

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

FORM S-3
REGISTRATION STATEMENT
UNDER THE SECURITIES ACT OF 1933

AngioDynamics, Inc.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

11-3146460
(I.R.S. Employer Identification No.)

14 Plaza Drive
Latham, NY 12110
(518) 795-1400
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Stephen A. Trowbridge
Senior Vice President, General Counsel and Assistant Secretary
AngioDynamics, Inc.
14 Plaza Drive
Latham, NY 12110
(518) 795-1400
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies of all communications, including communications sent to agent for service, should be sent to:

William P. Mills, Esq.
Cadwalader, Wickersham & Taft LLP
One World Financial Center
New York, NY 10281
(212) 504-6000

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 the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

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 registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Large accelerated filer

Accelerated filer

Non-accelerated filer
(Do not check if a smaller reporting company)

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Securities to Be Registered⁽¹⁾	Amount to Be Registered⁽²⁾	Proposed Maximum Offering Price Per Share⁽³⁾	Proposed Maximum Aggregate Offering Price⁽³⁾	Amount of Registration Fee⁽³⁾
Common stock, par value \$0.01 per share	9,433,008	\$ 11.75	\$ 110,837,844	\$ 15,118.28

(1) Includes associated rights (the "Rights") to purchase preferred or common stock. Until the occurrence of certain prescribed events, none of which has occurred, the Rights are not exercisable.

(2) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall be deemed to cover an indeterminate number of additional securities to be offered as a result of stock splits, stock dividends or similar transactions. The shares may be offered for resale by selling stockholders pursuant to the shelf prospectus contained herein.

(2) Estimated solely for the purpose of computing the amount of the registration fee pursuant to Rule 457(c) under the Securities Act, based on an average of the high and low reported sales prices of the registrant's shares of common stock, as reported on the Nasdaq Global Select Market on August 12, 2013, of \$11.87 and \$11.62.

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 this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED AUGUST 15, 2013

PROSPECTUS

9,433,008 Shares



ANGIODYNAMICS, INC.

Common Stock

This prospectus relates to the offer and resale of up to 9,433,008 shares of common stock of AngioDynamics, Inc. by the selling stockholders identified in this prospectus.

The selling stockholders will receive all of the proceeds from any sales of their shares. AngioDynamics, Inc. is not selling any shares of common stock pursuant to this prospectus and will not receive any of the proceeds from the sale of any shares of common stock to be sold by the selling stockholders. We are registering such shares of common stock under the terms of a stockholders agreement between us and the selling stockholders. For additional information on this stockholders agreement and certain restrictions on the selling stockholders' ability to transfer its shares of common stock without our consent, you should refer to the section entitled "Selling Stockholders" beginning on page 3.

Our registration of the shares of common stock covered by this prospectus does not mean that the selling stockholders will offer or sell any of the shares. The selling stockholders may sell the shares of common stock covered by this prospectus in a number of different ways and at varying prices. We provide more information about how the selling stockholders may sell the shares in the section entitled "Plan of Distribution" beginning on page 5.

Our common stock is traded on the NASDAQ Global Select Market ("NASDAQ") under the symbol "ANGO". On August 14, 2013, the last sale price of our common stock as reported on NASDAQ was \$11.65 per share.

See "Risk Factors" beginning on page 2 to read about factors you should consider before buying shares of our common stock.

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 August 15, 2013

TABLE OF CONTENTS

Prospectus Summary	1
Risk Factors	2
Cautionary Note Regarding Forward-Looking Statements	2
Use of Proceeds	2
Selling Stockholders	3
Plan of Distribution	5
Legal Matters	7
Experts	7
Where You Can Find More Information	7
Incorporation of Information by Reference	8

ABOUT THIS PROSPECTUS

You should rely only on the information contained in or incorporated by reference in this prospectus or in any related free writing prospectus filed by us with the Securities and Exchange Commission, or the “SEC.” We and the selling stockholder have not authorized anyone to provide you with different information. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in this prospectus or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus, the documents incorporated by reference and any related free writing prospectus is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in this 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.

Except where the context requires otherwise, in this prospectus “AngioDynamics” and the “Company” refer to AngioDynamics, Inc., and “we”, “us” and “our” refer to the Company and its direct and indirect subsidiaries, unless the context otherwise requires.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. This summary does not contain all of the information that you should consider before deciding to invest in our common stock. You should read this entire prospectus carefully, including the “Risk Factors” section included elsewhere in this prospectus and our financial information incorporated by reference herein.

Our Business

We design, manufacture and sell a wide range of medical, surgical and diagnostic devices used by professional healthcare providers for vascular access, for the treatment of peripheral vascular disease and for use in oncology and surgical settings. Our devices are generally used in minimally invasive, image-guided procedures. Most of our products are intended to be used once and then discarded, or they may be temporarily implanted for short- or long-term use.

Company Information

We have been in business since 1988. Our corporate headquarters is located at 14 Plaza Drive, Latham, New York 12110. Our phone number is (518) 795-1400. Our website is www.angiodynamics.com. We do not incorporate by reference into this prospectus the information on our website, and you should not consider it as part of this prospectus.

The Offering

Common Stock Offered by the Selling Stockholders	Up to 9,433,008 shares
Common Stock Outstanding	35,062,039 shares (as of July 31, 2013)
Terms of the Offering	The selling stockholders will determine when and how it sells the common stock offered in this prospectus, as described in “ <i>Plan of Distribution</i> .”
Use of Proceeds	We will not receive any of the proceeds from the sale of the shares of common stock being offered under this prospectus. See “ <i>Use of Proceeds</i> .”
NASDAQ Symbol	ANGO
Risk Factors	You should read the “ <i>Risk Factors</i> ” section of this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.

RISK FACTORS

We face a variety of significant and diverse risks, many of which are inherent in our business. You should carefully consider the risks described under the caption “Risk Factors” in our filings with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), incorporated by reference herein, before making an investment decision. The occurrence of any of those risks could materially and adversely affect our business, prospects, financial condition, results of operations or cash flow. Other risks and uncertainties that we do not now consider to be material or of which we are not now aware may become important factors that affect us in the future. You should carefully consider the risks and uncertainties in the documents incorporated by reference herein before deciding to invest in our common stock.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements regarding AngioDynamics’ expected future financial position, results of operations, cash flows, business strategy, budgets, projected costs, capital expenditures, products, competitive positions, growth opportunities, plans and objectives of management for future operations, as well as statements that include the words such as “expects,” “reaffirms,” “intends,” “anticipates,” “plans,” “believes,” “seeks,” “estimates,” or variations of such words and similar expressions, are forward-looking statements. These forward looking statements are not guarantees of future performance and are subject to risks and uncertainties. Investors are cautioned that actual events or results may differ from our expectations. Factors that may affect our actual results achieved include, without limitation, our ability to develop existing and new products, future actions by FDA or other regulatory agencies, results of pending or future clinical trials, the results of ongoing litigation, overall economic conditions, general market conditions, market acceptance, foreign currency exchange rate fluctuations, the effects on pricing from group purchasing organizations and competition, as well as our ability to integrate purchased businesses. Other risks and uncertainties include, but are not limited to, the factors described from time to time in our reports filed with the SEC, including our Form 10-K for the fiscal year ended May 31, 2013.

Although we believe that the assumptions underlying the forward-looking statements contained herein are reasonable, any of the assumptions could be inaccurate and, therefore, there can be no assurance that the forward-looking statements included in this prospectus will prove to be accurate. In light of the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of such information should not be regarded as a representation by us or any other person that our objectives and plans will be achieved. Any forward-looking statements are made pursuant to the Private Securities Litigation Reform Act of 1995 and, as such, speak only as of the date made. AngioDynamics disclaims any obligation to update the forward-looking statements. Investors are cautioned not to place undue reliance on these forward-looking statements which speak only as of the date stated, or if no date is stated, as of the date of this document.

The section included in this prospectus under the heading “*Risk Factors*” and in the documents incorporated herein lists various important factors that could cause actual results to differ materially from projected and historic results. We note these factors for investors as permitted by the Private Securities Litigation Reform Act of 1995. You should understand that it is not possible to predict or identify all such factors. Consequently, you should not consider any such list to be a complete set of all potential risks or uncertainties.

USE OF PROCEEDS

All of the shares of common stock offered by the selling stockholders pursuant to this prospectus will be sold by the selling stockholders for their accounts. We will not receive any of the proceeds from these sales. We will pay substantially all of the expenses of the selling stockholders other than underwriting discounts and commissions.

SELLING STOCKHOLDERS

The selling stockholders named in this prospectus may offer to sell from time to time in the future up to an aggregate of 9,433,008 shares of our common stock. As of the date of this prospectus, the selling stockholders collectively hold 9,433,008 shares of our common stock.

On May 22, 2012, we completed the acquisition of NM Holding Company, Inc., a privately-held global medical device company with strengths in the vascular access, interventional radiology and interventional cardiology markets. In connection with the acquisition, we issued 9,433,008 shares of our common stock to the selling stockholders and entered into a Stockholders Agreement, dated as of May 22, 2012, among the selling stockholders, AngioDynamics and Avista Capital Holdings, LP.

Under the terms of the Stockholders Agreement, our Board of Directors appointed two (2) individuals designated by the selling stockholders to serve on our Board of Directors until such time as, with respect to the first designee, the selling stockholders' beneficial ownership in AngioDynamics has been reduced below twenty percent (20%) of the then outstanding voting shares and, with respect to the second designee, the selling stockholders' beneficial ownership in AngioDynamics has been reduced below ten percent (10%) of the then outstanding voting shares. Any designee must satisfy certain requirements, including, among other things, that such person must not, at the time of designation, be prohibited or disqualified from serving as a director of a public company pursuant to any applicable rule or regulation of the SEC or NASDAQ or pursuant to applicable law.

Under the terms of the Stockholders Agreement, each of the selling stockholders and Avista Capital Holdings, LP is subject to a standstill provision until the later of (a) May 22, 2019 and (b) the three (3) year anniversary of the date on which the selling stockholders cease to beneficially own voting securities of AngioDynamics representing at least five percent (5%) of the voting securities outstanding. The standstill restrictions will generally prevent the selling stockholders and Avista Capital Holdings, LP from (i) acquiring any additional new AngioDynamics voting securities and (ii) taking a number of actions that might result in the selling stockholders or Avista Capital Holdings, LP exerting influence or control over AngioDynamics.

Under the terms of the Stockholders Agreement, the selling stockholders have agreed to vote all voting securities owned by the selling stockholders in accordance with the recommendation of the AngioDynamics Board of Directors for a period of one (1) year from the date of the Stockholders Agreement. Thereafter, the selling stockholders must vote their securities either (a) in accordance with the recommendation of the AngioDynamics Board of Directors or (b) in proportion to the votes cast with respect to the voting securities not owned by the selling stockholders, for so long as the selling stockholders beneficially own at least ten percent (10%) of the outstanding voting securities of AngioDynamics. However, each selling stockholder can vote its voting securities in its sole discretion if the selling stockholders beneficially own less than fifteen percent (15%) of the voting securities then outstanding and there is no designee of the selling stockholders then serving on the board.

Under the terms of the Stockholders Agreement, until May 22, 2013, the selling stockholders are prohibited from selling or otherwise transferring our common stock without our consent. Thereafter, the selling stockholders must use commercially reasonable efforts to transfer their shares of AngioDynamics in an orderly manner and may do so without AngioDynamics' consent and without restriction. However, in connection with any transfer that is effected pursuant to (A) a registration statement or a privately-negotiated transaction not subject to the registration requirements of the Securities Act, in each case, in which the selling stockholders negotiate the terms of such transfer directly with the third party purchaser of such shares or (B) in accordance with Rule 144 under the Securities Act but not pursuant to the manner of sale provisions specified in Rule 144(f), in each case, the selling stockholders shall not knowingly transfer shares:

- representing more than four and nine-tenths percent (4.9%) of the Company's voting securities then outstanding in a single transfer or series of related transfers (unless in a single transfer or series of related transfers in one or more block trades with one or more registered broker-dealers), or
- to (1) certain competitors of AngioDynamics, or (2) persons that have engaged in a proxy contest or have filed a Schedule 13D with respect to any issuer that disclosed certain plans or proposals that were not authorized or approved by the board of directors of such issuer or were not entered into pursuant to an

agreement with such issuer, in either case, during the two (2) year period immediately preceding the date of such transfer.

We are registering the shares to satisfy registration rights that we have granted to the selling stockholders under the Stockholders Agreement.

The table below describes each selling stockholder's beneficial ownership of our common stock as of the date of this prospectus.

Name of Beneficial Owner⁽¹⁾	Number of shares of common stock owned	Percentage of common stock owned prior to offering of shares pursuant to this prospectus (%)⁽¹⁾	Number of shares registered for sale pursuant to this prospectus	Percentage of common stock owned after offering of shares pursuant to this prospectus (%)⁽¹⁾⁽²⁾
Avista Capital Partners, L.P.	5,848,255	16.72%	5,848,255	—
Avista Capital Partners (Offshore), LP	1,542,132	4.41%	1,542,132	—
Navilyst Medical Co-Invest LLC	2,042,621	5.84%	2,042,621	—

(1) Beneficial ownership is determined in accordance with Rule 13d-3(d) promulgated by the SEC under the Exchange Act. Unless otherwise noted, each person or group identified possesses sole voting and investment power with respect to the shares. In calculating the number of shares beneficially owned by each selling stockholder prior to and after the offering of shares pursuant to this prospectus, we have based our calculations on 34,974,120 shares of common stock outstanding as of the date of this prospectus.

(2) Assumes the sale of all shares of common stock offered by the selling stockholders pursuant to this prospectus.

PLAN OF DISTRIBUTION

The aggregate proceeds to the selling stockholders from the sale of the shares will be the purchase price less any discounts and commissions. The selling stockholders reserve the right to accept and, together with their agents, to reject, any proposed purchase of shares to be made directly or through agents. As used in this prospectus, "selling stockholders" includes the donees, transferees, heirs, executors, administrators, legal representatives, pledgees, or others who may later hold the selling stockholders' interests.

The shares offered by this prospectus may be sold from time to time to purchasers:

- directly by the selling stockholders; or
- through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, commissions or agent's commissions from the selling stockholders or the purchasers of the shares. These discounts, concessions, or commissions may be in excess of those customary in the types of transaction involved.

The selling stockholders and any underwriters, broker-dealers or agents who participate in the sale or distribution of the shares may be deemed to be "underwriters" within the meaning of Section 2(11) of the Securities Act. Selling stockholders who are deemed to be "underwriters" within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act. Underwriters are subject to certain statutory liabilities, including, but not limited to, those relating to Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Exchange Act. If the shares are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions.

The shares offered in this prospectus may be sold in one or more transactions at:

- fixed prices;
- prevailing market prices at the time of sale;
- prices related to such prevailing market prices;
- varying prices determined at the time of sale; or
- negotiated prices.

These sales may be effected in one or more transactions:

- on any national securities exchange or quotation service on which the shares may be listed or quoted at the time of sale, including NASDAQ;
- in the over-the-counter market;
- in transactions otherwise than on such exchanges or services or in the over-the-counter market;
- in ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- in purchases by a broker or dealer as principal and resale by such broker or dealer for its account pursuant to this prospectus;
- through the writing of options (including the issuance by the selling stockholders of derivative securities), whether the options or such other derivative securities are listed on an options exchange or otherwise;
- through the settlement of short sales; or

- through any combination of the foregoing.

These transactions may include block transactions or crosses. Crosses are transactions in which the same broker acts as an agent on both sides of the trade.

In connection with the sales of the shares, the selling stockholders may enter into hedging transactions. For example, a selling stockholder may:

- enter into transactions with a broker-dealer, affiliate thereof or other third party in connection with which such other party may engage in sales of our common stock pursuant to this prospectus, in which case such other party may use shares of our common stock received from the selling stockholder to close out any short positions created;
- sell our common stock short itself pursuant to this prospectus and use shares of our common stock held by it to close out its short positions;
- enter into option or other types of transactions that require the selling stockholder to deliver our common stock to a broker-dealer or an affiliate thereof or other third party, who may then resell or transfer the common stock pursuant to this prospectus; or
- loan or pledge our common stock to a broker-dealer or an affiliate thereof or other third party, who may sell the loaned shares or, in an event of default in the case of a pledge, sell the pledged shares pursuant to this prospectus.

A short sale of shares by a broker-dealer, financial institution or selling stockholder would involve the sale of such shares that are not owned, and therefore must be borrowed, in order to make delivery of the security in connection with such sale. In connection with a short sale of shares, a broker-dealer, financial institution or selling stockholder may purchase shares on the open market to cover positions created by short sales. In determining the source of the shares to close out such short positions, the broker-dealer, financial institution or selling stockholders may consider, among other things, the price of shares available for purchase in the open market. At the time a particular offering of the shares is made, a prospectus supplement, if required, will be distributed, which will set forth the names of the selling stockholders, the aggregate amount of shares being offered and the terms of the offering, including, to the extent required, (1) the name or names of any underwriters, broker-dealers or agents, (2) any discounts, commissions and other terms constituting compensation from the selling stockholders and (3) any discounts, commissions or concessions allowed or reallocated to be paid to broker-dealers. Any discounts, commissions, concessions or other items constituting compensation allowed or reallocated or paid to underwriters, dealers or agents may be changed from time to time. To the extent the shares are offered pursuant to a prospectus supplement remain unsold, the selling stockholders may offer those shares on different terms pursuant to another prospectus supplement.

To our knowledge, there are currently no plans, arrangements or understandings between any selling stockholders and any underwriter, broker-dealer or agent regarding the sale of the shares by the selling stockholders.

The shares are listed on NASDAQ under the symbol "ANGO".

There can be no assurance that any selling stockholder will sell any or all of the shares under this prospectus. Further, we cannot assure you that any such selling stockholder will not transfer, devise or gift the shares by other means not described in this prospectus. In addition, any shares covered by this prospectus that qualify for sale under Rule 144 or Rule 144A of the Securities Act may be sold under Rule 144 or Rule 144A rather than under this prospectus. In addition, the selling stockholders may sell the common stock by any other legally available means. The shares may be sold in some states only through registered or licensed brokers or dealers. In addition, in some states the shares may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification is available and complied with.

The selling stockholders and any other person participating in the sale of the shares will be subject to the Exchange Act. The Exchange Act rules include, without limitation, Regulation M, which may limit the timing of purchases and sales of any of the shares by the selling stockholders and any other person. These provisions may

restrict certain activities of, and limit the timing of, purchases by the selling stockholders or other persons or entities. Furthermore, under Regulation M, persons engaged in a distribution of securities are prohibited from simultaneously engaging in market making and certain other activities with respect to such securities for a specified period of time prior to the commencement of such distributions, subject to special exceptions or exemptions. Regulation M may restrict the ability of any person engaged in the distribution of the securities to engage in market-making and certain other activities with respect to those securities. In addition, the anti-manipulation rules under the Exchange Act may apply to sales of the securities in the market. All of these limitations may affect the marketability of the shares and the ability of any person to engage in market-making activities with respect to the shares.

In the Stockholders Agreement, we have agreed to indemnify or provide contribution to the selling stockholders against certain liabilities, including certain liabilities under the Securities Act. In addition, we have agreed to pay substantially all of the expenses incidental to the registration of the shares to the public, including the payment of federal securities law and state blue sky registration fees, except that we will not bear any underwriting discounts or commissions or transfer taxes relating to the sale of the shares.

Agents and underwriters may be entitled under agreements entered into with us and the selling stockholders to indemnification against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments which the agents or underwriters may be required to make in respect thereof. Agents and underwriters may be customers of, may engage in transactions with, or perform services for, us and the selling stockholders in the ordinary course of business. The specific terms of any lock-up provisions in respect of any given offerings will be described in the applicable prospectus supplement.

Certain entities that may act as underwriters and their respective affiliates may have, from time to time, performed, and may perform in the future, various financial advisory and investment banking services for us, the selling stockholders and affiliates, for which they received or will receive customary fees and expenses.

We will not receive any proceeds from sales of any securities by the selling stockholders.

LEGAL MATTERS

The validity of the issuance of the shares of common stock offered hereby will be passed upon for AngioDynamics, Inc. by Stephen A. Trowbridge, Senior Vice President, General Counsel and Assistant Secretary of AngioDynamics, Inc. Mr. Trowbridge beneficially owns, or has rights to acquire under AngioDynamics' employee benefit plans, an aggregate of less than 1% of AngioDynamics' common stock.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control Over Financial Reporting) incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended May 31, 2013 have been so incorporated in reliance on the reports of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC. Certain information in the registration statement has been omitted from this prospectus in accordance with the rules of the SEC. We are a public company and file proxy statements and annual, quarterly and current reports and other information with the SEC. The registration statement, such reports and other information can be inspected and copied at the Public Reference Room of the SEC located at 100 F Street, N.E., Washington D.C. 20549. Copies of such materials, including copies of all or any portion of the registration statement, can be obtained from the Public Reference Room of the SEC at prescribed rates. You can call the SEC at 1-800-SEC-0330 to obtain information on the operation of the Public Reference Room. Such materials may also be accessed electronically by means of the SEC's home page on the Internet (www.sec.gov).

INCORPORATION OF INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information we file with it. This means that we can disclose important information to you by referring you to those documents. Any information we reference in this manner is considered part of this prospectus. Information contained in this prospectus supersedes information incorporated by reference that we have filed with the SEC prior to the date of this prospectus. We incorporate by reference the documents listed below, except to the extent that any information contained in any such document is deemed “furnished” in accordance with the rules of the SEC:

- our Annual Report on Form 10-K for the fiscal year ended May 31, 2013, filed on August 14, 2013;
- our Definitive Proxy Statement on Schedule 14A filed with the SEC on September 10, 2012;
- the description of our common stock, par value \$0.01 per share, as contained in a registration statement on Form 8-A filed on May 13, 2004 and in the prospectus included in the Registrant’s Registration Statement on Form S-1 (Commission File No. 333-113329), originally filed on March 5, 2004, as amended by Amendments No. 1, 2 and 3 thereto and as further amended by any subsequent amendments thereto; and
- all other documents filed by the Company pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, after the registration statement is declared effective and before the end of any offerings made under this prospectus.

In no event, however, will any of the information the Company furnishes to, pursuant to Item 2.02 or Item 7.01 of any Current Report on Form 8-K (including exhibits related thereto) or other applicable Commission rules, rather than files with, the Commission be incorporated by reference or otherwise be included herein, unless such information is expressly incorporated herein by a reference in such furnished Current Report on Form 8-K or other furnished document.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the reports or documents that we incorporate by reference in this prospectus contained in the registration statement (except exhibits to the documents that are not specifically incorporated by reference) at no cost to you, by writing or calling us at:

AngioDynamics, Inc.
14 Plaza Drive
Latham, New York 12110
(518) 795-1400

Information about us, including the documents incorporated by reference to this prospectus, is also available at our website at <http://investors.angiodynamics.com>. However, the information in our website is not a part of this prospectus, and other than the documents specifically incorporated by reference, is not incorporated by reference into this prospectus.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated costs and expenses to be incurred in connection with the issuance and distribution of the securities of AngioDynamics, Inc. (the “registrant”) which are registered under this Registration Statement on Form S-3 (this “registration statement”), other than underwriting discounts and commissions. The selling stockholders will not bear any portion of such costs and expenses. All amounts are estimates except the Securities and Exchange Commission registration fee.

The following expenses will be borne solely by the registrant.

	Amount to Be Paid
Registration fee	\$ 15,118.28
Legal fees and expenses	*
Accounting fees and expenses	*
Miscellaneous	*
Total ⁽¹⁾	*

(1) Does not include any fees or expenses in connection with any subsequent underwritten offering and any prospectus supplements prepared in connection therewith.

* These fees and expenses are based on the number and type of issuances and the amount of securities offered, and accordingly cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers.

The registrant is incorporated under the laws of the State of Delaware. Section 145 of the General Corporation Law of the State of Delaware (the “DGCL”) grants each corporation organized thereunder the power to indemnify any person who is or was a director, officer, employee or agent of a corporation or enterprise, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of being or having been in any such capacity, if he acted in good faith in a manner reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action, or proceeding, had no reasonable cause to believe his conduct was unlawful, except that with respect to an action brought by or in the right of the corporation such indemnification is limited to expenses (including attorneys’ fees). Our amended and restated certificate of incorporation provides that we must indemnify our directors and officers (or their heirs, executors or personal or legal representatives) to the fullest extent permitted by law; except that we shall only be required to indemnify a director or officer in connection with a proceeding (or part thereof) initiated by such person if the commencement of such proceeding (or part thereof) by such person was authorized in advance by our Board of Directors. Our amended and restated certificate of incorporation also provides that no director will be personally liable to us or any of our stockholders for monetary damages for breach of fiduciary duty as a director, except to the extent such exemption from liability or limitation thereof is not permitted under the DGCL.

In addition, our amended and restated by-laws provides that we must indemnify our officers and directors to the fullest extent permitted by law if the Company determines that such person acted in good faith in a manner reasonably believed to be in or not opposed to the best interests of the Company and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person’s conduct was unlawful, except that if a director or officer is successful on the merits or otherwise, such person will be indemnified by us without the necessity of the determination.

The registrant currently maintains liability insurance for its directors and officers.

Item 16. Exhibits.

Reference is made to the Exhibit Index following the signature pages hereto, which Exhibit Index is hereby incorporated into this Item.

Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes:

(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, any 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 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;

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the registration statement is on Form S-3 or Form F-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of 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 under the Securities Act of 1933 to any purchaser:

(A) 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

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (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), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 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.

(b) 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 section 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.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.

[NO FURTHER TEXT ON THIS PAGE]

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Latham, state of New York, on August 15, 2013.

ANGIODYNAMICS, INC.

By: /s/ Joseph M. DeVivo

Name: Joseph M. DeVivo

Title: President and Chief Executive Officer

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Joseph M. DeVivo and Mark T. Frost, and each of them, his true and lawful attorneys-in-fact and agents, with full power to act separately and full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or either of them or his or their substitute or substitutes may lawfully do or cause to be done by virtue hereof.

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

By: /s/ Joseph M. DeVivo

Name: Joseph M. DeVivo

Title: President, Chief Executive Officer (Principal Executive Officer) and Director

Date: August 15, 2013

By: /s/ Mark T. Frost

Name: Mark T. Frost

Title: Chief Financial Officer (Principal Financial and Chief Accounting Officer)

Date: August 15, 2013

By: /s/ Vincent A. Bucci

Name: Vincent A. Bucci

Title: Chairman of the Board

Date: August 15, 2013

By: /s/ David Burgstahler

Name: David Burgstahler

Title: Director

Date: August 15, 2013

By: /s/ Wesley E. Johnson, Jr.

Name: Wesley E. Johnson, Jr.

Title: Director

Date: August 15, 2013

By: /s/ Steven R. LaPorte
Name: Steven R. LaPorte
Title: Director
Date: August 15, 2013

By: /s/ Jeffrey G. Gold
Name: Jeffrey G. Gold
Title: Director
Date: August 15, 2013

By: /s/ Kevin J. Gould
Name: Kevin J. Gould
Title: Director
Date: August 15, 2013

By: /s/ Dennis S. Meteny
Name: Dennis S. Meteny
Title: Director
Date: August 15, 2013

By: /s/ Howard W. Donnelly
Name: Howard W. Donnelly
Title: Director
Date: August 15, 2013

By: /s/ Sriram Venkataraman
Name: Sriram Venkataraman
Title: Director
Date: August 15, 2013

EXHIBIT INDEX

Exhibit Number

Description

- 3.1 Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Company's quarterly report on Form 10-Q, filed with the Commission on October 7, 2005).
- 3.2 Amended and Restated By-laws (incorporated by reference to Exhibit 3.2 of the Company's quarterly report on Form 10-Q, filed with the Commission on October 7, 2005).
- 5.1 Opinion of Stephen A. Trowbridge, Senior Vice President, General Counsel and Assistant Secretary of AngioDynamics, Inc.
- 23.1 Consent of PricewaterhouseCoopers LLP
- 23.2 Consent of Stephen A. Trowbridge, Vice President, General Counsel and Assistant Secretary of AngioDynamics, Inc. (included in Exhibit 5.1)
- 24.1 Power of Attorney (included on signature page hereto)



August 15, 2013

AngioDynamics, Inc.
14 Plaza Drive
Latham, NY 12110

Ladies and Gentlemen:

I am General Counsel of AngioDynamics, Inc., a Delaware corporation (the "Company"), and have acted as counsel to the Company in connection with its Registration Statement on Form S-3 (the "Registration Statement") filed pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration of 9,433,008 shares (the "Shares") of the Company's common stock, par value \$0.01 per share (the "Common Stock"). This opinion letter is being furnished in accordance with the requirements of Item 601(b)(5) of Regulation S-K promulgated under the Securities Act.

As your counsel, I have examined originals or copies of such documents, corporate records, certificates of public officials and other instruments as I have deemed necessary or advisable for the purpose of rendering this opinion.

In connection with the opinion expressed herein, I have assumed that, at or prior to the time of the delivery of any such security, (i) the Company shall remain validly existing as a corporation in good standing under the laws of the State of Delaware; (ii) the Registration Statement shall have been declared effective and such effectiveness shall not have been terminated or rescinded; and (iii) there shall not have occurred any change in law affecting the validity or enforceability of such security. I have also assumed that the execution, delivery and performance by the Company of any security whose terms are established subsequent to the date hereof (a) require no action by or in respect of, or filing with, any governmental body, agency or official and (b) do not contravene, or constitute a default under, any public policy, any provision of applicable law or regulation or any judgment, injunction, order or decree or any agreement or other instrument binding upon the Company.

Based upon the foregoing, I am of the opinion that the shares of Common Stock proposed to be sold pursuant to the Registration Statement have been validly issued and are fully-paid and non-assessable.

I am a member of the Bar of the State of New York and the foregoing opinion is limited to the laws of the State of New York and the General Corporation Law of the State of Delaware.

I hereby consent to the filing of this opinion as an exhibit to the Registration Statement referred to above and further consent to the reference to my name under the caption "Legal Matters" in the prospectus, which is a part of the Registration Statement. In giving this consent,

I do not admit that I am in the category of persons whose consent is required under Section 7 of the Securities Act.

Very truly yours,

/s/ Stephen A. Trowbridge

-2-

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of our reports dated August 14, 2013 relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appear in AngioDynamics, Inc's Annual Report on Form 10-K for the year ended May 31, 2013. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

Albany, NY
August 15, 2013