

PROSPECTUS SUPPLEMENT
(To Prospectus Dated March 23, 2021)



PREDICTIVE ONCOLOGY INC.

16,671,747 Shares of Common Stock

This prospectus supplement (“Supplement”) modifies, supersedes and supplements certain information contained in, and should be read in conjunction with, that certain prospectus (the “Prospectus”) filed with the Securities and Exchange Commission (the “SEC”) by Predictive Oncology Inc. (the “Company”), dated March 23, 2021, related to the resale from time to time by the selling stockholders named therein of 16,671,747 shares of the Company’s common stock, par value \$0.01 per share (“Common Stock”), including (i) shares of Common Stock issuable upon exercise of outstanding warrants at an original exercise price of \$2.00 per share expiring on August 16, 2026 and (ii) shares of Common Stock issuable upon exercise of outstanding warrants at an original exercise price of \$2.00 per share expiring on August 23, 2026. Together, such warrants to purchase shares of Common Stock at the exercise price of \$2.00 per share are referred to as the “Existing Warrants,” and some of the Existing Warrants have been amended as described below under “Amendments to Existing Warrants.”

The Common Stock is listed on the Nasdaq Capital Market under the symbol “POAI.” On May 18, 2022, the last reported sale price of the Common Stock on the Nasdaq Capital Market was \$0.336 per share.

The information contained in this Supplement modifies and supersedes, in part, the information in the Prospectus. This Supplement is not complete without, and may not be delivered or used except in connection with, the Prospectus. Any information that is modified or superseded in the Prospectus shall not be deemed to constitute a part of the Prospectus, except as modified or superseded by this Supplement.

We may amend or supplement the Prospectus from time to time by filing amendments or supplements as required. You should read the entire Prospectus and any amendments or supplements carefully before you make an investment decision.

Investing in our securities involves risks. See “Risk Factors” on page 10 of the Prospectus and the risks described in the documents incorporated by reference in the Prospectus, including the risks described under “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2021.

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

FORWARD-LOOKING STATEMENTS

You should carefully consider the risk factors set forth in the Prospectus, as well as the other information contained in this Supplement and the Prospectus. This Supplement and the Prospectus contains forward-looking statements regarding events, conditions, and financial trends that may affect our plan of operation, business strategy, operating results, and financial position. You are cautioned that any forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties. Actual results may differ materially from those included within the forward-looking statements as a result of various factors. Cautionary statements in the “Risk Factors” section of the Prospectus and the reports incorporated by reference therein identify important risks and uncertainties affecting our future, which could cause actual results to differ materially from the forward-looking statements made or included in this Supplement and the Prospectus.

AMENDMENTS TO EXISTING WARRANTS

This Supplement is being filed to disclose the following:

On May 18, 2022, in connection with a securities purchase agreement entered into by the Company with certain institutional and accredited investors, including certain holders of the Existing Warrants, the Company filed a prospectus supplement (the “Registered Direct Prospectus Supplement”) and the accompanying base prospectus with the SEC under the Company’s registration statement on Form S-3 (Registration No. 333-254309). Pursuant to the securities purchase agreement and the Registered Direct Prospectus Supplement, the Company offered and sold an aggregate of 8,162,720 shares of its Common Stock, at a purchase price of \$0.60 per share (the “Registered Direct Offering”). In connection with the Registered Direct Offering, the Company entered into a warrant amendment agreement (the “Warrant Amendment Agreement”) with each of the purchasers in the Registered Direct Offering under which the Company agreed to amend certain outstanding warrants to purchase up to an aggregate of 16,325,435 shares of common stock that were previously issued in 2020 and 2021 to the purchasers, with exercise prices ranging from \$1.00 to \$2.00 per share, in consideration for their purchase of approximately \$4.9 million of Common Stock in the Registered Direct Offering.

Under the Warrant Amendment Agreement, with respect to the Existing Warrants held by the investors in the Registered Direct Offering and covered by the Warrant Amendment Agreement, the Company agreed to (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 November 18, 2022 (six months following the closing date of the Registered Direct Offering) and (iii) extend the original expiration date of the Existing Warrants to November 18, 2027 (five and one-half years following the close of the Registered Direct Offering). These amendments became effective on May 18, 2022, when the closing of the Registered Direct Offering occurred and each of such purchasers satisfied its purchase commitment to the Company.

Existing Warrants to purchase up to an aggregate of 4,993,993 shares of Common Stock are held by the selling stockholders named in the Prospectus and subject to the Warrant Amendment Agreements. The following selling stockholders named in the Prospectus participated in the Registered Direct Offering and entered into Warrant Amendment Agreements with respect to the following number of shares being offered pursuant to the Prospectus, as amended by this Supplement, all of which shares may be purchased under warrants that had exercise prices of \$2.00 per share prior to the Warrant Amendment Agreement: Intracoastal Capital, LLC, 1,197,337 shares; Armistice Capital Master Fund, 1,712,414 shares; Bigger Capital Fund, LP, 260,000 shares; District 2 Capital Fund LP, 260,000 shares; Cavalry Fund I LP/ Cavalry Special Ops Fund, LLC, 582,624 shares; FiveT Capital AG/ FiveT Investment Management Ltd., 171,695 shares; Lind Global Macro Fund, LP, 192,308 shares; Alpha Capital Anstalt, 338,362 shares; KBB Asset Management, 100,000 shares; and Brio Capital Master Fund Ltd., 179,253 shares. No changes have been made to the remaining Existing Warrants to purchase up to an aggregate of 1,639,034 shares of Common Stock, which shares may be resold under the Prospectus, as amended by this Supplement.

The date of this Prospectus Supplement is May 18, 2022.