Filed pursuant to 424(b)(3)
Registration No. 333-267689

PROSPECTUS

PREDICTIVE ONCOLOGY INC.

4,737,280 Shares

Common Stock

This prospectus relates to the offer and resale from time to time by the selling stockholders named in this prospectus of up to an aggregate of 4,737,280 shares of our common stock, par value $0.01 per share. These shares consist of (i) 3,837,280 shares of common stock issuable upon the exercise of common stock purchase warrants that were initially issued in a private placement to certain institutional and accredited investors and (ii) 900,000 shares of common stock issuable upon the exercise of placement agent warrants that were initially issued to certain designees of H.C. Wainwright & Co., LLC ("Wainwright"), as part of Wainwright's compensation for serving as our exclusive placement agent in connection with the private placement and two concurrent registered direct offerings completed on May 18, 2022.

Our registration of the securities covered by this prospectus does not mean that the selling stockholders will offer or sell any of the shares of common stock. The selling stockholders may sell or otherwise dispose of the shares of common stock publicly or through private transactions at prevailing market prices or at negotiated prices. We provide more information about how the selling stockholders may sell their shares in the section entitled "Plan of Distribution."

One or more of the selling stockholders may be deemed to be "underwriters" within the meaning of the Securities Act of 1933, as amended (the "Securities Act"), in connection with the resale of our common stock. We will bear all costs, expenses and fees in connection with the registration of the shares. The selling stockholders will bear all commissions and discounts, if any, attributable to their respective sales of the shares.

We will not receive any proceeds from the sale of shares of common stock by the selling stockholders. We will, however, receive the proceeds from any exercise of the warrants for cash.

Our common stock is listed on the Nasdaq Capital Market under the symbol "POAI." On October 12, 2022, the last reported per share price of our common stock on the Nasdaq Capital Market was $0.3068 per share.

Investing in our 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 11 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 October 13, 2022.

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ABOUT THIS PROSPECTUS

We urge you to read carefully this prospectus, together with the information incorporated herein by reference as described under "Incorporation of Certain Documents by Reference" before buying any of the securities offered.

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission (the "SEC") under which the selling stockholders named herein may, from time to time, offer and sell or otherwise dispose of the securities covered by this prospectus.

A prospectus supplement may add, update or change information included in this prospectus. You should read both this prospectus and any applicable prospectus supplement together with additional information described below under the heading "Where You Can Find Additional Information."

You should rely only on the information contained or incorporated by reference in this prospectus and any applicable prospectus supplement. Neither we nor the selling stockholders have authorized anyone to provide you with different information, and if anyone provides, or has provided you, with different or inconsistent information, you should not rely on it. We and the selling stockholders take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the securities offered hereby and only under circumstances and in jurisdictions where it is lawful to do so. This prospectus is not an offer to sell securities, and it is not soliciting an offer to buy securities, in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus, any prospectus supplement or in the documents incorporated by reference herein is accurate only as of the date of the document containing the information, regardless of the time of delivery of this prospectus or any applicable prospectus supplement or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

For investors outside of the United States, neither we nor the selling stockholders have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about, and to observe any restrictions relating to, this offering and the distribution of this prospectus outside of the United States.

INDUSTRY AND MARKET DATA

This prospectus and the information incorporated by reference herein contain market and industry statistics that are based on various sources that we believe is accurate. It is generally based on academic and other publications that are not produced for purposes of securities offerings or economic analysis. We believe the data contained in these reports or publications to be reliable as of the date of this prospectus, but there can be no assurance as to the accuracy or completeness of such information. We have not independently verified the market and industry data obtained from these sources. 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

This summary contains basic information about us. You should carefully read the entire prospectus and the documents we incorporate by reference herein. Some of the statements contained in this prospectus and the documents incorporated by reference herein, 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 these forward-looking statements. References to "we," "our," "us," the "Company," or "Predictive" refer to Predictive Oncology Inc., a Delaware corporation.

Business Overview

We operate in four 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; second, tumor-specific 3D cell culture models driving accurate prediction of clinical outcomes; third, contract services and research focused on solubility improvements, stability studies, and protein production, and; fourth, 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 four reportable segments: Helomics®, zPREDICTA®, Soluble™ and Skyline®. The Helomics segment includes clinical testing and contract research services that include the application of AI. Our zPREDICTA segment specializes in organ-specific disease models that provide 3D reconstruction of human tissues accurately representing each disease state and mimicking drug response enabling accurate testing of anticancer agents. Our Soluble segment provides services using a self-contained, automated system that conducts high-throughput, self-interaction chromatography screens, using additives and excipients commonly included in protein formulations resulting in soluble and physically stable formulations for biologics. Our Skyline segment consists of the STREAMWAY System product sales, and our TumorGenesis® subsidiary (Research and Development) is included within corporate. Going forward, we have determined that we will focus our resources on the Helomics and zPREDICTA segments and our primary mission statements to accelerate patient-centric drug discovery to improve patient outcomes in cancer treatment, harnessing the power of AI, and to develop tumor-specific 3D cell culture models that provide accurate 3D reconstruction of human tissues representing each cancer disease state.

On November 24, 2021, we acquired zPREDICTA, Inc. ("zPREDICTA") in a merger transaction, and at that time we identified zPREDICTA as a reportable segment. zPREDICTA's business, which involves integration of organ-specific cellular and extracellular elements into 3D culture models for in vitro cancer drug testing, represents a unique segment in the Predictive offerings.

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. Our Patient-centric Drug Discovery using Active Learning asset ("PeDAL"™) is a unique technology that combines our proprietary, clinically validated patient tumor cell line assay ("TruTumor"™), a vast knowledgebase of proprietary and public data together ("TumorSpace"™) with active learning - the active learning allowing the efficient exploration of compound drug responses against a large diverse patient "space". PeDAL offers researchers the opportunity to efficiently and cost-effectively bring patient diversity much earlier in the drug discovery process. PeDAL works by iterative cycles of active-learning powered Learn-Predict-Test to guide the testing of patient-specific compound responses using the TruTumor assay and patient cell lines to build a comprehensive predictive model of patient responses to compounds. This predictive model can then be used to rank compounds by the fraction of patients of certain profiles that respond as well as the set of compounds that provide the best coverage across patients. PeDAL will be used in fee-for-service projects with pharmaceutical companies.

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. Through the course of over 15 years of clinical testing of the responses of patient tumors to drugs, Helomics has amassed a huge proprietary knowledgebase of 150,000 patient cases. This data has been rigorously de-identified and aggregated to build a unique, proprietary model of tumor drug response that we call TumorSpace. The TumorSpace model and its data provide *a priori* knowledge for the machine learning approaches we employ as part of the PeDAL approach.

TumorSpace model provides a significant competitive advantage to our business offerings. PeDAL's unique patient and tumor-centric AI-driven approach can rapidly and cost-effectively screen hundreds of compounds in thousands of tumor cell lines, and gain valuable information about off- target effects and deliver:

- A ranked list of drug candidates by responsiveness
- Sets of drug candidates that provide maximum patient coverage
- Biomarker profiles of patients that respond to specific drug candidates

PeDAL also can deliver drug candidates targeted at a specific patient profile as early as the hit-to-lead stage of discovery, significantly increasing the chance of clinical success, leading to a dramatic improvement in both the success, time, and cost of your oncology discovery programs. The AI- driven models will, once validated, also provide clinical decision support to help oncologists individualize treatment.

Our CRO/AI business leverages our core competence in profiling the drug response of patient tumors. Our large knowledgebase of tumor drug response and other data, together with proven AI, has created a unique capability for oncology drug discovery that allows for the highly efficient screening of drug responses from thousands of diverse, well-characterized patient primary tumor cell lines. This novel disruptive patient-centric approach is ideally suited to the early part of drug discovery (especially hit-to-lead, lead optimization, and pre-clinical), resulting in better prioritization of compounds and better coverage of patient diversity. This will dramatically improve the chances of successfully translating discoveries, resulting in lowered costs, shortened timelines, and most importantly enhanced "speed-to-patient" for new therapies.

Our CRO services business applies PeDAL 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 TruTumor platform;
- TumorSpace model of over 150,000 tumor cases;
- Experienced AI team and AI/Core® 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.

Precision medicine, precisely targeting drugs based on the genomic profile of the patient, has become the aspiration for cancer therapy. 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 this precision oncology 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, due to a lack of research regarding which mutations in a tumor confer a sensitivity to a particular drug. 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. Our Helomics TumorSpace database addresses this need.

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 Tumor Drug Response Testing (formerly ChemoFx) and Genomic Profiling (formerly BioSpeciFx) tests. The Tumor Drug Response Testing determines how a patient's tumor specimen responds to a panel of various chemotherapy drugs, while the Genomic Profiling evaluates the expression of specific genes, or biomarkers, in the patient's tumor. Our proprietary TruTumor 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. Tumor Drug Response Testing is a fresh tissue platform that uses the patient's own live tumor cells to help physicians identify effective treatment options for each gynecologic cancer patient.

Genomic Profiling offers a select group of clinically relevant protein expression and genetic mutation tests associated with drug response and disease prognosis. Physicians can select biomarkers for testing from carefully chosen panels of relevant tests, intuitively organized by cancer pathway and tumor type. Results for these tests are presented in a clear, easy to understand format, including summaries of the clinical relevance of each marker.

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:

- TruTumor - a clinically validated tumor-profiling platform 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.

- TumorSpace model contains data on the drug response profiles across 131 cancer types over 10+ years of clinical testing.

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 TumorSpace platform to build AI-driven predictive models of tumor drug response and outcome. 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 is the understanding that our AI-driven models of tumor drug response serve 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, PeDAL tumor profiling, and CLIA laboratory to provide custom solutions utilizing our full array of assets and expertise.

The Cancer Quest 2020 initiative focused 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.

We completed our Discovery 21 campaign, the proof of concept for PeDAL, which incorporates CoRE™, our active machine learning program, with tumor profile data and human tumor samples, to efficiently determine the most effective drug treatment for a specific cancer type. With each iteration of PeDAL, the program learns, predicts, and then directs the most informative wet lab experimentation, while building the predictive model.

Discovery 21 demonstrated that a predictive model was built in an efficient manner using PeDAL and that the model revealed drug response patterns that provide insight into the treatment of ovarian cancer. This was followed by a validation round, with results demonstrating the accuracy of the model that predicted drug response. Within the clinical sector, we will be able to 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 fee-for-service 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.

zPREDICTA

zPREDICTA develops tumor-specific in vitro models for oncology drug discovery and research by biopharmaceutical companies and other clients and partners. zPREDICTA's 3D product models accelerate the drug development process for its clients and partners by leveraging the expertise in carcinogenesis, metastasis and the tumor microenvironment. It develops complex in vitro models that recapitulate the physiological environment of human tissue.

From target discovery and lead optimization to preclinical evaluation of efficacy and toxicity, the objective is to develop the tools necessary to accurately identify compounds that will have the highest probability of improving human health. Product offerings include preclinical testing services based on our proprietary models directly to clients in the biopharmaceutical industry.

zPREDICTA has expertise in creating human, disease-specific tissue microenvironments for testing drug efficacy and safety. Unlike other platforms, the patented 3D models utilize proprietary organ-specific extracellular matrix formulations that match the in vivo milieu of the organ of interest. These models reconstruct both cellular and extracellular compartments of each tissue, which is especially essential for testing of immuno- oncology agents.

zPREDICTA technology demonstrates high clinical relevance, enabling its pharma clients to manage pipeline attrition more efficiently by identifying drugs that are effective in patients, from the hundreds, and often thousands, of compounds in development. The tumor-specific models are used by a number of biopharmaceutical companies to evaluate the efficacy and toxicity of their therapeutic pipelines. Our models replicate the extracellular matrix ("ECM") of individual organs and disease-specific soluble microenvironment mimicking the biology of human disease, and as such, demonstrate high correlation with clinical response.

The zPREDICTA 3D tumor-specific models incorporate tissue-specific extracellular matrices and tumor-specific medium supplements allowing for a true reconstruction of tumor microenvironment. Our approach is compatible with multiple classes of immuno-oncology agents from naked antibodies and antibody-drug conjugates, to bi- and tri-specific compounds, and CAR-T cells. The organ-specific disease models provide 3D reconstruction of human tissues accurately representing each disease state and mimicking drug response.

Our platform incorporates both cellular and extracellular elements of tissue microenvironment in an organ- and disease-specific manner.

Extracellular components
- · extracellular matrix
- · soluble factors (cytokines, etc.)

Cell-cell interactions
- · tumor-tumor interactions
- · tumor-stroma interactions

Our platform is designed to evaluate drug candidates and drug combinations within the native microenvironment of human tissues. Our technology is a patient-derived 3D culture platform that recreates the complex human organ microenvironment thereby preserving the critical interactions between a tumor and its surroundings. Our platform supports long-term survival and proliferation of malignant and non-malignant cellular components of tissues. This includes tumor cells, stroma, and immune components. Anticancer cancer compounds tested in our models exhibit high correlation with clinical response when comparing treatment outcomes in the clinic with cellular behavior in response to the therapeutic regimen. Our organ-specific technology is compatible with multiple drug classes, including small molecules, antibodies, antibody-drug conjugates, immunomodulatory agents, CAR-T cells, etc. Our platform is fully customizable to the tumor and tissue of interest. It is compatible with multiple cell types, drug classes, and downstream analysis methods.

Applications include providing efficacy screening of anticancer compounds, evaluation of mechanisms of drug resistance, identification of new drug combinations, rescue of failed drug candidates, assessment of off-target toxicity, target discovery and biomarker discovery.

Soluble Biotech

Our subsidiary, Soluble Biotech Inc. ("Soluble"), focuses on contract services and research for biopharmaceutical company clients and academic collaborators, focused on solubility improvements, stability studies, and protein production. Specifically, Soluble provides optimized FDA-approved formulations for vaccines, antibodies, and other protein therapeutics in a faster and lower cost basis to its customers. In addition, Soluble enables protein degradation studies, which is a new and, based on current projections, potentially substantial line of business for the Company.

The primary assets of Soluble are our automated High Throughput Self-Interaction Chromatography (HSC™). HSC is a self-contained, automated system that conducts high-throughput, self-interaction chromatography screens on excipients previously approved by the FDA for protein formulations. Our technology measures second virial coefficient (B22 value) of protein-protein interactions to identify excipients that promote protein solubility in solutions. The data generated from HSC screens are analyzed by a proprietary predictive algorithm to identify the optimal combination(s) of buffers, pH, and excipients, resulting in increased solubility and physical stability of proteins. Several of our clients have seen ten- fold and hundred-fold increases in their protein's solubility while maintaining physical stability. For biopharmaceutical clients this means faster development times and quicker progression of molecules into the clinic. For academic collaborators, this means further progression of biochemical & biology studies necessary to advance fundamental research in areas of unmet medical need.

In addition, Soluble provides comprehensive protein stability analysis. Analysis via time-dependent shelf-life studies and forced degradation studies designed to quickly determine which of the previously FDA approved additives that will improve the solubility and stability of proteins in solutions. Services include pre-formulation development, stability assessment, and biophysical characterization which evaluate variables including pH, temperature, humidity, light, oxidizing agents, and mechanical stress to determine the most promising additives, formulation of *B22* values and confirmation on conformation stability. We provide clients with a list of the most promising additives from a set of over 40 different additives that can increase the solubility and stability of protein formulations.

Soluble also offers protein solubility kits that allow rapid identification of soluble formulations. We provide four different kits to fulfill customer solubility requirements. The kits are in 96-well format and provide the tools and methods to compare relative solubility across 88 common formulations (with 8 controls). Soluble kits utilize a simple mix and spin protocol that quickly evaluates aggregation behavior as a function of pH, salt, and additives costing significantly less than if manually determined. In addition, we provide innovative technologies for bacterial detection and removal in therapeutic proteins that continue to be a significant issue in the pharmaceutical field.

In addition, Soluble supplies proprietary technologies for bacterial endotoxin detection and removal. Endotoxin is an inherent byproduct of bacterial expression of therapeutic proteins. However, therapeutic proteins are required to have extremely low endotoxin levels. Soluble provides a product to remove endotoxin that works through multiple molecular interactions for efficient removal over a wide range of buffer conditions with minimal product loss. The detection of endotoxin can also be adversely affected by the protein therapeutic itself. To address this, Soluble provides sample treatment kits to minimize detection interference while using standard detection assays.

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: (i) reduce overhead costs to hospitals and surgical centers; (ii) improve compliance with the Occupational Safety and Health Administration ("OSHA") and other regulatory agency safety guidelines; (iii) improve efficiency in the operating room and radiology and endoscopy departments, thereby leading to greater profitability; and (iv) 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. We continue to operate the Skyline Medical business by continually improving our strategic opportunities, while focusing our resources on our precision medicine business.

Industry and Market Background and Analysis - Infectious and Biohazardous Waste Management

There has long been recognition of the collective potential for ill effects to healthcare workers from exposure to infectious/biohazardous 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 Skyline Medical division consists 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.

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. 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.

TumorGenesis

Our subsidiary TumorGenesisis is our research and development arm for Helomics and zPREDICTA. TumorGenesis also specializes in media that help cancer cells grow outside the patient's body and retain their DNA/RNA and proteomic signatures. With this tool, researchers are able to expand and study cancer cell types inherent in blood tumors and organ systems of all mammals, including humans.

May 2022 Concurrent Registered Direct Offerings and Private Placement

On May 18, 2022, we completed a registered direct offering in which we issued and sold an aggregate of 3,837,280 shares of our common stock, at a purchase price of $0.60 per share ("First Offering"). In addition, in a concurrent private placement ("Private Placement"), we sold to the same investors unregistered warrants to purchase up to an aggregate of 3,837,280 shares of our common stock at an exercise price of $0.70 per share (the "May 2022 Warrants"). The May 2022 Warrants will become exercisable on November 18, 2022 and will expire on November 18, 2027.

On May 18, 2022, we also completed a concurrent registered direct offering in which we issued and sold an aggregate of 8,162,720 shares of our common stock, at a purchase price of $0.60 per share ("Second Offering"). In connection with the Second Offering, we entered into a warrant amendment agreement (the "Warrant Amendment Agreement") with each of the purchasers in the Second Offering. Under the Warrant Amendment Agreement, we agreed to amend certain existing warrants to purchase up to 16,325,435 shares of common stock that were previously issued in 2020 and 2021 to the purchasers in the Second Offering, with exercise prices ranging from $1.00 to $2.00 per share (the "Existing Warrants"), as follows: (i) lower the exercise price of the Existing Warrants to $0.70 per share, (ii) provide that the Existing Warrants, as amended, will not be exercisable until six months following the closing date of the Second Offering, and (iii) extend the original expiration date of the Existing Warrant by five and one-half years following the close of the Second Offering. We refer to the First Offering, Second Offering and the Private Placement collectively as the "May 2022 Offerings".

We received aggregate net proceeds of approximately $6.5 million, after deducting placement agent fees and other offering expenses payable by us, from the First Offering and Second Offering.

Wainwright served as our exclusive placement agent in connection with the May 2022 Offerings. We paid Wainwright a cash fee equal to 7.5% of the aggregate gross proceeds from the sale of the shares in the First Offering and Second Offering; a management fee equal to 1.0% of the aggregate gross proceeds from the sale of the shares in the First Offering and Second Offering; $65,000 for non-accountable expenses; and $15,950 for clearing fees. In addition, we issued to designees of Wainwright as compensation warrants to purchase up to an aggregate of 900,000 shares of our common stock (the "Placement Agent Warrants"), equal to 7.5% of the aggregate number shares of our common stock sold in the First Offering and Second Offering. The Placement Agent Warrants have an exercise price equal to $0.75 per share, which is 125% of the offering price per share in the First Offering and Second Offering, will become exercisable on November 18, 2022 and will expire on May 16, 2027. We refer to the May 2022 Warrants and the Placement Agent Warrants collectively as the "Warrants."

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.

OFFERING SUMMARY

Common stock that may be offered by selling stockholders	4,737,280 shares, which are comprised of (i) 3,837,280 shares of common stock issuable upon the exercise of the May 2022 Warrants, and (ii) 900,000 shares of stock issuable upon the exercise of the Placement Agent Warrants.
Use of proceeds	The selling stockholders will receive all of the net proceeds from the sale of the shares offered pursuant to this prospectus. We will not receive any of the proceeds from these sales. However, we will receive proceeds from the exercise of the Warrants if exercised for cash.
Plan of Distribution	The selling stockholders may sell or otherwise dispose the shares of our common stock covered by this prospectus in a number of different ways and at varying prices. For further information, see "Plan of Distribution" beginning on page 17.
Risk Factors	You should read the "Risk Factors" section of this prospectus and the other information contained or incorporated by reference in this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.

RISK FACTORS

An investment in our securities involves a number of risks. Before deciding to invest in our securities, in addition to the risks and uncertainties discussed below under "Cautionary Note Regarding Forward-Looking Statements," you should carefully consider the specific risks described under the section captioned "Risk Factors" in our most recent Annual Report on Form 10-K, as updated by our subsequent quarterly and other reports we file with the SEC. If any of these risks actually occur, our business, financial condition, results of operations or cash flow could be materially 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 and uncertainties described in the documents referenced above are not the only ones that we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may become material and adversely affect our business.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference may contain "forward-looking statements" within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), We have based these forward-looking statements on our current expectations and beliefs about future developments or events and their potential effects on us. Forward-looking statements generally relate to future events or our future financial or operating performance. 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 forward-looking statements are subject to known and unknown risks, uncertainties and assumptions about us that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Important factors that may cause such differences include:

- Our history of operating losses;
- Current negative operating cash flows;
- Our capital needs to accomplish our goals, and the adequacy of available funds, including our ability to access the capital markets, our ability to obtain additional equity funding from current or new stockholders to fund our business operations and/or future growth plans, and the dilutive effect that raising equity capital would have on the relative equity ownership of our existing investors;
- Risks related to recent and future acquisitions, including the possibility of further impairment of goodwill and risks related to the benefits and costs of acquisition;
- 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 related to the protection of our intellectual property or any future legal claims relating to 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;
- Risk that our business and operations will continue to be materially and adversely affected by the COVID-19 pandemic, which has impacted on a significant supplier; has resulted in delayed production and less efficiency; and has impacted on our sales efforts, accounts receivable, and terms demanded by suppliers; and may impact financing transactions;
- Our ability to maintain effective control over financial reporting; and
- Other specific risks that may be alluded to in this prospectus.

We discuss many of these and other risks and uncertainties in greater detail under the heading "Risk Factors" in our most recent Annual Report on Form 10-K, as updated in our subsequent Quarterly Reports on Form 10-Q. Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

You should read this prospectus, as well as the documents incorporated by reference into this prospectus, completely and with the understanding that our actual future results, performance and achievements may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

USE OF PROCEEDS

We will not receive any proceeds from the sale of shares of our common stock by the selling stockholders identified in this prospectus. However, we will receive proceeds from the exercise of the Warrants for cash. We expect to use these proceeds for working capital purposes. We will have broad discretion over the use of proceeds from the exercise of the Warrants. There is no assurance that the holders of the Warrants will elect to exercise any or all of such Warrants. The Warrants contain a "cashless exercise" feature that allows the holders to exercise any of such Warrants without making a cash payment to us if there is not an effective registration statement covering the resale of the shares issuable upon exercise of such Warrants.

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 200,000,000 shares of common stock, and 20,000,000 shares of preferred stock, $0.01 par value per share. As of September 20, 2022, there were 78,388,875 shares of common stock outstanding and 79,246 shares of Series B Convertible Preferred Stock outstanding. All of the outstanding shares of our capital stock are fully paid and nonassessable.

Common Stock

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.

Preferred Stock

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.

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.

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 Equiniti.

Listing

The shares of our common stock are listed on The Nasdaq Capital Market under the symbol "POAI."

SELLING STOCKHOLDERS

The selling stockholders acquired the Warrants from us in a private offering in connection with the completion of the First Offering and Second Offering on May 18, 2022, pursuant to an exemption from the registration requirements under Section 4(a)(2) of the Securities Act and Rule 506 of Regulation D promulgated thereunder. We agreed to file a registration statement with the SEC for the purposes of registering for resale from time to time the shares of common stock that may be issued upon exercise of the May 2022 Warrants and Placement Agent Warrants. For additional information regarding the issuances of the Warrants, see "The Company - May 2022 Concurrent Direct Offerings and Private Placement."

The selling stockholders have not had any position or office, or other material relationship with us or any of our affiliates over the past three years, except as described in the table below.

The table below lists the selling stockholders and other information regarding the ownership of the shares of common stock offered hereby by the selling stockholders. The second column lists the number of shares of common stock owned by each selling stockholder as of September 20, 2022, assuming exercise of the May 2022 Warrants or Placement Agent Warrants held by such selling stockholder on that date without regard to any limitations on exercises. The third column lists the shares of common stock being offered by this prospectus by the selling stockholders. The fourth column assumes the sale of all of the shares offered by the selling stockholder pursuant to this prospectus.

The May 2022 Warrants and Placement Agent Warrants are not exercisable until November 18, 2022. In addition, a selling stockholder will not have the right to exercise its May 2022 Warrants or Placement Agent Warrants to the extent such exercise would cause the selling stockholder, together with its affiliates, to beneficially own in excess of 4.99% or 9.99%, as applicable, of the then outstanding common stock following such exercise, excluding for purposes of such determination common stock issuable upon exercise of the May 2022 Warrants or Placement Agent Warrants which have not been exercised. The number of shares in the second and fourth columns of the table do not reflect these limitations. The selling stockholders may sell all, some or none of their shares in this offering. See "Plan of Distribution."

We do not know how long the selling stockholders will hold the Warrants, whether any will exercise the Warrants, and upon such exercise, how long such selling stockholders will hold the shares of common stock before selling them. We currently have no agreements, arrangements or understandings with the selling stockholders regarding the sale of any of the shares.

Except as indicated by the footnotes below, we believe, based on the information furnished to us, that each of the selling stockholders has sole voting and investment power with respect to all shares of common stock that the selling stockholder owns, subject to applicable community property laws. Except as otherwise described below, based on the information provided to us by the selling stockholders, the selling stockholders are not a broker-dealer or an affiliate of a broker-dealer.

	Shares Beneficially		Shares Beneficially Owned After Offering	
Name of Selling Stockholder	Owned Before Offering	Number of Shares Being Offered	Number of Shares	Percentage of Class[1]
Armistice Capital Master Fund[2]	12,546,287	3,050,000(3)	9,496,287	10.81%(4)
Bigger Capital Fund, LP [5]	890,000	250,000(6)	640,000	*
District 2 Capital Fund LP [5]	890,000	250,000(7)	640,000	*
Intracoastal Capital, LLC [8]	4,110,026	287,280(9)	3,822,746	4.67%
Michael Vasinkevich [10]	2,263,653	577,125(11)	1,686,528	2.11%
Noam Rubinstein [10]	1,204,301	283,500(12)	920,801	1.16%
Craig Schwabe [10]	119,792	30,375(13)	89,417	*
Charles Worthman [10]	38,231	9,000(14)	29,231	*

* Less than 1%

(1) Based on 78,388,875 shares of our common stock issued and outstanding as of September 20, 2022. In computing the percentage ownership of a selling stockholder, we deemed outstanding shares of common stock subject to Warrants held by that selling stockholder that are exercisable within 60 days of September 20, 2022. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other selling stockholder.

(2) The shares are directly held by Armistice Capital Master Fund Ltd. ("Master Fund"), a Cayman Islands exempted company, and may be deemed to be indirectly beneficially owned by (i) Armistice Capital, LLC ("Armistice"), as the investment manager of the Master Fund; and (ii) Steven Boyd, as the Managing Member of Armistice Capital. Armistice and Steven Boyd disclaim beneficial ownership of the reported securities except to the extent of their respective pecuniary interest therein.

(3) Represents 3,050,000 shares of common stock issuable upon the exercise of the May 2022 Warrants that will become exercisable on November 18, 2022. Does not take into account beneficial ownership limitations preventing Master Fund from exercising any of the May 2022 Warrants to the extent following such exercise its beneficial ownership would exceed 4.99%.

(4) Does not take into account beneficial ownership limitations preventing Master Fund from exercising any of its warrants to the extent following such exercise its beneficial ownership would exceed 4.99%.

(5) Bigger Capital Fund GP, LLC ("Bigger GP") is a general partner of Bigger Capital Fund, LP ("Bigger Capital") and District 2 Capital LP ("District 2") is the investment manager of District 2 Capital Fund LP ("District 2 CF"). Michael Bigger is the managing member of Bigger GP and District 2 and District 2 Holdings LLC ("District 2 Holdings"), which is the managing member of District 2 GP LLC ("District 2 GP"), the general partner of District 2 CF. Therefore, Mr. Bigger, District 2, District 2 Holdings and District 2 CF may be deemed to be the beneficial owner, and have the shared power to dispose of or direct the disposition, of the shares reported as beneficially owned by District 2 CF and Mr. Bigger and Bigger GP may be deemed to be the beneficial owner, and have the shared power to dispose of or direct the disposition, of the shares reported as beneficially owned by Bigger Capital and District 2 CF.

(6) Represents 250,000 shares of common stock issuable upon the exercise of the May 2022 Warrants that will become exercisable on November 18, 2022. The May 2022 Warrants are only exercisable to the extent that Bigger Capital and its affiliates beneficially own no more than 4.99% of the outstanding common stock after exercise.

(7) Represents 250,000 shares of common stock issuable upon the exercise of the May 2022 Warrants that will become exercisable on November 18, 2022. The May 2022 Warrants are only exercisable to the extent that District 2 CF and its affiliates beneficially own no more than 4.99% of the outstanding common stock after exercise.

(8) Mitchell P. Kopin ("Mr. Kopin") and Daniel B. Asher ("Mr. Asher"), each of whom are managers of Intracoastal Capital, LLC ("Intracoastal"), have shared voting control and investment discretion over the shares held by Intracoastal. As a result, each of Mr. Kopin and Mr. Asher may be deemed to have beneficial ownership (as determined under Section 13(d) of the Exchange Act) of the securities reported herein that are held by Intracoastal.

(9) Represents 287,280 shares of common stock offered issuable upon the exercise of the May 2022 Warrants that will become exercisable on November 18, 2022. The May 2022 Warrants are only exercisable to the extent that Intracoastal and its affiliates beneficially own no more than 9.99% of the outstanding common stock after exercise.

(10) The selling stockholder is associated with Wainwright, a registered broker-dealer and the placement agent for the May 2022 Offerings, and, as a designee of Wainwright, received Placement Agent Warrants in the transactions described under "The Company – May 2022 Concurrent Registered Direct Offerings and Private Placement."

(11) Represents 577,125 shares of common stock issuable upon the exercise of the Placement Agent Warrants that will become exercisable on November 18, 2022. The Placement Agent Warrants are only exercisable to the extent that Michael Vasinkevich and his affiliates beneficially own no more than 4.99% of the outstanding common stock after exercise.

(12) Represents 283,500 shares of common stock issuable upon the exercise of the May 2022 Warrants that will become exercisable on November 18, 2022. The May 2022 Warrants are only exercisable to the extent that Noam Rubinstein and his affiliates beneficially own no more than 4.99% of the outstanding common stock after exercise.

(13) Represents 30,375 shares of common stock issuable upon the exercise of the May 2022 Warrants that will become exercisable on November 18, 2022. The May 2022 Warrants are only exercisable to the extent that Craig Schwabe and his affiliates beneficially own no more than 4.99% of the outstanding common stock after exercise.

(14) Represents 9,000 shares of common stock issuable upon the exercise of the May 2022 Warrants that will become exercisable on November 18, 2022. The May 2022 Warrants are only exercisable to the extent that Charles Worthman and his affiliates beneficially own no more than 4.99% of the outstanding common stock after exercise.

PLAN OF DISTRIBUTION

We are registering the resale by the selling stockholders or their permitted transferees of up to 4,737,280 shares of common stock that are issuable upon the exercise of the Warrants. The selling stockholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. We will pay all fees and expenses incident to the registration of the securities to be offered and sold pursuant to this prospectus. The selling stockholders will bear all commissions and discounts, if any, attributable to their sale of securities.

The selling stockholders or their permitted transferees may, from time to time, sell any or all of shares of our common stock covered hereby on the Nasdaq stock market, or any other stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed prices, at prevailing market prices at the time of sale, at varying prices or at negotiated prices. The selling stockholders may use any one or more of the following methods when selling securities:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- underwritten transactions;
- block trades (which may involve a cross trade) in which the broker-dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales;
- in transactions through broker-dealers that agree with the selling stockholders to sell a specified number of such securities at a stipulated price per security;
- through the distribution of shares by any selling stockholder to its partners, members or stockholders;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell securities under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the selling stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of securities, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2121; and in the case of a principal transaction a markup or markdown in compliance with FINRA Rule 2121. Discounts, concessions, commissions and similar selling expenses, if any, that can be attributed to the sale of common stock will be paid by the selling stockholders and/or the purchasers.

In connection with the sale of the securities or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. The selling stockholders may also sell securities short and deliver these securities to close out their short positions, or loan or pledge the securities to broker- dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The selling stockholders and any broker-dealers or agents that are involved in selling the securities may be deemed to be "underwriters" within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

We agreed to keep this prospectus effective until no selling stockholder that was a purchaser in the First Offering owns any May 2022 Warrants or shares of common stock issuable upon exercise of the May 2022 Warrants.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale of securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the selling stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of securities of the common stock by the Selling Stockholders or any other person. We will make copies of this prospectus available to the selling stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale.

LEGAL MATTERS

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

EXPERTS

Baker Tilly US, LLP, our independent registered public accounting firm, has audited our consolidated financial statements as of and for the years ended December 31, 2021 and 2020 included in our Annual Report on Form 10-K for the year ended December 31, 2021, which are incorporated by reference into this prospectus and elsewhere in the registration statement, and are included in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 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, 2021 filed on March 31, 2022;
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2022 filed on May 12, 2022;
- Our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022 filed on August 11, 2022;
- Our Current Reports on Form 8-K filed on January 4, 2022, February 18, 2022, March 31, 2022, May 12, 2022, May 13, 2022, May 18, 2022, May 23, 2022, July 26, 2022, August 11, 2022, September 14, 2022 and September 16, 2022;
- Our Current Report on Form 8-K/A filed on February 10, 2022; and
- The description of the Company's common stock under the caption "Description of Predictive Capital Stock – Common Stock" in the Company's Amendment No 2 to Registration Statement on Form S-4 as filed with the SEC on January 24, 2019, as amended by the description filed as Exhibit 4.14 to the Company's Annual Report on Form 10-K on March 31, 2022.

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.

4,737,280 Shares Common Stock

PROSPECTUS

October 13, 2022