

ANGIODYNAMICS INC
Form 424B7
April 06, 2017
Table of Contents

Filed Pursuant to Rule 424(b)(7)

Registration No. 333-190642

The information in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement is part of an effective registration statement filed with the Securities and Exchange Commission. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and neither we nor the selling stockholders are soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to Completion, Dated April 6, 2017.

PRELIMINARY PROSPECTUS SUPPLEMENT

(To Prospectus dated October 3, 2013)

2,350,000 Shares

ANGIODYNAMICS, INC.

Common Stock

This prospectus relates to the offer and resale of up to 2,350,000 shares of common stock of AngioDynamics, Inc. by the selling stockholders identified in this prospectus supplement.

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 supplement and will not receive any of the proceeds from the sale of any shares of common stock to be sold by the selling stockholders.

Our common stock is traded on the NASDAQ Global Select Market (NASDAQ) under the symbol ANGO . On April 5, 2017, the last sale price of our common stock as reported on NASDAQ was \$16.81 per share.

Investing in our common stock involves risks. See Risk Factors beginning on page S-3 of this prospectus supplement, beginning on page 2 of the accompanying prospectus, and in our Annual Report on Form 10-K for the fiscal year ended May 31, 2016 (which is incorporated by reference herein) to read about factors you should consider before making a decision to invest in our common stock.

	Per Share	Total
Public offering price	\$	\$
Underwriting discounts and commissions ⁽¹⁾	\$	\$
Proceeds, before expenses, to the selling stockholders	\$	\$

(1) We refer you to Underwriting beginning on page S-15 of this prospectus supplement for additional information regarding total underwriting compensation.

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

The underwriter expects to deliver the shares against payment in New York, New York on , 2017.

Barclays

Prospectus Supplement dated , 2017

Table of Contents

TABLE OF CONTENTS
PROSPECTUS SUPPLEMENT

	Page
<u>ABOUT THIS PROSPECTUS SUPPLEMENT</u>	S-ii
<u>PROSPECTUS SUPPLEMENT SUMMARY</u>	S-1
<u>THE OFFERING</u>	S-2
<u>RISK FACTORS</u>	S-3
<u>CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	S-6
<u>USE OF PROCEEDS</u>	S-7
<u>MARKET PRICE OF OUR COMMON STOCK</u>	S-8
<u>DIVIDEND POLICY</u>	S-9
<u>SELLING STOCKHOLDERS</u>	S-10
<u>MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS FOR NON-U.S. HOLDERS</u>	S-11
<u>UNDERWRITING</u>	S-15
<u>LEGAL MATTERS</u>	S-22
<u>EXPERTS</u>	S-22
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	S-23
<u>INCORPORATION OF DOCUMENTS BY REFERENCE</u>	S-23
PROSPECTUS	

	Page
<u>ABOUT THIS PROSPECTUS</u>	ii
<u>PROSPECTUS SUMMARY</u>	1
<u>RISK FACTORS</u>	2
<u>CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	2
<u>USE OF PROCEEDS</u>	2
<u>SELLING STOCKHOLDERS</u>	2
<u>PLAN OF DISTRIBUTION</u>	5
<u>LEGAL MATTERS</u>	7
<u>EXPERTS</u>	7
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	7
<u>INCORPORATION OF INFORMATION BY REFERENCE</u>	8

We have not authorized anyone to provide any information or to make any representations other than those contained or incorporated by reference herein or in any free writing prospectuses we have prepared. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus supplement is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus supplement is current only as of

its date. Our business, financial condition, results of operation and prospects may have changed since that date.

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

On August 15, 2013 we filed with the Securities and Exchange Commission, or SEC, a registration statement on Form S-3, and on October 3, 2013 we filed with the SEC an amended registration statement on Form S-3, utilizing a shelf registration process relating to the securities described in this prospectus supplement, which was declared effective on October 11, 2013.

This prospectus supplement describes the specific terms of an offering of our common stock and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into the accompanying prospectus. The second part, the accompanying prospectus, provides more general information. If the information in this prospectus supplement is inconsistent with the accompanying prospectus or any document incorporated by reference therein filed prior to the date of this prospectus supplement, you should rely on the information in this prospectus supplement.

It is important for you to read and consider all of the information contained in this prospectus supplement and the accompanying prospectus in making your investment decision. We include cross-references in this prospectus supplement and the accompanying prospectus to captions in these materials where you can find additional related discussions. The table of contents in this prospectus supplement provides the pages on which these captions are located. You should read both this prospectus supplement and the accompanying prospectus, together with the additional information described in the sections entitled **Where You Can Find More Information** and **Incorporation of Documents by Reference** of this prospectus supplement, before investing in our common stock.

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

Table of Contents

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained elsewhere in this prospectus supplement or incorporated by reference into this prospectus supplement and the accompanying prospectus. This summary is not complete and does not contain all of the information that you should consider before investing in our common stock. Before investing in our common stock, you should carefully read the entire prospectus supplement, the accompanying prospectus, any applicable free writing prospectus we file with the SEC and the information incorporated herein by reference, including the financial data and related notes and the sections entitled Risk Factors. Unless the context requires otherwise, references to AngioDynamics and the Company refer to AngioDynamics, Inc., and we, us and our refer to the Company and its direct and indirect subsidiaries.

Overview

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.

Corporate Information

We are a Delaware corporation and 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 supplement the information on, or that can be accessed through, our website, and you should not consider it as part of this prospectus supplement.

Table of Contents

THE OFFERING

Common stock offered by the selling stockholders	2,350,000 shares.
Common stock to be outstanding after this offering	36,788,697 shares.
Use of proceeds	We will not receive any of the proceeds from the sale of shares of common stock by the selling stockholders.
Risk factors	You should read Risk Factors section beginning on page S-3 of this prospectus supplement, in the accompanying prospectus and the documents incorporated by reference for a discussion of factors you should consider carefully before investing in our common stock.

NASDAQ trading symbol

ANGO .

Unless otherwise indicated, the number of shares of our common stock outstanding after this offering excludes:

1,833,827 shares of our common stock issuable upon exercise of outstanding stock options as of April 5, 2017, with a weighted average exercise price of \$15.02 per share;

approximately 1.6 million shares of our common stock available for granting of options under our 2004 Stock and Incentive Award Plan, or the 2004 Plan;

567,195 shares of non-vested restricted stock units outstanding as of April 5, 2017;

1,337,752 shares available for future purchases under our Employee Stock Purchase Plan; and

439,756 performance share awards outstanding as of April 5, 2017.

Table of Contents

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, including our Annual Report on Form 10-K for the year ended May 31, 2016, 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.

Our future operating results are difficult to predict and may vary significantly from quarter to quarter, which may adversely affect the price of our common stock.

The ongoing introduction of new products and services that affect our overall product mix make the prediction of future operating results difficult. You should not rely on our past results as any indication of future results or operating results. The price of our common stock will likely fall in the event that our operating results do not meet the expectations of analysts and investors. Comparisons of our quarterly operating results are an unreliable indication of our future performance because they are likely to vary significantly based on many factors, including:

the level of sales of our products and services in our markets;

our ability to introduce new products or services and enhancements in a timely manner;

the demand for and acceptance of our products and services;

the success of our competition and the introduction of alternative products or services;

our ability to command favorable pricing for our products and services;

the growth of the market for our devices and services;

the expansion and rate of success of our direct sales force in the United States and internationally and our independent distributors internationally;

actions relating to ongoing FDA compliance;

the effect of intellectual property disputes;

the size and timing of orders from independent distributors or customers;

the attraction and retention of key personnel, particularly in sales and marketing, regulatory, manufacturing and research and development;

unanticipated delays or an inability to control costs;

general economic conditions as well as those specific to our customers and markets; and

seasonal fluctuations in revenue due to the elective nature of some procedures.

Our stock price may be volatile, which may cause the value of our stock to decline or subject us to a securities class action litigation.

The trading price of our common stock may be volatile and could be subject to wide fluctuations in response to various factors, many of which are beyond our control, including:

general economic, industry and market conditions;

S-3

Table of Contents

actions by institutional or other large stockholders;

the depth and liquidity of the market for our common stock;

volume and timing of orders for our products;

developments generally affecting medical device companies;

the announcement of new products or product enhancements by us or our competitors;

changes in earnings estimates or recommendations by securities analysts;

investor perceptions of us and our business, including changes in market valuations of medical device companies; and

our results of operations and financial performance.

In addition, the stock market in general, and NASDAQ and the market for medical devices in particular, have experienced substantial price and volume volatility that is often seemingly unrelated to the operating performance of particular companies. These broad market fluctuations may cause the trading price of our common stock to decline. In the past, securities class action litigation has often been brought against a company after a period of volatility in the market price of its common stock. We may become involved in this type of litigation in the future. Any securities litigation claims brought against us could result in substantial expense and the diversion of management's attention from our business.

The presence of a significant stockholder who may sell our common stock, including in this offering, could cause our stock price to decline or affect the ability of a third party to acquire control of us.

Former stockholders of Navilyst Medical ("Navilyst") (which we acquired in May 2012), including investment funds affiliated with Avista Capital Partners, beneficially own approximately 12.7% of our outstanding common stock, and if the selling stockholders sell all of the shares included in this offering, they will beneficially own approximately 6.3% of our outstanding common stock. The sale of a substantial number of our shares by such parties or our other stockholders within a short period of time, including in this offering, could cause our stock price to decline, make it more difficult for us to raise funds through future offerings of our common stock or acquire other businesses using our common stock as consideration.

Certain of the former Navilyst stockholders entered into a stockholders agreement at the closing of the acquisition that permits investment funds affiliated with Avista Capital Partners to appoint two directors to our Board of Directors until such time as, with respect to the first director, certain of the former Navilyst stockholders' beneficial ownership in us has been reduced below 20% of the then outstanding voting shares and, with respect to the second director, certain of the former Navilyst stockholders' beneficial ownership in us has been reduced below 10% of the then outstanding voting shares. Although these directors will not constitute a majority of the Board of Directors, they may exercise

influence over the decisions of the board. David Burgstahler and Sriram Venkataraman were appointed to our Board of Directors on May 22, 2012. In connection with the sale of 2,250,000 shares of the Company's common stock on August 5, 2016 by certain of the former Navilyst stockholders, Sriram Venkataraman resigned from our Board of Directors. In connection with this offering, certain of the former Navilyst stockholders' beneficial ownership in us will be reduced below 10% of our outstanding voting shares. As a result, in accordance with the terms of his appointment to the Board of Directors and the terms of the stockholders agreement, David Burgstahler will resign from our Board of Directors though the Board of Directors may, at their discretion, vote to retain David Burgstahler as an appointed director.

Having certain of the former Navilyst stockholders as significant stockholders may have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from seeking to acquire, a majority of our outstanding common stock or control of our Board of Directors through a proxy solicitation. In that regard, these stockholders and their controlled affiliates are obligated pursuant to the stockholders agreement, in certain circumstances, not to transfer their shares of our common stock, in whole or in part, pursuant to any recapitalization,

Table of Contents

reclassification, consolidation, merger, share exchange or other business combination transaction involving us or pursuant to any tender, exchange or other similar offer for our common stock unless, in each case, the Board of Directors recommends such transaction or offer or fails to recommend that our stockholders reject such transaction or offer.

For the period from the date that is one year from the date of the stockholders agreement until the first date that certain of the former Navilyst stockholders no longer beneficially own at least ten percent (10%) of the voting securities outstanding at such time, the applicable former Navilyst stockholders agree to vote all voting securities then owned by them either, in the sole discretion of each stockholder, (1) in accordance with the recommendation of our Board or (2) in proportion to the votes cast with respect to the voting securities not owned by the applicable former Navilyst stockholders with respect to any business or proposal on which our stockholders are entitled to vote. If at any time following one (1) year from the date of the stockholders agreement, certain of the former Navilyst stockholders beneficially own less than fifteen percent (15%) of the voting securities then outstanding and there is no stockholder designee then serving on our Board pursuant to the stockholders agreement, the applicable former Navilyst stockholders may vote all voting securities then owned by them in their own discretion.

Table of Contents

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement (including the accompanying prospectus and the information incorporated or deemed to be incorporated by reference in this prospectus supplement) and any free writing prospectus that we may provide to you in connection with an offering of our common stock described in this prospectus supplement 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, optimistic, will, may, could, or 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 AngioDynamics' expectations. Factors that may affect the actual results achieved by AngioDynamics include, without limitation, the ability of AngioDynamics to develop its existing and new products, technological advances and patents attained by competitors, infringement of AngioDynamics' technology or assertions that AngioDynamics' technology infringes the technology of third parties, the ability of AngioDynamics to effectively compete against competitors that have substantially greater resources, future actions by the FDA or other regulatory agencies, domestic and foreign health care reforms and government regulations, results of pending or future clinical trials, overall economic conditions, the results of on-going litigation, challenges with respect to third-party distributors or joint venture partners or collaborators, the results of sales efforts, the effects of product recalls and product liability claims, changes in key personnel, the ability of AngioDynamics to execute on strategic initiatives, the effects of economic, credit and capital market conditions, general market conditions, market acceptance, foreign currency exchange rate fluctuations, the effects on pricing from group purchasing organizations and competition, the ability of AngioDynamics to integrate purchased businesses, the presence of a significant stockholder who may sell our common stock, as well as the risk factors listed from time to time in AngioDynamics' SEC filings, including but not limited to its Annual Report on Form 10-K for the year ended May 31, 2016.

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 supplement 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, except as may be required by law. 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 supplement 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.

Table of Contents

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of shares of our common stock by selling stockholders in this offering.

S-7

Table of Contents**MARKET PRICE OF OUR COMMON STOCK**

Our common stock is traded on The Global Select Market tier of The NASDAQ Stock Market LLC (formerly the Nasdaq National Market), under the symbol ANGO.

The following table sets forth, for the fiscal quarters indicated, the high and low sale prices for our common stock as reported by NASDAQ.

	Sale Price	
	High	Low
Year ended May 31, 2015		
First Quarter	\$ 16.60	\$ 13.80
Second Quarter	\$ 17.85	\$ 13.29
Third Quarter	\$ 19.72	\$ 17.29
Fourth Quarter	\$ 18.89	\$ 15.54

	Sale Price	
	High	Low
Year ended May 31, 2016		
First Quarter	\$ 16.80	\$ 14.31
Second Quarter	\$ 14.87	\$ 11.24
Third Quarter	\$ 12.70	\$ 10.02
Fourth Quarter	\$ 12.72	\$ 10.76

	Sale Price	
	High	Low
Year ended May 31, 2017		
First Quarter	\$ 16.99	\$ 11.92
Second Quarter	\$ 17.64	\$ 15.28
Third Quarter	\$ 18.18	\$ 15.64
Fourth Quarter (through April 5, 2017)	\$ 18.12	\$ 16.31

As of April 4, 2017, there were 199 holders of record of our common stock. The actual number of stockholders is greater than the number of record holders, and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

Table of Contents

DIVIDEND POLICY

We did not declare any cash dividends on our common stock during our last three fiscal years. We do not anticipate paying any cash dividends on our common stock for the foreseeable future.

S-9

Table of Contents**SELLING STOCKHOLDERS**

The following table and accompanying footnotes sets forth information as of April 6, 2017 regarding the beneficial ownership of the selling stockholders in this offering. A person is a beneficial owner of a security if that person has or shares voting power, which includes the power to vote or to direct the voting of the security, or investment power, which includes the power to dispose of or to direct the disposition of the security or has the right to acquire such powers within 60 days. Percentage of beneficial ownership is based on 36,788,697 shares of common stock outstanding as of April 4, 2017 and 36,788,697 shares of common stock outstanding after giving effect to this offering.

Name of beneficial owner ⁽¹⁾	Shares of common stock beneficially owned before this offering		Number of shares being offered	Shares of common stock beneficially owned after this offering ⁽¹⁾	
	Number of shares	Total voting percentage		Number of shares	Total voting percentage
Avista Capital Partners, L.P. and related funds ⁽²⁾	4,683,008	12.7%	2,350,000	2,333,008	6.3%

- (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 supplement, we have based our calculations on 36,788,697 shares of common stock outstanding as of the date of this prospectus supplement and 36,788,697 shares of common stock outstanding after giving effect to this offering.
- (2) The shares included in the table consist of: 2,903,360 shares held by Avista Capital Partners, L.P., 765,590 shares held by Avista Capital Partners (Offshore), L.P., and 1,014,058 shares held by Navilyst Medical Co-Invest, LLC (collectively, the Avista Funds). Avista Capital Partners GP, LLC (ACP GP) serves as the general partner of Avista Capital Partners, L.P. and Avista Capital Partners (Offshore), L.P. and as the managing member of Navilyst Medical Co-Invest, LLC. By virtue of the relationships described above, ACP GP may be deemed to share beneficial ownership of the shares held by the Avista Funds. In this offering Avista Capital Partners, L.P. will sell 1,456,947 shares of common stock, Avista Capital Partners (Offshore), L.P. will sell 384,184 shares of common stock and Navilyst Medical Co-Invest, LLC will sell 508,869 shares of common stock. Voting and disposition decisions at ACP GP with respect to the shares held by the Avista Funds are made by an investment committee, the members of which are Thompson Dean, Steven Webster, David Burgstahler, David Durkin and Sriram Venkataraman. Each of the members of the investment committee disclaims beneficial ownership of the shares held by the Avista Funds. The address for each of these entities is c/o Avista Capital Holdings, LP, 65 East 55th Street, 18th Floor, New York, NY 10022.

Table of Contents

**MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS FOR NON-U.S.
HOLDERS**

The following discussion is a summary of the material U.S. federal income and estate tax consequences for Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed, except to the extent provided below. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the Internal Revenue Service, or the IRS, in each case in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder's particular circumstances, including the impact of the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

U.S. expatriates and former citizens or long-term residents of the United States;

persons subject to the alternative minimum tax;

persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;

banks, insurance companies, and other financial institutions;

brokers, dealers or traders in securities;

controlled foreign corporations, passive foreign investment companies, and corporations that accumulate earnings to avoid U.S. federal income tax;

partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);

tax-exempt organizations or governmental organizations;

persons deemed to sell our common stock under the constructive sale provisions of the Code;

persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation; and

tax-qualified retirement plans.

If an entity treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

S-11

Table of Contents

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of a Non-U.S. Holder

For purposes of this discussion, a Non-U.S. Holder is any beneficial owner of our common stock that is neither a U.S. person nor an entity treated as a partnership for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

an individual who is a citizen or resident of the United States;

a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;

an estate, the income of which is subject to U.S. federal income tax regardless of its source; or

a trust that (1) is subject to the primary supervision of a U.S. court and the control of one or more United States persons (within the meaning of Section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

We do not anticipate declaring or paying dividends to holders of our common stock in the foreseeable future. However, if we do make distributions of cash or property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder's adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under Sale or other taxable disposition.

Subject to the discussion below on effectively connected income, dividends paid to a Non-U.S. Holder of our common stock will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates applicable to U.S. persons. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

S-12

Table of Contents

Sale or other taxable disposition

Subject to the discussion below under Information reporting and backup withholding and FATCA, a Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);

the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or

our common stock constitutes a U.S. real property interest, or USRPI, by reason of our status as a U.S. real property holding corporation, or USRPHC, for U.S. federal income tax purposes.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular graduated rates applicable to U.S. persons. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

Gain described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty), which may be offset by U.S. source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends, however, on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a Non-U.S. Holder of our common stock will not be subject to U.S. federal income tax if our common stock is regularly traded, as defined by applicable Treasury Regulations, on an established securities market, and such Non-U.S. Holder owned, actually or constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period.

Non-U.S. Holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Information reporting and backup withholding

Payments of dividends on our common stock will not be subject to backup withholding, provided the applicable withholding agent does not have actual knowledge or reason to know the holder is a United States person and the holder either certifies its non-U.S. status, such as by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in

connection with any dividends on our common stock paid to the Non-U.S. Holder, regardless of whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting, if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such holder is a United States person, or the holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

S-13

Table of Contents

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

FATCA

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act, or FATCA) on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on, or gross proceeds from the sale or other disposition of, our common stock, in each case, paid to a foreign financial institution or a non-financial foreign entity (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations (including providing sufficient documentation evidencing its compliance (or deemed compliance) with FATCA), (2) the non-financial foreign entity either certifies it does not have any substantial United States owners (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain specified United States persons or United States-owned foreign entities (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock, and will apply to payments of gross proceeds from the sale or other disposition of such stock on or after January 1, 2019. If a dividend payment is both subject to withholding under FATCA and subject to the withholding tax discussed above under Distributions, the withholding under FATCA may be credited against and therefore reduce such other withholding tax.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

Federal Estate Tax

Our common stock beneficially owned by an individual who is not a citizen or resident of the United States (as defined for U.S. federal estate tax purposes) at the time of death generally will be includable in the decedent's gross estate for U.S. federal estate tax purposes, unless an applicable estate tax treaty provides otherwise.

Table of Contents

UNDERWRITING

Barclays Capital Inc. is acting as underwriter of the offering. Subject to the terms and conditions set forth in an underwriting agreement between us, the selling stockholders and the underwriter, the selling stockholders intend to sell to the underwriter, and the underwriter intends to purchase from the selling stockholders 2,350,000 shares of our common stock.

Subject to the terms and conditions set forth in the underwriting agreement, the underwriter has agreed to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased.

We and the selling stockholders intend to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriter may be required to make in respect of those liabilities.

The underwriter is offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and other conditions contained in the underwriting agreement, such as the receipt by the underwriter of officer's certificates and legal opinions. The underwriter reserves the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commissions and Discounts

The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriter by the selling stockholder.

Paid by the Selling Stockholders

Per Share	\$
Total	\$

The underwriter proposes to offer the shares of common stock directly to the public and to selected dealers, which may include the underwriter, at the public offering price on the cover of this prospectus supplement. After the offering, the underwriter may change the offering price and other selling terms.

The expenses of the offering, not including the underwriting discounts, are estimated at \$350,000 and are payable by us. We intend to reimburse the underwriter for expenses relating to clearing of this offering with FINRA in an amount up to \$30,000.

No Sales of Similar Securities

We have agreed not to sell or transfer any common stock or securities convertible into, exchangeable for, exercisable for, or repayable with common stock, for 30 days after the date of this prospectus supplement, with certain limited exceptions, without first obtaining the written consent of the underwriter. This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for or repayable with common stock. It also applies to common stock owned now or acquired later by us or for which we later acquire the power of disposition.

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

Short Positions

In connection with the offering, the underwriter may purchase and sell our common stock in the open market. These transactions may include short sales and purchases on the open market to cover positions created by short sales. Short sales involve the sale by the underwriter of a greater number of shares than they are required to purchase in the offering. Covered short sales are sales made in an amount not greater than the underwriter's option to

S-15

Table of Contents

purchase additional shares described above. The underwriter may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriter will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option granted to them. Naked short sales are sales in excess of such option. The underwriter must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in the offering.

Similar to other purchase transactions, the underwriter's purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our Class A common stock or preventing or retarding a decline in the market price of our Class A common stock. As a result, the price of our Class A common stock may be higher than the price that might otherwise exist in the open market. The underwriter may conduct these transactions on NASDAQ, in the over-the-counter market or otherwise.

None of us, the selling stockholders or the underwriter make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our Class A common stock. In addition, neither we, the selling stockholders nor the underwriter make any representation that the underwriter will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Passive Market Making

In connection with this offering, the underwriter may engage in passive market making transactions in the Class A common stock on the NASDAQ in accordance with Rule 103 of Regulation M under the Exchange Act during a period before the commencement of offers or sales of Class A common stock and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded. Passive market making may cause the price of our Class A common stock to be higher than the price that otherwise would exist in the open market in the absence of those transactions. The underwriter is not required to engage in passive market making and may end passive market making activities at any time.

Electronic Distribution

In connection with the offering, the underwriter may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

The underwriter and its affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. The underwriter has received, or may in the future receive, customary fees and commissions for these transactions.

In addition, in the ordinary course of its business activities, the underwriter and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriter and its affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short

positions in such securities and instruments.

European Economic Area

In relation to each member state of the European Economic Area, no offer of ordinary shares which are the subject of the offering has been, or will be made to the public in that Member State, other than under the following exemptions under the Prospectus Directive:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

S-16

Table of Contents

(b) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the Representatives for any such offer; or

(c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of ordinary shares referred to in (a) to (c) above shall result in a requirement for the Company or any Representative to publish a prospectus pursuant to Article 3 of the Prospectus Directive, or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person located in a Member State to whom any offer of ordinary shares is made or who receives any communication in respect of an offer of ordinary shares, or who initially acquires any ordinary shares will be deemed to have represented, warranted, acknowledged and agreed to and with each Representative and the Company that (1) it is a qualified investor within the meaning of the law in that Member State implementing Article 2(1)(e) of the Prospectus Directive; and (2) in the case of any ordinary shares acquired by it as a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, the ordinary shares acquired by it in the offer have not been acquired on behalf of, nor have they been acquired with a view to their offer or resale to, persons in any Member State other than qualified investors, as that term is defined in the Prospectus Directive, or in circumstances in which the prior consent of the Representatives has been given to the offer or resale; or where ordinary shares have been acquired by it on behalf of persons in any Member State other than qualified investors, the offer of those ordinary shares to it is not treated under the Prospectus Directive as having been made to such persons.

The Company, our representatives and their respective affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgments and agreements.

This prospectus supplement has been prepared on the basis that any offer of shares in any Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of shares. Accordingly any person making or intending to make an offer in that Member State of shares which are the subject of the offering contemplated in this prospectus supplement may only do so in circumstances in which no obligation arises for the Company or any of the Representatives to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the Company nor the Representatives have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the Company or the Representatives to publish a prospectus for such offer.

For the purposes of this provision, the expression an offer of ordinary shares to the public in relation to any ordinary shares in any Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the ordinary shares to be offered so as to enable an investor to decide to purchase or subscribe the ordinary shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression Prospectus Directive means Directive 2003/71/EC (as amended) and includes any relevant implementing measure in each Member State.

Notice to Prospective Investors in the United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are qualified investors (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the Order) and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as relevant persons). This document must not

be acted on or relied on in the United Kingdom by persons who are not relevant persons. In the United Kingdom, any investment or investment activity to which this document relates is only available to, and will be engaged in with, relevant persons.

S-17

Table of Contents

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus supplement relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority (DFSA). This prospectus supplement is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for the prospectus supplement. The shares to which this prospectus supplement relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus supplement you should consult an authorized financial advisor.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission (ASIC), in relation to the offering. This prospectus supplement does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the Corporations Act), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons (the Exempt Investors) who are sophisticated investors (within the meaning of section 708(8) of the Corporations Act), professional investors (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus supplement contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus supplement is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

S-18

Table of Contents

Notice to Prospective Investors in Hong Kong

The shares of common stock have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to professional investors as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a prospectus as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares of common stock have been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares of common stock which are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Japan

The shares have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph,

Japanese Person shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to Prospective Investors in Singapore

This prospectus supplement has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the SFA), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

- (a) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- (b) where no consideration is or will be given for the transfer;
- (c) where the transfer is by operation of law;
- (d) as specified in Section 276(7) of the SFA; or

S-19

Table of Contents

(e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Notice to Prospective Investors in Canada

This document constitutes an exempt offering document as defined in and for the purposes of applicable Canadian securities laws. No prospectus has been filed with any securities commission or similar regulatory authority in Canada in connection with the offer and sale of the securities described herein (the Securities). No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon this document or on the merits of the Securities and any representation to the contrary is an offence.

Canadian investors are advised that this document has been prepared in reliance on section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105). Pursuant to section 3A.3 of NI 33-105, this document is exempt from the requirement to provide investors with certain conflicts of interest disclosure pertaining to connected issuer and/or related issuer relationships as would otherwise be required pursuant to subsection 2.1(1) of NI 33-105.

Resale Restrictions

The offer and sale of the Securities in Canada is being made on a private placement basis only and is exempt from the requirement to prepare and file a prospectus under applicable Canadian securities laws. Any resale of Securities acquired by a Canadian investor in this offering must be made in accordance with applicable Canadian securities laws, which may vary depending on the relevant jurisdiction, and which may require resales to be made in accordance with Canadian prospectus requirements, a statutory exemption from the prospectus requirements, in a transaction exempt from the prospectus requirements or otherwise under a discretionary exemption from the prospectus requirements granted by the applicable local Canadian securities regulatory authority. These resale restrictions may under certain circumstances apply to resales of the Securities outside of Canada.

Representations of Purchasers

Each Canadian investor who purchases the Securities will be deemed to have represented to the issuer and to each dealer from whom a purchase confirmation is received, as applicable, that the investor (i) is purchasing as principal, or is deemed to be purchasing as principal in accordance with applicable Canadian securities laws, for investment only and not with a view to resale or redistribution; (ii) is an accredited investor as such term is defined in section 1.1 of National Instrument 45-106 *Prospectus Exemptions* (NI 45-106) or, in Ontario, as such term is defined in section 73.3(1) of the *Securities Act* (Ontario); and (iii) is a permitted client as such term is defined in section 1.1 of National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*.

Taxation and Eligibility for Investment

Any discussion of taxation and related matters contained in this document does not purport to be a comprehensive description of all of the tax considerations that may be relevant to a Canadian investor when deciding to purchase the Securities and, in particular, does not address any Canadian tax considerations. No representation or warranty is hereby made as to the tax consequences to a resident, or deemed resident, of Canada of an investment in the Securities or with respect to the eligibility of the Securities for investment by such investor under relevant Canadian federal and provincial legislation and regulations.

Rights of Action for Damages or Rescission

Securities legislation in certain of the Canadian jurisdictions provides certain purchasers of securities pursuant to an offering memorandum, including where the distribution involves an eligible foreign security as such term is defined in Ontario Securities Commission Rule 45-501 *Ontario Prospectus and Registration Exemptions* and in Multilateral Instrument 45-107 *Listing Representation and Statutory Rights of Action Disclosure Exemptions*, as applicable, with a remedy for damages or rescission, or both, in addition to any other rights they may have at law,

S-20

Table of Contents

where the offering memorandum, or other offering document that constitutes an offering memorandum, and any amendment thereto, contains a misrepresentation as defined under applicable Canadian securities laws. These remedies, or notice with respect to these remedies, must be exercised or delivered, as the case may be, by the purchaser within the time limits prescribed under, and are subject to limitations and defences under, applicable Canadian securities legislation. In addition, these remedies are in addition to and without derogation from any other right or remedy available at law to the investor.

Language of Documents

Upon receipt of this document, each Canadian investor hereby confirms that it has expressly requested that all documents evidencing or relating in any way to the sale of the Securities described herein (including for greater certainty any purchase confirmation or any notice) be drawn up in the English language only. *Par la réception de ce document, chaque investisseur canadien confirme par les présentes qu'il a expressément exigé que tous les documents faisant foi ou se rapportant de quelque manière que ce soit à la vente des valeurs mobilières décrites aux présentes (incluant, pour plus de certitude, toute confirmation d'achat ou tout avis) soient rédigés en anglais seulement.*

Table of Contents

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. Certain legal matters in connection with the offering will be passed upon for the underwriters by Latham & Watkins LLP, New York, New York.

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 supplement by reference to the Annual Report on Form 10-K for the year ended May 31, 2016 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

S-22

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the shares of common stock offered hereby. This prospectus supplement, which constitutes part of the registration statement, does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. For further information with respect to us and the shares of common stock offered hereby, you should refer to the registration statement and to the exhibits and schedules filed therewith. Statements contained in this prospectus supplement regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement. We are also required to file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings, including our registration statement and the exhibits and schedules thereto, may be inspected without charge at the public reference room maintained by the SEC located at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Copies of all or any portion of the registration statements and the filings may be obtained from such offices upon payment of prescribed fees. The public may obtain information on the operation of the public reference room by calling the SEC at (800) SEC-0330 or (202) 551-8090. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC.

You may obtain a copy of any of our filings, at no cost, by writing or telephoning us at:

AngioDynamics, Inc.

14 Plaza Drive

Latham, New York 12110

(518) 795-1400

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference information we file with it into our registration statement of which this prospectus supplement is a part, which means that we can disclose important information to you by referring you to other documents. The information incorporated by reference is considered to be part of this prospectus supplement. We incorporate by reference into this prospectus supplement the documents listed below, except for information furnished under Items 2.02 or 7.01 on Form 8-K or other information furnished to the SEC which is not deemed filed and not incorporated in this prospectus supplement.

We hereby incorporate by reference the following documents:

our Annual Report on Form 10-K for the year ended May 31, 2016, filed on August 1, 2016;

our Quarterly Reports on Form 10-Q for the quarters ended August 31, 2016, filed on October 5, 2016, November 30, 2016, filed on January 6, 2017, and February 28, 2017, filed on April 3, 2017;

our Current Reports on Form 8-K filed with the SEC on July 25, 2016, July 28, 2016, August 5, 2016, September 8, 2016 (amended), October 7, 2016, October 28, 2016, November 10, 2016 and November 18, 2016;

our Definitive Proxy Statement on Schedule 14A, filed on September 15, 2016;

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 before the end of any offerings made under this prospectus supplement.

S-23

Table of Contents

We will provide to each person, including any beneficial owner, to whom a prospectus supplement and accompanying prospectus is delivered, a copy of any or all of the reports or documents that we incorporate by reference in this prospectus supplement and accompanying 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

The documents incorporated by reference to this prospectus supplement and accompanying prospectus are also available at our website at <http://investors.angiodynamics.com>. However, the information on, or that can be accessed through, our website is not a part of this prospectus supplement and accompanying prospectus, and other than the documents specifically incorporated by reference, is not incorporated by reference into this prospectus supplement and accompanying prospectus.

Any statement in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this registration statement to the extent that a statement contained herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

You should rely only on the information incorporated by reference or provided in this prospectus supplement or the accompanying prospectus. We have not authorized anyone else to provide you with different information.

S-24

Table of Contents

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 2.

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 October 2, 2013, the last sale price of our common stock as reported on NASDAQ was \$13.76 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 October 3, 2013

Table of Contents

TABLE OF CONTENTS

<u>PROSPECTUS SUMMARY</u>	1
<u>RISK FACTORS</u>	2
<u>CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	2
<u>USE OF PROCEEDS</u>	2
<u>SELLING STOCKHOLDERS</u>	2
<u>PLAN OF DISTRIBUTION</u>	5
<u>LEGAL MATTERS</u>	7
<u>EXPERTS</u>	7
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	7
<u>INCORPORATION OF INFORMATION BY REFERENCE</u>	8

Table of Contents

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.

Table of Contents

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	35,158,444 shares (as of August 26, 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.

Table of Contents

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.

Table of Contents

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.

Table of Contents

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⁾	Percentage of common stock owned prior to offering of shares pursuant to this prospectus (%) ⁽¹⁾		Percentage of common stock owned after offering of shares pursuant to this prospectus (%) ⁽¹⁾⁽²⁾	
	Number of shares of common stock owned	Number of shares registered for sale pursuant to this prospectus	Number of shares of common stock owned after offering of shares pursuant to this prospectus	Number of shares registered for sale pursuant to this prospectus
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.

Table of Contents

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

Table of Contents

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

Table of Contents

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 report 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).

Table of Contents

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 11, 2013;

our Current Report on Form 8-K filed with the SEC on September 24, 2013;

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 (a) after the initial filing date of the registration statement of which this prospectus is a part and before the effectiveness of the registration statement and (b) 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.

Table of Contents

2,350,000 Shares

ANGIODYNAMICS, INC.

Common Stock

PROSPECTUS SUPPLEMENT

Barclays

, 2017