

MIMEDX GROUP, INC.

Form 424B5

December 09, 2013

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Filed Pursuant to Rule 424(b)(5)

Registration No. 333-189785

The information in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell nor are we seeking an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED DECEMBER 9, 2013

PRELIMINARY PROSPECTUS SUPPLEMENT

(to Prospectus dated July 19, 2013)

5,000,000 Shares

Common Stock

This is an offering of 5,000,000 shares of common stock of MiMedx Group, Inc.

Our common stock is traded on the NASDAQ Capital Market under the symbol MDXG. On December 6, 2013, the last reported sale price of our common stock on the NASDAQ Capital Market was \$6.98 per share.

Investing in our common stock involves risks. See Risk Factors beginning on page S-9 of this prospectus supplement.

	Per Share	Total
Public Offering Price		
Underwriting Discount payable by MiMedx ⁽¹⁾		
Proceeds, Before Expenses, to MiMedx		

⁽¹⁾ In addition to the underwriting discount payable by us, we have agreed to reimburse the underwriters for certain expenses. See Underwriting.

We have granted an option to the underwriters to purchase, on a pro rata basis, up to an additional 750,000 shares of our common stock solely to cover any over-allotments.

The Securities and Exchange Commission (SEC) and state securities regulators have not approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

We anticipate that delivery of the shares of common stock will be made on or about December , 2013.

Sole Book-Running Manager

Canaccord Genuity

Lead Manager

Craig-Hallum Capital Group

Co-Managers

Northland Capital Markets

Lake Street Capital Markets

The date of this prospectus supplement is December , 2013

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of the offering of common stock and also adds to and updates information contained in the accompanying prospectus as well as the documents incorporated by reference in this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus, gives more general information about securities we may offer from time to time, some of which does not apply to the common stock we are offering. This prospectus supplement incorporates by reference important business and financial information about us that is not included in or delivered with this prospectus supplement. To the extent any inconsistency or conflict exists between the information included or incorporated by reference in this prospectus supplement and the information included or incorporated by reference in the accompanying prospectus, the information included or incorporated by reference in this prospectus supplement updates and supersedes the information in the accompanying prospectus.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and any issuer free writing prospectus. Neither we nor the underwriters have authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. Neither we nor the underwriters are making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus and any issuer free writing prospectus, is accurate only as of the respective dates of those materials. Our business, financial condition, results of operations and prospects may have changed since those dates.

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DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement or the accompanying prospectus contain certain forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 with respect to our business, financial condition, liquidity and results of operations. Words such as anticipates, expects, intends, plans, predicts, believes, seeks, estimates, could, would, will, may, can, continue, potential, should, terms or other comparable terminology often identify forward-looking statements. Statements in this prospectus supplement, the accompanying prospectus and the other documents incorporated by reference that are not historical facts are hereby identified as forward-looking statements for the purpose of the safe harbor provided by Section 21E of the Securities Exchange Act of 1934, as amended (which we refer to as the Exchange Act) and Section 27A of the Securities Act of 1933, as amended (which we refer to as the Securities Act). These forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties that could cause actual results to differ materially from the results contemplated by the forward-looking statements, including the risks discussed in this prospectus supplement, the accompanying prospectus, in our Annual Report on Form 10-K for the fiscal year ended December 31, 2012 in Item 1A under Risk Factors, in our Quarterly Reports on Form 10-Q for the periods ended June 30, 2013 and September 30, 2013, at Part II, Item 1A, and our other SEC reports. These forward-looking statements include, but are not limited to, statements about:

the advantages of our products;

our ability to develop future products;

the strength of our patent portfolio and our prospects for obtaining additional patents covering our proprietary technology;

our belief regarding the growth of our direct sales force resulting in increased revenues;

expectations regarding government and other third-party payment or reimbursement for our products, including the impact of the new Centers for Medicare and Medicaid Services (CMS) methodology for reimbursement for skin substitutes;

our beliefs regarding our relationships with our two largest distributors and expectations regarding future revenue growth;

expectations regarding whether anticipated cash from operating and financing activities and existing cash and cash equivalents will enable the company to meet its liquidity needs and fund its planned investment activities for the next year.

our ability to procure sufficient quantities of donated placentas for our products and future products;

the impact of the U.S. Food and Drug Administration's (FDA) position with respect to the qualification of our micronized products under Section 361 of the Public Health Service Act;

the impact of purported class action litigation;

expectations regarding results of our clinical trials with respect to our products; and

our ability to compete effectively.

Many of the important factors that will determine these results are beyond our ability to control or predict. You are cautioned not to put undue reliance on any forward-looking statements, which speak only as of the date of this prospectus supplement, the accompanying prospectus or, in the case of documents incorporated by reference, as of the date of such documents. Except as otherwise required by law, we do not assume any obligation to publicly update or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this prospectus supplement or to reflect the occurrence of unanticipated events.

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PROSPECTUS SUPPLEMENT SUMMARY

The following summary is qualified in its entirety by the more detailed information appearing elsewhere in this prospectus supplement, the accompanying prospectus, the financial statements and other documents incorporated by reference and any related free writing prospectus. You should carefully read the Risk Factors sections that are contained in this prospectus supplement, the accompanying prospectus, the Form 10-K, and our subsequently filed Form 10-Qs to determine whether an investment in our common stock is appropriate for you.

Our Company

MiMedx® Group, Inc. is an integrated developer, manufacturer and marketer of patent protected regenerative biomaterial products and allografts processed from human amniotic membrane. Innovations in Regenerative Biomaterials is the framework behind our mission to give physicians products and tissues to help the body heal itself. Our biomaterial platform technologies include our tissue technologies, AmnioFix® and EpiFix® and the device technologies HydroFix® and CollaFix .

AmnioFix®, EpiFix® and other Tissue-Based Allografts

MiMedx is the leading supplier of allografts processed from amniotic tissue, having supplied over 200,000 allografts to date for application in the Surgical, Orthopedic, Spinal, Wound Care, Ophthalmic, and Dental segments of healthcare. Our tissue-based products include our own brands, AmnioFix® and EpiFix®, as well as products that we supply on a private label or OEM basis. The Company continues to research new opportunities for amniotic tissue, and currently has several additional offerings in various stages of conceptualization and development.

Over several years, we have developed a unique and proprietary technique for processing allografts from the donated placental tissue. Our PURION® process produces an allograft that is safe and effective. Our unique processing technique specifically focuses on maintaining the delicate multi-layered structure and collagen matrix of the tissue. The PURION® process does not subject materials to ultra-low temperature conditions during processing or storage. This technique helps maintain graft structure, provides optimal performance and allows the allograft to be stored at room temperature and have a five year shelf life. Additionally, each allograft incorporates specialized visual embossments that assist the surgeon with proper graft placement and orientation.

Our team is dedicated to providing safe, superior allografts that exceed customer expectations. To better satisfy the requirements and expectations of our customers, the Company maintains strict control on quality from the time of procurement. The Company has developed and implemented a Quality Management System in compliance with both FDA and American Association of Tissue Banks (AATB) standards. Using this Quality Management System, the Company maintains strict control over each step of the manufacturing process.

EpiFix®

Our EpiFix® allograft is configured for external use. It is designed to enhance healing of wounds, as well as to reduce inflammation and scarring. Currently, EpiFix® is being used to treat chronic wounds, including diabetic foot ulcers, venous stasis ulcers, arterial ulcers and pressure ulcers, burns and surgical wounds (such as wounds following plastic surgery). We offer EpiFix® in both sheet form as well as a micronized powder form. The powder can be packed into wounds and is particularly useful for tunneling wounds. Some physicians also choose to mix the powder with saline to inject it into the wound bed and wound margins.

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AmnioFix®

Our AmnioFix® allografts are configured for internal use. Currently, our AmnioFix® product line consists of three configurations, AmnioFix®, AmnioFix® Wrap and AmnioFix® Injectable:

AmnioFix® is provided in a sheet form. It is configured to enhance non-structural soft tissue healing and to minimize scar tissue formation after primary surgical repair. It is being used currently in spine, general and urology surgeries.

AmnioFix® Wrap also is supplied in a sheet form and is configured for the same purposes as AmnioFix®, but is optimized for use as a wrap for nerves, tendons or ligaments.

AmnioFix® Injectable is supplied in micronized powder form designed for injection into soft tissue areas. AmnioFix® Injectable is designed to reduce inflammation while enhancing healing of soft tissue micro tears. Currently, AmnioFix® Injectable is being used to treat conditions such as tendonitis, plantar fasciitis, lateral epicondylitis, medial epicondylitis, bursitis, strains and sprains.

Ophthalmic Surgery and Dental

Currently, allografts for ophthalmic surgery and dental and oral maxilla facial applications are sold on an OEM basis pursuant to agreements whereby we have granted third parties exclusive licenses to some of our technology for use in those fields in specified markets.

Medical Devices- CollaFix and HydroFix

Our CollaFix technology combines an innovative means of creating fibers from soluble collagen and a specialized cross-linking process. MiMedx utilizes two separate cross-linking technologies for various applications. Initial laboratory and animal testing shows that the cross-linked collagen fibers produce a very strong, biocompatible, and durable construct that can be transformed into biomechanical constructs intended to treat a number of orthopedic soft-tissue trauma and disease disorders. We continue to evaluate how best to exploit this technology. We may license rights to specific aspects of our collagen technology to third parties for use in applications and indications that we choose not to exploit ourselves.

Our HydroFix® devices and products are based on licenses to certain patents and patent application rights to a PVA-based hydrogel, which is a water-based biomaterial that can be manufactured with a wide range of mechanical properties, including those that appear to mimic closely the mechanical and physical properties of natural, healthy human tissue. Because the addressable market for our HydroFix® products is somewhat limited, we chose to discontinue this product line this quarter.

Recent Developments

Issuance of Additional Amnion Patent

On December 3, 2013, we were issued a patent in relation to embossment of our amnion sheets.

Centers for Medicare and Medicaid Services Releases New Methodology for Reimbursement for Skin Substitutes.

In 2013, CMS reimbursement for skin substitutes, such as the Company's EpiFix® allografts, was computed on the basis of the Company's average selling price (ASP) for the product plus 6%. On November 27, 2013, CMS announced a new methodology for the reimbursement of skin substitutes in the hospital outpatient setting that will be applicable in 2014. Under the new Hospital Outpatient Prospective Payment System (OPPS) Final Rule, CMS will package the reimbursement for certain products used in advanced wound care, including EpiFix®, with the related surgical procedure under a two-tier payment system. Under the new system, CMS divides skin substitutes into two groups for packaging purposes: high cost skin

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substitutes and low cost skin substitutes. Skin substitutes with an average sales price amount above the weighted average of \$32 per sq. cm. are classified in the high cost group and those at or below the weighted average per sq. cm. are classified in the low cost group. The 2014 packaged rate for the low cost skin substitutes applied to adult wounds smaller than 100 sq. cm. is \$409.41, and the packaged rate for high cost skin substitutes, such as EpiFix®, is \$1371.19. Additionally, EpiFix® was extended pass-through status through 2014, which means that, in addition to the packaging payment of \$1,371.19, if the reimbursement for EpiFix® calculated on the basis of ASP + 6% exceeds an offset amount of \$778.42, the facility will be entitled to an additional pass-through payment in the amount of the difference. It is important to note that the packaged rate of \$1,371.19 is subject to a patient co-pay or secondary coverage; however, the pass-through payment for EpiFix® is not subject to a co-pay or secondary coverage. CMS states that pass-through payments are intended to facilitate the adoption of certain new products for a period of at least two, but not more than three years. EpiFix® will retain this status for 2014, which will be the third and final year. The new CMS reimbursement policy does not apply to products applied in physician offices, which will continue to be reimbursed using the ASP + 6% payment methodology. Management believes this new methodology will provide the Company with opportunities to increase market share.

Discontinuation of HydroFix® product line

As noted, during the fourth quarter we chose to discontinue the HydroFix® product line. Our normal process is to review intangible assets for impairment as of year end. Our preliminary review indicates it is likely we will write off the intangible assets related to HydroFix® at the end of the fourth quarter.

FDA Untitled Letter and Subsequent Developments

Initially, MiMedx processed its tissue allografts in only one form, which was a sheet form. In 2011, MiMedx introduced a micronized form of its sheet allografts.

The FDA has specific regulations governing human cells, tissues and cellular and tissue-based products, or HCT/Ps. An HCT/P is a product containing or consisting of human cells or tissue intended for transplantation into a human patient. If an HCT/P meets the criteria for regulation solely under Section 361 of the Public Health Service Act (so-called 361 HCT/Ps), no FDA review for safety and effectiveness under a drug, device, or biological product marketing application is required. However, the processor of the tissue is required to register with the FDA, comply with regulations regarding labeling, record keeping, donor eligibility, and screening and testing, process the tissue in accordance with established Good Tissue Practices, and report any adverse events.

To be a 361 HCT/P, a product generally must meet all four of the following criteria:

It must be minimally manipulated;

It must be intended for homologous use;

Its manufacture must not involve combination with another article, except for water, crystalloids or a sterilizing, preserving or storage agent; and

It must not have a systemic effect and must not be dependent upon the metabolic activity of living cells for its primary function (unless the product is intended for reproductive use, autologous use, or use in a first or second degree blood relative).

MiMedx believes that all of its tissue products qualify as 361 HCT/Ps. The FDA conducted a directed inspection of the Company's micronized product in July 2012 and issued a No Action Indicated letter following that inspection in December 2012; however, on August 28, 2013, the FDA issued an Untitled Letter alleging that the Company's micronized allografts do not meet the minimal manipulation criteria for regulation solely under Section 361 of the Public Health Service Act due to the micronization process which alters the original, relevant characteristics of the structural tissue, relating to the tissue's utility for reconstruction, repair or

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replacement. The Untitled Letter concluded that, as a result, MiMedx would need a biologics license to lawfully market the micronized products. Importantly, the Untitled Letter did not specify which relevant characteristics the FDA believed were altered by the micronization process, and did not require that we stop marketing the micronized products.

Following the publication of the Untitled Letter from the FDA regarding the Company's injectable products in September 2013, the trading price of the Company's stock dropped sharply and several purported class action lawsuits were filed against us and certain of our executive officers asserting violations of the Securities Act of 1933 and the Securities Exchange Act of 1934 with respect to various statements related to the Company's belief that FDA approval was not required to market its products. These cases have now all been removed to, and consolidated in, the United States District Court for the Northern District of Georgia, and while the cases are in the early stages, we believe the Company's statements were accurate based both on an opinion of counsel obtained prior to the launch of the injectable product and the FDA's published positions on the qualification of products as 361 HCT/Ps. Although the cases are in the early stages, we believe that the outcome of this litigation will not have a material adverse impact on our financial position or results of operations.

On October 28, 2013, the Company met with the FDA to present the reasons it believes its micronized products do qualify as 361 HCT/Ps. The FDA acknowledged that our presentation included new information that they would review and consider, and they committed to responding in a timely fashion.

On December 4, 2013, the Company announced that, through a series of communications with the FDA, the FDA had explained to the Company the basis for its position regarding the micronized products. Specifically, the FDA explained its belief that [c]ryo-milling cut, dehydrated amniotic/chorionic membrane results in a micron-sized powder and the loss of the tensile strength and elasticity that are essential characteristics of the original amniotic/chorionic tissue relating to its utility to function as a physical membrane (i.e. covering, barrier). For this reason, the Agency believes that the micronized products are more than minimally manipulated and the products therefore are not eligible for marketing solely under Section 361 of the Public Health Service Act. The Company responded to the FDA that while it does not agree with the Agency's position, it understands the Agency's interest in further regulating this emerging technology. Accordingly, the Company has proposed to the FDA that it will pursue the Investigational New Drug (IND) and Biologics License Application (BLA) process for certain micronized products, and, in parallel, also proposed to enter into negotiations with the FDA on a plan to transition the micronized products to licensed biological products and continue to market the micronized products under specific conditions. The Company has also informed the FDA that it is ready to immediately commence discussions regarding this transition plan. While there is no guarantee that the FDA will agree to any particular transition plan, the Company is hopeful that it can reach a mutually satisfactory agreement with the FDA in this regard. If the Company and the FDA are not able to agree on a transition plan, the Company may have to remove the micronized products from the market or limit its marketing of the micronized products in some way, although it may also be able to continue to market them. The Company has noted that the micronized products make up only about 15% of projected revenues in 2014, and its guidance remains unchanged insofar as management believes it would be able to refocus its efforts to achieve its revenue goals if it no longer markets the micronized products.

Supply Agreement with Medtronic Sofamor Danek USA, Inc. and Spinal Graft Technologies, LLC

On September 19, 2013, the Company entered into a Supply Agreement (Agreement) with Medtronic Sofamor Danek USA, Inc. and Spinal Graft Technologies, LLC (SGT), a wholly owned subsidiary of Medtronic, Inc., to provide the Company's tissue based product for spine surgeries. Through the Agreement, MiMedx will provide its PURION® processed sheet allograft products to Medtronic, Inc. to be marketed by SGT for spinal applications. The initial term of the Agreement is three years.

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MiMedx Group, Inc. is incorporated under the laws of the State of Florida. All references to MiMedx, the Company, we, , us or our in this prospectus mean MiMedx Group, Inc., a Florida corporation, and all entities owned or controlled by MiMedx Group, Inc., except where it is made clear that the term means only the parent company.

Our principal executive offices are located at 1775 West Oak Commons Court, NE, Marietta, Georgia 30062. Our telephone number is (770) 651-9100. Our website address is <http://www.mimedx.com>. Information contained in, or accessible through, our website does not constitute a part of this prospectus supplement or the accompanying prospectus.

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THE OFFERING

The following summary of the offering contains basic information about this offering and the common stock and is not intended to be complete. It does not contain all the information that is important to you. For a more complete understanding of the common stock, please refer to the section of the accompanying prospectus entitled "Description of Capital Stock-Common Stock."

Common stock offered by MiMedx	5,000,000 shares (5,750,000 shares if the underwriters' over-allotment option is exercised in full)
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Common stock to be outstanding after this offering	103,463,198 shares (104,213,198 shares if the underwriters' over-allotment option is exercised in full)
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Use of proceeds	We intend to use the net proceeds from the sale of our securities covered by this prospectus for general corporate purposes, including, but not limited to, research, development and further commercialization of our products, obtaining regulatory approvals, funding of our clinical trials, capital expenditures, working capital and future acquisitions of complementary businesses, technology or products, although we currently have no agreements or commitments with respect to any such investment or acquisition.
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Risk factors	See "Risk Factors" on page S-9 of this prospectus supplement for a discussion of factors you should carefully consider before deciding to invest in shares of our common stock.
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Transfer agent	Interwest Transfer Company, Inc.
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NASDAQ Capital Market Symbol	MDXG
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The number of shares of common stock outstanding after this offering is based on 98,463,198 shares outstanding as of November 30, 2013, and excludes 3,323,737 shares of common stock available for issuance or future grant under our equity compensation plans or previously reserved in connection with prior acquisitions and capital raises.

Unless otherwise stated, the information in this prospectus supplement assumes that the underwriters have not exercised their option to purchase additional shares from us to cover over-allotments.

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The following tables set forth, for the periods and dates indicated, our summary selected consolidated financial data. The summary selected consolidated financial data has been derived from our unaudited consolidated financial statements and accompanying notes for the nine months ended September 30, 2013 and 2012, as well as our audited historical consolidated financial statements and accompanying notes for the fiscal years ended December 31, 2012, 2011, and 2010. The results included here are not necessarily indicative of future performance.

	Years Ended December 31,			Nine Months Ended, September 30,	
	2012	2011	2010	2013	2012
REVENUES					
Net sales	\$ 27,053,773	\$ 7,760,446	\$ 788,874	\$ 41,186,943	\$ 16,544,110
OPERATING COSTS AND EXPENSES:					
Cost of products sold	5,188,378	3,357,909	1,720,063	6,216,940	3,499,117
Research and development expenses	2,884,546	2,976,313	2,753,331	3,458,585	1,748,847
Selling, general and administrative expenses (Including Amortization of Intangibles)	20,970,687	11,181,437	6,848,135	32,738,416	12,561,257
Impairment of intangible assets	1,798,495				1,798,495
Fair value adjustment of earn-out liability	1,567,050	5,803			1,320,000
LOSS FROM OPERATIONS	(5,355,383)	(9,761,016)	(10,532,655)	(1,226,998)	(4,383,606)
OTHER INCOME (EXPENSE), net					
Amortization of debt discount	(1,714,101)	(315,152)		(1,328,439)	(1,222,290)
Financing expense associated with warrants			(287,449)		
Interest expense, net	(592,892)	(117,818)	(599,649)	(32,503)	(451,196)
LOSS BEFORE INCOME TAXES	(7,662,376)	(10,193,986)	(11,419,753)	(2,587,940)	(6,057,092)
Income taxes				(96,975)	
NET LOSS	\$ (7,662,376)	\$ (10,193,986)	\$ (11,419,753)	\$ (2,684,915)	\$ (6,057,092)
Net loss per common share					
Basic and diluted	\$ (0.09)	\$ (0.14)	\$ (0.19)	\$ (0.03)	\$ (0.07)
Shares used in computing net loss per common share					
Basic and diluted	81,646,295	72,450,337	59,138,357	95,429,988	84,091,014

Other Financial Data:

Adjusted EBITDA	\$ 2,394,490	\$ (6,313,720)	\$ (8,249,804)	\$ 4,140,340	\$ 1,962,629
Adjusted EBITDA %	9%	-81%	-1046%	10%	12%

	2012	December 31, 2011	2010	September 30, 2013	September 30, 2012
Balance Sheet Data:					
Current assets	\$ 18,088,791	\$ 6,881,511	\$ 1,705,798	\$ 25,845,711	\$ 16,140,400
Property and equipment, net	1,071,625	869,411	756,956	3,761,633	999,866
Goodwill and intangible assets	15,952,192	19,130,928	4,786,991	15,688,949	16,214,787
Total assets	35,182,608	27,096,192	7,352,245	45,296,293	33,535,481
Current liabilities	5,070,772	4,732,044	1,251,717	8,331,394	10,548,110
Earn-out liability payable in common	5,792,330	7,410,503			
Convertible senior secured notes	4,012,442	2,744,587			3,493,540
Total liabilities	15,175,306	15,199,627	1,251,717	9,757,863	14,352,735
Total stockholders' equity	\$ 20,007,302	\$ 11,896,565	\$ 6,100,528	\$ 35,538,430	\$ 19,182,746

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Due to the material amount of non-cash related items included in the Company results of operations, the Company has developed an Adjusted EBITDA metric which provides management with a clearer view of operational use of cash (see the table below).

	Year Ended December 31,			Nine Months Ended, September 30,	
	2012	2011	2010	2013	2012
Net Loss (Per GAAP)	\$ (7,662,376)	\$ (10,193,986)	\$ (11,419,753)	\$ (2,684,915)	\$ (6,057,092)
Income Taxes				96,975	
Financing expense associated with warrants issued in connection with convertible promissory note			595,679		
Financing (expense) associated with beneficial conversion of hybrid debt instrument			287,448		
Financing expense associated with beneficial conversion of note payable issued in conjunction with acquisition	170,509	266,991			170,509
Financing expense associated with beneficial conversion of Line of Credit with Related Party	561,202	33,254			343,527
Financing expense associated with beneficial conversion of Senior Secured Promissory Notes	982,390	14,907		1,328,439	708,254
Other interest expense, net	592,891	117,818	3,970	32,503	451,196
Depreciation Expense	465,367	446,502	444,259	422,524	354,425
Amortization Expense	1,380,241	1,335,908	667,932	789,809	1,117,646
Employee Share Based Compensation	2,075,680	1,307,869	996,307	3,437,328	1,432,627
Other Share Based Compensation	463,041	351,214	174,354	717,677	323,042
Impairment of Intangible Assets	1,798,495				1,798,495
Fair Value Adjustment of Earn-out Liability	1,567,050	5,803			1,320,000
Adjusted EBITDA	\$ 2,394,490	\$ (6,313,720)	\$ (8,249,804)	\$ 4,140,340	\$ 1,962,629

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RISK FACTORS

Investing in our common stock involves risks that could affect us and our business as well as our industry generally. Please see the risk factors discussed below, in the accompanying prospectus, as well as the more detailed discussions in our most recent Form 10-K, and the subsequently filed Form 10-Qs incorporated by reference in this prospectus supplement. Much of the business information, as well as the financial and operational data contained in our risk factors, is updated in our periodic reports and current reports on Forms 10-Q and 8-K, respectively, which are also incorporated by reference into this prospectus supplement and the accompanying prospectus. These reports may also disclose additional risks. See **Incorporation of Certain Documents by Reference** in this prospectus supplement.

Although we believe that we have discussed key factors below and under the caption **Risk Factors** in the accompanying prospectus, our most recent Form 10-K, and subsequently filed Form 10-Qs, please be aware that other risks may prove to be important in the future. New risks may emerge at any time, and we cannot predict such risks or estimate the extent to which they may affect our financial condition or performance. Before purchasing our common stock, you should carefully consider the risks discussed in this prospectus supplement and the accompanying prospectus, as well as the documents incorporated by reference herein and therein and in any related free writing prospectus. Each of the risks described could result in a decrease in the value of our securities and your investment therein.

Risks Related to this Offering

Our management team will have broad discretion over the use of the net proceeds from this offering.

Our management will use its discretion to direct the net proceeds from this offering. We intend to use the net proceeds from the sale of our securities covered by this prospectus for general corporate purposes, including, but not limited to, research, development and further commercialization of our products, obtaining regulatory approvals, funding of our clinical trials, capital expenditures, working capital and future acquisitions of complementary businesses, technology or products, although we currently have no agreements or commitments with respect to any such investment or acquisition. Our management's judgments may not result in positive returns on your investment and you will not have an opportunity to evaluate the economic, financial or other information upon which our management bases its decisions.

Investors in this offering will experience immediate and substantial dilution.

The public offering price of the common stock offered pursuant to this prospectus supplement is substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase shares of common stock in this offering, you will incur immediate and substantial dilution in the pro forma net tangible book value per share of common stock from the price per share that you pay for the common stock. If the holders of outstanding options or warrants exercise those options or warrants at prices below the public offering price, you will incur further dilution.

Table of Contents**USE OF PROCEEDS**

We estimate that our net proceeds from this offering, after deducting the underwriting discount and estimated offering expenses payable by us, will be approximately \$ million (or approximately \$ million if the underwriters over-allotment option is exercised in full).

We intend to use the net proceeds from the sale of our securities covered by this prospectus for general corporate purposes, including, but not limited to, research, development and further commercialization of our products, obtaining regulatory approvals, funding of our clinical trials, capital expenditures, working capital and future acquisitions of complementary businesses, technology or products, although we currently have no agreements or commitments with respect to any such investment or acquisition.

The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. As a result, our management will have broad discretion to allocate the net proceeds from this offering.

In the event that any net proceeds are not immediately applied, we may temporarily hold them as cash, deposit them in banks, or invest them in cash equivalents or short-term securities that our investment policies permit us to invest in from time to time.

DILUTION

Purchasers of common stock in this offering will be diluted to the extent of the difference between the public offering price per share and our pro forma net tangible book value per share after this offering. We calculate net tangible book value per share by dividing our net tangible book value, which is tangible assets less total liabilities, by the number of outstanding shares of our common stock.

Our net tangible book value as of September 30, 2013 was approximately \$19,849,481 or \$.20 per share. After giving effect to the sale by us of 5,000,000 shares of common stock offered by this prospectus supplement at a public offering price of \$ per share, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma net tangible book value as of September 30, 2013 would have been approximately \$ million, or \$ per share. This represents an immediate increase in pro forma net tangible book value of \$ per share to existing stockholders and an immediate dilution of \$ per share to new investors purchasing our common stock in this offering. The following table illustrates the per share dilution:

Public offering price per share	\$
Net tangible book value per share as of September 30, 2013	\$.20
Increase in net tangible book value per share after this offering	\$
Pro forma net tangible book value per share as of September 30, 2013, after giving effect to this offering	\$
Dilution per share to new investors in this offering	\$

The information above assumes that the underwriters do not exercise their option to purchase additional shares. If the underwriters exercise their option to purchase additional shares in full, our pro forma net tangible book value per share

at September 30, 2013 after giving effect to this offering would have been \$ per share, and the dilution in pro forma net tangible book value per share to investors in this offering would have been \$ per share.

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The above table is based on 97,636,013 shares of our common stock issued and outstanding as of September 30, 2013, which does not include the following:

15,139,543 shares issuable upon the exercise of outstanding stock options as of September 30, 2013 with a weighted-average exercise price of \$2.28 per share, outstanding warrants to acquire 1,923,669 shares with a weighted-average exercise price of \$.93, or 426,800 restricted stock unit grants; and

4,259,119 shares available for future issuance under our equity compensation plans as of September 30, 2013.

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Table of Contents**PRICE RANGE OF COMMON STOCK AND DIVIDEND POLICY****Price Range of Common Stock**

Our common stock trades on the NASDAQ Capital Market under the symbol MDXG. Prior to April 25, 2013, our common stock traded on the OTC Bulletin Board. The following table sets forth on a per share basis the range of high and low sale prices for our common stock for the periods indicated as reported on the OTC Bulletin Board through April 25, 2013, and on the NASDAQ Capital Market thereafter.

Year ended December 31, 2013	High	Low
First Quarter	\$ 5.93	\$ 3.84
Second Quarter	7.73	4.74
Third Quarter	7.03	3.85
Fourth Quarter (through December 6, 2013)	6.98	4.53

Year ended December 31, 2012	High	Low
First Quarter	\$ 1.40	\$ 1.10
Second Quarter	2.20	1.03
Third Quarter	2.99	1.97
Fourth Quarter	3.85	2.59

Year ended December 31, 2011	High	Low
First Quarter	\$ 1.42	\$ 1.04
Second Quarter	1.15	0.76
Third Quarter	1.39	1.00
Fourth Quarter	1.25	1.00

The last reported sale price of our common stock on December 6, 2013, on the NASDAQ Capital Market is set forth on the cover page of this prospectus supplement. As of November 30, 2013, there were 715 holders of record of our common stock.

Dividend Policy

We have not paid any cash dividends on our common stock since our formation and do not intend to do so in the future.

Table of Contents**UNDERWRITING**

We are offering the shares of common stock described in this prospectus supplement through a number of underwriters. Subject to the terms and conditions of an underwriting agreement between us and Canaccord Genuity Inc., as representative of the underwriters, which we refer to as the representative, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, from us, the number of shares of common stock listed next to its name in the following table:

Name	Number of shares
Canaccord Genuity Inc.	
Craig-Hallum Capital Group LLC	
Northland Securities, Inc.	
Lake Street Capital Markets, LLC	
Total	

The underwriters are committed to purchase all the shares of common stock (other than those covered by the over-allotment option described below) offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters have advised us that they propose to offer the shares of common stock directly to the public at the public offering price set forth on the cover page of this prospectus supplement, and to dealers at the public offering price less a selling concession not in excess of \$ per share. The underwriters also may allow, and dealers may reallow, a concession not in excess of \$ per share to brokers and dealers. After the public offering of the shares, the underwriters may change the offering price and other selling terms.

We have granted an option to the underwriters to purchase up to 750,000 additional shares of our common stock at the purchase price set forth on the cover page of this prospectus supplement. The underwriters may exercise this option for 30 days from the date of this prospectus supplement solely to cover any over-allotments. If any shares are purchased with this over-allotment option, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The following table shows the per share and total underwriting discounts to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Per Share	Without Overallotment Exercise	Total With Overallotment Exercise
Public offering price	\$	\$	\$

Underwriting discount	\$	\$	\$
Net proceeds, before expenses, to us	\$	\$	\$

The expenses of the offering are estimated to be approximately \$, which amount includes up to \$50,000 that we have agreed to reimburse the underwriters for certain of their expenses in connection with this offering. We are responsible for all of our expenses related to the offering, whether or not it is completed.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended, and to contribute to payments that the underwriters may be required to make for certain liabilities.

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Lock-Up Agreements

We, and each of our executive officers and directors, have agreed that, subject to certain exceptions, during the period ending 90 days after the date of this prospectus supplement, which we refer to as the restricted period, neither we nor our executive officers and directors will, without the prior consent of Canaccord Genuity Inc., directly or indirectly offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise dispose of any shares of common stock or any securities that may be converted into or exchanged for any shares of our common stock, enter into any swap or other arrangement that transfers to another person, in whole or in part, any of the economic consequences of ownership of our common stock. The foregoing restrictions do not apply with respect to an aggregate of 150,000 shares of common stock held by certain entities in which our Chairman and Chief Executive Officer possesses sole voting and investment control.

Notwithstanding the termination of the restricted period outlined above, and subject to certain exceptions, in the event that either (i) during the last 17 days of the restricted period, we issue an earnings release or material news or a material event relating to us occurs, or (ii) prior to the expiration of the restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the restricted period, then the expiration of the restricted period will be extended until the expiration of the 18-day period beginning on the date of the issuance of an earnings release or the occurrence of the material news or material event, as applicable, unless the underwriters waive, in writing, such extension, except that such extension will not apply if the shares of Common Stock are actively traded securities (as defined in Regulation M of the Securities Exchange Act of 1934, as amended). At any time and without public notice, Canaccord Genuity Inc. may in its sole discretion release all or some of the securities from these lock-up agreements.

Price Stabilization and Short Positions

In connection with the offering, the underwriters may purchase and sell the common stock in the open market. These transactions may include over-allotment and stabilizing transactions, passive market making and purchases to cover syndicate short positions created in connection with the offering. Until distribution of the shares of our common stock is completed, SEC rules may limit the underwriters from bidding for and purchasing shares of our common stock. However, the underwriters may engage in transactions that stabilize the price of the shares of our common stock, such as bids or purchases to peg, fix or maintain that price. A stabilizing transaction is a bid for or the purchase of common stock on behalf of an underwriter in the open market prior to the completion of this offering for the purpose of fixing or maintaining the price of the shares of common stock. Stabilizing transactions may cause the price of shares of our common stock to be higher than the price that might otherwise prevail in the open market.

If an underwriter creates a short position in our common stock in connection with this offering (i.e., if it sells more shares of our common stock than are listed on the cover page of this prospectus supplement), the underwriter may reduce that short position by purchasing shares of our common stock in the open market. A covering transaction is the bid for or purchase of common stock on behalf of an underwriter to reduce a short position incurred by the underwriter in connection with the offering. The underwriters may also elect to reduce any short position by exercising all or part of the over-allotment option described above. A short position is more likely to be created if an underwriter is concerned that there may be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in this offering. Similar to other purchase transactions, an underwriter's purchases to cover the short sales may have the effect of raising or maintaining the market price of our shares or preventing or retarding a decline in the market price of our shares. As a result, the price of our shares may be higher than the price that might otherwise prevail in the open market.

An underwriter also may impose a penalty bid, whereby the underwriter may reclaim selling concessions allowed to syndicate members or other broker-dealers in respect of the common stock sold in the offering for

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their account if the underwriter repurchases the shares in stabilizing or covering transactions. These activities may stabilize, maintain or otherwise affect the market price of the common stock, which may be higher than the price that might otherwise prevail in the open market. The imposition of a penalty bid may also affect the price of the shares of our common stock in that it discourages resales of those shares of our common stock.

In connection with this offering, the underwriters may also engage in passive market making transactions in our common stock on the NASDAQ Capital Market in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering 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.

The underwriters have advised us that these transactions may be effected on the NASDAQ Capital Market or otherwise. Neither we nor the underwriters 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 shares of our common stock. In addition, neither we nor the underwriters make any representation that the underwriters will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Distribution

This prospectus supplement and the accompanying prospectus may be made available in electronic format on websites or through other online services maintained by the underwriters of the offering, or by their affiliates. Other than this prospectus supplement and the accompanying prospectus in electronic format, the information on such websites and any information contained in any other website maintained by the underwriters or any of their affiliates is not part of this prospectus supplement, the accompanying prospectus or the registration statement of which this prospectus supplement and the accompanying prospectus form a part, has not been approved or endorsed by us or the underwriters in their capacities as underwriters and should not be relied upon by investors.

Relationship with MiMedx

In the ordinary course of business, the underwriters and their affiliates may, in the future, provide various investment banking, financial advisory and other services to us for which they may receive customary compensation. In the course of their business, the underwriters and their affiliates may actively trade our securities for their own account or for the accounts of customers, and, accordingly the underwriters and their affiliates may at any time hold long or short positions in such securities.

Northland Capital Markets is the trade name for certain capital markets and investment banking services of Northland Securities, Inc., member FINRA/SIPC.

Listing

Our common stock is listed on The NASDAQ Capital Market under the symbol MDXG.

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EXPERTS

Cherry Bekaert LLP, an independent registered public accounting firm, has audited our consolidated financial statements as of and for the years ended December 31, 2012 and 2011, included in our Annual Report on Form 10-K for the year ended December 31, 2012, and the effectiveness of our internal controls over financial reporting as of December 31, 2012, as set forth in their reports, which are incorporated by reference in the registration statement to which this prospectus supplement forms a part. Our financial statements as of and for the years ended December 31, 2012 and December 31, 2011, are incorporated by reference in reliance on Cherry Bekaert LLP reports given on their authority as experts in accounting and auditing.

LEGAL MATTERS

Womble Carlyle Sandridge & Rice, LLP, our counsel, will issue opinions about the legality of the common stock and certain other legal matters relating to this offering. Goodwin Procter LLP, New York, New York, is acting as counsel for the underwriters in connection with certain legal matters relating to the shares of common stock offered by this prospectus supplement.

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INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference information into this prospectus supplement, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The documents incorporated by reference into this prospectus supplement contain important information that you should read about us.

The following documents are incorporated by reference into this prospectus supplement:

SEC Filing (File No. 001-35887)

Quarterly Report on Form 10-Q for the quarter ended March 31, 2013
 Quarterly Report on Form 10-Q for the quarter ended June 30, 2013
 Quarterly Report on Form 10-Q for the quarter ended September 30, 2013
 Amendment to the Form 8-A filed April 22, 2013
 The description of our common stock contained in our Form 8-A
 Annual Report on Form 10-K for the year ended December 31, 2012
 Definitive Proxy Statement on Schedule 14A
 Current Reports on Form 8-K

Date of Filing

May 10, 2013
 August 8, 2013
 November 8, 2013
 April 23, 2013
 April 22, 2013
 March 15, 2013
 April 4, 2013
 September 5, 2013
 July 19, 2013
 July 2, 2013
 June 26, 2013
 May 23, 2013
 May 15, 2013 *
 April 22, 2013
 April 2, 2013
 March 12, 2013
 February 4, 2013

* A related Form 8-K/A was filed on July 2, 2013.

We also incorporate by reference into this prospectus supplement all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus supplement and the termination of this offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

We will provide to each person, including any beneficial owner, to whom a prospectus supplement is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus supplement, other than exhibits which are specifically incorporated by reference into such documents. Requests should be directed to Michael Senken at MiMedx Group, Inc., 1775 West Oak Commons Court, NE, Marietta, Georgia 30062 by calling us at (770) 651-9100.

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PROSPECTUS

\$150,000,000

Common Stock

Preferred Stock

Warrants

Units

MiMedx Group, Inc. (the Company) may offer to sell from time to time common stock, preferred stock, warrants, and units of such securities. The preferred stock of the Company may be convertible into common stock or preferred stock of another series.

In addition, selling shareholders to be named in a prospectus supplement may offer, from time to time, shares of our common stock. To the extent that any selling shareholder resells any securities, the selling shareholder may be required to provide you with this prospectus and a prospectus supplement identifying and containing specific information about the selling shareholder and the terms of the securities being offered.

The Company may offer securities and selling shareholders may offer shares of our common stock at an aggregate offering price of up to \$150,000,000. The common stock, preferred stock, warrants, and units of the Company may be offered separately or together, in multiple series, in amounts, at prices and on terms that will be set forth in one or more prospectus supplements to this prospectus.

This prospectus describes some of the general terms that may apply to these securities and the general manner in which they may be offered. Each time the Company sells securities, a prospectus supplement will be provided that will contain specific information about the terms of any securities offered and the specific manner in which the securities will be offered. The prospectus supplement will also contain information, where appropriate, about material United States federal income tax consequences relating to, and any listing on a securities exchange of, the securities covered by the prospectus supplement. The prospectus supplement may add to, update or change the information in this prospectus. You should read this prospectus and any prospectus supplement carefully before you invest in our securities. This prospectus may not be used to sell securities unless accompanied by a prospectus supplement.

The Company may offer the securities directly to investors, through agents designated from time to time by the Company, or to or through underwriters or dealers. If any agents, underwriters, or dealers are involved in the sale of any of the securities, their names, and any applicable purchase price, fee, commission or discount arrangement with, between or among them will be set forth, or will be calculable from the information set forth, in an accompanying prospectus supplement. For more detailed information, see Plan of Distribution.

Our common stock is traded on the NASDAQ Capital Market under the symbol MDXG. On June 28, 2013, the last reported sale price of our common stock on the NASDAQ Capital Market was \$ 7.06. We have not yet determined whether any of the other securities that may be offered by this prospectus will be listed on any exchange, inter-dealer quotation system or over-the-counter system. If we decide to seek a listing for any of those securities, that will be disclosed in a prospectus supplement.

Investing in our common stock involves a high degree of risk. You should review carefully the risks and uncertainties referenced under the heading Risk Factors on page 6 of this prospectus and in our most recent Annual Report on Form 10-K, which is incorporated by reference herein, updated and supplemented by our periodic reports and other information filed by us with the Securities and Exchange Commission and incorporated by reference herein. The prospectus supplement applicable to each type or series of securities we or any selling shareholder offer may contain a discussion of additional risks applicable to an investment in us and the particular type of securities we are offering under that prospectus supplement.

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 , 2013.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, which we refer to as the SEC, using a shelf registration process. Under this shelf process, we may sell any combination of the securities described in this prospectus in one or more offerings and selling shareholders to be named in a prospectus supplement may, from time to time, sell our common stock up to a total aggregate dollar amount of \$150,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with additional information described under the heading **Where You Can Find Additional Information.**

We have filed or incorporated by reference exhibits to the registration statement of which this prospectus forms a part. You should read the exhibits carefully for provisions that may be important to you. Any statement made in this prospectus concerning the contents of any contract, agreement or other document is only a summary of the actual document. You may obtain a copy of any document summarized in this prospectus at no cost by writing to or telephoning us at the address and telephone number given below. Each statement regarding a contract, agreement or other document is qualified in its entirety by reference to the actual document. See **Where You Can Find More Information** below.

You should rely only on the information contained in this prospectus and the accompanying prospectus supplement or incorporated by reference in these documents. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained or incorporated by reference in this prospectus or the accompanying prospectus supplement. If anyone provides you with different, inconsistent or unauthorized information or representations, you must not rely on them. This prospectus and the accompanying prospectus supplement are an offer to sell only the securities offered by these documents, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus or any prospectus supplement is current only as of the date on the front of those documents.

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PROSPECTUS SUMMARY

This summary highlights information contained elsewhere or incorporated by reference into this prospectus. Because it is a summary, it does not contain all of the information that you should consider before investing in our securities. You should read this entire prospectus carefully, including the section entitled Risk Factors, any applicable prospectus supplement and the documents that we incorporate by reference into this prospectus and the prospectus supplement, before making an investment decision.

ABOUT MIMEDX GROUP, INC.

MiMedx® Group, Inc. is an integrated developer, manufacturer and marketer of patent protected regenerative biomaterial products and allografts processed from human amniotic membrane. Innovations in Regenerative Biomaterials is the framework behind our mission to give physicians products and tissues to help the body heal itself. Our biomaterial platform technologies include our tissue technologies, AmnioFix® and EpiFix® and the device technologies HydroFix® and CollaFix .

Our Technology and Products

AmnioFix®, EpiFix® and other Tissue-Based Allografts

MiMedx is the leading supplier of allografts processed from amniotic tissue, having supplied over 150,000 allografts to date for application in the surgical, orthopedic, spinal, wound care, ophthalmic, and dental segments of healthcare. Our tissue-based products include our own brands, AmnioFix® and EpiFix®, as well as products that we supply on a private label or OEM basis. The Company continues to research new opportunities for amniotic tissue, and currently has several additional offerings in various stages of conceptualization and development.

We believe that all of our current tissue-based products, as well as those we expect to introduce in the near term, qualify for regulation solely under Section 361 of the Public Health Services Act. This means that AmnioFix® and EpiFix® are regulated differently than the other two MiMedx platform technologies, CollaFix and HydroFix®, which are regulated as medical devices for which Food and Drug Administration (FDA) clearances or approvals are required prior to marketing in the United States. Products that are regulated solely under Section 361 of the Public Health Services Act do not need premarket clearance or approval in the United States, which accelerates our ability to bring new products to market.

Tissue Processing and Recovery

We operate a licensed tissue bank that is registered as an establishment with the FDA. We are an accredited member of the American Association of Tissue Banks (AATB). We partner with FDA registered tissue establishments, physicians and hospitals to recover donated placental tissue. After consent for donation is obtained, donors are screened for eligibility and the donated tissue is tested for safety in compliance with federal regulations and AATB standards on communicable disease transmission. All donor records and test results are reviewed by our Medical Director prior to the release of the tissue for processing.

Over several years, we have developed a unique and proprietary technique for processing allografts from the donated placental tissue. Our Purion® process produces an allograft that is safe, effective, and minimally manipulated. Our unique processing technique specifically focuses on maintaining the delicate multi-layered structure and collagen matrix of the tissue. The Purion® process does not subject materials to ultra-low temperature conditions during processing or storage. This technique helps maintain graft structure, provides optimal performance and allows the

allograft to be stored at room temperature and have a five year shelf life. Additionally, each allograft incorporates specialized visual embossments that assist the surgeon with proper graft placement and orientation.

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Our team is dedicated to providing safe, superior allografts that exceed customer expectations. To better satisfy the requirements and expectations of our customers, the Company maintains strict control on quality from the time of procurement. The Company has developed and implemented a Quality Management System in compliance with both FDA and AATB standards. Using this Quality Management System, the Company maintains strict control over each step of the manufacturing process.

EpiFix®

Our EpiFix® allograft is configured for external use. It is designed to enhance healing of wounds, as well as to reduce inflammation and scarring. Currently, EpiFix® is being used to treat chronic wounds, including diabetic foot ulcers, venous stasis ulcers, arterial ulcers and pressure ulcers, burns and surgical wounds (such as wounds following plastic surgery).

AmnioFix®

Our AmnioFix® allografts are configured for internal use. Currently, our AmnioFix® product line consists of three configurations, AmnioFix®, AmnioFix® Wrap and AmnioFix® Injectable:

AmnioFix® is provided in a sheet form. It is configured to enhance non-structural soft tissue healing and to minimize scar tissue formation after primary surgical repair. It is being used currently in spine, general and urology surgeries.

AmnioFix® Wrap also is supplied in a sheet form and is configured for the same purposes and AmnioFix®, but is optimized for use as a wrap for nerves, tendons or ligaments.

AmnioFix® Injectable is supplied in micronized powder form designed for injection into soft tissue areas. AmnioFix® Injectable is designed to reduce inflammation while enhancing healing of soft tissue micro tears. Currently, AmnioFix® Injectable is being used to treat conditions such as tendonitis, plantar fasciitis, lateral epicondylitis, medial epicondylitis, bursitis, strains and sprains.

Ophthalmic Surgery and Dental

Currently, allografts for ophthalmic surgery and dental and oral maxilla facial applications are sold on an OEM basis pursuant to agreements whereby we have granted third parties exclusive licenses to some of our technology for use in those fields in specified markets.

Medical Devices- CollaFix and HydroFix®

Our CollaFix technology combines an innovative means of creating fibers from soluble collagen and a specialized cross-linking process. MiMedx utilizes two separate cross-linking technologies for various applications. Initial laboratory and animal testing shows that the cross-linked collagen fibers produce a very strong, biocompatible, and durable construct that can be transformed into biomechanical constructs intended to treat a number of orthopedic soft-tissue trauma and disease disorders. The technology is licensed from Shriners Hospitals for Children and University of South Florida Research Foundation, Inc. pursuant to an exclusive, world-wide license to practice and use the technology and to manufacture, have manufactured, market, offer for sale and sell products incorporating the

technology. We continue to evaluate how best to exploit this technology. We may license rights to specific aspects of our collagen technology to third parties for use in applications and indications that we choose not to exploit ourselves.

Our HydroFix[®] devices and products are based on licenses to certain patents and patent application rights to a PVA-based hydrogel, which is a water-based biomaterial that can be manufactured with a wide range of mechanical properties, including those that appear to mimic closely the mechanical and physical properties of natural, healthy human tissue. Our licenses allow us to manufacture, market, use and sell medical devices and products incorporating the claimed technology for (i) all neurological and orthopedic uses related to the human spine, (ii) neurological and orthopedic uses (including muscular and skeletal use) related to the rotator cuff, but

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excluding the product SaluBridge (which is made from Salubria® biomaterial and is currently cleared for use by the FDA) and (iii) for application as a surgical sheet anywhere in the body. Our licenses are exclusive, world-wide and perpetual. Because the addressable market for our HydroFix® products is somewhat limited, we do not expect significant expansion in the sales of this product line.

MiMedx Group, Inc. is incorporated under the laws of the State of Florida. All references to MiMedx, the Company, we, us or our in this prospectus mean MiMedx Group, Inc., a Florida corporation, and all entities owned or controlled by MiMedx Group, Inc., except where it is made clear that the term means only the parent company.

Our principal executive offices are located at 1775 West Oak Commons Court, NE, Marietta, Georgia 30062. Our telephone number is (770) 651-9100. Our website address is <http://www.mimedx.com>. Information contained in, or accessible through, our website does not constitute a part of this prospectus.

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SECURITIES REGISTERED HEREBY THAT MAY BE OFFERED

We may offer any of the following securities with a total value of up to \$150,000,000 from time to time under this prospectus at prices and on terms to be determined by market conditions at the time of the offering:

common stock;

preferred stock, in one or more series;

warrants to purchase shares of common stock, shares of preferred stock or depositary shares; or

any combination of the foregoing securities, in units.

We refer to our common stock, preferred stock depositary shares, warrants and units collectively in this prospectus as the securities. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

designation or classification;

aggregate offering price;

rates and times of payment of dividends, if any;

redemption, conversion or sinking fund terms, if any;

voting or other rights, if any;

conversion prices, if any; and

important federal income tax considerations.

Common Stock. We may offer shares of our common stock. Our common stock currently is listed on the NASDAQ Capital Market under the symbol MDXG. Shares of common stock that may be offered in this offering will, when issued and paid for, be fully paid and non-assessable.

Preferred Stock. We may offer shares of our preferred stock in one or more series. Our board of directors will determine the rights, preferences, privileges and restrictions of the preferred stock, including any dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of any series. Convertible preferred stock may or may not be convertible into shares of our common stock. If convertible, conversion may be mandatory or at your option and would be at prescribed conversion rates. Shares of preferred stock that may be offered in this offering will, when issued and paid for, be fully paid and non-assessable. The terms of the preferred stock we may offer under this prospectus and any prospectus supplement will be set forth in a certificate of designations relating to that series and will be incorporated by reference into the registration statement of which this prospectus is a part. We urge you to read the complete certificate of designations containing the terms of the applicable series of preferred stock, as well as the applicable prospectus supplement, and any related free writing prospectus that we may authorize to be provided to you, related to such series. We currently have no shares of preferred stock outstanding.

Warrants. We may issue warrants for the purchase of common stock and/or preferred stock in one or more series. We may issue warrants independently or in combination with common stock, and/or preferred stock. In this prospectus, we have summarized certain general features of the warrants under Description of Warrants. We urge you, however, to read the applicable prospectus supplement, and any related free writing prospectus that we may authorize to be provided to you, related to the particular series of warrants being offered, as well as the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that contain the terms of the warrants. We will file as exhibits to the registration statement of which this prospectus

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is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that describe the terms of the particular series of warrants we are offering, and any supplemental agreements, before the issuance of such warrants.

Warrants may be issued under a warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if any, in the applicable prospectus supplement relating to a particular series of warrants.

Holders of warrants will not be entitled, solely by virtue of being holders, to vote, to consent, to receive dividends, to receive notice as shareholders with respect to any meeting of shareholders for the election of directors or any other matter, or to exercise any rights as a holder of equity securities purchasable upon exercise of the warrants.

Units. We may issue units representing any combination of common stock, preferred stock, depositary shares and/or warrants from time to time. The units may be issued under one or more unit agreements. In this prospectus, we have summarized certain general features of the units.

We will incorporate by reference into the registration statement of which this prospectus is a part the form of unit agreement under which the units are designated, if any, describing the terms of the units we are offering before the issuance of the related units. We urge you to read the prospectus supplements related to any units being offered, as well as the complete unit agreement, if any, designating the units.

Selling Shareholders. The selling shareholders will offer up to 7,500,000 shares of our Common Stock.

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RISK FACTORS

Investing in our securities involves a high degree of risk, including the following:

We have limited operating experience and a history of net losses, and we may never achieve or maintain profitability.

Our operating results may fluctuate significantly as a result of a variety of factors, many of which are outside of our control.

We are in a highly competitive field and face competition from large, well-established, tissue processors and medical device manufacturers, as well as new market entrants.

Many of our products have short regulatory timeframes and our competitors may be able to develop competitive products that are as or more effective than our products or that render our products and technologies less competitive or obsolete.

Our failure to compete effectively would have a material and adverse effect on our business, results of operations and financial condition.

Our EpiFix® and AmnioFix® products are dependent on the availability of sufficient quantities of placental tissue from human donors, and any disruption in supply could adversely affect our business.

Our EpiFix® and AmnioFix® products are derived from human tissue and therefore have the potential for disease transmission.

We depend on key personnel.

We are dependent on our relationships with distributors and independent sales representatives to generate revenue.

The Company's principal market concentration of risk is related to our limited distribution channels.

We are investing significant capital in expanding our sales force, and there can be no assurance that these efforts will result in significant increases in sales.

A significant portion of our revenues comes from a limited number of accounts.

A significant portion of our revenues is derived from governmental accounts, and any change in the way those governmental accounts purchase products could adversely affect our business.

Our revenues depend on adequate reimbursement from public and private insurers and health systems.

Disruption of our manufacturing and processing could adversely affect our business, financial condition and results of operations.

To be commercially successful, we must convince physicians that our products are safe and effective alternatives to existing treatments and that our products should be used in their procedures.

We will need to expand our organization, and we may be unable to manage rapid growth effectively.

Additional financing may be necessary for implementation of our growth strategy.

We face the risk of product liability claims and may not be able to obtain or maintain adequate product liability insurance.

We may implement a product recall or voluntary market withdrawal due to product defects which could significantly increase our costs, damage our reputation and disrupt our business.

We may not be successful in commercializing all of our technologies for our medical device products, such as HydroFix® and CollaFix .

Our international business and prospects could be adversely impacted by risks inherent in international markets.

Our ability to protect our intellectual property and proprietary technology through patents and other means is uncertain and may be inadequate, which would have a material and adverse effect on us.

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The prosecution and enforcement of patents licensed to us by third parties are not within our control, and without these technologies, our products may not be successful and our business would be harmed if the patents were infringed or misappropriated without action by such third parties.

In the event a competitor infringes upon our licensed or pending patent or other intellectual property rights, enforcing those rights may be costly, uncertain, difficult and time consuming.

We may become subject to claims of infringement of the intellectual property right of others, which could prohibit us from developing our products, require us to obtain licenses from third parties, or to develop non-infringing alternatives, and subject us to substantial monetary damages.

We may be subject to damages resulting from claims that we, our employees, or our independent contractors have wrongfully used or disclosed alleged trade secrets of others.

Our License Agreement for our CollaFix technology could be terminated.

Reclassification of our EpiFix® and AminoFix® products from regulation under Section 361 of the Public Health Services Act could make the introduction of new tissue products more expensive and significantly delay the expansion of our tissue product offerings and subject us to additional post-market regulatory requirements.

Obtaining and maintaining the necessary regulatory approvals for our medical device products is expensive and time-consuming and may impede our ability to exploit our HydroFix® and CollaFix technologies.

Our business is subject to continuing regulatory compliance by the FDA and other authorities, which is costly and our failure to comply could result in negative effects on our business.

We and our sales representatives, whether employees or independent contractors, must comply with various federal and state anti-kickback, self referral, false claims and similar laws, any breach of which could cause a material adverse effect on our business, financial condition, and results of operations.

The implementation of the reporting and disclosure obligations of the Physician Payment Sunshine Act provisions of the Health Care Reform Law could adversely affect our business.

We face significant uncertainty in the industry due to government healthcare reform.

The price of our common stock has been, and will likely continue to be, volatile.

The concentrated common stock ownership by certain of our executive officers and directors will limit your ability to influence corporate matters.

The exercise of warrants or options may depress our stock price and may result in dilution to our common stockholders.

Our common stock may be thinly traded.

Securities analysts may elect not to report on our common stock or may issue negative reports that adversely affect the stock price.

We do not intend to pay cash dividends.

We may become involved in securities class action litigation that could divert management's attention and harm its business.

Anti-takeover provisions in our organizational documents may discourage or prevent a change of control, even if an acquisition would be beneficial to shareholders, which could affect our share price adversely and prevent attempts by shareholders to replace or remove current management.

You should consider carefully the detailed discussion of these and other risk factors set forth in the documents and reports filed by us with the Securities and Exchange Commission, which we refer to as the SEC, that are incorporated by reference into this prospectus, as well as any risks described in any applicable prospectus supplement, before deciding whether to buy our securities. Additional risks not known to us or that we believe are immaterial may also significantly impair our business operations and could result in a complete loss of your investment.

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DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and the documents incorporated by reference into this prospectus contain certain forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 with respect to our business, financial condition, liquidity and results of operations. Words such as anticipates, expects, intends, plans, predicts, believes, seeks, estimates, could, would, continue, potential, should, and the negative of these terms or other comparable terminology often identify forward-looking statements. Statements in this prospectus and the other documents incorporated by reference that are not historical facts are hereby identified as forward-looking statements for the purpose of the safe harbor provided by Section 21E of the Securities Exchange Act of 1934, as amended (which we refer to as the Exchange Act) and Section 27A of the Securities Act of 1933, as amended (which we refer to as the Securities Act). These forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties that could cause actual results to differ materially from the results contemplated by the forward-looking statements, including the risks discussed in this prospectus, in our Annual Report on Form 10-K for the fiscal year ended December 31, 2012 in Item 1A under Risk Factors, our Quarterly Report on Form 10-Q for the period ended March 31, 2013, and the risks detailed from time to time in our future SEC reports. These forward-looking statements include, but are not limited to, statements about:

the advantages of our products;

our ability to develop future products;

our belief regarding the growth of our direct sales force resulting in increased revenues;

expectations regarding government and other third-party payment or reimbursement for our products;

our beliefs regarding our relationships with our two largest distributors;

expectations regarding future revenue growth;

expectations regarding whether anticipated cash from operating and financing activities and existing cash and cash equivalents will enable the company to meet its liquidity needs and fund its planned investment activities for the remainder of 2013 and for the first quarter of 2014.

expectations regarding the impact of the NASDAQ listing on the Company's stock price, shareholder base and shareholder value.

our ability to procure sufficient quantities of donated placentas for our products and future products;

market opportunities for our products and future products;

prospects for obtaining additional patents covering our proprietary technology;

expectations regarding results of our clinical trials with respect to our products; and

our ability to compete effectively.

Many of the important factors that will determine these results are beyond our ability to control or predict. You are cautioned not to put undue reliance on any forward-looking statements, which speak only as of the date of this prospectus or, in the case of documents incorporated by reference, as of the date of such documents. Except as otherwise required by law, we do not assume any obligation to publicly update or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

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WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus is part of a registration statement we filed with the SEC. You should rely only on the information contained in this prospectus, any applicable prospectus supplement or documents incorporated by reference into this prospectus. We have not authorized anyone else to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front page of this prospectus, regardless of the time of delivery of this prospectus or any sale of securities.

We file reports, proxy statements and other information with the SEC. You may read and copy any reports, proxy statements or other information filed by us at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at (800) SEC-0330. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including MiMedx Group, Inc. The address of the SEC website is <http://www.sec.gov>.

Important Information Incorporated By Reference

The SEC allows us to incorporate by reference information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The documents incorporated by reference into this prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this document:

SEC Filing (File No. 001-35887)	Date of Filing
Quarterly Report on Form 10-Q for the quarter ended March 31, 2013	May 10, 2013
Amendment to the Form 8-A filed April 22, 2013	April 23, 2013
The description of our common stock contained in our Form 8-A	April 22, 2013
Annual Report on Form 10-K for the year ended December 31, 2012	March 15, 2013
Current Reports on Form 8-K	July 2, 2013
	June 26, 2013
	May 23, 2013
	May 15, 2013 *
	March 12, 2013
	February 4, 2013

* A related Form 8-K/A was filed on July 2, 2013.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial

registration statement and prior to effectiveness of the registration statement, or (ii) from the date of this prospectus but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus, other than exhibits which are specifically incorporated by reference into such documents. Requests should be directed to Michael Senken at MiMedx Group, Inc., 1775 West Oak Commons Court, NE, Marietta, Georgia 30062 by calling us at (770) 651-9100.

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USE OF PROCEEDS

Unless we provide otherwise in a supplement to this prospectus, we intend to use the net proceeds from the sale of our securities covered by this prospectus for general corporate purposes, including, but not limited to, research, development and further commercialization of our products, obtaining regulatory approvals, funding of our clinical trials, capital expenditures, working capital and future acquisitions of complementary businesses, technology or products, although we currently have no agreements or commitments with respect to any such investment or acquisition. We will not receive any proceeds from the sale of shares of our common stock by any selling shareholder.

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The following table contains our consolidated ratio of earnings to fixed charges for the periods indicated. You should read these ratios in connection with our consolidated financial statements, including the notes to those financial statements, incorporated by reference in this prospectus.

	For the Quarter Ended		For the Year Ended			For the Year Ended	
	March 31,		December 31,			March 31,	
	2013	2012	2012	2011	2010	2009	2008
Ratio of Earnings to Fixed Charges ⁽¹⁾							

- ⁽¹⁾ For the quarters ended March 31, 2013, March 31, 2012 and the years ended December 31, 2012, December 31, 2010, March 31, 2009 and March 31, 2008, we had no earnings and therefore, are unable to calculate the ratio of fixed charges to earnings. Our earnings for those periods were insufficient to cover fixed charges by \$1.3 million, \$.5 million, \$2.3 million, \$.4 million, \$.6 million, \$.2 million and \$ 0 respectively.

We have computed the ratio of earnings to fixed charges by dividing earnings by fixed charges. For the purposes of computing these ratios, earnings have been calculated by adding fixed charges to income (loss) from continuing operations before income taxes before adjustment for increase or loss from equity investees (if any), distributed income of equity investees (if any), and our share of losses before income taxes from equity investees for which charges arising from guarantees are included in listed charges (if any), non controlling interest (if any) and fixed charges as the sum of interest on debt and capitalized leases, amortization of debt premiums discount and expense, and an imputed interest factor included in rentals. Currently, we do not have any shares of preferred stock outstanding.

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SELLING SHAREHOLDERS

This prospectus relates in part to the possible sale by certain of our shareholders, or the selling shareholders, who own shares of common stock granted under one of our stock incentive plans or resulting from the exercise of options granted under one of our stock incentive plans or acquired through an exemption from registration under Section 4(2) of the Securities Act and Regulation D promulgated thereunder, for transactions by an issuer not involving a public offering. We have issued 1,933,309 shares in the aggregate under the MiMedx Group, Inc. Assumed 2006 Stock Incentive Plan, the MiMedx Group, Inc. Amended and Restated Assumed 2005 Stock Plan, and the MiMedx, Inc. Assumed 2007 Stock Plan to directors and executive officers who are currently serving as such. The shares acquired in private placements were acquired pursuant to:

the conversion of 3% Convertible Senior Secured Promissory Notes we issued in May 2009;

common stock sold by us in November 2009, or the common stock issued upon exercise of related warrants issued as part of the placement;

common stock originally issued in connection with our December 2010 acquisition of Surgical Biologics, upon conversion of the Secured Convertible Promissory Note we issued in connection with that acquisition, or earned as contingent consideration;

common stock issued by us in connection with the private placement we commenced in October 2010, or the common stock issued upon exercise of related warrants issued as part of the placement;

conversion of the 5% Convertible Senior Secured Promissory Note we issued in March, 2011 and December, 2011 and exercise of related warrants issued in connection with the placements.

These initial purchasers of our securities, as well as their transferees, pledges, donees or successors, all of whom we refer to as selling shareholders, may from time to time offer and sell the securities pursuant to this prospectus (as amended) and any applicable prospectus supplement.

The applicable prospectus (as amended) or prospectus supplement will set forth the name of each of the selling shareholders, the amount of common stock owned by each selling shareholder prior to the offering, the number of shares of our common stock to be offered by each selling shareholder and the amount of the common stock to be owned by each selling shareholder after completion of the offering. The applicable prospectus (as amended) or prospectus supplement will also disclose whether any of the selling shareholders has held any position or office with, has been employed by or otherwise has had a material relationship with us during the three years prior to the date of the prospectus (as amended) or prospectus supplement.

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DESCRIPTION OF CAPITAL STOCK

The following description of our common stock and preferred stock, together with the additional information we include in any applicable prospectus supplement and in any related free writing prospectuses, summarizes the material terms and provisions of the common stock and preferred stock that we may offer under this prospectus. The following description of our capital stock does not purport to be complete and is subject to, and qualified in its entirety by, our Articles of incorporation, as amended, and our Bylaws, as amended, which are exhibits to the registration statement of which this prospectus forms a part, and by applicable law. We refer in this section to our Articles of Incorporation, as amended, as our articles of incorporation, and we refer to our Bylaws as our bylaws. The terms of our common stock and preferred stock may also be affected by Florida law.

Authorized Capital Stock

The Company's authorized capital stock consists of 130,000,000 shares of common stock, \$0.001 par value (common stock) and 5,000,000 shares of preferred stock, \$0.001 par value per share (preferred stock). As of June 30, 2013, there were 96,236,451 shares of common stock outstanding net of 50,000 treasury shares. The shares of common stock currently outstanding are validly issued, fully paid and non-assessable. There were no shares of preferred stock outstanding as of June 30, 2013.

Common Stock

Voting

Holders of our common stock are entitled to one vote per share held of record on matters to be voted on by shareholders and also are entitled to receive such dividends, if any, as may be declared from time to time by our board of directors in its discretion out of funds legally available therefor.

Holders of our common stock have exclusive voting rights for the election of our directors and all other matters requiring shareholder action, except with respect to amendments to our articles of incorporation that alter or change the powers, preferences, rights or other terms of any outstanding preferred stock if the holders of such affected series of preferred stock are entitled to vote on such an amendment or filling vacancies on the board of directors. Except as otherwise provided by law or in our articles of incorporation or bylaws, the approval by holders of a majority of the shares of common stock present in person or represented by proxy at a meeting and entitled to vote is sufficient to authorize, affirm, ratify or consent to a matter voted on by shareholders. The Florida Business Compensation Act, or

FBCA, requires the approval of the holders of a majority of the outstanding stock entitled to vote for certain extraordinary corporate transactions, such as a merger, sale of substantially all assets, dissolution or amendment of the articles of incorporation. Holders of our common stock do not have cumulative voting rights. As a result, the holders of a majority of the shares of common stock voting for the election of directors may elect all of the Company's directors if they choose to do so, and in such event, the holders of the remaining shares of common stock will not be able to elect any person or persons to the Board of Directors.

Dividends

Holders of common stock are entitled to share ratably in any dividends declared by our board of directors, subject to any preferential dividend rights of any outstanding preferred stock. Dividends consisting of shares of common stock may be paid to holders of shares of common stock. We do not intend to pay cash dividends in the foreseeable future.

Liquidation and Dissolution

Upon our liquidation or dissolution, the holders of our common stock will be entitled to receive pro rata all assets remaining available for distribution to shareholders after payment of all liabilities and provision for the liquidation of any shares of preferred stock at the time outstanding.

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Other Rights and Restrictions

Our common stock has no preemptive or other subscription rights, and there are no conversion rights or redemption or sinking fund provisions with respect to such stock. Our common stock is not subject to redemption by us. Our articles of incorporation and bylaws do not restrict the ability of a holder of common stock to transfer the shareholder's shares of common stock. If we issue shares of common stock under this prospectus, the shares will be fully paid and non-assessable and will not have, or be subject to, any preemptive or similar rights.

The Company reserves the rights to repeal, alter, amend or rescind any provision contained in its articles of incorporation or bylaws.

Listing

Our common stock is listed on The NASDAQ Capital Market under the symbol MDXG.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Interwest Transfer Company, Inc. It is located at 1981 Murray Holladay Road, Suite 100, Salt Lake City, Utah 84117, and its telephone number is (801) 272-9294.

Preferred Stock

Our board of directors has the authority to issue up to 5,000,000 shares of preferred stock in one or more series and to determine the rights and preferences of the shares of any such series without shareholder approval, none of which are outstanding. Our board of directors may issue preferred stock in one or more series and has the authority to fix the designation and powers, rights and preferences and the qualifications, limitations, or restrictions with respect to each class or series of such class without further vote or action by the shareholders.

If we decide to issue any preferred stock pursuant to this prospectus, we will describe in a prospectus supplement the terms of the preferred stock, including, if applicable, the following:

the title of the series and stated value;

the number of shares of the series of preferred stock offered, the liquidation preference per share, if applicable, and the offering price;

the applicable dividend rate(s) or amount(s), period(s) and payment date(s) or method(s) of calculation thereof;

the date from which dividends on the preferred stock will accumulate, if applicable;

any procedures for auction and remarketing;

any provisions for a sinking fund;

any applicable provision for redemption and the price or prices, terms and conditions on which preferred stock may be redeemed;

any securities exchange listing;

any voting rights and powers;

the terms and conditions, if applicable, of conversion into shares of our common stock, including the conversion price or rate or manner of calculation thereof;

a discussion of any material U.S. federal income tax considerations;

the relative ranking and preference as to dividend rights and rights upon our liquidation, dissolution or the winding up of our affairs;

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any limitations on issuance of any series of preferred stock ranking senior to or on a parity with such series of preferred stock as to dividend rights and rights upon our liquidation, dissolution or the winding up of our affairs; and

any other specific terms, preferences, rights, limitations or restrictions of such series of preferred stock. While providing desirable flexibility for possible acquisitions and other corporate purposes, and eliminating delays associated with a shareholder vote on specific issuances, the issuance of preferred stock could adversely affect the voting power of holders of common stock as well as dividend and liquidation payments on both common stock and preferred stock. The ability of our board of directors to issue preferred stock without shareholder approval could also have the effect of delaying, deferring or preventing a change of control of us or the removal of existing management.

Certain Anti-Takeover Provisions of Florida Law and our Articles of Incorporation and Bylaws

The Company is subject to the Florida affiliated transactions statute, which generally requires approval by the disinterested directors or supermajority approval by shareholders for affiliated transactions between a corporation and an interested stockholder. An interested stockholder is any person who is the beneficial owner of more than 10% of the outstanding voting stock of the corporation. The affiliated transactions covered by the statute include, with certain exceptions, (a) mergers and consolidations to which the corporation and the interested stockholder are parties, (b) sales or other dispositions of the corporation's assets to the interested stockholder having an aggregate market value of 5% or more of the outstanding shares of the corporation, having an aggregate value of 5% or more of the assets, on a consolidated basis, of the corporation, or representing 5% or more of the earning power or net income of the corporation, (c) issuances by the corporation of its securities to the interested stockholder having an aggregate market value equal to 5% or more of the aggregate market value of all the corporation's outstanding shares, (d) the adoption of any plan for the liquidation or dissolution of the corporation proposed by or pursuant to an arrangement with the interested stockholder, (e) any reclassification of the corporation's securities that has the effect of increasing by more than 5% the percentage of outstanding voting shares of the corporation beneficially owned by the interested stockholder, and (f) the receipt by the interested stockholder of certain loans or other financial assistance from the corporation. Accordingly, these provisions may discourage attempts to acquire the Company.

These provisions of Florida law and the Company's articles of incorporation and bylaws could prohibit or delay mergers or other takeover or change of control of the Company and may discourage attempts by other companies to acquire us, even if such a transaction would be beneficial to the Company's shareholders.

Staggered Board of Directors

Our articles of incorporation and bylaws provide that our board of directors be classified into three classes of directors of approximately equal size. As a result, in most circumstances, a person can gain control of our board only by successfully engaging in a proxy contest at two or more annual meetings.

Authorized But Unissued Shares

Our authorized but unissued shares of common stock and preferred stock are available for future issuances without shareholder approval and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, corporate acquisitions, employee benefit plans and shareholder rights plans. The existence of authorized but unissued and unreserved common stock and preferred stock could render more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

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Special Meetings

Pursuant to our bylaws, special meetings of the shareholders may be called only by the Chairman of the Board or Chief Executive Officer at the request in writing of a majority of the board of directors then in office or at the request in writing of shareholders owning not less than 50% of all votes entitled to be cast at the special meeting.

Charter and Bylaws Provisions

In addition, the Company's articles of incorporation and bylaws include other provisions that may deter or impede hostile takeovers or changes of control or management. These provisions include the following:

Directors may be removed from office only for cause at a meeting of shareholders called for the purpose at which 66-21% of the shares are voted for such removal;

Allowing the Board to fill vacancies; and

Cumulative voting is not allowed in the election of the Company's directors.

Stock Options and Restricted Stock Awards

As of June 30, 2013, the Company had issued and outstanding options to purchase an aggregate of approximately 16 million shares of Common Stock (net of forfeitures, expirations and cancellations) pursuant to its Stock Option Plans, at exercise prices between \$.50 and \$ 6.75. Of such options, approximately 7 million were exercisable as of June 30, 2013. As of June 30, 2013, the Company had issued and outstanding approximately 280,000 shares of restricted stock that are subject to future time-based vesting and a risk of forfeiture.

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DESCRIPTION OF UNITS

The following description, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the units that we may offer under this prospectus. Units may be offered independently or together with common stock, preferred stock, and/or warrants offered by any prospectus supplement, and may be attached to or separate from those securities. While the terms we have summarized below will generally apply to any future units that we may offer under this prospectus, we will describe the particular terms of any series of units that we may offer in more detail in the applicable prospectus supplement. The terms of any units offered under a prospectus supplement may differ from the terms described below.

We may issue the units under a unit agreement. We use the term **unit agreement** to refer to any of these unit agreements. We will incorporate by reference into the registration statement of which this prospectus is a part of the form of unit agreement, including a form of unit certificate, if any, that describes the terms of the series of units we are offering before the issuance of the related series of units. The following description of the unit agreement and the units summarizes those aspects of the units and those portions of the unit agreement that we believe will be most important to your decision to invest in our units. You should keep in mind, however, that it is the unit agreement, and not this summary, that defines your rights as a holder of units. There may be other provisions in the unit agreement that are also important to you. The particular terms of the units offered by any prospectus supplement and the extent to which the general provisions described below may apply to such units will be outlined in the applicable prospectus supplement. We urge you to read the applicable prospectus supplements related to the units that we sell under this prospectus, as well as the complete unit agreements that contain the terms of the units. See **Where You Can Find More Information** for information on how to obtain a copy of the unit agreement when it is filed.

General

We may issue units comprised of one or more shares of common stock, shares of preferred stock, and warrants in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We will describe in the applicable prospectus supplement the terms of the series of units, including:

The designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;

Any provisions of the governing unit agreement that differ from those described in this prospectus; and

Any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The provisions described in this section, as well as those described under **Description of Capital Stock**, and **Description of Warrants**, will apply to each unit and to any common stock, preferred stock, debt security, or warrant included in each unit, respectively.

Issuance in Series

We may issue units in such amounts and in numerous distinct series as we determine.

Enforceability of Rights by Holders of Units

Each unit agent, if there is one, will act solely as our agent under the applicable unit agreement and will not assume any obligation or relationship of agency or trust with any holder of any unit. A single bank or trust

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company may act as unit agent for more than one series of units. A unit agent will have no duty or responsibility in a case of any default by us under the applicable unit agreement or unit, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a unit may, without the consent of the related unit agent or the holder of any other unit, enforce by appropriate legal action its rights as holder under any security included in the unit.

Title

We or the unit agent, if there is one, and any of their agents may treat the registered holder of any unit certificate as an absolute owner of the units evidenced by that certificate for any purposes and as the person entitled to exercise the rights attaching to the units so requested, despite any notice to the contrary.

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DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplement, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. The terms of any warrants offered under a prospectus supplement may differ from the terms described below.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement, including a form of warrant certificate, that describes the terms of the particular warrants we are offering before the issuance of the related warrants. The following summaries of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to the warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the warrants that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete warrant agreements and warrant certificates that contain the terms of the warrants.

General

We may issue warrants for the purchase of common stock or preferred stock in one or more series. We may issue warrants independently or together with common stock and preferred stock, and the warrants may be attached to or separate from these securities.

We may evidence each series of warrants by warrant certificates that we will issue under a separate agreement. We may enter into a warrant agreement with a warrant agent. We will indicate the name and address and other information regarding the warrant agent in the applicable prospectus supplement relating to particular warrants.

If we decide to issue warrants pursuant to this prospectus, we will specify in a prospectus supplement the terms of the warrants, including, if applicable, the following:

the offering price and aggregate number of warrants offered;

the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;

the date on and after which the warrants and the related securities will be separately transferable;

the number of shares of stock purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;

the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;

the terms of any rights to redeem or call the warrants;

any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;

the dates on which the right to exercise the warrants will commence and expire;

the manner in which the warrant agreement and warrants may be modified;

a discussion of any material U.S. federal income tax considerations of holding or exercising the warrants;

the terms of the securities issuable upon exercise of the warrants; and

any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

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Before exercising their warrants, holders of warrants may have no rights of holders of the securities purchasable upon such exercise, including, in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase shares of our stock at the exercise price that we describe in the applicable prospectus supplement. Holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. If we so indicate in the applicable prospectus supplement, the warrants may also provide that they may be exercised on a cashless or net basis. We will set forth on the reverse side of the warrant certificate, if applicable, and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to us or a warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at our offices, the corporate trust office of a warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the common stock or preferred stock purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender shares of common stock or preferred stock as all or part of the exercise price for warrants.

Enforceability of Rights by Holders of Warrants

Any warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and warrant agreements will be governed by and construed in accordance with the laws of the State of Florida.

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PLAN OF DISTRIBUTION

We may sell the securities offered by this prospectus from time to time in one or more transactions, including without limitation:

directly to one or more purchasers;

through agents;

to or through underwriters, brokers or dealers;

through a combination of any of these methods.

A distribution of the securities offered by this prospectus may also be effected through the issuance of derivative securities, including without limitation, warrants, subscriptions, exchangeable securities, forward delivery contracts and the writing of options.

In addition, the manner in which we may sell some or all of the securities covered by this prospectus includes, without limitation, through:

a block trade in which a broker-dealer will attempt to sell as agent, but may position or resell a portion of the block, as principal, in order to facilitate the transaction;

purchases by a broker-dealer, as principal, and resale by the broker-dealer for its account;

ordinary brokerage transactions and transactions in which a broker solicits purchasers; or

privately negotiated transactions.

We may also enter into hedging transactions. For example, we may:

enter into transactions with a broker-dealer or affiliate thereof in connection with which such broker-dealer or affiliate will engage in short sales of the common stock pursuant to this prospectus, in which case such broker-dealer or affiliate may use shares of common stock received from us to close out its short positions;

sell securities short and redeliver such shares to close out our short positions;

enter into option or other types of transactions that require us to deliver common stock to a broker-dealer or an affiliate thereof, who will then resell or transfer the common stock under this prospectus; or

loan or pledge the common stock to a broker-dealer or an affiliate thereof, 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.

In addition, we may enter into derivative or hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with such a transaction, the third parties may sell securities covered by and pursuant to this prospectus and an applicable prospectus supplement or pricing supplement, as the case may be. If so, the third party may use securities borrowed from us or others to settle such sales and may use securities received from us to close out any related short positions. We may also loan or pledge securities covered by this prospectus and an applicable prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement or pricing supplement, as the case may be.

A prospectus supplement with respect to each offering of securities will state the terms of the offering of the securities, including:

the name or names of any underwriters or agents and the amounts of securities underwritten or purchased by each of them, if any;

the public offering price or purchase price of the securities and the net proceeds to be received by us from the sale;

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any delayed delivery arrangements;

any underwriting discounts or agency fees and other items constituting underwriters' or agents' compensation;

any discounts or concessions allowed or reallocated or paid to dealers; and

any securities exchange or markets on which the securities may be listed.

The offer and sale of the securities described in this prospectus by us, the underwriters or the third parties described above may be effected from time to time in one or more transactions, including privately negotiated transactions, either:

at a fixed price or prices, which may be changed;

at market prices prevailing at the time of sale;

at prices related to the prevailing market prices; or

at negotiated prices.

General

Any public offering price and any discounts, commissions, concessions or other items constituting compensation allowed or reallocated or paid to underwriters, dealers, agents or remarketing firms may be changed from time to time. Underwriters, dealers, agents and remarketing firms that participate in the distribution of the offered securities may be underwriters as defined in the Securities Act. Any discounts or commissions they receive from us and any profits they receive on the resale of the offered securities may be treated as underwriting discounts and commissions under the Securities Act. We will identify any underwriters, agents or dealers and describe their commissions, fees or discounts in the applicable prospectus supplement or pricing supplement, as the case may be.

Underwriters and Agents

If underwriters are used in a sale, they will acquire the offered securities for their own account. The underwriters may resell the offered securities in one or more transactions, including negotiated transactions. These sales may be made at a fixed public offering price or prices, which may be changed, at market prices prevailing at the time of the sale, at prices related to such prevailing market price or at negotiated prices. We may offer the securities to the public through an underwriting syndicate or through a single underwriter. The underwriters in any particular offering will be mentioned in the applicable prospectus supplement or pricing supplement, as the case may be.

Unless otherwise specified in connection with any particular offering of securities, the obligations of the underwriters to purchase the offered securities will be subject to certain conditions contained in an underwriting agreement that we will enter into with the underwriters at the time of the sale to them. The underwriters will be obligated to purchase all

of the securities of the series offered if any of the securities are purchased, unless otherwise specified in connection with any particular offering of securities. Any initial offering price and any discounts or concessions allowed, reallocated or paid to dealers may be changed from time to time.

We may designate agents to sell the offered securities. Unless otherwise specified in connection with any particular offering of securities, the agents will agree to use their best efforts to solicit purchases for the period of their appointment. We may also sell the offered securities to one or more remarketing firms, acting as principals for their own accounts or as agents for us. These firms will remarket the offered securities upon purchasing them in accordance with a redemption or repayment pursuant to the terms of the offered securities. A prospectus supplement or pricing supplement, as the case may be, will identify any remarketing firm and will describe the terms of its agreement, if any, with us and its compensation.

In connection with offerings made through underwriters or agents, we may enter into agreements with such underwriters or agents pursuant to which we receive our outstanding securities in consideration for the

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securities being offered to the public for cash. In connection with these arrangements, the underwriters or agents may also sell securities covered by this prospectus to hedge their positions in these outstanding securities, including in short sale transactions. If so, the underwriters or agents may use the securities received from us under these arrangements to close out any related open borrowings of securities.

Dealers

We may sell the offered securities to dealers as principals. We may negotiate and pay dealers commissions, discounts or concessions for their services. The dealer may then resell such securities to the public either at varying prices to be determined by the dealer or at a fixed offering price agreed to with us at the time of resale. Dealers engaged by us may allow other dealers to participate in resales.

Direct Sales

We may choose to sell the offered securities directly. In this case, no underwriters or agents would be involved.

Institutional Purchasers

We may authorize agents, dealers or underwriters to solicit certain institutional investors to purchase offered securities on a delayed delivery basis pursuant to delayed delivery contracts providing for payment and delivery on a specified future date. The applicable prospectus supplement or pricing supplement, as the case may be, will provide the details of any such arrangement, including the offering price and commissions payable on the solicitations.

We will enter into such delayed contracts only with institutional purchasers that we approve. These institutions may include commercial and savings banks, insurance companies, pension funds, investment companies and educational and charitable institutions.

Indemnification; Other Relationships

We may have agreements with agents, underwriters, dealers and remarketing firms to indemnify them against certain civil liabilities, including liabilities under the Securities Act. Agents, underwriters, dealers and remarketing firms, and their affiliates, may engage in transactions with, or perform services for, us in the ordinary course of business. This includes commercial banking and investment banking transactions.

Market-Making, Stabilization and Other Transactions

There is currently no market for any of the offered securities, other than the common stock which is listed on the NASDAQ Capital Market. If the offered securities are traded after their initial issuance, they may trade at a discount from their initial offering price, depending upon prevailing interest rates, the market for similar securities and other factors. While it is possible that an underwriter could inform us that it intends to make a market in the offered securities, such underwriter would not be obligated to do so, and any such market-making could be discontinued at any time without notice. Therefore, no assurance can be given as to whether an active trading market will develop for the offered securities. We have no current plans for listing of the preferred stock or warrants on any securities exchange or on the National Association of Securities Dealers, Inc. automated quotation system; any such listing with respect to any particular preferred stock or warrants will be described in the applicable prospectus supplement or pricing supplement, as the case may be.

In connection with any offering of common stock, the underwriters may purchase and sell shares of common stock in the open market. These transactions may include short sales, syndicate covering transactions and stabilizing transactions. Short sales involve syndicate sales of common stock in excess of the number of shares to be purchased by the underwriters in the offering, which creates a syndicate short position. Covered short sales are sales of shares made in an amount up to the number of shares represented by the underwriters' over-allotment option. In determining the source of shares to close out the covered syndicate short position,

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the underwriters 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 over-allotment option. Transactions to close out the covered syndicate short involve either purchases of the common stock in the open market after the distribution has been completed or the exercise of the over-allotment option. The underwriters may also make naked short sales of shares in excess of the over-allotment option. The underwriters must close out any naked short position by purchasing shares of common stock in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of bids for or purchases of shares in the open market while the offering is in progress for the purpose of pegging, fixing or maintaining the price of the securities.

In connection with any offering, the underwriters may also engage in penalty bids. Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of the securities to be higher than it would be in the absence of the transactions. The underwriters may, if they commence these transactions, discontinue them at any time.

Fees and Commissions

In compliance with the guidelines of the Financial Industry Regulatory Authority (the FINRA), the aggregate maximum discount, commission or agency fees or other items constituting underwriting compensation to be received by any FINRA member or independent broker-dealer will not exceed 8% of any offering pursuant to this prospectus and any applicable prospectus supplement or pricing supplement, as the case may be; however, it is anticipated that the maximum commission or discount to be received in any particular offering of securities will be significantly less than this amount.

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LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, Womble Carlyle Sandridge & Rice, LLP, will provide opinions regarding the authorization and validity of the securities. Any underwriters will also be advised about legal matters by their own counsel, which will be named in the prospectus supplement.

EXPERTS

Cherry Bekaert LLP, an independent registered public accounting firm, has audited our consolidated financial statements as of and for the years ended December 31, 2012 and 2011, included in our Annual Report on Form 10-K for the year ended December 31, 2012, and the effectiveness of our internal control over financial reporting as of December 31, 2012, as set forth in their reports, which are incorporated by reference in the registration statement. Our financial statements as of and for the years ended December 31, 2012 and December 31, 2011, are incorporated by reference in reliance on Cherry Bekaert LLP reports given on their authority as experts in accounting and auditing.

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5,000,000 Shares

Common Stock

PROSPECTUS SUPPLEMENT

Canaccord Genuity

Craig-Hallum Capital Group

Northland Capital Markets

Lake Street Capital Markets

December , 2013