partnerships; and costs of providing funding to our partner companies, which may never be repaid or provide anticipated returns;

- Risk that we will be unable to protect our intellectual property or claims that we are infringing on others' intellectual property;
- The impact of competition;
- Acquisition and maintenance of any necessary regulatory clearances applicable to applications of our technology;
- Inability to attract or retain qualified senior management personnel, including sales and marketing personnel;
- Risk that we never become profitable if our product is not accepted by potential customers;
- Possible impact of government regulation and scrutiny;
- Unexpected costs and operating deficits, and lower than expected sales and revenues, if any;
- Adverse results of any legal proceedings;
- The volatility of our operating results and financial condition;
- Management of growth;
- Material and adverse effects of the COVID-19 pandemic, including impact on a significant supplier; a reduction in on-site staff at several of our facilities, resulting in delayed production and less efficiency; impact on sales efforts; impact on accounts receivable and terms demanded by suppliers; and possible impact on financing transactions; and
- Other specific risks that may be detailed from time to time in the Company's reports filed with the SEC.

In some cases, you can identify forward-looking statements by terms such as "may", "will", "should", "could", "would", "expects", "plans", "anticipates", "believes", "estimates", "projects", "predicts", "potential" and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading "Risk Factors" beginning on page 8 of this prospectus and in our SEC filings. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement.

You should read this prospectus, the documents we have filed with the SEC that are incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

Information regarding market and industry statistics contained in this prospectus is included based on information available to the Company that it believes is accurate. It is generally based on academic and other publications that are not produced for purposes of securities offerings or economic analysis. The Company has not reviewed or included data from all sources, and the Company cannot assure potential investors of the accuracy or completeness of the data included in this prospectus. Forecasts and other forward-looking information obtained from these sources are subject to the same qualifications and the additional uncertainties accompanying any estimates of future market size, revenue and market acceptance of products and services. The Company has no obligation to update forward-looking information to reflect actual results or changes in assumptions or other factors that could affect those statements.

USE OF PROCEEDS

We will receive the proceeds from the exercise of the Exchange Warrants, but not from the sale of the underlying shares of Common Stock by the holders of Exchange Warrants. We intend to use the proceeds from the exercise of the Exchange Warrants for general corporate purposes, including working capital, sales and marketing activities, general and administrative matters, repayment of indebtedness and capital expenditures. We may also use a portion of the proceeds to acquire or invest in complementary products or businesses. Our management will have broad discretion over the uses of the proceeds from the exercise of the Exchange Warrants. Pending these uses, we intend to invest the net proceeds from the exercise of the Exchange Warrants in short-term, investment-grade, interest-bearing securities such as money market accounts, certificates of deposit, commercial paper and guaranteed obligations of the U.S. government.

DESCRIPTION OF CAPITAL STOCK

The following description summarizes the material terms of our capital stock. This summary is, however, subject to the provisions of our certificate of incorporation and bylaws. For greater detail about our capital stock, please refer to our certificate of incorporation and bylaws.

General

Our authorized capital stock consists of 100,000,000 shares of Common Stock, and 20,000,000 shares of preferred stock, $0.01 par value per share ("Preferred Stock"). Out of the Preferred Stock, as of September 4, 2020, 2,300,000 shares have been designated Series B Convertible Preferred Stock, of which 79,246 shares were outstanding.

The outstanding shares of our Common Stock and Preferred Stock are fully paid and nonassessable.

The Series B Convertible Preferred Stock is convertible into Common Stock at the option of its holders on a 1:1 basis, subject to a 4.99% beneficial ownership blocker.

Our Board of Directors is authorized, subject to any limitations prescribed by law, to provide for the issuance of the shares of Preferred Stock in series and, by filing a certificate pursuant to the applicable law of the State of Delaware, to establish from time to time the number of shares to be included in each such series, and to fix the designation, powers, preferences and rights of the shares of each such series and any qualifications, limitations or restrictions thereon. The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the outstanding shares of Common Stock without a vote of the holders of the Preferred Stock, or of any series thereof, unless a vote of any such holders is required pursuant to the certificate or certificates establishing the series of Preferred Stock.

Common Stock

As of September 4, 2020, we had 15,421,006 shares of common stock outstanding held by approximately 152 stockholders of record.

Voting Rights. The holders of our Common Stock are entitled to one vote for each outstanding share of Common Stock owned by that shareholder on every matter properly submitted to the shareholders for their vote. Shareholders are not entitled to vote cumulatively for the election of directors.

Dividend Rights. Subject to the dividend rights of the holders of any outstanding series of preferred stock, holders of our Common Stock are entitled to receive ratably such dividends and other distributions of cash or any other right or property as may be declared by our Board of Directors out of our assets or funds legally available for such dividends or distributions.

Liquidation Rights. In the event of any voluntary or involuntary liquidation, dissolution or winding up of our affairs, holders of our Common Stock would be entitled to share ratably in our assets that are legally available for distribution to shareholders after payment of liabilities and after the satisfaction of any liquidation preference owed to the holders of any Preferred Stock.

Conversion, Redemption and Preemptive Rights. Holders of our Common Stock have no conversion, redemption, preemptive, subscription or similar rights.

Anti-Takeover Provisions

Bylaws. Certain provisions of our Bylaws could have anti-takeover effects. These provisions are intended to enhance the likelihood of continuity and stability in the composition of our corporate policies formulated by our Board of Directors. In addition, these provisions also are intended to ensure that our Board of Directors will have sufficient time to act in what our Board of Directors believes to be in the best interests of our Company and our shareholders. Nevertheless, these provisions could delay or frustrate the removal of incumbent directors or the assumption of control of us by the holder of a large block of Common Stock, and could also discourage or make more difficult a merger, tender offer, or proxy contest, even if such event would be favorable to the interest of our shareholders. These provisions are summarized below.

Advance Notice Provisions for Raising Business or Nominating Directors. Sections 2.09 and 2.10 of our Bylaws contain advance-notice provisions relating to the ability of shareholders to raise business at a shareholder meeting and make nominations for directors to serve on our Board of Directors. These advance-notice provisions generally require shareholders to raise business within a specified period of time prior to a meeting in order for the business to be properly brought before the meeting.

Number of Directors and Vacancies. Our Bylaws provide that the exact number of directors shall be determined from time to time solely by resolution adopted by the affirmative vote of a majority of the entire Board of Directors. The Board of Directors is divided into three classes, as nearly equal in number as possible, designated: Class I, Class II and Class III (each, a "Class"). In the case of any increase or decrease, from time to time, in the number of directors, the number of directors in each class shall be apportioned as nearly equal as possible. Except as otherwise provided in the Certificate of Incorporation, each director serves for a term ending on the date of the third annual meeting of the Company's stockholders following the annual meeting at which such director was elected; provided, that the term of each director shall continue until the election and qualification of a successor and be subject to such director's earlier death, resignation or removal. Vacancies on the Board of Directors resulting from death, resignation, removal or otherwise and newly created directorships resulting from any increase in the number of directors may be filled solely by a majority of the directors then in office (although less than a quorum) or by the sole remaining director.

Delaware Law. We are subject to Section 203 of the Delaware General Corporation Law. This provision generally prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date the stockholder became an interested stockholder, unless:

- prior to such date, the board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned by persons who are directors and also officers and by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to such date, the business combination is approved by the board of directors and authorized at an annual meeting or special meeting of stockholders and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an "interested stockholder" as any entity or person beneficially owning 15% or more of the outstanding voting stock of a corporation, or an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of a corporation at any time within three years prior to the time of determination of interested stockholder status; and any entity or person affiliated with or controlling or controlled by such entity or person.

These statutory provisions could delay or frustrate the removal of incumbent directors or a change in control of our company. They could also discourage, impede, or prevent a merger, tender offer, or proxy contest, even if such event would be favorable to the interests of stockholders. In addition, note that while Delaware law permits companies to opt out of its business combination statute, our Certificate of Incorporation does not include this opt-out provision.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Corporate Stock Transfer, Inc.

Listing

The shares of our common stock are listed on The Nasdaq Capital Market under the symbol "POAI." On September 11, 2020, the last reported sale price per share for our common stock as reported by The Nasdaq Capital Market was $0.845.

THE OFFERING

Issuance of Exchange Warrants

On April 4, 2019 (the "Effective Date"), the Company completed the business combination of Helomics Acquisition, Inc., a wholly-owned subsidiary of the Company ("Merger Sub"), with Helomics Holding Corporation ("Helomics") in accordance with the terms of the Amended and Restated Agreement and Plan of Merger, dated as of October 26, 2018 (as amended, the "Merger Agreement"). Pursuant to the terms of the Merger Agreement, the parties to the Merger Agreement consummated a forward-triangular merger, whereby Helomics merged with and into Merger Sub, with Merger Sub surviving the merger as a wholly-owned subsidiary of the Company (the "Merger").

In accordance with the Merger Agreement, and pursuant to an Offer to Exchange dated February 13, 2019 and included in the Company's Registration Statement on Form S-4 (File No. 333-228031), which became effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, on February 13, 2019 (the "Registration Statement"), the Company made an offer to issue (the "Exchange Offer") to holders of certain promissory notes of Helomics (the "Helomics Notes Payable") and accompanying warrants to purchase Helomics common stock (the "Helomics Warrants") (a) shares of Common Stock in exchange for the tendered Helomics Notes Payable and (b) warrants to purchase shares of Common Stock (the "Exchange Warrants") at an exercise price of $10.00 per share (as adjusted for a one-for-ten (1:10) reverse stock split that was effective on October 29, 2019 (the "2019 Reverse Split")) in exchange for the Helomics Warrants held by such holders. The issuance occurred on the Effective Date and at the effective time of the Merger. With respect to the Exchange Warrants specifically, Predictive issued Exchange Warrants to purchase up to 1,424,506 shares of Common Stock (as adjusted for the 2019 Reverse Split) to (a) all holders of Helomics Notes Payable who accepted the Exchange Offer and (b) three holders of Helomics Notes Payable who did not accept the Exchange Offer, but executed a note extension agreement with Predictive, pursuant to which such holders agreed to accept the terms of the Exchange Offer with respect to their Helomics Warrants. The amount of the Exchange Warrants issued was determined according to a formula based on the number of Helomics Warrants held by a tendering holder.

The Exchange Warrants expire five years after the Effective Date, and require the payment of cash to exercise such warrants unless there is no effective registration statement covering the exercise of the Exchange Warrants or the resale of the shares that may be purchased thereunder. The Exchange Warrants, and the shares issuable upon conversion or exercise thereof, were registered with the United States Securities and Exchange Commission on the Registration Statement.

Upon a "fundamental transaction," the Exchange Warrants will continue to exist and be converted into a right to receive alternative consideration upon exercise. The Exchange Warrants entitle the holders of the Exchange Warrants to participate in any distributions of common stock as though the Exchange Warrant were exercised in full in advance of the record date of the distribution. The Exchange Warrants contain a beneficial ownership limitation, which prohibits a holder from obtaining greater than 4.99% (or at the holder's election, 9.99%) of the outstanding Common Stock immediately after the exercise of the Exchange Warrant.

Amended Exercise Price of the Exchange Warrants

On _____, 2020, the date of this prospectus, the Company notified the holders of the Exchange Warrants that the Company would accept an exercise price therefor of $0.845 (the "Amended Exercise Price"), equal to the last reported per share price of Common Stock on the Nasdaq Capital Market on September 11, 2020, the last trading day before the date of this prospectus.

PLAN OF DISTRIBUTION

The shares of Common Stock offered and sold by us pursuant to this prospectus will be issued directly to the holders of Exchange Warrants upon payment of the exercise price therefore to us. We will pay all fees and expenses incident to the registration of the offer and sale of shares of Common Stock by such holders of Exchange Warrants pursuant to this prospectus.

LEGAL MATTERS

The validity of any securities offered from time to time by this prospectus and any related prospectus supplement will be passed upon by Maslon LLP, Minneapolis, Minnesota.

EXPERTS

The financial statements incorporated in this prospectus by reference from the Company's Annual Report on Form 10-K for the year ended December 31, 2019 have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference (which report expresses an unqualified opinion and includes an explanatory paragraph relating to the substantial doubt about the Company's ability to continue as a going concern as described in Note 1 to the financial statements). Such financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

The financial statements of Helomics Holding Corporation for the fiscal year ended December 31, 2018, as restated, incorporated by reference in this prospectus have been so incorporated in reliance on the report of Schneider Downs & Co., Inc., certified public accountants registered with the Public Company Accounting Oversight Board, as auditor for Helomics Holding Corporation prior to the acquisition by the Company.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-4 (File No. 333-228031) under the Securities Act with respect to the securities we are offering under this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities we are offering under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including us. The address of the SEC website is www.sec.gov.

We maintain a website at www.predictive-oncology.com. Information contained in, or accessible through, our website is not part of this prospectus and you should not rely on that information unless that information is also in this prospectus or incorporated by reference in this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS 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 documents incorporated by reference into this prospectus contain important information that you should read about us. The following documents are incorporated by reference into this prospectus:

We are allowed to incorporate by reference information contained in documents that we file with the SEC. This means that we can disclose important information to you by referring you to those documents and that the information in this prospectus is not complete and you should read the information incorporated by reference for more detail. We incorporate by reference in two ways. First, we list certain documents that we have already filed with the SEC. The information in these documents is considered part of this prospectus. Second, the information in documents that we file in the future will update and supersede the current information in, and incorporated by reference in, this prospectus until we file a post-effective amendment that indicates the termination of the offering of the common stock made by this prospectus.

We incorporate by reference the documents listed below and any future filings we will make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than information furnished in Current Reports on Form 8-K filed under Item 2.02 or 7.01 of such form unless such form expressly provides to the contrary), including those made after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of such registration statement:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2019;
- Our Quarterly Reports on Form 10-Q for the quarters ended March 30, 2020 and June 30, 2020;
- Current Reports on Form 8-K filed September 8, 2020, August 13, 2020, July 20, 2020, July 7, 2020, June 26, 2020, June 19, 2020, June 12, 2020, June 8, 2020, June 2, 2020, 2 reports filed on May 8, 2020, May 1, 2020, April 30, 2020, April 24, 2020, April 22, 2020, April 1, 2020, March 23, 2020, March 16, 2020, February 21, 2020, February 7, 2020, February 4, 2020, January 28, 2020, January 24, 2020, January 6, 2020; and April 10, 2019, as amended by Amendment No. 1 on June 18, 2019 and Amendment No. 2 on September 26, 2019; and
- The description of the Company's common stock filed as Exhibit 4.29 "Description of Registrant's Securities" to the Company's Annual Report on Form 10-K on April 1, 2020.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference in this prospectus but not delivered with this prospectus. You may request a copy of this information at no cost, by writing or telephoning us at the following address or telephone number:

Predictive Oncology Inc.
Attention: Corporate Secretary
2915 Commers Drive, Suite 900
Eagan, Minnesota 55121
(651) 389-4800

PREDICTIVE ONCOLOGY INC.

1,424,506 Shares

Warrants to Purchase Common Stock

PROSPECTUS

[•], 2020

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses Of Issuance And Distribution.

The following table sets forth the costs and expenses, payable by the registrant in connection with the sale of common stock being registered. All amounts are estimates except the SEC registration fee and the Nasdaq listing fee.

Securities and Exchange Commission registration fee	$	1,726.15*
NASDAQ listing fee	$	5,055.00
Printing and engraving expenses	$	5,000.00
Legal fees and expenses	$	5,000.00
Accounting fees and expenses	$	5,000.00
Miscellaneous	$	218.85
Total	$	22,000.00

*Previously paid in connection with the filing of the Company's registration statement on Form S-4 (File No 333-228031), which is amended hereby.

Item 14. Indemnification of Directors and Officers.

We are a Delaware corporation and certain provisions of the Delaware Statutes and our bylaws provide for indemnification of our officers and directors against liabilities that they may incur in such capacities. A summary of the circumstances in which indemnification is provided is discussed below, but this description is qualified in its entirety by reference to our bylaws and to the statutory provisions.

Section 145 of the Delaware General Corporation Law provides for, under certain circumstances, the indemnification of our officers, directors, employees and agents against liabilities that they may incur in such capacities. A summary of the circumstances in which such indemnification provided for is contained herein, but that description is qualified in its entirety by reference to the relevant Section of the Delaware General Corporation Law.

In general, the statute provides that any director, officer, employee or agent of a corporation may be indemnified against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement, actually and reasonably incurred in a proceeding (including any civil, criminal, administrative or investigative proceeding) to which the individual was a party by reason of such status. Such indemnity may be provided if the indemnified person's actions resulting in the liabilities: (i) were taken in good faith; (ii) were reasonably believed to have been in or not opposed to our best interest; and (iii) with respect to any criminal action, such person had no reasonable cause to believe the actions were unlawful. Unless ordered by a court, indemnification generally may be awarded only after a determination of independent members of the Board of Directors or a committee thereof, by independent legal counsel or by vote of the stockholders that the applicable standard of conduct was met by the individual to be indemnified.

The statutory provisions further provide that to the extent a director, officer, employee or agent is wholly successful on the merits or otherwise in defense of any proceeding to which he was a party, he is entitled to receive indemnification against expenses, including attorneys' fees, actually and reasonably incurred in connection with the proceeding.

Indemnification in connection with a proceeding by or in the right of the Company in which the director, officer, employee or agent is successful is permitted only with respect to expenses, including attorneys' fees actually and reasonably incurred in connection with the defense. In such actions, the person to be indemnified must have acted in good faith, in a manner believed to have been in our best interest and must not have been adjudged liable to us unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability, in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expense which the Court of Chancery or such other court shall deem proper. Indemnification is otherwise prohibited in connection with a proceeding brought on behalf of the Company in which a director is adjudged liable to us, or in connection with any proceeding charging improper personal benefit to the director in which the director is adjudged liable for receipt of an improper personal benefit.

Delaware law authorizes us to reimburse or pay reasonable expenses incurred by a director, officer, employee or agent in connection with a proceeding in advance of a final disposition of the matter. Such advances of expenses are permitted if the person furnishes to us a written agreement to repay such advances if it is determined that he is not entitled to be indemnified by us.

The statutory section cited above further specifies that any provisions for indemnification of or advances for expenses does not exclude other rights under our certificate of incorporation, corporate bylaws, resolutions of our stockholders or disinterested directors, or otherwise. These indemnification provisions continue for a person who has ceased to be a director, officer, employee or agent of the corporation and inure to the benefit of the heirs, executors and administrators of such persons.

The statutory provision cited above also grants the power to the Company to purchase and maintain insurance policies that protect any director, officer, employee or agent against any liability asserted against or incurred by him in such capacity arising out of his status as such. Such policies may provide for indemnification whether or not the corporation would otherwise have the power to provide for it.

Article 8 of our certificate of incorporation provides that we shall indemnify our directors and officers to the fullest extent permitted by the Delaware General Corporation Law.

We have purchased directors' and officers' liability insurance in order to limit the exposure to liability for indemnification of directors and officers, including liabilities under the Securities Act of 1933, as amended (the "Securities Act").

Insofar as indemnification for liabilities arising under the Securities Act may be permitted for our directors, officers, and controlling persons pursuant to the foregoing provisions or otherwise, we have been advised that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Item 15. Recent Sales of Unregistered Securities

The following is a summary of our transactions since August 2017 involving sales of our securities that were not registered under the Securities Act:

On October 13, 2017, the Company issued 5,000 shares of common stock, par value $0.01, at $15.80 per share to a vendor for investor relations services.

On January 12, 2018, the Company issued 110,000 shares of common stock, par value $0.01, at $9.50 per share, in exchange for 2,500,000 shares of Helomics Holding Corporation Series A Preferred Stock. The exchange of shares resulted in the Company owning 20% of Helomics outstanding stock.

On July 10, 2018, the Company issued 15,000 shares of common stock and 10,000 shares of common stock, par value $0.01, at $11.80 per share to consultants, pursuant to a license agreement, for their services.

On July 11, 2018, the Company issued 75,000 shares of common stock, par value $0.01, at $11.70 per share pursuant to a license agreement. The 75,000 shares of Company common stock are being held in escrow by Corporate Stock Transfer, Inc. as an escrow agent. A portion of the shares will be released from escrow to each licensor or their designee upon each instance that certain milestones have been completed.

On September 28, 2018, we issued a convertible promissory note to each of two investors in the original principal amount of an aggregate $2,297,727.50 in exchange for an investment of $2,000,000, less commissions, with net proceeds to the Company of $1,815,000. As additional consideration for the investment, the Company issued an aggregate 65,000 inducement shares (subsequently registered) of its common stock to the investors or their affiliates plus warrants to acquire up to an aggregate 107,177 shares of the Company's common stock at an exercise price of $11.55 per share. Upon certain events, each investor obtained the right to convert its note subject to an exchange cap described below. On February 7, 2019, we entered into a: (1) a forbearance agreement with each investor and an amended and restated note with each of the investors which increased the principal amount of the existing notes by an aggregate $344,659. On February 11, 2019, the Company issued an aggregate 16,667 additional shares of common stock to the investors for forbearance in connection with an event of default and a claimed event of default. The notes upon conversion are subject to a cap on the number of shares that can be issued upon conversion such that the sum of (a) the total number of conversion shares plus (b) the number of inducement shares plus (c) the number of forbearance shares is limited to an aggregate 267,832 shares. On September 27, 2019, the Company entered into an amendment to a secured note originally dated September 28, 2018 issued to L2 Capital, LLC, under which the maturity date of the note was extended. In connection with the amendment, the Company issued 1,500 shares of common stock to the holder. On December 12, 2019, the due date of the note was extended from December 31, 2019 to March 31, 2020. In exchange for the extension, the principal balance of the loan was increased by $120,000 and we issued 1,500 shares to the investor.

On October 17, 2018, the Company issued 4,341 shares of common stock, par value $0.01, at $9.29 per share in lieu of paid salary to its Vice President of Sales & Marketing.

On November 30, 2018, our CEO, Carl Schwartz, made an investment of $370,000 in the Company and received a note and a common stock purchase warrant for 22,129 warrant shares at $8.36 per share. Effective as of January 8, 2019, Dr. Schwartz made an additional investment of $950,000 and received an amended and restated note in the original principal amount of $1,320,000 and an amended and restated warrant, which added a second tranche of 74,219 warrant shares at an exercise price of $7.04. Each tranche is exercisable beginning on the sixth month anniversary of the date of the related investment through the fifth-year anniversary of the date of the related investment. On January 8, 2019, Dr. Schwartz also purchased 7,813 shares of the Company's common stock in a private investment for $50,000, representing a price of $6.40 per share, pursuant to a subscription agreement. On February 6, 2019, Dr. Schwartz made an additional investment of $300,000 in the Company and received an amended and restated note in the original principal amount of $1,620,000 and an amended and restated warrant, which added a third tranche of 13,889 warrant shares at an exercise price of $11.88 per share. On February 1, 2019 and the first day of each calendar month thereafter while the note and the warrant remain outstanding, a number of additional shares will be added to the second tranche and the third tranche equal to (1) one-half percent (1/2%) of the outstanding principal balance of the Note on such date, divided by (2) the closing price of the Company's common stock on that date. The number of warrant shares will be subject to a share limit such that the total of (a) the 7,813 shares of common stock purchased by Dr. Schwartz on January 8, 2019, and (b) the total number of warrant shares (110,860 warrant shares as of February 6, 2019) may not exceed 281,835 shares (equal to 19.9% of the outstanding shares of Common Stock on January 8, 2019). If the second tranche and/or third tranche cannot be increased as required herein due to the share limit, then in lieu of any such increase, the Company shall pay to Dr. Schwartz a cash amount equal to one-half percent (1/2%) of the principal balance of the Schwartz note in lieu of such increase. On January 31, 2020, we entered into an exchange agreement with Dr. Carl Schwartz under which Dr. Schwartz delivered existing promissory notes and warrants to us to be cancelled and in exchange received: a promissory note issued in the original principal amount of $2,115,000, bearing twelve percent interest per annum and with a maturity date of September 30, 2020; and a fee of $130,000, paid in the form of 5,000 shares of our common stock.

On June 13, 2019, the Company initiated a Series E convertible preferred stock ("Series E Stock") private placement. The Company sold 257.7 shares of Series E Convertible Preferred Stock for an aggregate purchase price of $2,577,000. Each holder of Series E Stock had the right to convert each share of Series E Stock into 0.056857% of the issued and outstanding shares of common stock immediately prior to conversion (rounded down to the nearest whole share) for each share of Series E Convertible Preferred Stock, beginning six months after the initial closing date of June 13, 2019. The Series E Stock was subject to certain limitations required under the NASDAQ Marketplace Rules; however, these limitations are no longer in effect for purposes of conversion, because the Company's stockholders approved the removal of these limitations on October 23, 2019. On June 13, 2020, the Company converted the shares of Series E Stock into common stock upon the same terms and limitations as the above optional conversion. The shares of common stock upon conversion were subsequently registered on Form S-1 (File Nos. 333-235441 and 333-239207).

On September 27, 2019, the Company issued a promissory note to an investor in the original principal amount of $847,500 in exchange for an investment of $700,000. As additional consideration for the investment, the Company issued an aggregate 8,857 shares of its common stock to the Investor plus a warrant to acquire up to 68,237 shares of the Company's common stock at an exercise price of $6.21 per share.

On September 27, 2019, the Company entered into an amendment to a secured note originally dated September 28, 2018 issued to L2 Capital, LLC, under which the maturity date of the note was extended. In connection with the amendment, the Company issued 15,000 shares of common stock to the holder.

On October 24, 2019, we entered into an equity purchase agreement with an investor, providing for an equity financing facility. Upon the terms and subject to the conditions in the purchase agreement, the investor is committed to purchase shares having an aggregate value of up to $15,000,000 of our common stock for a period of up to three years (the "Equity Shares"). We issued to the investor 104,651 commitment shares (the "Commitment Shares") for entering into the agreement. From the date of the agreement through December 31, 2019, we issued an aggregate 122,356 shares of common stock valued at $319,196. From January 1, 2020 through August 21, 2020, we issued an aggregate 1,025,000 shares of common stock valued at $1,371,195. These shares were subsequently registered on Form S-1 (File No. 333-234366 with respect to the Commitment Shares; and File No. 333-239408 with respect to the Equity Shares).

On November 12, 2019, we issued 10,356 shares of common stock valued at $34,923 in payment for investor relations services and other services.

On March 3, 2020, Peter Morawetz, a former Board member, was given 5,000 shares of common stock, valued at $9,800.

On March 4, 2020, we issued 150,000 shares of common stock at $2.35 per share in payment for public relations services.

On March 18, 2020, we issued sold and issued to private investors (i) 260,000 shares of common stock, at a sale price of $2.121 per share; (ii) prefunded warrants to acquire 1,390,166 shares of common stock, sold at $2.12 per share and exercisable at an exercise price of $0.001 per share; (iii) Series A warrants to acquire 1,650,166 shares of Common Stock at $1.88 per share, exercisable immediately and terminating five and one-half years after the date of issuance; and (iv) Series B warrants to acquire 1,650,166 shares of Common Stock at $1.88 per share, exercisable immediately and terminating two years after the date of issuance.

On May 8, 2020, in a private placement concurrent with a registered direct offering, the Company issued warrants to the investors to purchase up to an aggregate of 1,396,826 shares of our common stock at $1.45 per share. On June 29, 2020, the investors exercised such warrants in connection with warrant exercise agreements. Under the agreements, in consideration of such exercise and a payment of $0.125 per warrant, the investors received new warrants to purchase 1,396,826 shares at $1.80 per share.

On May 27, 2020, the Company issued 125,000 shares of common stock and waived all existing claims that the Company has or may have against InventaBioTech, Inc. (f/k/a CytoBioscience, Inc.) in connection with the acquisition of the assets of Soluble Therapeutics, Inc. and BioDtech, Inc.

On July 1, 2020, the Company, entered into an Asset Purchase Agreement with Quantitative Medicine LLC, ("QM") and its owners and simultaneously completed the acquisition of substantially all of the assets owned by QM. In exchange, the Company provided consideration in the form of 954,719 shares of common stock, which, when issued, had a market value of approximately $1,750,000.

Unless otherwise specified above, the Company believes that all of the above transactions were transactions not involving any public offering within the meaning of Section 4(2) of the Securities Act, since (a) each of the transactions involved the offering of such securities to a substantially limited number of persons; (b) each person took the securities as an investment for his/her/its own account and not with a view to distribution; (c) each person had access to information equivalent to that which would be included in a registration statement on the applicable form under the Securities Act; and (d) each person had knowledge and experience in business and financial matters to understand the merits and risk of the investment; therefore no registration statement needed to be in effect prior to such issuances.

Item 16. Exhibits and Financial Statements.

See "Exhibit Index" below, which follows the signature page to this registration statement.

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

(a) (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) to include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, an increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), 424(b)(5), or 424(b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), 415(a)(1)(vii), or 415(a)(1)(x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities: The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby further undertakes that, for the purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(d) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(e) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(f) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(g) If and when applicable, the Registrant hereby further undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Securities and Exchange Commission under Section 305(b)(2) of the Trust Indenture Act.

EXHIBIT INDEX

Exhibit Number	Description
2.1	Amended and Restated Agreement and Plan of Merger dated October 22, 2018 (13) Exhibit 2.1
3.1	Certificate of Incorporation (1) Exhibit 3.1
3.2	Certificate of Amendment to Certificate of Incorporation to effect reverse stock split and reduction in authorized share capital filed with the Delaware Secretary of State on October 20, 2014 (2) Exhibit 3.2
3.3	Certificate of Amendment to Certificate of Incorporation regarding increase in share capital, filed with the Delaware Secretary of State on July 24, 2015 (3) Exhibit 3.3
3.4	Certificate of Amendment to Certificate of Incorporation to increase authorized share capital, filed with the Delaware Secretary of State on September 16, 2016 (7) Exhibit 3.4
3.5	Certificate of Amendment to Certificate of Incorporation to effect reverse stock split and reduction in authorized share capital, fled with the Delaware Secretary of State on October 26, 2016 (8) Exhibit 3.5
3.6	Certificate of Amendment to Certificate of Incorporation regarding increase in share capital, filed with the Delaware Secretary of State on January 26, 2017 (9) Exhibit 3.6
3.7	Certificate of Amendment to Certificate of Incorporation to effect reverse stock split, filed with the Delaware Secretary of State on January 2, 2018 (15) Exhibit 3.7
3.8	Certificate of Amendment to Certificate of Incorporation to effect name change, filed with the Delaware Secretary of State on February 1, 2018 (4) Exhibit 3.8
3.9	Certificate of Amendment to Certificate of Incorporation to increase authorized share capital and establish a classified Board of Directors (17) Exhibit 3.9
3.10	Second Amended and Restated Bylaws as of June 10, 2019 (25) Exhibit 3.10
3.11	Form of Certificate of Designation of Preferences, Rights and Limitations of Series B Convertible Preferred Stock (5) Exhibit 3.11
3.12	Certificate of Designation of Preferences, Rights and Limitations of Series C Convertible Preferred Stock (14) Exhibit 3.12
3.13	Certificate of Amendment to Certificate of Incorporation dated March 22, 2019 (18) Exhibit 3.13
3.14	Certificate of Designation Of Preferences, Rights And Limitations of Series D Convertible Preferred Stock (35) Exhibit 3.14
3.15	Certificate of Designation of Preferences, Rights and Limitations of Series E Convertible Preferred Stock Effective June 13, 2019 (26) Exhibit 3.15
3.16	Certificate of Amendment of Certificate of Incorporation (25) Exhibit 3.16
3.17	Certificate of Amendment of Certificate of Incorporation (30) Exhibit 3.17

4.1	Form of specimen certificate evidencing shares of Series B Convertible Preferred Stock (6) Exhibit 4.1
4.2	Form of New Warrant Agency Agreement by and between Skyline Medical Inc. and Form of Warrant Certificate for Series B Warrant (10) Exhibit 4.2
4.3	Form of Series B Warrant Certificate (included as part of Exhibit 4.2) (10) Exhibit 4.3
4.4	Form of Series C Warrant (11) Exhibit 4.4
4.5	Form of Unit Purchase Option (11) Exhibit 4.5
4.6	Form of Series D Warrant Agency Agreement by and between Skyline Medical Inc. and Corporate Stock Transfer, Inc. and Form of Series D Warrant Certificate (12) Exhibit 4.6
4.7	Form of Series D Warrant Certificate (included as part of Exhibit 4.6) (12) Exhibit 4.78
4.8	Form of Amendment to Warrant (4) Exhibit 4.8
4.9	Investor Warrant (14) Exhibit 4.9
4.10	Series E Warrant Agency Agreement by and between Skyline Medical Inc. and Corporate Stock Transfer, Inc. dated January 9, 2018 (16) Exhibit 4.10
4.11	Form of Series E Warrant Certificate (16) Exhibit 4.11
4.12	Common Stock Purchase Warrant issued to L2 Capital, LLC dated September 28, 2018 (17) Exhibit 4.12
4.13	Common Stock Purchase Warrant issued to Peak One Opportunity Fund, LP dated September 28, 2018 (17) Exhibit 4.13
4.14	Second Amended and Restated Common Stock Purchase Warrant issued to Carl Schwartz dated February 6, 2019 (19) Exhibit 4.14
4.15	Form of Warrant (Initial Issue Date: March 1, 2019) (20) Exhibit 4.15
4.16	Form of Unit Purchase Option (20) Exhibit 4.16
4.17	Common Stock Purchase Warrant issued to Carl Schwartz dated November 30, 2018 (21) Exhibit 4.17
4.18	Amended and Restated Common Stock Purchase Warrant issued to Carl Schwartz dated January 8, 2019 (22) Exhibit 4.18
4.19	Form of Common Stock Purchase Warrant issued March 29, 2019 (24) Exhibit 4.19
4.20	Form of Unit Purchase Option for the Purchase of Units (24) Exhibit 4.20
4.21	Common Stock Purchase Warrant Issued to Oasis Capital, LLC dated September 27, 2019 (27) Exhibit 4.21
4.22	Form of Specimen Common Stock Certificate (28) Exhibit 4.22
4.23	Form of Common Stock Purchase Warrant Issued on or about October 1, 2019 (29) Exhibit 4.23

4.24	Common Stock Purchase Warrant issued to Oasis Capital, LLC dated February 5, 2020 (32) Exhibit 4.24
4.25	Form of Series A Warrant (33) Exhibit 4.25
4.26	Form of Series B Warrant (33) Exhibit 4.26
4.27	Form of Prefunded Warrant (33) Exhibit 4.27
4.28	Form of Prefunded Common Stock Purchase Warrant (34) Exhibit 4.28
4.29	Description of Registrant's Securities (35) Exhibit 4.29
4.30	Common Stock Purchase Warrant issued to Oasis Capital, LLC dated March 6, 2020 (31) Exhibit 4.30
4.31	Common Stock Purchase Warrant issued to Oasis Capital, LLC dated April 5, 2020 (31) Exhibit 4.31
4.32	Form of Common Stock Purchase Warrant (36) Exhibit 4.32
4.33	Form of Common Stock Purchase Warrant (37) Exhibit 4.33
4.34	Form of Common Stock Purchase Warrant (29) Exhibit 4.34
5.1	Opinion of Maslon LLP (38) Exhibit 5.1
23.1*	Consent of Deloitte & Touche LLP Exhibit 23.1
23.2*	Consent of Schneider Downs & Co., Inc. Exhibit 23.2
23.3	Consent of Maslon LLP (included as part of Exhibit 5.1) (38)
24.1*	Power of Attorney (included on signature page) Exhibit 24.1

* Filed with Post Effective Amendment No. 1 on September 8, 2020

(1) Filed on December 19, 2013 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(2) Filed on October 24, 2014 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(3) Filed on June 30, 2015 as an appendix to our Information Statement on Schedule 14C and incorporated herein by reference.

(4) Filed on February 6, 2018 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(5) Filed on August 20, 2015 as an exhibit to our Registration Statement on Form S-1 (File No. 333-198962) and incorporated herein by reference.

(6) Filed on August 10, 2015 as an exhibit to our Registration Statement on Form S-1 (File No. 333-198962) and incorporated herein by reference.

(7) Filed on September 16, 2016 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(8) Filed on October 27, 2016 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(9) Filed on January 27, 2017 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(10) Filed on March 25, 2016 as an exhibit to our Registration Statement on Form S-4 (File No. 333-210398) and incorporated herein by reference.

(11) Filed on November 30, 2016 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(12) Filed on January 10, 2017 as an exhibit to our Registration Statement on Form S-1 (File No. 333-215005) and incorporated herein by reference.

(13) Filed on October 30, 2018 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(14) Filed on November 29, 2017 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(15) Filed on January 2, 2018 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(16) Filed on January 10, 2018 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(17) Filed on October 4, 2018 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(18) Filed on March 22, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(19) Filed on February 12, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(20) Filed on March 1, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(21) Filed on December 7, 2018 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(22) Filed on January 14, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(23) Filed on January 24, 2019 as Annex H to Amendment No. 2 to Form S-4 (File No. 333-228031) and incorporated herein by reference.

(24) Filed on April 2, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference.

(25) Filed on June 13, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(26) Filed on June 19, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(27) Filed on September 30, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(28) Filed on October 3, 2019 as an exhibit to our Registration Statement on Form S-3 (File No. 333-234073) and incorporated herein by reference

(29) Filed on October 10, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(30) Filed on October 28, 2019 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(31) Filed on April 6, 2020 as an exhibit to our Registration Statement on Form S-3 (File No. 333-237581) and incorporated herein by reference

(32) Filed on February 7, 2020 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(33) Filed on March 16, 2020 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(34) Filed on March 23, 2020 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(35) Filed on April 1, 2020 as an exhibit to our Annual Report on Form 10-K and incorporated herein by reference

(36) Filed on May 8, 2020 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(37) Filed on June 26, 2020 as an exhibit to our Current Report on Form 8-K and incorporated herein by reference

(38) Filed on December 26, 2018 as an exhibit to Amendment No. 1 to Form S-4 (File No. 333-228031) and incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Eagan, State of Minnesota, on September 14, 2020.

PREDICTIVE ONCOLOGY INC.

/s/ Bob Myers
Bob Myers
Chief Financial Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated:

Signature	Title	Date
*	Chief Executive Officer (principal executive officer) and Director	September 14, 2020
Carl Schwartz		
/s/ Bob Myers	Chief Financial Officer (principal financial and accounting officer)	September 14, 2020
Bob Myers		
*	Director	September 14, 2020
J. Melville Engle		
*	Director	September 14, 2020
Richard L. Gabriel		
*	Director	September 14, 2020
Daniel E. Handley		
*	Director	September 14, 2020
Gregory S. St.Clair, Sr.		
*	Director	September 14, 2020
Chuck Nuzum		
*	Director	September 14, 2020
Nancy Chung-Welch		

* By: /s/ Bob Myers

Bob Myers, Attorney in Fact