

APPLIED DNA SCIENCES INC
Form 424B5
March 26, 2015

The information in this prospectus supplement is not complete and may be changed. This prospectus supplement and the attached prospectus are not an offer to sell these securities and we are not soliciting offers to buy these securities in any state where the offer or sale is not permitted.

Filed Pursuant to Rule 424(b)(5)

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SUBJECT TO COMPLETION, DATED MARCH 26, 2015

**PRELIMINARY PROSPECTUS SUPPLEMENT
(to Prospectus dated March 10, 2015)**

APPLIED DNA SCIENCES, INC.

SHARES OF COMMON STOCK AND

WARRANTS TO PURCHASE

SHARES OF COMMON STOCK

We are offering up to _____ shares of common stock and warrants to purchase up to an aggregate of _____ shares of common stock in a firm commitment underwritten public offering. One share of common stock is being sold together with _____ of a warrant. Each full warrant is immediately exercisable for one share of common stock at an exercise price of \$3.50 per share and will expire on November 20, 2019.

Our common stock and the warrants offered hereby are listed on The NASDAQ Capital Market under the symbols "APDN" and "APDNW," respectively. On March 25, 2015, the last reported sale prices of our common stock and warrants on The NASDAQ Capital Market were \$3.33 per share and \$1.41 per warrant, respectively.

The purchase of the securities offered through this prospectus involves a high degree of risk. You should consider carefully the risk factors beginning on page S-6 of this prospectus supplement, on page 4 of the accompanying base prospectus, and in the documents incorporated by reference into this prospectus supplement before purchasing any of the securities offered by this prospectus. Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

	Per Share	Per	of a Warrant⁽¹⁾	Total
Public offering price	\$	\$		\$
Underwriting discounts and commissions ⁽²⁾	\$	\$		\$
Proceeds, before expenses, to us ⁽³⁾	\$	\$		\$

(1) One share of common stock is being sold together with _____ of a warrant, with each full warrant being exercisable for the purchase of one share of common stock.

We have agreed to issue warrants to the underwriters and to reimburse the underwriters for expenses incurred by it (2) in an amount not to exceed \$90,000. We refer you to “Underwriting” beginning on page S-24 of this prospectus supplement for additional information regarding total underwriter compensation.

(3) We estimate the total expenses of this offering will be approximately \$320,000. We refer you to “Underwriting” and “Expenses” for additional information.

The underwriters expect to deliver the securities against payment in New York, New York on April __, 2015. We have granted the underwriters the option for a period of 45 days to sell up to an additional _____ shares of common stock and/or _____ warrants to purchase common stock at the public offering price, less underwriting discounts and commission, to cover overallotments, if any.

Sole Book Running Manager

Maxim Group LLC

Co-Manager

The Benchmark Company

The date of this prospectus supplement is March , 2015.

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Prospectus

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You should rely only on the information contained in, or incorporated by reference in, this prospectus supplement and the accompanying base prospectus and any free writing prospectus that we may provide to you. We and the underwriters have not authorized anyone to provide you with different or additional information. If anyone provides you with different or inconsistent information, you should not rely on it. The information contained in this prospectus supplement is accurate only as of the date of this prospectus supplement, regardless of the time of delivery of this prospectus supplement or any sale of securities described in this prospectus supplement. This prospectus supplement and the accompanying base prospectus are not an offer to sell these securities and they are not soliciting an offer to buy 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 base prospectus, and the documents incorporated by reference, is accurate as of

the date on the front of those documents only. Our business, financial condition, results of operations and prospects may have changed since those dates.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is part of a registration statement that we filed with the Securities and Exchange Commission (SEC) utilizing a “shelf” registration process. Under this shelf registration statement process, we may from time to time offer to sell up to \$25,000,000 of our common stock, preferred stock, debt securities, warrants to purchase common stock, preferred stock and/or debt securities, rights to purchase common stock, preferred stock or warrants and units consisting of shares of common stock, preferred stock, warrants, rights or debt securities or any combination of these securities in one or more transactions.

We provide information to you about this offering of our common stock in two separate documents that are bound together: (1) this prospectus supplement, which describes the specific details regarding this offering of shares of common stock and warrants to purchase common stock; and (2) the accompanying base prospectus dated March 10, 2015, included in our registration statement on Form S-3 (SEC File No. 333-202432) (the “Registration Statement”), which provides general information regarding our shares of common stock, shares of preferred stock, debt securities, warrants to purchase common stock, preferred stock and/or debt securities, rights to purchase common stock, preferred stock or warrants and units consisting of shares of common stock, shares of preferred stock, warrants, debt securities, rights or any combination of these securities and other information some of which may not apply to this offering. If information in this prospectus supplement is inconsistent with the accompanying base prospectus, you should rely on this prospectus supplement. However, if any statement in one of these documents is inconsistent with a statement in another document having a later date, for example, a document incorporated by reference in this prospectus supplement, the statement in the document having the later date modifies or supersedes the earlier statement as our business, financial condition, results of operations and prospects may have changed since the earlier dates.

You should read this prospectus supplement, together with the accompanying base prospectus, the documents incorporated by reference in this prospectus supplement and the base prospectus and any free writing prospectus that we have authorized for use in connection with this offering before making an investment decision. You should also read and consider the information in the documents referred to in the sections of this prospectus supplement and the accompanying base prospectus entitled “Where You Can Find More Information” and “Information Incorporated by Reference”. When we refer to this “prospectus”, we are referring to both this prospectus supplement and the base prospectus combined.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the base prospectus, or in any free writing prospectus that we have authorized for use in connection with this offering. We and the underwriters have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it.

We are not making an offer to sell the securities covered by this prospectus supplement in any jurisdiction in which an offer or solicitation is not permitted or in which the person making the offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation.

The information appearing in this prospectus supplement, the documents incorporated by reference in this prospectus supplement, the base prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering is accurate only as of its respective date, regardless of the time of delivery of the respective document or of any sale of securities covered by this prospectus. You should not assume that the information contained in or incorporated by reference in this prospectus supplement, the base prospectus, or in any free writing prospectus that we have authorized for use in connection with this offering, is accurate as of any date other than the respective dates thereof.

In this prospectus supplement, “we,” “us,” “our,” and “the company,” refers to Applied DNA Sciences, Inc. and its subsidiaries, unless the context otherwise requires.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information about us, this offering and information appearing elsewhere in this prospectus supplement, the accompanying base prospectus and in the documents we incorporate by reference in this prospectus supplement. This summary is not complete and does not contain all of the information that you should consider before investing in our securities. After you carefully read this summary, to fully understand our company and this offering and its consequences to you, you should read this entire prospectus supplement, the accompanying base prospectus, and any related free writing prospectus authorized by us, including the information referred to under the heading “Risk Factors” in this prospectus supplement beginning on page S-6, and any related free writing prospectus, as well as the other documents that we incorporate by reference into this prospectus supplement, including our financial statements and the notes to those financial statements, which are incorporated herein by reference from our Annual Report on Form 10-K for the year ended September 30, 2014, as amended, and our Quarterly Report on Form 10-Q for the quarter ended December 31, 2014. Please read “Where You Can Find More Information” on page S-28 of this prospectus supplement.

Our Company

Using biotechnology as a forensic foundation, we provide botanical-DNA based security and authentication solutions and services that can help protect products, brands, entire supply chains, and intellectual property of companies, governments and consumers from theft, counterfeiting, fraud and diversion. Whether working in supply chain security, brand protection or law enforcement applications, it is our goal to help establish secure flourishing environments that foster quality, integrity and success. With secure taggants, high-resolution DNA authentication, and comprehensive reporting, our botanical DNA-based technologies are designed to deliver what we believe to be the greatest levels of security, deterrence and legal recourse strength.

***SigNature*[®] DNA.** SigNature DNA is our platform ingredient, at the core of all of our security solutions. From application to application the vehicle which carries SigNature DNA is custom designed to suit the application. Exhaustive development efforts have yielded a flexible and durable marker with all the accuracy provided by nature. SigNature DNA is based on full, double stranded plant DNA, and provides forensic power and protection for a wide array of applications. Highly secure, robust and durable, SigNature DNA markers are an ingredient that can be used to fortify brand protection efforts; mark, track and convict criminals; and strengthen supply chain security. Custom DNA sequences can be embedded into a wide range of host carriers including ink, varnish, thread, laminates and metal coatings. These items can then be tested for the presence of SigNature DNA markers through optical screening or a forensic level authentication. Hundreds of millions of SigNature DNA marks now exist in the public domain on items ranging from consumer product packaging to microcircuits to guitars. We believe that no marks have ever been copied.

SigNature DNA, SigNature[®] T DNA, fiberTyping[®], DNANet[®] and digitalDNA[®], our principal anti-counterfeiting and product authentication solutions can be used in numerous industries, including microcircuits and other electronics, cash-in-transit (transport and storage of banknotes), textiles and apparel, automotive, printing and packaging, homeland security, law enforcement and home asset marking, identity cards and other secure documents, industrial materials, agrochemicals, pharmaceuticals, consumer products, food and beverage, sports memorabilia, fine wine, and art and collectibles.

SigNature T DNA and fiberTyping. There is one common thread that runs through the global textile industry: success breeds counterfeiting and diversion. SigNature T botanical DNA markers are used for brand protection efforts and raw material source compliance programs. In situations where natural fibers like cotton or wool are utilized, we can isolate and type inherent DNA, making it possible to verify the presence of specified materials. This fiberTyping process provides DNA verification to help manufacturers, retailers and brand owners ensure quality, safety and compliance of their products.

DNANet. Recognizing that DNA-based evidence is the cornerstone of the modern era of law enforcement, we have created what we believe to be an effective crime fighting tool: DNANet, a botanical DNA marker that can be used to definitively link evidence and offenders to specific crime scenes. Whether deployed as a residential asset

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marker, an offender spray or fog in a retail location or a degradation dye in cash handling boxes, DNA markers facilitate conviction, and establish a heightened level of deterrence. DNANet, which includes our SmartDNA product line, is a unique security system and effective crime protection system for stores, warehouses, banks, pharmacies, ATMs and the protection of valuables. The system contains a water-based, non-toxic spray that may be triggered during a crime, marking the perpetrator and remaining on their person for weeks after the crime. Each unit is designed to be unique to each store, warehouse or sting operation, allowing the police and prosecutors to link criminals to the crimes. The DNANet family of products include Sentry 500 Intruder Spray Systems, Advanced Molecular Taggant Technology and our SmartDNA product line.

digitalDNA. digitalDNA is a security solution that utilizes the flexibility of mobile communications, the instant accessibility of secure, cloud-based data, and the certainty of DNA to make item tracking and authentication fast, easy and definitive, while providing the opportunity to create a new customer interface. digitalDNA begins with a DNA-secured form of the QR (“quick read”) code or other two dimensional code. A unique identification code is created for each article, and represented in an easy-to-read QR style barcode. The product uses forensic authentication of a botanical DNA marker, embedded within a secure QR code, and physically included within the ink used to digitally print the code. Should there ever be a question about the validity of a digitalDNA code, a laboratory-based analysis can be conducted to determine authenticity.

Counterfeit Prevention Authentication Program. Our turnkey program for electronics, military, commercial, and aerospace contractors called the Counterfeit Prevention Authentication Program empowers end-users to verify the originality or provenance of parts which have been marked by their suppliers with our SigNature DNA Markers.

Recent Developments

We have been advised by our special regulatory counsel that our SigNature DNA technology is suitable for inclusion in FDA regulated products to authenticate their originality and thereby exclude counterfeit products from the supply chain. Our use of SigNature DNA in prescription drugs would be at levels of approximately 1 part per trillion which is less than 1/100,000th the level of DNA considered permissible as a contaminant in oral doses. Therefore, we have been advised that our SigNature DNA qualifies as an acceptable physical-chemical identifier in FDA-regulated products, except for those subject to an FDA-approved New Drug Application.

On March 18, 2015, we announced that our SigNature DNA technology has been deployed as a physical or chemical drug formulation identifier, or PCID, in the pharmaceutical industry. We have incorporated our SigNature DNA into ordinary pharmaceutical grade inks, successfully marked more than 10,000 prescription drug tablets, acetaminophen gel-tabs and aspirin tablets with DNA-embedded ink; and shown that the DNA in those inks can be detected as a PCID and used for authentication via proprietary DNA amplification technologies. We have shown that the SigNature DNA printed upon standard pharmaceutical dosages is now forensically detectable in a field-deployable format. Using our polymerase chain reaction and isothermal amplification methods, kits and devices, based on Signature DNA, our customers will be able to conduct on-the-spot field authentication of pharmaceuticals at any point in the supply chain. In

addition, we are currently involved in a trial with one of the world's largest pharmaceutical companies through one of our channel partners. The trial relates to the application of DNA into a food-grade printable ink that can be printed onto the tablet.

On March 25, 2015, we entered into a mutual license agreement with Divatex Home Fashion, Inc., a leading supplier of home textiles, to commercialize the first supply chain-DNA-verified cotton product. Divatex will be responsible for marketing and is licensing use of certain trademarks to us, while we license our Signature T DNA technology to Divatex to ensure the veracity of the product. The license agreement is intended to result in revenue sharing by both parties. Divatex is a wholly-owned subsidiary of Himatsingka Seide Ltd., a publicly traded company on the BSE, India.

Summary Risks

Before you invest in our stock or warrants, you should carefully consider all the information in this prospectus supplement, including matters set forth in the "Risk Factors" section beginning on page S-6 of this

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prospectus supplement. We believe that the following are some of the major risks and uncertainties that may affect us:

We have a short operating history, a relatively new business model, and have not produced significant revenues, which makes it difficult to evaluate our future prospects and increases the risk that we will not be successful;

We have a history of operating losses which may continue, and which may harm our ability to obtain financing and continue our operations;

We will require additional financing which may require the issuance of additional shares of common stock which would dilute the ownership held by our stockholders;

- If we are unable to obtain additional financing our business operations may be harmed or discontinued;

Our operating results could be adversely affected by a reduction in business with our customers that supply parts to the Defense Logistics Agency;

- Our operating results could be adversely affected by a reduction in business with our significant customers;

If our existing products and services are not accepted by potential customers or we fail to introduce new products and services, our business, results of operations and financial condition will be harmed;

The expenses or losses associated with the lack of widespread market acceptance of our solutions will harm our business, operating results and financial condition;

We need to expand our sales, marketing and support organizations and our distribution arrangements to increase market acceptance of our products and services;

If we are unable to retain the services of Dr. Hayward, our Chief Executive Officer, or Dr. Liang, our Chief Technology Officer, we may not be able to continue our operations;

The markets for our anti-counterfeiting and product authentication solutions are very competitive, and we may be unable to continue to compete effectively in these industries in the future;

- Our research and development efforts for new products may be unsuccessful;

Our failure to manage our growth in operations and acquisitions of new product lines and new businesses could harm our business;

Our intellectual property rights are valuable, and any inability to protect them could reduce the value of our products, services and brand;

Intellectual property litigation could harm our business; and

General economic conditions may adversely affect our business, operating results and financial condition.

Corporate History

We are a Delaware corporation, which was initially formed in 1983 under the laws of the State of Florida as Datalink Systems, Inc. In 1998, we reincorporated in Nevada, and in 2002, we changed our name to our current name, Applied DNA Sciences, Inc. In December 2008, we reincorporated from Nevada to the State of Delaware.

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In November 2005, our corporate headquarters were relocated from Los Angeles, California to the Long Island High Technology Incubator at Stony Brook University in Stony Brook, New York, where we established laboratories for the manufacture of DNA markers and product prototypes, and DNA authentication. The address of our corporate headquarters is 50 Health Sciences Drive, Stony Brook, New York 11790, and our telephone number is (631) 240-8800. We maintain a website at www.adnas.com where general information about us is available. The information on, or that may be accessed through, our website is not incorporated by reference into and should not be considered a part of this prospectus supplement.

To date, we have had a limited operating history, and as a result, our operations have produced limited recurring revenues from our services and products; we have incurred expenses and have sustained losses.

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THE OFFERING

Securities offered:	shares of our common stock and warrants to purchase up to an aggregate of shares of common stock.
Description of Warrants:	Each full warrant is immediately exercisable for one share of common stock at an exercise price of \$3.50 per share and will expire on November 20, 2019.
	\$ per share
Public Offering price:	\$ per of a warrant
Common stock outstanding before the offering ⁽¹⁾ :	17,364,202 shares
Common stock to be outstanding after the offering ⁽¹⁾⁽²⁾ :	shares (shares if the warrants being offered hereby are exercised in full)
Over-Allotment Option:	The Underwriting Agreement provides that we will grant to the underwriters an option, exercisable within 45 days after the closing of this offering, to purchase up to an additional 15% of the total number of common stock and/or warrants to be offered by us pursuant to this offering, solely for the purpose of covering over-allotments, if any.
Underwriters' Warrants:	The Underwriting Agreement provides that we will issue to the underwriters share purchase warrants covering a number of shares of common stock equal to 4% of the shares sold to investors in the offering (or 2% for up to \$2,000,000 of shares which may be sold to investors introduced to the underwriters by us, if any), including the over-allotments, if any.
Use of Proceeds:	We intend to use the net proceeds from this offering for working capital, capital expenditures, business development and research and development expenditures and acquisitions of new technologies or businesses.
Listing and Symbols:	Our common stock and the warrants offered hereby are listed on The NASDAQ Capital Market under the symbols "APDN" and "APDNW," respectively.
Risk Factors:	Investing in our securities involves substantial risks. You should carefully review and consider the "Risk Factors" section of this prospectus supplement beginning on page S-6 and the other information in this prospectus supplement for a discussion of the factors you should consider before you decide to invest in this offering.

(1) The number of shares of our common stock outstanding as of March 25, 2015 excludes the following:
8,262,792 shares of common stock issuable upon exercise of outstanding stock options and warrants, at a weighted average exercise price of \$4.07 per share; and

- _____ shares of common stock issuable upon exercise of the underwriter warrants.

The total number of shares of our common stock outstanding after this offering is based on 17,364,202 shares (2)outstanding as of March 25, 2015. Except as otherwise indicated herein, all information in this prospectus supplement assumes the underwriters do not exercise the over-allotment option.

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RISK FACTORS

Investment in our securities involves a number of risks. You should be able to bear the complete loss of your investment. In addition to the risks and investment considerations discussed elsewhere in this prospectus supplement or any document incorporated by reference herein, the following factors should be carefully considered by anyone purchasing the securities offered by this prospectus supplement. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations. We also update risk factors from time to time in our periodic reports on Forms 10-K, 10-Q and 8-K which will be incorporated by reference in this prospectus supplement. If any of the following risks actually occur, our business could be harmed. In such case, the trading price of our common stock could decline and investors could lose all or a part of their investment.

Risks Relating to Our Business:

We have a short operating history, a relatively new business model, and have not produced significant revenues. This makes it difficult to evaluate our future prospects and increases the risk that we will not be successful.

We have a short operating history with our current business model, which involves the development, marketing, sale and distribution of anti-counterfeiting and product authentication solutions. Our operations since inception have produced limited revenues, and may not produce significant revenues in the near term, or at all, which may harm our ability to obtain additional financing and may require us to reduce or discontinue our operations. If we create significant revenues in the future, we expect to derive most of such revenues from the sale of anti-counterfeiting and product authentication solutions, which are immature industries. You must consider our business and prospects in light of the risks and difficulties we will encounter as an early-stage operating company in a new and rapidly evolving industry. We may not be able to successfully address these risks and difficulties, which could significantly harm our business, operating results, and financial condition.

We have a history of losses from operations which may continue, and which may harm our ability to obtain financing and continue our operations.

We incurred operating losses of \$12.3 million and \$10.2 million for the years ended September 30, 2014 and 2013, respectively, and \$3.8 million for each of the three months ended December 31, 2014 and 2013, respectively. These operating losses have principally been the result of the various costs associated with our selling, general and administrative expenses as we expanded operations, acquired, developed and validated technologies, expanded marketing activities, incurred interest expense on notes we issued to obtain financing and issued warrants with “reset”

provisions. Our operations are subject to the risks and competition inherent in a company that moved from the development stage to an operating company. We may not generate sufficient revenues from operations to achieve or sustain profitability on a quarterly, annual or any other basis in the future. Our revenues and profits, if any, will depend upon various factors, including whether our existing products and services or any new products and services we develop will achieve market acceptance. If we continue to incur losses, our accumulated deficit will continue to increase which might significantly impair our ability to obtain additional financing. As a result, our business, results of operations and financial condition would be significantly harmed, and we may be required to reduce or terminate our operations.

If we are unable to obtain additional financing our business operations may be harmed or discontinued.

Our continuation as a going concern is dependent upon our future revenues and our ability to commercialize more products, obtain additional capital and attain profitable operations. We will require additional funds to complete the continued development and commercialization of our products, product manufacturing, and to fund expected additional losses from operations, until revenues are sufficient to cover our operating expenses. If we are unsuccessful in obtaining the necessary additional financing, we will most likely be forced to reduce or terminate our operations.

Our operating results could be adversely affected by a reduction in business with our customers that supply parts to the United States Defense Logistics Agency (“DLA”).

We derive a significant amount of revenues from a group of customers that supply FSC 5962 parts to DLA. Taken as a group, these customers were responsible for approximately 45%, 54% and 46% of our revenues for the years ended September 30, 2014, 2013 and 2012, respectively. As of December 15, 2014, DLA marked all FSC 5962 microcircuits with DNA at its Electronic Test Laboratory in Columbus, Ohio and will no longer issue solicitations requiring suppliers to provide DNA marked FSC 5962 microcircuits. On November 13, 2014, we were awarded a contract by DLA to provide DLA with a SigNature DNA mark and related equipment, services and training. We are working with DLA to develop an appropriate transition plan to this new approach. Over time, this change could result in lower revenues and could adversely impact our business, financial condition or results of operations.

Our operating results could be adversely affected by a reduction in business with our significant customers.

Our revenue earned from sales of products and services for the three months ended December 31, 2014 included an aggregate of 53% from two customers (the Federal Government and Divatex). No customer represented greater than 10% of our total revenues for the fiscal years ended September 30, 2014 or 2013. An aggregate of 54% of our total revenues for fiscal 2012 was attributable to two customers. In addition, our group of customers who supply FSC 5962 microcircuits to DLA, constituting 45% of our revenues for the fiscal year ended September 30, 2014, will most likely be reduced during 2015 as a result of DLA’s decision to DNA mark microcircuits at its own laboratory instead of issuing third party solicitations to suppliers. Generally our customers do not have an obligation to make purchases from us and may stop ordering our products and services or may terminate existing orders or contracts at any time with little or no financial penalty. The loss of any of our significant customers, any substantial decline in sales to these customers or any significant change in the timing or volume of purchases by our customers could result in lower revenues and could harm our business, financial condition or results of operations.

If our existing products and services are not accepted by potential customers or we fail to introduce new products and services, our business, results of operations and financial condition will be harmed.

There has been limited market acceptance of our botanical DNA encryption, encapsulation, embedment and authentication products and services to date. Some of the factors that will affect whether we achieve market acceptance of our solutions include:

- availability, quality and price relative to competitive solutions;

customers' opinions of the solutions' utility;

ease of use;

consistency with prior practices;

scientists' opinions of the solutions' usefulness; and

general trends in anti-counterfeit and security solutions' research.

The expenses or losses associated with the lack of widespread market acceptance of our solutions will harm our business, operating results and financial condition.

Rapid technological changes and frequent new product introductions are typical for the markets we serve. Our future success may depend in part on continuous, timely development and introduction of new products that address evolving market requirements. We believe successful new product introductions may provide a significant competitive advantage because customers invest their time in selecting and learning to use new products, and are often reluctant to switch products. To the extent we fail to introduce new and innovative products, we may lose any market share we then have to our competitors, which will be difficult or impossible to regain. Any inability, for

technological or other reasons, to successfully develop and introduce new products could reduce our growth rate or damage our business. We may experience delays in the development and introduction of products. We may not keep pace with the rapid rate of change in anti-counterfeiting and security products' research, and any new products acquired or developed by us may not meet the requirements of the marketplace or achieve market acceptance.

We need to expand our sales, marketing and support organizations and our distribution arrangements to increase market acceptance of our products and services.

We currently have a limited number of sales, marketing, customer service and support personnel and will need to increase our staff to generate a greater volume of sales and to support any new customers or the expanding needs of existing customers. The employment market for sales, marketing, customer service and support personnel in our industry is very competitive, and we may not be able to hire the kind and number of sales, marketing, customer service and support personnel we are targeting. Our inability to hire qualified sales, marketing, customer service and support personnel may harm our business, operating results and financial condition. While we have entered into a limited number of agreements with distributors, we may not be able to sufficiently build out a distribution network or enter into arrangements with qualified distributors on acceptable terms or at all. If we are not able to develop greater distribution capacity, we may not be able to generate sufficient revenue to support our operations.

If we are unable to retain the services of Dr. Hayward or Dr. Liang, we may not be able to continue our operations.

Our success depends to a significant extent upon the continued service of Dr. James A. Hayward, our Chairman, Chief Executive Officer and President, and Dr. Benjamin Liang, our Secretary and Strategic Technology Development Officer. We entered into an employment agreement with Dr. Hayward dated July 11, 2011. We do not have an employment agreement with Dr. Liang. Loss of the services of Drs. Hayward or Liang could significantly harm our business, results of operations and financial condition. We do not maintain key-man insurance on the lives of Drs. Hayward or Liang.

The markets for our anti-counterfeiting and product authentication solutions are very competitive, and we may be unable to continue to compete effectively in these industries in the future.

The principal markets for our anti-counterfeiting and product authentication solutions are intensely competitive. Many of our competitors, both in the United States and elsewhere, are major pharmaceutical, chemical and biotechnology companies, or have strategic alliances with such companies, and many of them have substantially greater capital resources, marketing experience, research and development staff, and facilities than we do. Any of these companies could succeed in developing products that are more effective than the products that we have or may develop and may be more successful than us in producing and marketing their existing products. Some of our competitors that operate

in the anti-counterfeiting and fraud prevention markets include: American Bank Note Holographics, Inc., Applied Optical Technologies, Authentix, Collectors Universe Inc., Brandwatch, Collotype, Data Dot Technology, De La Rue Plc., Digimarc Corp., DNA Technologies, Inc., ID Global, Informium AG, Inksure Technologies, Kodak, L-1 Identity Solutions, Media Sec Technologies, opSec Security Group plc., SelectaDNA, SmartWater Technology, Inc., Sun Chemical Corp, Tracetag, ProofTag SAS and Yottamark.

We expect this competition to continue and intensify in the future. Competition in our markets is primarily driven by:

· product performance, features and liability;

· price;

· timing of product introductions;

· ability to develop, maintain and protect proprietary products and technologies;

sales and distribution capabilities;

technical support and service;

brand loyalty;

applications support; and

breadth of product line.

If a competitor develops superior technology or cost-effective alternatives to our products, our business, financial condition and results of operations could be significantly harmed.

If a manufacturer fails to use acceptable labor practices, we might have delays in shipments or face joint liability for violations, resulting in decreased revenue and increased expenses.

While we require our independent manufacturers to operate in compliance with applicable laws and regulations, we have no control over their ultimate actions. While our internal and vendor operating guidelines promote ethical business practices and our staff and buying agents periodically visit and monitor the operations of our independent manufacturers, we do not control these manufacturers or their labor practices. The violation of labor or other laws by our independent manufacturers, or by one of our licensing partners, or the divergence of an independent manufacturer's or licensing partner's labor practices from those generally accepted as ethical in the United States, could interrupt, or otherwise disrupt the shipment of finished products to us or damage our reputation. Any of these, in turn, could have a material adverse effect on our financial condition and results of operations, such as the loss of potential revenue and incurring additional expenses.

Our research and development efforts for new products may be unsuccessful.

We incur research and development expenses to develop new products and technologies in an effort to maintain our competitive position in a market characterized by rapid rates of technological advancement. Our research and development efforts are subject to unanticipated delays, expenses and technical problems. There can be no assurance that any of these products or technologies will be successfully developed or that, if developed, will be commercially successful. In the event that we are unable to develop commercialized products from our research and development efforts or we are unable or unwilling to allocate amounts beyond our currently anticipated research and development investment, we could lose our entire investment in these new products and technologies. Any failure to translate

research and development expenditures into successful new product introduction could have an adverse effect on our business.

Failure to license new technologies could impair sales of our existing products or any new product development we undertake in the future.

To generate broad product lines, it is advantageous to sometimes license technologies from third parties rather than depend exclusively on the development efforts of our own employees. As a result, we believe our ability to license new technologies from third parties may be important to our ability to offer new products. In addition, from time to time we are notified or become aware of patents held by third parties that are related to technologies we are selling or may sell in the future. After a review of these patents, we may decide to seek a license for these technologies from these third parties. There can be no assurance that we will be able to successfully identify new technologies developed by others. Even if we are able to identify new technologies of interest, we may not be able to negotiate a license on favorable terms, or at all.

Our failure to manage our growth in operations and acquisitions of new product lines and new businesses could harm our business.

The recent growth in our operations could place a significant strain on our current management resources. To manage such growth, we may need to improve our:

operations and financial systems;

procedures and controls; and

training and management of our employees.

Our future growth, if any, may be attributable to acquisitions of new product lines and new businesses. For example, during fiscal 2013, we completed the purchase of certain assets and technology from RedWeb Technologies Limited relating to its forensic tagging security system. Future acquisitions, if successfully consummated, would likely create increased working capital requirements, which would likely precede by several months any material contribution of an acquisition to our net income. Our failure to manage growth or future acquisitions successfully could seriously harm our operating results. Also, acquisition costs could cause our quarterly operating results to vary significantly. Furthermore, our stockholders would be diluted if we financed the acquisitions by incurring convertible debt or issuing securities.

A percentage of our sales occur outside of the U.S. As a result, we are subject to the economic, political, regulatory and other risks of international operations.

For the three months ended December 31, 2014, and in fiscal 2014, 2013 and 2012, 21%, 33%, 38% and 44% of our revenue, respectively, was from customers located outside of the U.S. We believe that the revenue from the sale of our products outside the U.S. will continue to grow in the near future. We intend to expand our international operations to the extent that suitable opportunities become available. Our foreign operations and sales could be adversely affected as a result of:

nationalization of private enterprises and assets;

political or economic instability in certain countries and regions;

differences in foreign laws, including increased difficulties in protecting intellectual property and uncertainty in enforcement of contract rights;

the possibility that foreign governments may adopt regulations or take other actions that could directly or indirectly harm our business and growth strategy;

credit risks;

- currency fluctuations;

- tariff and tax increases;

- export and import restrictions and restrictive regulations of foreign governments;

- shipping products during times of crisis or wars; and

- Other risks inherent in foreign operations.

We are subject to numerous regulatory, legal, operational, and other risks as a result of our international operations which could adversely impact our businesses in many ways.

As a U.S. company, we are required to comply with the economic sanctions and embargo programs administered by Office of Foreign Assets Control and similar multi-national bodies and governmental agencies worldwide, and the Foreign Corrupt Practices Act (“FCPA”). A violation of a sanction or embargo program or of the FCPA or similar laws prohibiting certain payments to governmental officials, such as the U.K. Bribery Act, could

subject us, and individual employees, to a regulatory enforcement action as well as significant civil and criminal penalties which could adversely impact our business and operations.

Failure to attract and retain qualified scientific, production and managerial personnel could harm our business.

Recruiting and retaining qualified scientific and production personnel to perform and manage prototype, sample, and product manufacturing and business development personnel to conduct business development are critical to our success. In addition, our desired growth and expansion into areas and activities requiring additional expertise, such as clinical testing, government approvals, production, sales and marketing will require the addition of new management personnel and the development of additional expertise by existing management personnel. Because the industry in which we compete is very competitive, we face significant challenges attracting and retaining a qualified personnel base. Although we believe we have been and will be able to attract and retain these personnel, we may not be able to continue to successfully attract qualified personnel. The failure to attract and retain these personnel or, alternatively, to develop this expertise internally would harm our business since our ability to conduct business development and manufacturing will be reduced or eliminated, resulting in lower revenues. We generally do not enter into employment agreements requiring our employees to continue in our employment for any period of time.

Our intellectual property rights are valuable, and any inability to protect them could reduce the value of our products, services and brand.

Our patents, trademarks, trade secrets, copyrights and all of our other intellectual property rights are important assets for us. There are events that are outside of our control that pose a threat to our intellectual property rights as well as to our products and services. For example, effective intellectual property protection may not be available in every country in which our products and services are distributed. The efforts we have taken to protect our proprietary rights may not be sufficient or effective. Any significant impairment of our intellectual property rights could harm our business or our ability to compete. Protecting our intellectual property rights is costly and time consuming. Any increase in the unauthorized use of our intellectual property could make it more expensive to do business and harm our operating results. Although we seek to obtain patent protection for our innovations, it is possible we may not be able to protect some of these innovations. Given the costs of obtaining patent protection, we may choose not to protect certain innovations that later turn out to be important. There is always the possibility that the scope of the protection gained from one of our issued patents will be insufficient or deemed invalid or unenforceable. We also seek to maintain certain intellectual property as trade secrets. The secrecy could be compromised by third parties, or intentionally or accidentally by our employees, which would cause us to lose the competitive advantage resulting from these trade secrets.

Intellectual property litigation could harm our business.

Litigation regarding patents and other intellectual property rights is extensive in the biotechnology industry. In the event of an intellectual property dispute, we may be forced to litigate. This litigation could involve proceedings instituted by the U.S. Patent and Trademark Office or the International Trade Commission, as well as proceedings brought directly by affected third parties. Intellectual property litigation can be extremely expensive, and these expenses, as well as the consequences should we not prevail, could seriously harm our business.

If a third party claims an intellectual property right to technology we use, we might need to discontinue an important product or product line, alter our products and processes, pay license fees or cease our affected business activities. Although we might under these circumstances attempt to obtain a license to this intellectual property, we may not be able to do so on favorable terms, or at all. Furthermore, a third party may claim that we are using inventions covered by the third party's patent rights and may go to court to stop us from engaging in our normal operations and activities, including making or selling our product candidates. These lawsuits are costly and could affect our results of operations and divert the attention of managerial and technical personnel. A court may decide that we are infringing the third party's patents and would order us to stop the activities covered by the patents. In addition, a court may order us to pay the other party damages for having violated the other party's patents. The biotechnology industry has produced a proliferation of patents, and it is not always clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to

interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our products or methods of use either do not infringe the patent claims of the relevant patent and/or that the patent claims are invalid, and we may not be able to do this. Proving invalidity, in particular, is difficult since it requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents.

Because some patent applications in the United States may be maintained in secrecy until the patents are issued, because patent applications in the United States and many foreign jurisdictions are typically not published until eighteen months after filing, and because publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications for technology covered by our or our licensor's issued patents or pending applications or that we or our licensors were the first to invent the technology. During the ordinary course of our business, we do not conduct "prior art" searches before filing a patent application. Our competitors may have filed, and may in the future file, patent applications covering technology similar to ours. Any such patent application may have priority over our or our licensors' patent applications and could further require us to obtain rights to issued patents covering such technologies. If another party has filed a United States patent application on inventions similar to ours, we may have to participate in an interference proceeding declared by the United States Patent and Trademark Office to determine priority of invention in the United States. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful, resulting in a loss of our United States patent position with respect to such inventions.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations.

Accidents related to hazardous materials could adversely affect our business.

Some of our operations require the controlled use of hazardous materials for chemical reactions and synthesis. These materials are common to molecular/biological/chemical laboratories and require no special handling or regulation. Although we believe our safety procedures comply with the standards prescribed by federal, state, local and foreign regulations, the risk of accidental contamination of property or injury to individuals from these materials cannot be completely eliminated. In the event of an accident, we could be liable for any damages that result, which could seriously damage our business and results of operations.

Potential product liability claims could affect our earnings and financial condition.

We face a potential risk of liability claims based on our products and services. Though we have product liability insurance coverage which we believe is adequate, we may not be able to maintain this insurance at reasonable cost and on reasonable terms. We also cannot assure that this insurance, if obtained, will be adequate to protect us against a product liability claim, should one arise. In the event that a product liability claim is successfully brought against us, it could result in a significant decrease in our liquidity or assets, which could result in the reduction or termination of our business.

Litigation generally could affect our financial condition and results of operations.

We generally may be subject to claims made by and required to respond to litigation brought by customers, former employees, former officers and directors, former distributors and sales representatives, former consultants and vendors and service providers. We have faced such claims and litigation in the past and we cannot assure that we will not be subject to claims in the future. In the event that a claim is successfully brought against us, considering our lack of material revenue and the losses our business has incurred for the period from our inception to September 30, 2014, this could result in a significant decrease in our liquidity or assets, which could result in the reduction or termination of our business.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.

Our operations could be subject to earthquakes, power shortages, telecommunications failures, cyber-attacks or other vulnerabilities in our computer systems, terrorism, water shortages, tsunamis, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics, political or economic instability, and other natural or manmade disasters or business interruptions. The occurrence of any of these business disruptions could seriously harm our revenue and financial condition and increase our costs and expenses.

General economic conditions may adversely affect our business, operating results and financial condition.

A general weakening or decline in the global economy or a period of economic slowdown may have serious negative consequences for our business and operating results. Since our customers incorporate our products into a variety of consumer goods, the demand for our products is subject to worldwide economic conditions and their impact on levels of consumer spending. Some of the factors affecting consumer spending include general economic conditions, unemployment, consumer debt, reductions in net worth, residential real estate and mortgage markets, taxation, energy prices, interest rates, consumer confidence and other macroeconomic factors. During a period of economic weakness or uncertainty, demand for consumer goods incorporating our products may weaken, and current or potential customers may defer purchases of our products. Although global economic conditions have improved somewhat since the extreme economic contraction in fiscal years 2008 and 2009, there is still significant uncertainty in the global economy, and there is no guarantee that the global economy will remain in this improved state.

While credit and financial markets seemed to have stabilized from their period of extreme distress, there can be no assurance that our liquidity will not be affected by changes in the financial markets and the global economy. Moreover, the recent crisis has had a significant material adverse impact on a number of financial institutions and has limited access to capital and credit for many companies. This could, among other things, make it more difficult for us to obtain, or increase our cost of obtaining, capital and financing for our operations. Our access to additional capital may not be available on terms acceptable to us or at all.

Risks Relating to Our Common Stock, Warrants and this Offering:

We will require additional financing which may require the issuance of additional shares of common stock which would dilute the ownership held by our stockholders.

We will need to raise funds through either debt or the sale of our shares in order to achieve our business goals. Any additional shares issued would further dilute the percentage ownership held by the stockholders. Furthermore, if we raise funds in equity transactions through the issuance of convertible securities which are convertible at the time of conversion at a discount to the prevailing market price, substantial dilution is likely to occur resulting in a material decline in the price of your shares. Our public offering during November 2014 resulted in dilution to investors and future offerings of securities, including this offering, could result in further dilution to investors.

We may require additional financing in the future, which may not be available or, if available, may be on terms that cause a decline in the value of the securities purchased in this offering.

If we raise capital in the future by issuing additional securities, investors may experience a decline in the value of the securities purchased in this offering. In addition, such securities may have rights senior to the rights of the securities purchased in this offering.

Our management has broad discretion as to the use of the net proceeds from this offering.

We cannot specify with certainty the particular uses of the net proceeds we will receive from this offering, and these uses may vary from our current plans. Our management will have broad discretion in the application of the net proceeds, including for any of the purposes described in "Use of Proceeds." Accordingly, you will have to rely upon the judgment of our management with respect to the use of the proceeds. Our management may spend a portion or all of the net proceeds from this offering in ways that holders of our common stock may not desire or that may not yield a significant return or any return at all. The failure by our management to apply these funds

effectively could harm our business. Pending their use, we may also invest the net proceeds from this offering in a manner that does not produce income or that loses value.

You will experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase.

Since the price per share of our common stock being offered is substantially higher than the net tangible book value per share of our common stock, you will suffer substantial dilution in the net tangible book value of the common stock you purchase in this offering. Based on a public offering price of \$____ per share, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of approximately \$____ per share in the net tangible book value of the common stock. See the section entitled “Dilution” in this prospectus for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

There are a large number of shares of common stock underlying our outstanding options and warrants and the sale of these shares may depress the market price of our common stock and cause immediate and substantial dilution to our existing stockholders.

As of March 25, 2015, we had 17,364,202 shares of common stock issued and outstanding and outstanding options and warrants to purchase 8,262,792 shares of common stock. The issuance of shares upon exercise of outstanding options and warrants will cause immediate and substantial dilution to the interests of other stockholders.

If we fail to comply with the continuing listing standards of The NASDAQ Capital Market, our securities could be delisted.

Our common stock and warrants are listed on the NASDAQ Capital Market under the symbols “APDN” and “APDNW,” respectively. For our common stock and warrants to continue to be listed on the NASDAQ Capital Market, we must meet the current NASDAQ Capital Market continued listing requirements. If we were unable to meet these requirements, including, but not limited to, requirements to obtain shareholder approval of a transaction other than a public offering involving the sale or issuance equal to 20% or more of our common stock at a price that is less than the market value of our common stock, our common stock and warrants could be delisted from the NASDAQ Capital Market. If our securities were to be delisted from the NASDAQ Capital Market, our securities could begin to trade on the over-the-counter bulletin board or on the OTC Link, as the case may be. In such event, our securities could once again be subject to the “penny stock” rules which among other things require brokers or dealers to approve investors’ accounts, receive written agreements and determine investor suitability for transactions and disclose risks relating to investing in the penny stock market. Any such delisting of our securities could have an adverse effect on the market price of, and the efficiency of the trading market for our securities, not only in terms of the number of shares that can

be bought and sold at a given price, but also through delays in the timing of transactions and less coverage of us by securities analysts, if any. Also, if in the future we were to determine that we need to seek additional equity capital, it could have an adverse effect on our ability to raise capital in the public or private equity markets.

Any material weaknesses in our internal control over financing reporting in the future could adversely affect investor confidence, impair the value of our common stock and increase our cost of raising capital.

Any failure to remedy deficiencies in our internal control over financial reporting that may be discovered or our failure to implement new or improved controls, or difficulties encountered in the implementation of such controls, could harm our operating results, cause us to fail to meet our reporting obligations or result in material misstatements in our financial statements. Any such failure could, in turn, affect the ability of our management to certify that internal control over our financial reporting is effective. Inferior internal control over financial reporting could also subject us to the scrutiny of the SEC and other regulatory bodies which could cause investors to lose confidence in our reported financial information and could subject us to civil or criminal penalties or shareholder litigation, which could have an adverse effect on our results of operations and the trading price of our common stock.

In addition, if we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting, the disclosure of that fact, even if quickly remedied, could reduce the market's confidence in our financial statements and harm our share price. Furthermore, deficiencies could result in future non-compliance with Section 404 of the Sarbanes-Oxley Act of 2002. Such non-compliance could subject us to a variety of administrative sanctions, including review by the SEC or other regulatory authorities.

We may be subject to claims for damages in connection with certain sales of shares of our common stock in the open market.

There may have been inadvertent violations of federal and state securities laws in connection with certain sales of shares of our common stock in the open market pursuant to a registration statement on Form S-3 that we had filed to cover the resale of shares issued or to be issued that was declared effective by the Securities and Exchange Commission on July 31, 2013. On December 20, 2013, we filed our annual report on Form 10-K for the fiscal year ended September 30, 2013 (the "Original 2013 Form 10-K") which did not include the auditor attestation report on internal control over financial reporting required by Section 404(b) of Sarbanes-Oxley (the "Auditor Attestation Report"). On May 1, 2014, we filed an amendment on Form 10-K/A to the Original 2013 Form 10-K in order to include the Auditor Attestation Report.

There were approximately three months when sales of shares may have occurred in open market transactions pursuant to our registration statement when the use thereof should have been suspended. Any such sales may have violated Section 5 or Section 12(a)(1) of the Securities Act of 1933, as amended, and, as a result, we may be liable for claims for damages. In addition, the Securities and Exchange Commission and relevant state regulators could impose monetary fines or other sanctions on us as provided under relevant federal and state securities laws. The amount of such damages and penalties, if any, cannot be determined at this time. If the payment of damages or fines is significant, it could have a material, adverse effect on our cash flow, financial condition or prospects.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Statements in this prospectus supplement and in the documents incorporated by reference in this prospectus supplement contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or Exchange Act, and are subject to the “safe harbor” created by those sections. Forward looking statements involve risks and uncertainties and contain words such as “may,” “assumes,” “forecasts,” “positions,” “predicts,” “strategy,” “expects,” “estimates,” “anticipates,” “believes,” “projects,” “intends,” “plans,” “budgets,” “potential,” “continue” and variations thereof regarding matters that are not historical facts. Because these statements involve risks and uncertainties, as well as certain assumptions, actual results may differ materially from those expressed or implied by such forward-looking statements. Factors that could cause actual results to differ materially include, but are not limited to, those risks identified under “Risk Factors” and from time to time in our other filings with the SEC. The information in this prospectus supplement and the accompanying base prospectus speaks only as of the date of those documents and the information incorporated herein by reference speaks only as of the date of the document incorporated by reference. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

Forward-looking statements include our plans and objectives for future operations, including plans and objectives relating to our products and our future economic performance. Assumptions relating to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions, future business decisions, and the time and money required to successfully complete development and commercialization of our technologies, all of which are difficult or impossible to predict accurately and many of which are beyond our control. Although we believe that the assumptions underlying the forward-looking statements contained herein are reasonable, any of those assumptions could prove inaccurate and, therefore, we cannot assure you that the results contemplated in any of the forward-looking statements contained herein will be realized. Based on the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of any such statement should not be regarded as a representation by us or any other person that our objectives or plans will be achieved.

USE OF PROCEEDS

We estimate that we will receive net proceeds of approximately \$_____ from our sale of common stock and corresponding warrants in this offering, or approximately \$_____ if the underwriters exercise in full their option to purchase additional shares of common stock and warrants, after deducting the estimated underwriting discount and estimated offering expenses payable by us. We intend to use the net proceeds received from this offering for working capital, capital expenditures, business development and research and development expenditures and acquisitions of new technologies or businesses. The actual allocation of proceeds realized from this offering will depend upon our operating revenues and cash position and our working capital requirements.

Therefore, as of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering. Accordingly, we will have broad discretion in the application of the net proceeds, and investors will be relying on our judgment regarding the application of the proceeds of this offering.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

DILUTION

If you purchase securities in this offering, your interest will be immediately and substantially diluted to the extent of the difference between the public offering price per share of our common stock and _____ of a warrant and the as adjusted net tangible book value per share of our common stock after giving effect to this offering.

Our net tangible book value as of December 31, 2014 was approximately \$2,109,439 or approximately \$0.12 per share of common stock. After giving effect to the sale of the shares and warrants in this offering at the public offering price of \$_____ per share and _____ of a warrant and after deducting underwriter discounts and commissions and other estimated offering expenses payable by us, our pro forma as adjusted net tangible book value at December 31, 2014 would have been approximately \$_____ million or \$_____ per share. This represents an immediate increase in net tangible book value of approximately \$_____ per share to our existing stockholders, and an immediate dilution of \$_____ per share to investors purchasing shares in the offering (assuming that no value is attributed to the warrants).

Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of our common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

The following table illustrates the per share dilution to investors purchasing securities in the offering:

Public offering price per share and _____ of a warrant	\$
Net tangible book value per share as of December 31, 2014	\$0.12
Increase in net tangible book value per share attributable to this offering	\$
Adjusted net tangible book value per share after this offering	\$
Amount of dilution in net tangible book value per share to new investors in this offering	\$

The information above assumes that the underwriters do not exercise their over-allotment option. If the underwriters exercise their over-allotment option in full, the as adjusted net tangible book value will increase to \$____ per share, representing an immediate increase to existing stockholders of \$____ per share and an immediate dilution of \$____ per share to new investors. If any shares are issued upon exercise of outstanding options or warrants, new investors will experience further dilution.

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CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization, as of December 31, 2014:

• on an actual basis; and
 on a pro forma basis, based on an offering price of \$_____ per share of common stock and _____ of a warrant, to give effect to the sale of _____ shares of common stock and warrants to purchase _____ shares of common stock, after deducting the estimated underwriter discounts and commissions and estimated offering expenses payable by us.

You should consider this table in conjunction with “Use of Proceeds” above as well as our “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and the notes to those financial statements incorporated by reference in this prospectus.

	As of December 31, 2014	
	Unaudited, Actual	Unaudited, Pro forma
Cash and cash equivalents	\$ 2,871,570	
Stockholders’ Equity:		
Preferred stock, par value \$0.001 per share; 10,000,000 shares authorized; -0- shares issued and outstanding as of December 31, 2014	\$	\$
Series A Preferred stock, par value \$0.001 per share; 10,000,000 shares authorized; -0- shares outstanding as of December 31, 2014		
Series B Preferred stock, par value \$.001 per share; 10,000,000 shares authorized; -0- shares outstanding as of December 31, 2014		
Common stock, \$0.001 par value per share; 500,000,000 shares authorized; 17,361,702 shares issued and outstanding as of December 31, 2014	17,362	
Additional paid-in capital	210,872,495	
Accumulated deficit	(207,588,916)	
Total Stockholders’ Equity	\$ 3,300,941	

DESCRIPTION OF SECURITIES WE ARE OFFERING

In this offering, we are offering a maximum of _____ shares of common stock and warrants to purchase up to _____ shares of common stock.

As of March 25, 2015, our authorized capital stock consists of 500,000,000 shares of common stock, par value \$0.001 per share, of which 17,364,202 shares were issued and outstanding, and 10,000,000 shares of preferred stock, par value \$0.001 per share, of which no shares were issued and outstanding. In addition, as of March 25, 2015, there were issued and outstanding options to purchase 3,808,957 shares of common stock and warrants to purchase 4,453,835 shares of our common stock. The authorized and unissued shares of common stock and preferred stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange on which our securities may be listed. Unless approval of our stockholders is so required, our board of directors will not seek stockholder approval for the issuance and sale of our common stock.

Common Stock

Each shareholder of our common stock is entitled to one vote for each share issued and outstanding held on all matters to be voted upon by the shareholders. Our shares of common stock have no preemptive, conversion, or redemption rights. Upon the sale of substantially all of our stock or assets or dissolution, liquidation or winding up, and after all liquidation preferences payable to any series of preferred stock entitled thereto have been satisfied, our remaining assets shall be distributed to all holders of common stock and any similarly situated stockholders who are not entitled to any liquidation preference or, if there be an insufficient amount to pay all such stockholders, then ratably among such holders. All of our issued and outstanding shares of common stock are fully paid and non-assessable. Our Certificate of Incorporation, as amended, does not provide for cumulative voting in the election of directors. The holders of shares of our common stock will be entitled to such cash dividends as may be declared from time to time by our board of directors from funds available therefor.

Our common stock is listed on The NASDAQ Capital Market under the symbol "APDN." The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company.

Warrants

In connection with this offering, we will issue warrants to purchase _____ shares of our common stock. For every share of common stock issued, we will issue _____ of a warrant. Each full warrant issued in this offering entitles the registered holder to purchase one share of common stock at a price equal to \$3.50 per share, subject to adjustment as discussed below, at any time commencing upon consummation of this offering and terminating at 5:00 p.m., New York City time, on November 20, 2019.

The warrants will be issued in registered form under a warrant agreement between us and our warrant agent. The material provisions of the warrants are set forth herein but are only a summary and are qualified in their entirety by the provisions of the warrant agreement that has been filed as an exhibit to the registration statement of which this prospectus forms a part. The exercise price and number of shares of common stock issuable upon exercise of the warrants may be adjusted in certain circumstances, including in the event of a stock dividend, extraordinary dividend or recapitalization, reorganization, merger or consolidation. However, the warrants will not be adjusted for issuances of common stock at a price below their respective exercise prices.

The warrants may be exercised upon surrender of the warrant certificate on or prior to the expiration date at the offices of the warrant agent, with the exercise form on the reverse side of the public warrant certificate completed and

executed as indicated, accompanied by full payment of the exercise price, by certified or official bank check payable to us, for the number of warrants being exercised. Under the terms of the warrant agreement, we have agreed to use our reasonable best efforts to maintain the effectiveness of the registration statement and current prospectus relating to common stock issuable upon exercise of the warrants until the expiration of the warrants. During any period we fail to have maintained an effective registration statement covering the shares underlying the warrants, the warrant holder may exercise the warrants on a cashless basis and if the requirements of Rule 144 of the

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Securities Act have been satisfied the shares may be freely sold. If the requirements of Rule 144 of the Securities Act have not been satisfied and there is no registration statement filed, warrant holders will be entitled to certain cash payments until the warrant shares can be delivered without a legend.

The warrant holders do not have the rights or privileges of holders of common stock and any voting rights until they exercise their warrants and receive shares of common stock; provided that if we issue options, convertible securities, warrants or similar securities to our stockholders, each warrant holder will have the right to acquire the same as if it had exercised its warrants for common stock. After the issuance of shares of common stock upon exercise of the warrants, each holder will be entitled to one vote for each share held of record on all matters to be voted on by stockholders.

In the event of a “Fundamental Transaction” (as defined in the warrant agreement, which generally includes any merger with another entity, the sale, transfer or other disposition of all or substantially all of our assets to another entity, or the acquisition by a person of more than 50% of our common stock), each warrant holder will have the right at any time prior to the consummation of the Fundamental Transaction to require us to repurchase the warrant for a purchase price in cash equal to the Black Scholes value (as calculated under the warrant agreement) of the then remaining unexercised portion of such warrant on the date of such Fundamental Transaction. Any warrant holder that receives cash described in the preceding sentence shall not receive any “Alternate Consideration” (as defined in the warrant agreement) from such Fundamental Transaction. The “Alternate Consideration” generally means the number of shares of the successor or acquiring corporation and any additional consideration receivable as a result of such Fundamental Transaction.

No fractional shares of common stock will be issued upon exercise of the warrants. If, upon exercise of the warrants, a holder would be entitled to receive a fractional interest in a share, we will, upon exercise, round up to the nearest whole number of shares of common stock to be issued to the warrant holder.

Anti-takeover Effects of Certain Provisions of our Certificate of Incorporation and Bylaws

Our certificate of incorporation contains provisions that could make it more difficult to acquire control of our company by means of a tender offer, open market purchases, a proxy contest or otherwise. A description of these provisions is set forth below.

Preferred Stock

We believe that the availability of the preferred stock under our certificate of incorporation provides us with flexibility in addressing corporate issues that may arise. Having these authorized shares available for issuance allows us to issue shares of preferred stock without the expense and delay of a special stockholders’ meeting. The authorized shares of preferred stock, as well as shares of common stock, will be available for issuance without further action by our stockholders, unless action is required by applicable law or the rules of any stock exchange on which our securities may be listed. The board of directors has the power, subject to applicable law, to issue series of preferred stock that could, depending on the terms of the series, impede the completion of a merger, tender offer or other takeover attempt that some, or a majority, of the stockholders might believe to be in their best interests or in which stockholders might receive a premium for their stock over the then prevailing market price of the stock.

Advance Notice Procedure

Our bylaws provide an advance notice procedure for stockholders to nominate director candidates for election or to bring business before an annual meeting of stockholders. Only persons nominated by, or at the direction of, our board

of directors or by a stockholder who has given proper and timely notice to our secretary prior to the meeting, will be eligible for election as a director. In addition, any proposed business other than the nomination of persons for election to our board of directors must constitute a proper matter for stockholder action pursuant to the notice of meeting delivered to us. For notice to be timely, it must be received by our secretary not less than 90 nor more than 120 calendar days prior to the first anniversary of the previous year's annual meeting (or if the date of the annual meeting is advanced more than 30 calendar days or delayed by more than 60 calendar days from the anniversary date of the previous year's annual meeting, not earlier than the 90th calendar day prior to such meeting or the 10th calendar day after public disclosure of the date of such meeting is first made). These advance notice provisions may have the effect of precluding the conduct of certain business at a meeting if the proper

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procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempt to obtain control of us.

Special Meetings of Stockholders

Our bylaws provide that special meetings of stockholders may be called only by the Chairman of the Board, the Chief Executive Officer, or the Board of Directors pursuant to a resolution adopted by a majority of the Board.

Anti-Takeover Effects of Delaware Law

Section 203 of the Delaware General Corporation Law (DGCL) provides that, subject to exceptions specified therein, an “interested stockholder” of a Delaware corporation shall not engage in any “business combination,” including general mergers or consolidations or acquisitions of additional shares of the corporation, with the corporation for a three-year period following the time that such stockholder becomes an interested stockholder unless:

prior to such time, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

upon consummation of the transaction which resulted in the stockholder becoming an “interested stockholder,” the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced (excluding specified shares); or

on or subsequent to such time, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock not owned by the interested stockholder.

Under Section 203, the restrictions described above also do not apply to specified business combinations proposed by an interested stockholder following the announcement or notification of one of specified transactions involving the corporation and a person who had not been an interested stockholder during the previous three years or who became an interested stockholder with the approval of a majority of the corporation’s directors, if such transaction is approved or not opposed by a majority of the directors who were directors prior to any person becoming an interested stockholder during the previous three years or were recommended for election or elected to succeed such directors by a majority of such directors. The restrictions described above also do not apply to specified business combinations with a person who is an “interested stockholder” prior to the time when the corporation’s common stock is listed on a national securities exchange, so these restrictions would not apply to a business combination with any person who is one of our stockholders prior to this offering.

Except as otherwise specified in Section 203, an “interested stockholder” is defined to include:

any person that is the owner of 15% or more of the outstanding voting stock of the corporation, or is an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of the corporation at any time within three years immediately prior to the date of determination; and

the affiliates and associates of any such person

Under some circumstances, Section 203 makes it more difficult for a person who is an interested stockholder to effect various business combinations with us for a three-year period.

Listing

Our shares of common stock and the warrants offered hereby are listed on The NASDAQ Capital Market under the symbols “APDN” and “APDNW,” respectively.

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Transfer Agent and Registrar

American Stock Transfer & Trust Company, located in Brooklyn, New York, is the transfer agent and registrar for our common stock.

Dividends

We have never declared or paid any cash dividends on our common stock. We do not anticipate paying any cash dividends to stockholders in the foreseeable future. In addition, any future determination to pay cash dividends will be at the discretion of the Board of Directors and will be dependent upon our financial condition, results of operations, capital requirements, and such other factors as the Board of Directors deem relevant.

Underwriters' Warrants

Please see "Underwriting" for a description of Warrants to be issued to the underwriters.

MARKET PRICE FOR OUR SECURITIES

Our shares of common stock and certain warrants that were issued in our public offering which closed on November 20, 2014 have been listed on The NASDAQ Capital Market under the symbols "APDN" and "APDNW," respectively, since November 17, 2014. Our common stock was quoted on The Over The Counter Market Group ("OTCQB") maintained by the National Association of Securities Dealers under the symbol "APDN" through November 14, 2014.

The following table sets forth the high and low sales prices for our common stock on The NASDAQ Capital Market and the OTCQB, as applicable, during the current fiscal year and the fiscal years ended September 30, 2014 and 2013. The following high and low sales prices of our common stock have been adjusted retroactively to reflect a one-for-60 reverse stock split that was effective on October 29, 2014.

Period	Common Stock		Warrants	
	High	Low	High	Low
Fiscal 2015:				
Second Quarter (through March 25, 2015)	\$4.39	\$2.71	\$1.79	\$0.90
First Quarter	\$6.60	\$2.08	\$1.29	\$0.65
Fiscal 2014:				
Fourth Quarter	\$7.80	\$5.40	\$--	\$--
Third Quarter	\$8.40	\$6.00	\$--	\$--
Second Quarter	\$10.80	\$7.20	\$--	\$--
First Quarter	\$11.40	\$4.80	\$--	\$--
Fiscal 2013:				
Fourth Quarter	\$12.00	\$5.40	\$--	\$--
Third Quarter	\$15.60	\$10.20	\$--	\$--
Second Quarter	\$13.80	\$7.80	\$--	\$--
First Quarter	\$17.40	\$10.20	\$--	\$--

INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

Our Certificate of Incorporation provides to the fullest extent permitted by Delaware law that our directors or officers shall not be personally liable to us or our stockholders for damages for breach of such director's or officer's fiduciary duty. The effect of this provision of our Certificate of Incorporation is to eliminate our rights and our stockholders (through stockholders' derivative suits on behalf of our company) to recover damages against a director or officer for breach of the fiduciary duty of care as a director or officer (including breaches resulting from negligent or grossly negligent behavior), except under certain situations defined by statute. We believe that the indemnification provisions in our Certificate of Incorporation are necessary to attract and retain qualified persons as directors and officers.

We have entered into an indemnification agreement (each, an "Indemnification Agreement") with each of our directors and executive officers. In general, the Indemnification Agreement obligates us to indemnify a director or executive officer, to the fullest extent permitted by applicable law, for certain expenses, including attorneys' fees, judgments, penalties, fines and settlement amounts actually and reasonably incurred by them in any action or proceeding arising out of their services as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request. In addition, the Indemnification Agreement provides for the advancement of expenses incurred by the indemnitee in connection with any covered proceeding to the fullest extent permitted by applicable law. The rights provided by the Indemnification Agreement are in addition to any other rights to indemnification or advancement of expenses to which the indemnitee may be entitled under applicable law, the Company's Certificate of Incorporation or bylaws, or otherwise.

Insofar as indemnification for liabilities arising under the Securities Act, may be permitted to directors, officers or persons controlling us pursuant to the foregoing provisions, or otherwise, we have been advised that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

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UNDERWRITING

We have entered into an underwriting agreement with Maxim Group LLC acting as the sole book-running manager and sole representative for the underwriters named below. Subject to the terms and conditions of the underwriting agreement, the underwriters named below have agreed to purchase, and we have agreed to sell to them, the number of shares of common stock and warrants to purchase common stock at the public offering price, less the underwriting discounts, commissions, as set forth on the cover page of this prospectus supplement and as indicated below:

Underwriters	Number of Shares	Number of Warrants
Maxim Group LLC		
The Benchmark Company		
Total		

The underwriting agreement provides that the obligations of the underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus are subject to the approval of certain legal matters by their counsel and to other conditions. The underwriters are obligated to take and pay for all of the shares and warrants offered by this prospectus supplement if any such shares and warrants are taken, other than those shares and warrants covered by the over-allotment option described below.

Over-Allotment Option

We have granted to the underwriters an option, exercisable not later than 45 days after the effective date of the registration statement, to purchase up to _____ additional shares and/or warrants to purchase an aggregate of _____ shares of common stock, at the per share price of \$____ or per warrant price of \$_____ less the underwriting discounts and commissions set forth on the cover of this prospectus supplement. The underwriters may exercise this option only to cover over-allotments made in connection with this offering. To the extent that the underwriters exercise this option, each of the underwriters will become obligated, subject to conditions, to purchase approximately the same percentage of these additional shares and/or warrants as the number of shares and/or warrants to be purchased by it in the above table bears to the total number of shares and/or warrants offered by this prospectus supplement. We will be obligated, pursuant to the option, to sell these additional shares and/or warrants to the underwriters to the extent the option is exercised. If any additional shares and/or warrants are purchased, the underwriters will offer the additional shares and/or warrants on the same terms as those on which the other shares and/or warrants are being offered hereunder.

Commissions

We have agreed to pay the underwriters (i) a cash fee equal to 7% of the gross proceeds raised in this offering (except that such cash fee shall be 3.5% for up to \$2,000,000 of gross proceeds attributable to investors which may be introduced to the underwriters by us, if any) and (ii) warrants to purchase (x) that number of shares of our common stock equal to an aggregate of 4% of the shares of common stock sold in the offering (or 2% of up to \$2,000,000 of shares which may be sold to investors introduced to the underwriters by us, if any). Such underwriters' warrants shall have an exercise price equal to \$_____ per share, which is 115% of the public offering price and terminate five years after the effective date of this registration statement. In addition, (1) they will provide for cashless exercise, (2) they will provide up to two demand registration rights with respect to the underlying shares (one at our expense) for a period of five years from the date of issuance and (3) they will provide for unlimited "piggyback" registration rights with respect to the underlying shares during the five year period commencing six months after the effective date of

this offering. Such underwriters' warrants will be subject to FINRA Rule 5110(g)(1) in that, except as otherwise permitted by FINRA rules, for a period of 180 days following the issuance, of which this prospectus supplement forms a part, the underwriters' warrants shall not be (A) sold, transferred, assigned, pledged, or hypothecated, or (B) the subject of any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of the securities by any person.

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The representative has advised us that the underwriters propose to offer the shares and warrants directly to the public at the public offering price set forth on the cover of this prospectus supplement. In addition, the representative may offer some of the shares and warrants to other securities dealers at such price less a concession of up to \$_____ per share. After the offering to the public, the offering price and other selling terms may be changed by the representative without changing the proceeds we will receive from the underwriters.

The following table summarizes the public offering price, underwriting commissions and proceeds before expenses to us assuming both no exercise and full exercise of the underwriters' option to purchase additional shares and warrants. The underwriting commissions are equal to the public offering price per share or warrant less the amount per share or warrant the underwriters pay us for the shares.

	Per Share ⁽¹⁾	Per Warrant ⁽¹⁾	Total Without Over- Allotment	Total With Over- Allotment
Public offering price	\$	\$	\$	\$
Underwriting discounts and commissions	\$	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$	\$

(1) The discounts and commissions shown do not include the warrant to purchase shares of common stock and warrants issuable to the underwriters at closing.

We estimate that the total expenses of the offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding underwriting discounts and commissions, will be approximately \$223,000, all of which are payable by us.

Lock-Up Agreements

We and each of our officers and directors have agreed, subject to certain exceptions, not to offer, issue, sell, contract to sell, encumber, grant any option for the sale of or otherwise dispose of any shares of our common stock or other securities convertible into or exercisable or exchangeable for shares of our common stock for a period of six (6) months after the effective date of the registration statement of which this prospectus is a part without the prior written consent of Maxim Group LLC.

Maxim Group LLC may in its sole discretion and at any time without notice release some or all of the shares subject to lock-up agreements prior to the expiration of the lock-up period. When determining whether or not to release shares from the lock-up agreements, the representative will consider, among other factors, the security holder's reasons for requesting the release, the number of shares for which the release is being requested and market conditions at the time.

Price Stabilization, Short Positions and Penalty Bids

In connection with this offering, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock or warrants. Specifically, the underwriters may over-allot in connection with this offering by selling more shares and warrants than are set forth on the cover page of this prospectus supplement. This creates a short position in our common stock or warrants for the underwriters' own account. The short position may be either a covered short position or a naked short position. In a covered short position, the number of shares of common stock or warrants over-allotted by the underwriters is not greater than the number of shares of common stock or warrants that they may purchase in the over-allotment option. In a naked short position, the number of shares of

common stock or warrants involved is greater than the number of shares of common stock or warrants in the over-allotment option. To close out a short position, the underwriters may elect to exercise all or part of the over-allotment option. The underwriters may also elect to stabilize the price of our common stock or warrants or reduce any short position by bidding for, and purchasing, common stock or warrants in the open market.

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The underwriters may also impose a penalty bid. This occurs when a particular underwriter or dealer repays selling concessions allowed to it for distributing a security in this offering because the underwriter repurchases that security in stabilizing or short covering transactions.

Finally, the underwriters may bid for, and purchase, shares of our common stock or warrants in market making transactions, including “passive” market making transactions as described below.

These activities may stabilize or maintain the market price of our common stock or warrants at a price that is higher than the price that might otherwise exist in the absence of these activities. The underwriters are not required to engage in these activities, and may discontinue any of these activities at any time without notice. These transactions may be effected on The NASDAQ Capital Market, in the over-the-counter market, or otherwise.

In connection with this offering, the underwriters and selling group members, if any, or their affiliates may engage in passive market making transactions in our common stock or warrants immediately prior to the commencement of sales in this offering, in accordance with Rule 103 of Regulation M under the Exchange Act. Rule 103 generally provides that:

- a passive market maker may not effect transactions or display bids for our common stock or warrants in excess of the highest independent bid price by persons who are not passive market makers;
- net purchases by a passive market maker on each day are generally limited to 30% of the passive market maker’s average daily trading volume in our common stock or warrants during a specified two-month prior period or 200 shares or warrants, whichever is greater, and must be discontinued when that limit is reached; and
- passive market making bids must be identified as such.

Other Terms

In addition, we have agreed to reimburse the underwriters for all reasonable out-of-pocket expenses up to \$90,000, including but not limited to reasonable legal fees, incurred by the underwriters in connection with the offering. Any expenses in excess of \$5,000, excluding fees for legal counsel, shall be subject to our prior approval, which such approval shall not be unreasonably withheld. We will reimburse the underwriters for all such expenses regardless of whether the offering is consummated.

Our Relationships with the Underwriters

The underwriters and their affiliates have engaged, and may in the future engage, in investment banking transactions and other commercial dealings in the ordinary course of business with us or our affiliates. It has received, or may in the future receive, customary fees and commissions for these transactions. Maxim Group LLC was the sole book-running manager of our November 2014 common stock and warrant offering.

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

Indemnification

We have agreed to indemnify the underwriters against liabilities relating to the offering arising under the Securities Act and the Exchange Act, liabilities arising from breaches of some or all of the representations and

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warranties contained in the underwriting agreement, and to contribute to payments that the underwriters may be required to make for these liabilities.

Electronic Distribution

A prospectus supplement and accompanying base prospectus in electronic format may be made available on a website maintained by the representatives of the underwriters and may also be made available on a website maintained by other underwriters. The underwriters may agree to allocate a number of shares or warrants to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives of the underwriters to underwriters that may make Internet distributions on the same basis as other allocations. In connection with the offering, the underwriters or syndicate members may distribute prospectus supplements and accompanying base prospectuses electronically. No forms of electronic prospectus other than prospectus supplements and accompanying base prospectuses that are printable as Adobe® PDF will be used in connection with this offering.

The underwriters have informed us that they do not expect to confirm sales of shares and warrants offered by this prospectus supplement to accounts over which they exercise discretionary authority.

Other than the prospectus supplement in electronic format, the information on any underwriter's website and any information contained in any other website maintained by an underwriter is not part of the prospectus supplement or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or any underwriter in its capacity as underwriter and should not be relied upon by investors.

Foreign Regulatory Restrictions on Purchase of Securities Offered Hereby Generally

No action has been or will be taken in any jurisdiction (except in the United States) that would permit a public offering of the securities offered by this prospectus supplement and accompanying base prospectus, or the possession, circulation or distribution of this prospectus supplement and accompanying base prospectus or any other material relating to us or the securities offered hereby in any jurisdiction where action for that purpose is required. Accordingly, the securities offered hereby may not be offered or sold, directly or indirectly, and neither of this prospectus supplement and accompanying base prospectus nor any other offering material or advertisements in connection with the securities offered hereby may be distributed or published, in or from any country or jurisdiction except in compliance with any applicable rules and regulations of any such country or jurisdiction.

Each of the underwriters may arrange to sell securities offered by this prospectus supplement and accompanying base prospectus in certain jurisdictions outside the United States, either directly or through affiliates, where they are permitted to do so.

EXPENSES

The following are the estimated expenses of the issuance and distribution of the common stock and warrants in this offering, other than the underwriting discount, all of which will be paid by us.

SEC registration fee	\$2,905
FINRA filing fee	\$4,250
NASDAQ Capital Market additional listing fee	\$5,000
Legal fees and expenses	\$170,000
Accounting fees and expenses	\$30,000
Miscellaneous	\$17,845

Total \$230,000

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*The SEC registration fee of \$2,905 and the FINRA filing fee of \$4,250 covering all of the securities being offered under the registration statement on Form S-3 (File No. 333-202432) filed with the SEC with an effective date of March 10, 2015, of which this prospectus supplement forms part, was previously paid. We allocate the cost of these fees on an approximate pro-rata basis with each offering.

LEGAL MATTERS

The validity of the issuance of the securities offered hereby will be passed upon for us by Norton Rose Fulbright US LLP, New York, New York. Harter Secrest & Emery LLP is acting as counsel for the underwriter in this offering.

EXPERTS

The consolidated financial statements as of and for the year ended September 30, 2014 incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended September 30, 2014, as amended on March 6, 2015, have been audited by Marcum LLP, an independent registered public accounting firm, as stated in their report incorporated by reference herein, and have been so incorporated in reliance upon such report and upon the authority of such firm as experts in accounting and auditing. The consolidated financial statements as of and for each of the two years in the period ended September 30, 2013 incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended September 30, 2014, as amended on March 6, 2015, have been audited by RBSM LLP, an independent registered public accounting firm, as stated in their report incorporated by reference herein, and have been so incorporated in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

During the fiscal years ended September 30, 2013 and 2012, there were no “reportable events” (as defined in Item 304(a)(1)(v) of Regulation S-K), except that in RBSM LLP’s report dated May 1, 2014 on the Company’s internal control over financial reporting as of September 30, 2013, RBSM LLP expressed an adverse opinion on the effectiveness of the Company’s internal control over financial reporting due to the existence of the material weakness identified and described in our Amendment No. 1 to our Annual Report on Form 10-K/A for the fiscal year ended September 30, 2013.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 (File No. 333-202432), of which this prospectus supplement and the accompanying base prospectus are a part, under the Securities Act, to register the shares of common stock offering by this prospectus supplement. However, this prospectus supplement and the accompanying base prospectus do not contain all of the information contained in the Registration Statement. We have omitted from this prospectus supplement some parts of the Registration Statement as permitted by the rules and regulations of the SEC. Statements in this prospectus supplement concerning any document we have filed as an exhibit to the Registration Statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified in their entirety by reference to these filings. In addition, we file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any documents that we have filed with the SEC at the SEC’s Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information about the operation of the Public Reference Room. The SEC also maintains an Internet site that contains reports, proxy and information statements and other information that registrants file electronically with the SEC, including us. The SEC’s Internet site can be found at <http://www.sec.gov>. In addition, we make available on or through our Internet site copies of these reports as soon as reasonably practicable after we electronically file or furnished them to the SEC. Our Internet site can be found at <http://www.adnas.com>. Our website is not a part of this prospectus supplement.

INFORMATION INCORPORATED BY REFERENCE

We have elected to incorporate certain information by reference into this prospectus supplement. By incorporating by reference, we can disclose important information to you by referring you to other documents we have filed or will file with the SEC. The information incorporated by reference is deemed to be part of this

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prospectus supplement, except for information incorporated by reference that is superseded by information contained in this prospectus supplement. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any statements in the prospectus supplement or any document previously incorporated by reference have been modified or superseded. This prospectus supplement incorporates by reference the documents set forth below that we have previously filed with the SEC, except in each case the information contained in such document to the extent “furnished” and not “filed”:

Our Annual Report on Form 10-K for the fiscal year ended September 30, 2014, filed with the SEC on December 15, 2014.

Our Amendment No. 1 to our Annual Report on Form 10-K/A for the fiscal year ended September 30, 2014, filed with the SEC on March 6, 2015.

Our Quarterly Report on Form 10-Q for the quarterly period ended December 31, 2014, filed with the SEC on February 9, 2015.

The description of our common stock and warrants to purchase common stock contained in our registration statement on Form 8-A (File No. 001-36745) filed with the Commission on November 13, 2014, pursuant to Section 12(b) of the Securities Exchange Act of 1934, as amended (“Exchange Act”), including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference all documents we file in the future pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement and prior to the sale of all the securities covered by this prospectus supplement (including all such documents filed with the SEC after the date of the initial filing of the Registration Statement that contains this prospectus supplement and prior to effectiveness of the Registration Statement or after such effectiveness), except in each case the information contained in such document to the extent “furnished” and not “filed”.

You may obtain copies of these documents on the website maintained by the SEC at <http://www.sec.gov>, or from us without charge (other than exhibits to such documents, unless such exhibits are specifically incorporated by reference into such documents) by writing us at Corporate Secretary, Applied DNA Sciences, Inc., 50 Health Sciences Drive, Stony Brook, New York 11790 or visiting our website at <http://www.adnas.com>. No information contained on our website is intended to be included as part of, or incorporated by reference into, this prospectus supplement.

APPLIED DNA SCIENCES, INC.

_____ **SHARES OF COMMON STOCK**

WARRANTS TO PURCHASE _____ SHARES OF COMMON STOCK

PROSPECTUS

Sole Book Running Manager

Maxim Group LLC

Co-Manager

The Benchmark Company

April __, 2015

PROSPECTUS

APPLIED DNA SCIENCES, INC.

\$25,000,000
Common Stock
Preferred Stock
Debt Securities
Warrants
Rights
Units

We may offer and sell, from time to time in one or more offerings, up to \$25,000,000 of our common stock, preferred stock, debt securities, warrants and rights, or any combination of these securities, and/or units consisting of common stock, preferred stock, debt securities, warrants and rights. We may also offer common stock or preferred stock upon conversion of debt securities and common stock upon conversion of preferred stock.

This prospectus describes some of the general terms that may apply to these securities. When we decide to sell a particular class or series of securities, we will provide specific terms of the offered securities in one or more prospectus supplements. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings.

The prospectus supplement, and any documents incorporated by reference, may also add, update or change information contained in or incorporated by reference into this prospectus. However, no prospectus supplement shall offer a security that is not registered and described in this prospectus at the time of its effectiveness. You should read this prospectus and any prospectus supplement, as well as the documents incorporated by reference or deemed to be incorporated by reference into this prospectus, and any free writing prospectus carefully before you invest. This prospectus may not be used to offer or sell our securities unless accompanied by a prospectus supplement relating to the offered securities.

Our common stock and our warrants are listed on The NASDAQ Capital Market under the symbols “APDN” and “APDNW”, respectively. Each prospectus supplement will contain information, where applicable, as to our listing on any securities exchange of the securities covered by the prospectus supplement. The aggregate market value of our outstanding common stock held by non-affiliates was approximately \$55,168,097 based on 17,361,702 shares of outstanding common stock, of which 3,069,449 shares are held by affiliates, and a price of \$3.86 per share, which was the last reported sale price of our common stock as quoted on The NASDAQ Capital Market on February 27, 2015. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar month period that ends on, and includes, the date of this prospectus.

These securities may be sold by us directly to purchasers, through dealers or agents, or to or through underwriters, or through a combination of these methods. See “Plan of Distribution” in this prospectus. We may also describe the plan of distribution for any particular offering of our securities in a prospectus supplement. If any agents, underwriters or dealers are involved in the sale of any securities in respect of which this prospectus is being delivered, we will

disclose their names and the nature of our arrangements with them in a prospectus supplement. The net proceeds we expect to receive from any such sale will also be included in a prospectus supplement.

An investment in our common stock involves a high degree of risk. See the sections entitled “Risk Factors” in our most recent Annual Report on Form 10-K and in any Quarterly Report on Form 10-Q, as well as in any prospectus supplement or free writing prospectus related to these specific offerings.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required or related free writing prospectuses. You should read the entire prospectus and any amendments or supplements carefully before you make your investment decision.

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 March 10, 2015

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ABOUT THIS PROSPECTUS

This prospectus is part of a Registration Statement that we filed with the Securities and Exchange Commission (“SEC”) using a “shelf” registration process. Under this shelf registration process, we may offer from time to time securities having a maximum aggregate offering price of \$25,000,000. Each time we offer securities, we will prepare and file with the SEC a prospectus supplement or information that is incorporated by reference into this prospectus that describes the specific amounts, prices and terms of the securities we offer. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings and securities. The prospectus supplement also may add, update or change information contained in this prospectus or the documents incorporated herein by reference. You should read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectus together with additional information described below under the caption “Where You Can Find More Information.”

This prospectus does not contain all the information provided in the Registration Statement we filed with the SEC. For further information about us or our securities offered hereby, you should refer to that Registration Statement, which you can obtain from the SEC as described below under “Where You Can Find More Information.”

You should rely only on the information contained or incorporated by reference in this prospectus, any prospectus supplement and any related free writing prospectus. We have not 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. This prospectus is not an offer to sell securities, and it is not soliciting an offer to buy securities, in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus, any prospectus supplement, any related free writing prospectus as well as information we have previously filed with the SEC and incorporated by reference, is accurate as of the date of those documents only. Our business, financial condition, results of operations and prospects may have changed since those dates.

We may sell securities through underwriters or dealers, through agents, directly to purchasers or through any combination of these methods. We and our agents reserve the sole right to accept or reject in whole or in part any proposed purchase of securities. The prospectus supplement, which we will prepare and file with the SEC each time we offer securities, will set forth the names of any underwriters, agents or others involved in the sale of securities, and any applicable fee, commission or discount arrangements with them. See “Plan of Distribution.”

In this prospectus, unless otherwise indicated, “our company,” “we,” “us” or “our” refer to Applied DNA Sciences, Inc., a Delaware corporation and its consolidated subsidiaries.

PROSPECTUS SUMMARY

This prospectus summary highlights certain information about our company and other information contained elsewhere in this prospectus or in documents incorporated by reference. This summary does not contain all of the information that you should consider before making an investment decision. You should carefully read the entire prospectus, any prospectus supplement, including the section entitled “Risk Factors” and the documents incorporated by reference into this prospectus, before making an investment decision.

THE OFFERING

This prospectus is part of a Registration Statement that we filed with the Securities and Exchange Commission (“SEC”) utilizing a shelf registration process. Under this shelf registration process, we may sell any combination of:

- common stock;
- preferred stock;
- debt securities, in one or more series;
- warrants to purchase any of the securities listed above;
- rights to purchase common stock, preferred stock or warrants; and/or
- units consisting of one or more of the foregoing

in one or more offerings up to a total dollar amount of \$25,000,000. 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 specific offering and include a discussion of any risk factors or other special considerations that apply to those securities. 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 the additional information described under the heading “Where You Can Find More Information.”

OUR COMPANY

Overview

Using biotechnology as a forensic foundation, we provide botanical-DNA based security and authentication solutions and services that can help protect products, brands, entire supply chains, and intellectual property of companies, governments and consumers from theft, counterfeiting, fraud and diversion. Whether working in supply chain security, brand protection or law enforcement applications, it is our goal to help establish secure flourishing environments that foster quality, integrity and success. With secure taggants, high-resolution DNA authentication, and comprehensive reporting, our botanical DNA-based technologies are designed to deliver what we believe to be the greatest levels of security, deterrence and legal recourse strength.

SigNature® DNA. SigNature DNA is our platform ingredient, at the core of all our security solutions. From application to application the vehicle that carries SigNature DNA is custom designed to suit the application. Exhaustive development efforts have yielded a flexible and durable marker with all the accuracy provided by nature. SigNature DNA is based on full, double stranded plant DNA, and provides forensic power and protection for a wide array of applications. Highly secure, robust and durable, SigNature DNA markers are an ingredient that can be used to fortify brand protection efforts; mark, track and convict criminals; and strengthen supply chain security. Custom DNA sequences can be embedded into a wide range of host carriers including ink, varnish, thread, laminates and metal coatings. These items can then be tested for the presence of SigNature DNA Markers through optical screening or a forensic level authentication. Hundreds of millions of SigNature DNA marks now exist in the public domain on items ranging from consumer product packaging to microcircuits to guitars. We believe that no marks have ever been copied.

SigNature DNA, SigNature® T DNA, fiberTyping®, DNAnet® and digitalDNA®, our principal anti-counterfeiting and product authentication solutions can be used in numerous industries, including microcircuits and other electronics, cash-in-transit (transport and storage of banknotes), textiles and apparel, automotive, printing and packaging, homeland security, law enforcement and home asset marking, identity cards and other secure documents, industrial materials, agrochemicals, pharmaceuticals, consumer products, food and beverage, sports memorabilia, fine wine, and art and collectibles.

SigNature T DNA and fiberTyping. There is one common thread that runs through the global textile industry: success breeds counterfeiting and diversion. SigNature T botanical DNA markers are used for brand protection efforts and raw material source compliance programs. In situations where natural fibers like cotton or wool are utilized, we can isolate and type inherent DNA, making it possible to verify the presence of specified materials. This fiberTyping process provides DNA verification to help manufacturers, retailers and brand owners ensure quality, safety and compliance of their products.

DNAnet. Recognizing that DNA-based evidence is the cornerstone of the modern era of law enforcement, we have created what we believe to be an effective crime fighting tool: DNAnet, a botanical DNA marker that can be used to definitively link evidence and offenders to specific crime scenes. Whether deployed as a residential asset marker, an offender spray or fog in a retail location or a degradation dye in cash handling boxes, DNA markers facilitate conviction, and establish a heightened level of deterrence. DNAnet, which includes our SmartDNA product line, is a unique security system and effective crime protection system for stores, warehouses, banks, pharmacies, ATMs and the protection of valuables. The system contains a water-based, non-toxic spray that may be triggered during a crime, marking the perpetrator and remaining on their person for weeks after the crime. Each unit is designed to be unique to each store, warehouse or sting operation, allowing the police and prosecutors to link criminals to the crimes. Assets acquired from RedWeb Technologies including Sentry 500 Intruder Spray Systems and Advanced Molecular Taggant Technology and our SmartDNA product line are now included in the DNAnet family of products.

digitalDNA. digitalDNA is a security solution that utilizes the flexibility of mobile communications, the instant accessibility of secure, cloud-based data, and the certainty of DNA to make item tracking and authentication fast, easy and definitive, while providing the opportunity to create a new customer interface. digitalDNA begins with a DNA-secured form of the QR (“quick read”) code or other two dimensional code. A unique identification code is created for each article, and represented in an easy-to-read QR style barcode. The product uses forensic authentication of a botanical DNA marker, embedded within a secure QR code, and physically included within the ink used to digitally print the code. Should there ever be a question about the validity of a digitalDNA code, a laboratory-based analysis can be conducted to determine authenticity.

Counterfeit Prevention Authentication Program. Our turnkey program for electronics, military, commercial, and aerospace contractors called the Counterfeit Prevention Authentication Program (“CPA” Program) empowers end-users to verify the originality or provenance of parts which have been marked by their suppliers with our SigNature DNA Markers.

Corporate History

We are a Delaware corporation, which was initially formed in 1983 under the laws of the State of Florida as Datalink Systems, Inc. In 1998, we reincorporated in Nevada, and in 2002, we changed our name to our current name, Applied DNA Sciences, Inc. In December 2008, we reincorporated from Nevada to the State of Delaware.

In November 2005, our corporate headquarters were relocated from Los Angeles, California to the Long Island High Technology Incubator at Stony Brook University in Stony Brook, New York, where we established laboratories for the manufacture of DNA markers and product prototypes, and DNA authentication. The address of our corporate headquarters is 50 Health Sciences Drive, Stony Brook, New York 11790, and our telephone number is (631) 240-8800. We maintain a website at www.adnas.com where general information about us is available. The information on, or that may be accessed through, our website is not incorporated by reference into and should not be considered a part of this registration statement.

To date, we have had a limited operating history, and as a result, our operations have produced limited recurring revenues from our services and products; we have incurred expenses and have sustained losses.

RISK FACTORS

Investing in our securities involves significant risks. The prospectus supplement applicable to a particular offering of securities will contain a discussion of the risks applicable to an investment in the Company and to the particular types of securities that we are offering under that prospectus supplement. Before making an investment decision, you should carefully consider the risks described under the heading “Risk Factors” contained in, or incorporated into, the applicable prospectus supplement and any related free writing prospectus, together with all of the other information appearing in or incorporated by reference into this prospectus and any applicable prospectus supplement and related free writing prospectus, in light of your particular investment objectives and financial circumstances. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment. Additional risks not known to us or that we believe are immaterial may also adversely affect our business, operating results and financial condition and the value of an investment in our securities.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Statements in this prospectus and in the documents incorporated by reference in this prospectus contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or Exchange Act, and are subject to the “safe harbor” created by those sections. Forward looking statements involve risks and uncertainties and contain words such as “may,” “assumes,” “forecasts,” “positions,” “predicts,” “strategy,” “expects,” “estimates,” “anticipates,” “projects,” “intends,” “plans,” “budgets,” “potential,” “continue” and variations thereof regarding matters that are not historical facts. Because these statements involve risks and uncertainties, as well as certain assumptions, actual results may differ materially from those expressed or implied by such forward-looking statements. Factors that could cause actual results to differ materially include, but are not limited to, those risks identified under “Risk Factors” and from time to time in our other filings with the SEC. The information in this prospectus or any prospectus supplement speaks only as of the date of that document and the information incorporated herein by reference speaks only as of the date of the document incorporated by reference. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

Forward-looking statements include our plans and objectives for future operations, including plans and objectives relating to our products and our future economic performance. Assumptions relating to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions, future business decisions, and the time and money required to successfully complete development and commercialization of our technologies, all of which are difficult or impossible to predict accurately and many of which are beyond our control. Although we believe that the assumptions underlying the forward-looking statements contained herein are reasonable, any of those assumptions could prove inaccurate and, therefore, we cannot assure you that the results contemplated in any of the forward-looking statements contained herein will be realized. Based on the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of any such statement should not be regarded as a representation by us or any other person that our objectives or plans will be achieved.

USE OF PROCEEDS

Except as otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of the securities covered by this prospectus for general corporate purposes, which may include, but is not limited to, working capital, capital expenditures, business development and research and development expenditures and acquisitions of new technologies or businesses. The precise amount, use and timing of the application of such proceeds will depend upon our funding requirements and the availability and cost of other capital. Additional information on the use of net proceeds from an offering of securities covered by this prospectus may be set forth in the prospectus supplement relating to the specific offering.

RATIO OF EARNINGS TO FIXED CHARGES

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

In calculating the ratio of earnings to fixed charges, “earnings” means the sum of income before income taxes and fixed charges exclusive of capitalized interest, and “fixed charges” means interest expensed and capitalized, amortized premiums, discounts and capitalized expenses relating to indebtedness and an estimate of the portion of annual rental expense on leases that represents the interest factor.

	Three-months ended December 31, 2014	(1)	(2)	(3)	(4)	(5)	(6)
Ratio of Earnings to Fixed Charges	—	—	—	—	—	—	—

(1) Due to the loss for the fiscal quarter ended December 31, 2014, the ratio of earning to fixed charges for that period was less than 1.00. The deficiency of earnings to total fixed charges was approximately \$7,828,644.

(2) Due to the loss for the fiscal year ended September 30, 2014, the ratio of earnings to fixed charges for that period was less than 1.00. The deficiency of earnings to total fixed charges was approximately \$13,066,661.

(3) Due to the loss for the fiscal year ended September 30, 2013, the ratio of earnings to fixed charges for that period was less than 1.00. The deficiency of earnings to total fixed charges was approximately \$17,686,472.

(4) Due to the loss for the fiscal year ended September 30, 2012, the ratio of earnings to fixed charges for that period was less than 1.00. The deficiency of earnings to total fixed charges was approximately \$7,150,712.

(5) Due to the loss for the fiscal year ended September 30, 2011, the ratio of earnings to fixed charges for that period was less than 1.00. The deficiency of earnings to total fixed charges was approximately \$10,515,124.

(6) Due to the loss for the fiscal year ended September 30, 2010, the ratio of earnings to fixed charges for that period was less than 1.00. The deficiency of earnings to total fixed charges was approximately \$7,909,600.

As of the date of this prospectus, we have no shares of preferred stock outstanding and have not declared or paid any dividends on preferred stock for the periods set forth above.

DESCRIPTIONS OF THE SECURITIES WE MAY OFFER

The descriptions of the securities contained in this prospectus, together with any applicable prospectus supplement, summarize all the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to a particular offering the specific terms of the securities offered by that prospectus supplement. We will indicate in the applicable prospectus supplement if the terms of the securities differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, regarding material United States federal income tax considerations relating to the securities.

We may sell from time to time, in one or more offerings:

shares of our common stock;

shares of our preferred stock;

debt securities;

warrants to purchase any of the securities listed above;

rights to purchase common stock, preferred stock or warrants; and/or

units consisting of one or more of the foregoing.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

CAPITAL STOCK

General

The following description of common stock and preferred stock, together with the additional information we include in any applicable prospectus supplement, summarizes the material terms and provisions of the common stock and preferred stock that we may offer under this prospectus but is not complete. For the complete terms of our common stock and preferred stock, please refer to our Certificate of Incorporation, as may be amended from time to time, any certificates of designation for our preferred stock, that may be authorized from time to time, and our bylaws, as amended from time to time. The Delaware General Corporation Law may also affect the terms of these securities. While the terms we have summarized below will apply generally to any future common stock or preferred stock that we may offer, we will describe the specific terms of any series of these securities in more detail in the applicable prospectus supplement. If we so indicate in a prospectus supplement, the terms of any common stock or preferred stock we offer under that prospectus supplement may differ from the terms we describe below.

As of February 23, 2015, our authorized capital stock consists of 500,000,000 shares of common stock, par value \$0.001 per share, of which 17,361,702 shares were issued and outstanding as of February 12, 2015, and 10,000,000 shares of preferred stock, par value \$0.001 per share, of which no shares were issued and outstanding as of February 23, 2015. In addition, as of February 23, 2015, we had options to purchase 3,809,555 shares of common stock issued and outstanding. The authorized and unissued shares of common stock and preferred stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange on which our securities may be listed. Unless approval of our stockholders is so required, our board of directors will not seek stockholder approval for the issuance and sale of our common stock.

Common Stock

Each shareholder of our common stock is entitled to one vote for each share issued and outstanding held on all matters to be voted upon by the shareholders. Our shares of common stock have no preemptive, conversion, or redemption rights. Upon the sale of substantially all of our stock or assets or dissolution, liquidation or winding up, and after all liquidation preferences payable to any series of preferred stock entitled thereto have been satisfied, our remaining assets shall be distributed to all holders of common stock and any similarly situated stockholders who are not entitled to any liquidation preference or, if there be an insufficient amount to pay all such stockholders, then ratably among such holders. All of our issued and outstanding shares of common stock are fully paid and non-assessable. Our Certificate of Incorporation, as amended, does not provide for cumulative voting in the election of directors. The holders of shares of our common stock will be entitled to such cash dividends as may be declared from time to time by our board of directors from funds available therefor.

Our common stock is listed on The NASDAQ Capital Market under the symbol "APDN." The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company.

Warrants

Effective November 20, 2014, we consummated an underwritten public offering consisting of 2,800,000 shares of common stock and warrants to purchase up to an aggregate of 2,800,000 shares of common stock for gross proceeds of \$9.1 million before deducting underwriting discounts and offering expenses. The public offering price for each share of common stock, together with one warrant was \$3.25. The warrants may be exercised for a period of five years and have an exercise price of \$3.50 per share of common stock. In connection with the offering, we granted to the underwriters a 45-day option to acquire up to 420,000 additional shares of common stock and/or up to 420,000 additional warrants. We closed on the underwriters exercise of the over-allotment option on 52,000 shares of common stock and 416,850 warrants.

As of February 23, 2015, we had outstanding 4,470,502 warrants to purchase 4,470,502 shares of our common stock at a weighted average exercise price of \$3.88. The 3,216,850 warrants sold in the underwritten public offering are listed on The NASDAQ Capital Market under the symbol "APDNW". Our Warrant Agent is American Stock Transfer & Trust Company.

Preferred Stock

Our Certificate of Incorporation, as amended, provides that our board of directors may, by resolution, designate classes of preferred stock in the future. The designated series of preferred stock shall have such powers, designations, preferences and relative, participation or optional or other special rights and qualifications, limitations or restrictions as shall be expressed in the resolution adopted by the board of directors. Once designated by our board of directors, each series of preferred stock will have specific financial and other terms that will be described in a prospectus supplement. The description of the preferred stock that is set forth in any prospectus supplement is not complete without reference to the documents that govern the preferred stock. These include our Certificate of Incorporation, as amended, and any certificates of designation that our board of directors may adopt. Prior to the issuance of shares of each series of preferred stock, the board of directors is required by the Delaware General Corporate Law and our Certificate of Incorporation to adopt resolutions and file a certificate of designations with the Secretary of State of the State of Delaware. The certificate of designations fixes for each class or series the designations, powers, preferences, rights, qualifications, limitations and restrictions, including, but not limited to, some or all of the following:

the number of shares constituting that series and the distinctive designation of that series, which number may be increased or decreased (but not below the number of shares then outstanding) from time to time by action of the board of directors;

the dividend rate and the manner and frequency of payment of dividends on the shares of that series, whether dividends will be cumulative, and, if so, from which date;

whether that series will have voting rights, in addition to any voting rights provided by law, and, if so, the terms of such voting rights;

whether that series will have conversion privileges, and, if so, the terms and conditions of such conversion, including provision for adjustment of the conversion rate in such events as the board of directors may determine;

whether or not the shares of that series will be redeemable, and, if so, the terms and conditions of such redemption;

whether that series will have a sinking fund for the redemption or purchase of shares of that series, and, if so, the terms and amount of such sinking fund;

whether or not the shares of the series will have priority over or be on a parity with or be junior to the shares of any other series or class in any respect;

the rights of the shares of that series in the event of voluntary or involuntary liquidation, dissolution or winding up of the corporation, and the relative rights or priority, if any, of payment of shares of that series; and

any other relative rights, preferences and limitations of that series.

All shares of preferred stock offered hereby will be, when issued, fully paid and non-assessable, including shares of preferred stock issued upon the exercise of preferred stock warrants or subscription rights, if any.

Although our board of directors has no intention at the present time of doing so, it could authorize the issuance of a series of preferred stock that could, depending on the terms of such series, impede the completion of a merger, tender offer or other takeover attempt.

Anti-takeover Effects of Certain Provisions of our Certificate of Incorporation and Bylaws

Our certificate of incorporation contains provisions that could make it more difficult to acquire control of our company by means of a tender offer, open market purchases, a proxy contest or otherwise. A description of these provisions is set forth below.

Preferred Stock

We believe that the availability of the preferred stock under our certificate of incorporation provides us with flexibility in addressing corporate issues that may arise. Having these authorized shares available for issuance allows us to issue shares of preferred stock without the expense and delay of a special stockholders' meeting. The authorized shares of preferred stock, as well as shares of common stock, will be available for issuance without further action by our stockholders, unless action is required by applicable law or the rules of any stock exchange on which our securities may be listed. The board of directors has the power, subject to applicable law, to issue series of preferred stock that could, depending on the terms of the series, impede the completion of a merger, tender offer or other takeover attempt that some, or a majority, of the stockholders might believe to be in their best interests or in which stockholders might receive a premium for their stock over the then prevailing market price of the stock.

Advance Notice Procedure

Our bylaws provide an advance notice procedure for stockholders to nominate director candidates for election or to bring business before an annual meeting of stockholders. Only persons nominated by, or at the direction of, our board of directors or by a stockholder who has given proper and timely notice to our secretary prior to the meeting, will be eligible for election as a director. In addition, any proposed business other than the nomination of persons for election to our board of directors must constitute a proper matter for stockholder action pursuant to the notice of meeting delivered to us. For notice to be timely, it must be received by our secretary not less than 90 nor more than 120 calendar days prior to the first anniversary of the previous year's annual meeting (or if the date of the annual meeting is advanced more than 30 calendar days or delayed by more than 60 calendar days from the anniversary date of the previous year's annual meeting, not earlier than the 90th calendar day prior to such meeting or the 10th calendar day

after public disclosure of the date of such meeting is first made). These advance notice provisions may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempt to obtain control of us.

Special Meetings of Stockholders

Our bylaws provide that special meetings of stockholders may be called only by the Chairman of the Board, the Chief Executive Officer, or the Board of Directors pursuant to a resolution adopted by a majority of the Board.

Anti-Takeover Effects of Delaware Law

Section 203 of the Delaware General Corporation Law (DGCL) provides that, subject to exceptions specified therein, an “interested stockholder” of a Delaware corporation shall not engage in any “business combination,” including general mergers or consolidations or acquisitions of additional shares of the corporation, with the corporation for a three-year period following the time that such stockholder becomes an interested stockholder unless:

prior to such time, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

upon consummation of the transaction which resulted in the stockholder becoming an “interested stockholder,” the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced (excluding specified shares); or

on or subsequent to such time, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock not owned by the interested stockholder.

Under Section 203, the restrictions described above also do not apply to specified business combinations proposed by an interested stockholder following the announcement or notification of one of specified transactions involving the corporation and a person who had not been an interested stockholder during the previous three years or who became an interested stockholder with the approval of a majority of the corporation’s directors, if such transaction is approved or not opposed by a majority of the directors who were directors prior to any person becoming an interested stockholder during the previous three years or were recommended for election or elected to succeed such directors by a majority of such directors. The restrictions described above also do not apply to specified business combinations with a person who is an “interested stockholder” prior to the time when the corporation’s common stock is listed on a national securities exchange, so these restrictions would not apply to a business combination with any person who is one of our stockholders prior to this offering.

Except as otherwise specified in Section 203, an “interested stockholder” is defined to include:

any person that is the owner of 15% or more of the outstanding voting stock of the corporation, or is an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of the corporation at any time within three years immediately prior to the date of determination; and the affiliates and associates of any such person

Under some circumstances, Section 203 makes it more difficult for a person who is an interested stockholder to effect various business combinations with us for a three-year period.

WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplement or free writing prospectus, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and any related warrant agreement and warrant certificate. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the specific terms of any series of warrants in more detail in the applicable prospectus supplement. If we indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the Registration Statement which includes this prospectus.

General

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

We will evidence each series of warrants by warrant certificates that we may issue under a separate agreement. We may enter into a warrant agreement with a warrant agent. Each warrant agent may be a bank that we select which has its principal office in the United States. We may also choose to act as our own warrant agent. We will indicate the name and address of any such warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

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

the offering price and aggregate number of warrants offered;

if applicable, 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;

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

in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;

in the case of warrants to purchase common stock or preferred stock, the number or amount of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which and currency in which these shares may be purchased upon such exercise;

the manner of exercise of the warrants, including any cashless exercise rights;

the warrant agreement under which the warrants will be issued;

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

anti-dilution provisions of the warrants, if any;

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 or, if the warrants are not continuously exercisable during that period, the specific date or dates on which the warrants will be exercisable;

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

the identities of the warrant agent and any calculation or other agent for the warrants;

federal income tax consequences of holding or exercising the warrants;

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

any securities exchange or quotation system on which the warrants or any securities deliverable upon exercise of the warrants may be listed or quoted; and

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

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or

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 the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to 5:00 P.M. eastern 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 exercise price by the methods provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate, and in the applicable prospectus supplement, the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities 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.

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 the holder's right to exercise, and receive the securities purchasable upon exercise of, its warrants in accordance with their terms.

Warrant Agreement Will Not Be Qualified Under Trust Indenture Act

No warrant agreement will be qualified as an indenture, and no warrant agent will be required to qualify as a trustee, under the Trust Indenture Act. Therefore, holders of warrants issued under a warrant agreement will not have the protection of the Trust Indenture Act with respect to their warrants.

Governing Law

Each warrant agreement and any warrants issued under the warrant agreements will be governed by New York law.

Calculation Agent

Any calculations relating to warrants may be made by a calculation agent, an institution that we appoint as our agent for this purpose. The prospectus supplement for a particular warrant will name the institution that we have appointed to act as the calculation agent for that warrant as of the original issue date for that warrant, if any. We may appoint a different institution to serve as calculation agent from time to time after the original issue date without the consent or notification of the holders. The calculation agent's determination of any amount of money payable or securities deliverable with respect to a warrant will be final and binding in the absence of manifest error.

DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus. While the terms we have summarized below will generally apply to any future debt securities we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement or a free writing prospectus. The terms of any debt securities we offer under a prospectus supplement or a free writing prospectus may differ from the terms we describe below. As of the date of this prospectus, we have no outstanding registered debt securities.

We will issue senior notes under a senior indenture, which we will enter into with the trustee to be named in the senior indenture. We will issue subordinated notes under a subordinated indenture, which we will enter into with the trustee to be named in the subordinated indenture. We have filed forms of these documents as exhibits to the Registration Statement of which this prospectus is a part. We use the term "indentures" to refer to both the senior indenture and the subordinated indenture.

The indentures will be qualified under the Trust Indenture Act of 1939, unless an exemption from the qualification provisions is applicable. References to the Trust Indenture Act of 1939 include all amendments thereto. We use the term "debenture trustee" to refer to either the senior trustee or the subordinated trustee, as applicable.

The following summaries of material provisions of the senior notes, the subordinated notes and the indentures are subject to, and qualified in their entirety by reference to, all the provisions of the indenture applicable to a particular series of debt securities, and all supplements thereto. We urge you to read the applicable prospectus supplements related to the debt securities that we sell under this prospectus, as well as the complete indentures that contain the terms of the debt securities. Except as we may otherwise indicate, the terms of the senior and the subordinated indentures are identical.

General

The terms of each series of debt securities will be established by or pursuant to a resolution of our board of directors and set forth or determined in the manner provided in an officers' certificate or by a supplemental indenture. Debt securities may be issued in separate series without limitation as to aggregate principal amount. We may specify a maximum aggregate principal amount for the debt securities of any series. In addition, the particular terms of each series of debt securities will be described in a prospectus supplement relating to such series, including any pricing supplement. The prospectus supplement will set forth, among other things:

the title;

the principal amount being offered, and, if a series, the total amount authorized and the total amount outstanding;

any limit on the amount that may be issued;

whether or not we will issue the series of debt securities in global form and, if so, the terms and who the depository will be;

the maturity date;

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whether and under what circumstances, if any, we will pay additional amounts on any debt securities held by a person who is not a U.S. person for tax purposes, and whether we can redeem the debt securities if we have to pay such additional amounts;

the annual interest rate, which may be fixed or variable, or the method for determining the rate, the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

the terms of the subordination of any series of subordinated debt, if applicable;

the place where payments will be payable;

restrictions on transfer, sale or other assignment, if any;

our right, if any, to defer payment of interest and the maximum length of any such deferral period;

the date, if any, after which, the conditions upon which, and the price at which we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions, and any other applicable terms of those redemption provisions;

the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;

whether the indenture will restrict our ability and/or the ability of our subsidiaries to, among other things:

incur additional indebtedness;

issue additional securities;

create liens;

pay dividends and make distributions in respect of our capital stock and the capital stock of our subsidiaries;

redeem capital stock;

place restrictions on our subsidiaries' ability to pay dividends, make distributions or transfer assets;

make investments or other restricted payments;

sell or otherwise dispose of assets;

enter into sale-leaseback transactions;

engage in transactions with stockholders and affiliates;

issue or sell stock of our subsidiaries; or

effect a consolidation or merger;

whether the indenture will require us to maintain any interest coverage, fixed charge, cash flow-based, asset-based or other financial ratios;

information describing any book-entry features;

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provisions for a sinking fund purchase or other analogous fund, if any;

whether the debt securities are to be offered at a price such that they will be deemed to be offered at an “original issue discount” as defined in paragraph (a) of Section 1273 of the Internal Revenue Code;

the procedures for any auction and remarketing, if any;

the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof;

if other than dollars, the currency in which the series of debt securities will be denominated; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, including any events of default that are in addition to those described in this prospectus or any covenants provided with respect to the debt securities that are in addition to those described above, and any terms that may be required by us or advisable under applicable laws or regulations or advisable in connection with the marketing of the debt securities.

Conversion or Exchange Rights

We will set forth in the prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for common stock or other securities of ours or a third party, including the conversion or exchange rate, as applicable, or how it will be calculated, and the applicable conversion or exchange period. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of our securities or the securities of a third party that the holders of the series of debt securities receive upon conversion or exchange would, under the circumstances described in those provisions, be subject to adjustment, or pursuant to which those holders would, under those circumstances, receive other property upon conversion or exchange, for example in the event of our merger or consolidation with another entity.

Consolidation, Merger or Sale

The indentures in the forms initially filed as exhibits to the registration statement of which this prospectus is a part do not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of all or substantially all of our assets. However, any successor of ours or the acquirer of such assets must assume all of our obligations under the indentures and the debt securities.

If the debt securities are convertible for our other securities, the person with whom we consolidate or merge or to whom we sell all of our property must make provisions for the conversion of the debt securities into securities that the holders of the debt securities would have received if they had converted the debt securities before the consolidation, merger or sale.

Events of Default under the Indenture

The following are events of default under the indentures in the forms initially filed as exhibits to the Registration Statement with respect to any series of debt securities that we may issue:

if we fail to pay interest when due and payable and our failure continues for 90 days and the time for payment has not been extended or deferred;

if we fail to pay the principal, sinking fund payment or premium, if any, when due and payable and the time for payment has not been extended or delayed;

if we fail to observe or perform any other covenant contained in the debt securities or the indentures, other than a covenant specifically relating to another series of debt securities, and our failure continues for 90 days after we receive notice from the debenture trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the applicable series; and

if specified events of bankruptcy, insolvency or reorganization occur.

If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the debenture trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series, by notice to us in writing, and to the debenture trustee if notice is given by such holders, may declare the unpaid principal of, premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the principal amount of and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the debenture trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indentures, if an event of default under an indenture shall occur and be continuing, the debenture trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the debenture trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the debenture trustee, or exercising any trust or power conferred on the debenture trustee, with respect to the debt securities of that series, provided that:

the direction so given by the holder is not in conflict with any law or the applicable indenture; and

subject to its duties under the Trust Indenture Act of 1939, the debenture trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will only have the right to institute a proceeding under the indentures or to appoint a receiver or trustee, or to seek other remedies if:

the holder has given written notice to the debenture trustee of a continuing event of default with respect to that series;

the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request, and such holders have offered reasonable indemnity, to the debenture trustee to institute the proceeding as trustee; and

the debenture trustee does not institute the proceeding and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the debenture trustee regarding our compliance with specified covenants in the indentures.

Modification of Indenture; Waiver

We and the debenture trustee may change an indenture without the consent of any holders with respect to specific matters, including:

to fix any ambiguity, defect or inconsistency in the indenture;

to comply with the provisions described above under “—Consolidation, Merger or Sale”;

to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act of 1939;

to evidence and provide for the acceptance of appointment by a successor trustee;

to provide for uncertificated debt securities and to make all appropriate changes for such purpose;

to add to, delete from, or revise the conditions, limitations and restrictions on the authorized amount, terms or purposes of issuance, authorization and delivery of debt securities or any series, as set forth in the indenture;

to provide for the issuance of and establish the form and terms and conditions of the debt securities of any series as provided under “—General” to establish the form of any certifications required to be furnished pursuant to the terms of the indenture or any series of debt securities, or to add to the rights of the holders of any series of debt securities;

to add to our covenants such new covenants, restrictions, conditions or provisions for the protection of the holders, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default, or to surrender any of our rights or powers under the indenture; or

to change anything that does not materially adversely affect the interests of any holder of debt securities of any series.

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In addition, under the indentures, the rights of holders of a series of debt securities may be changed by us and the debenture trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, we and the debenture trustee may only make the following changes with the consent of each holder of any outstanding debt securities affected:

extending the fixed maturity of the series of debt securities;

reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any debt securities; or

reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Discharge

Each indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except that the following obligations, among others survive until the maturity date or the redemption date:

register the transfer or exchange of debt securities of the series;

replace stolen, lost or mutilated debt securities of the series;

maintain paying agencies;

hold monies for payment in trust; and

appoint any successor trustee;

and the following obligations survive the maturity date or the redemption date:

recover excess money held by the debenture trustee; and

compensate and indemnify the debenture trustee.

As more fully set forth in the indentures, in order to exercise our rights to be discharged, we must either deliver for cancellation all securities of a series to the debenture trustee or must deposit with the debenture trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we otherwise specify in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indentures provide that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, known as DTC, or another depository named by us and identified in a prospectus supplement with respect to that series.

At the option of the holder, subject to the terms of the indentures and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indentures and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will make no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in a board resolution the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

issue, register the transfer of, or exchange any debt securities of any series being redeemed in part during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or

register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Debenture Trustee

The debenture trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the debenture trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the debenture trustee is under no obligation to exercise any of the powers given it by the indentures at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will name in the applicable board resolution any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the debenture trustee for the payment of the principal of or any premium or interest on any debt securities that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indentures and the debt securities will be governed by and construed in accordance with the laws of the State of New York, except to the extent that the Trust Indenture Act of 1939 is applicable.

Subordination of Subordinated Debt Securities

The subordinated debt securities will be subordinate and junior in priority of payment to certain of our other indebtedness to the extent described in a prospectus supplement. The indentures in the forms initially filed as exhibits to the Registration Statement of which this prospectus is a part do not limit the amount of indebtedness that we may incur, including senior indebtedness or subordinated indebtedness, and do not limit us from issuing any other debt, including secured debt or unsecured debt.

RIGHTS

We may issue rights to purchase common stock, preferred stock or warrants that we may offer to our securityholders. The rights may or may not be transferable by the persons purchasing or receiving the rights. In connection with any rights offering, we may enter into a standby underwriting or other arrangement with one or more underwriters or other persons pursuant to which such underwriters or other persons would purchase any offered securities remaining unsubscribed for after such rights offering. Each series of rights will be issued under a separate rights agent agreement to be entered into between us and a bank or trust company, as rights agent, that we will name in the applicable prospectus supplement. The rights agent will act solely as our agent in connection with the rights and will not assume any obligation or relationship of agency or trust for or with any holders of rights certificates or beneficial owners of rights. A copy of the form of rights agent or subscription agent agreement, including the form of rights certificate representing a series of rights, will be filed with the SEC in connection with the offering of a particular series of rights.

The prospectus supplement relating to any rights that we offer will include specific terms relating to the offering, including, among other matters:

the date of determining the security holders entitled to the rights distribution;

the aggregate number of rights issued and the aggregate number of shares of common stock or preferred stock or warrants purchasable upon exercise of the rights;

the exercise price;

the conditions to completion of the rights offering;

the date on which the right to exercise the rights will commence and the date on which the rights will expire; and

any applicable federal income tax considerations.

Each right would entitle the holder of the rights to purchase for cash the amount of shares of common stock or preferred stock or warrants at the exercise price set forth in the applicable prospectus supplement. Rights may be exercised at any time up to the close of business on the expiration date for the rights provided in the applicable prospectus supplement. After the close of business on the expiration date, all unexercised rights will become void.

If less than all of the rights issued in any rights offering are exercised, we may offer any unsubscribed securities directly to persons other than our security holders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby arrangements, as described in the applicable prospectus supplement.

Until a holder exercises the rights to purchase shares of our common stock or preferred stock or warrants, the holder will not have any rights as a holder of shares of our common stock or preferred stock or warrants, as the case may be, by virtue of ownership of the rights.

UNITS

We may issue units comprised of one or more of the other securities described in this prospectus, in any prospectus supplement or a free writing prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder, with the rights and obligations of a holder, of each security included in the unit. 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 or upon the occurrence of a specified event or occurrence.

The applicable prospectus supplement or free writing prospectus will describe:

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 unit agreement under which the units will be issued;

any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and

whether the units will be issued in fully registered or global form.

PLAN OF DISTRIBUTION

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

to or through underwriters;

through broker-dealers (acting as agent or principal);

through agents;

directly by us to one or more purchasers (including our affiliates and shareholders), through a specific bidding or auction process, a rights offering or otherwise;

through a combination of any such methods of sale; or

through any other methods described in a prospectus supplement.

The distribution of securities may be effected, from time to time, in one or more transactions, including:

block transactions (which may involve crosses) and transactions on The Nasdaq Capital Market or any other organized market where the securities may be traded;

purchases by a broker-dealer as principal and resale by the broker-dealer for its own account pursuant to a prospectus supplement;

ordinary brokerage transactions and transactions in which a broker-dealer solicits purchasers;

sales “at the market” to or through a market maker or into an existing trading market, on an exchange or otherwise; and

sales in other ways not involving market makers or established trading markets, including direct sales to purchasers.

The applicable prospectus supplement will describe the terms of the offering of the securities, including:

the name or names of any underwriters, if, and if required, any dealers or agents;

the purchase price of the securities and the proceeds we will receive from the sale;

any underwriting discounts and other items constituting underwriters’ compensation;

any discounts or concessions allowed or re-allowed or paid to dealers; and

any securities exchange or market on which the securities may be listed or traded.

We may distribute the securities from time to time in one or more transactions at:

a fixed price or prices, which may be changed;

market prices prevailing at the time of sale;

prices related to such prevailing market prices; or

negotiated prices.

Only underwriters named in the prospectus supplement are underwriters of the securities offered by the prospectus supplement.

If underwriters are used in an offering, we will execute an underwriting agreement with such underwriters and will specify the name of each underwriter and the terms of the transaction (including any underwriting discounts and other terms constituting compensation of the underwriters and any dealers) in a prospectus supplement. The securities may be offered to the public either through underwriting syndicates represented by managing underwriters or directly by one or more investment banking firms or others, as designated. If an underwriting syndicate is used, the managing underwriter(s) will be specified on the cover of the prospectus supplement. If underwriters are used in the sale, the offered securities will be acquired by the underwriters for their own accounts and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices

determined at the time of sale. Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may be changed from time to time. Unless otherwise set forth in the prospectus supplement, the obligations of the underwriters to purchase the offered securities will be subject to conditions precedent, and the underwriters will be obligated to purchase all of the offered securities, if any are purchased.

We may grant to the underwriters options to purchase additional securities to cover over-allotments, if any, at the public offering price, with additional underwriting commissions or discounts, as may be set forth in a related prospectus supplement. The terms of any over-allotment option will be set forth in the prospectus supplement for those securities.

If a dealer is used in the sale of the securities, we, or an underwriter, will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. To the extent required, we will set forth in the prospectus supplement, document incorporated by reference or free writing prospectus, as applicable, the name of the dealer and the terms of the transactions.

We may sell the securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement.

We may authorize agents or underwriters to solicit offers by institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

In connection with the sale of the securities, underwriters, dealers or agents may receive compensation from us or from purchasers of the securities for whom they act as agents, in the form of discounts, concessions or commissions. Underwriters may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters or commissions from the purchasers for whom they may act as agents. Underwriters, dealers and agents that participate in the distribution of the securities, and any institutional investors or others that purchase securities directly for the purpose of resale or distribution, may be deemed to be underwriters, and any discounts or commissions received by them from us and any profit on the resale of the common stock by them may be deemed to be underwriting discounts and commissions under the Securities Act. No FINRA member firm may receive compensation in excess of that allowable under FINRA rules, including Rule 5110, in connection with the offering of the securities.

We may provide agents, underwriters and other purchasers with indemnification against particular civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents, underwriters or other purchasers may make with respect to such liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

To facilitate the public offering of a series of securities, persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the market price of the securities. This may include over-allotments or short sales of the securities, which involves the sale by persons participating in the offering of more securities than have been sold to them by us. In addition, those persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to underwriters or dealers participating in any such offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. Such transactions, if commenced, may be discontinued at any time. We make no representation or prediction as to the direction or magnitude of any effect that the transactions described above, if implemented, may have on the price of our securities.

Unless otherwise specified in the applicable prospectus supplement, any common stock sold pursuant to a prospectus supplement will be eligible for trading as listed on The NASDAQ Capital Market. Any underwriters to whom securities are sold by us for public offering and sale may make a market in the securities, but such underwriters will not be obligated to do so and may discontinue any market making at any time without notice.

In order to comply with the securities laws of some states, if applicable, the securities offered pursuant to this prospectus will be sold in those states only through registered or licensed brokers or dealers. In addition, in some states securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and complied with.

So long as the aggregate market value of our voting and non-voting common equity held by non-affiliates is less than \$75,000,000.00 and so long as required by the rules of the SEC, the amount of securities we may offer hereunder will be limited such that the aggregate market value of securities sold by us during a period of 12 calendar months cannot exceed one-third of the aggregate market value of the voting and non-voting common equity held by non-affiliates.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution.

LEGAL MATTERS

Certain legal matters governed by New York law with respect to the validity of certain of the offered securities will be passed upon for us by Norton Rose Fulbright US LLP, New York, New York.

EXPERTS

The consolidated financial statements as of and for the year ended September 30, 2014 incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended September 30, 2014, have been audited by Marcum LLP, an independent registered public accounting firm, as stated in their report incorporated by reference herein, and have been so incorporated in reliance upon such report and upon the authority of such firm as experts in accounting and auditing. The consolidated financial statements as of and for each of the two years in the period ended September 30, 2013 incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended September 30, 2014, have been audited by RBSM LLP, an independent registered public accounting firm, as stated in their report incorporated by reference herein, and have been so incorporated in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

Our Certificate of Incorporation provides to the fullest extent permitted by Delaware law that our directors or officers shall not be personally liable to us or our stockholders for damages for breach of such director's or officer's fiduciary duty. The effect of this provision of our Certificate of Incorporation is to eliminate our rights and those of our stockholders (through stockholders' derivative suits on behalf of our company) to recover damages against a director or officer for breach of the fiduciary duty of care as a director or officer (including breaches resulting from negligent or grossly negligent behavior), except under certain situations defined by statute. We believe that the indemnification provisions in our Certificate of Incorporation are necessary to attract and retain qualified persons as directors and officers.

We have entered into an indemnification agreement (each, an "Indemnification Agreement") with each of our directors and executive officers. In general, the Indemnification Agreement obligates us to indemnify a director or executive officer, to the fullest extent permitted by applicable law, for certain expenses, including attorneys' fees, judgments, penalties, fines and settlement amounts actually and reasonably incurred by them in any action or proceeding arising out of their services as one of our directors or executive officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request. In addition, the Indemnification Agreement provides for the advancement of expenses incurred by the indemnitee in connection with any covered proceeding to the fullest extent permitted by applicable law. The rights provided by the Indemnification Agreement are in addition to any other rights to indemnification or advancement of expenses to which the indemnitee may be entitled under applicable law, the Company's Certificate of Incorporation, as amended, or bylaws, or otherwise.

Insofar as indemnification for liabilities arising under the Securities Act, may be permitted to directors, officers or persons controlling us pursuant to the foregoing provisions, or otherwise, we have been advised that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus and any subsequent prospectus supplements do not contain all of the information in the Registration Statement. We have omitted from this prospectus some parts of the Registration Statement as permitted by the rules and regulations of the SEC. Statements in this prospectus concerning any document we have filed as an exhibit to the Registration Statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified in their entirety by reference to these filings. In addition, we file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any documents that we have filed with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information about the operation of the Public Reference Room. The SEC also maintains an Internet site that contains reports, proxy and information statements and other information that registrants file electronically with the SEC, including us. The SEC's Internet site can be found at <http://www.sec.gov>. In addition, we make available on or through our Internet site copies of these reports as soon as reasonably practicable after we electronically file or furnished them to the SEC. Our Internet site can be found at <http://www.adnas.com>. Our website is not a part of this prospectus.

INFORMATION INCORPORATED BY REFERENCE

We have elected to incorporate certain information by reference into this prospectus. By incorporating by reference, we can disclose important information to you by referring you to other documents we have filed or will file with the SEC. The information incorporated by reference is deemed to be part of this prospectus, except for information incorporated by reference that is superseded by information contained in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any statements in the prospectus or any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents set forth below that we have previously filed with the SEC, except in each case the information contained in such document to the extent "furnished" and not "filed":

Our Annual Report on Form 10-K for the fiscal year ended September 30, 2014, filed with the SEC on December 15, 2014.

Our Quarterly Report on Form 10-Q for the quarterly period ended December 31, 2014, filed with the SEC on February 9, 2015.

Our Current Report on Form 8-K filed with the SEC on February 10, 2015.

The description of our capital stock contained in our registration statement on Form 8-A (File No. 001-36745) filed with the Commission on November 13, 2014, pursuant to Section 12(b) of the Securities Exchange Act of 1934, as amended ("Exchange Act"), including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference all documents we file in the future pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and prior to the sale of all the securities covered by this prospectus (including all such documents filed with the SEC after the date of the initial filing of the Registration Statement that contains this prospectus and prior to effectiveness of the Registration Statement or after such effectiveness), except in each case the information contained in such document to the extent "furnished" and not "filed".

You may obtain copies of these documents on the website maintained by the SEC at <http://www.sec.gov>, or from us without charge (other than exhibits to such documents, unless such exhibits are specifically incorporated by reference into such documents) by writing us at Corporate Secretary, Applied DNA Sciences, Inc., 50 Health Sciences Drive, Stony Brook, New York 11790 or visiting our website at <http://www.adnas.com>.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus shall be deemed to be modified or superseded for the purposes of this prospectus to the extent that a statement contained herein, any prospectus supplement or in any other subsequently filed document which also is or deemed to be incorporated by reference herein modifies or supersedes that statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

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