APPLIED DNA SCIENCES INC
Form 424B5
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File No. 333-218158

PROSPECTUS SUPPLEMENT
(To Prospectus dated May 26, 2017)

5,500,000 SHARES OF COMMON STOCK

AND

WARRANTS TO PURCHASE 5,500,000 SHARES OF COMMON STOCK

We are offering up to 5,500,000 shares of our common stock and warrants to purchase up to 5,500,000 shares of our common stock (the "Warrants") in a firm commitment underwritten public offering by Maxim Group LLC, the underwriter. The shares of common stock and the Warrants are being offered pursuant to this prospectus supplement and accompanying prospectus. The Warrants will be issued separately but must be purchased together with the common stock. The combined purchase price for each share of common stock and accompanying Warrant is $0.50. The Warrants will be exercisable beginning on the date of issuance (the "Initial Exercise Date"), at an exercise price of $0.50 per share and will expire on the five-year anniversary of the Initial Exercise Date. The Warrants include an adjustment provision that, subject to certain exceptions, reduces their exercise price if the Company issues common stock or common stock equivalents at a price lower than the then-current exercise price of the Warrants, subject to a minimum exercise price of $0.14 per share. We have also granted the underwriter a period of 45 days to purchase up to an additional 825,000 shares of common stock and/or 825,000 Warrants, which the underwriter may only exercise to cover over-allotments made in connection with this offering.

The aggregate market value of our outstanding shares of common stock held by non-affiliates was $32,872,711 based on 30,112,057 shares of common stock outstanding as of December 20, 2018, of which 26,725,781 shares are held by non-affiliates, and a per share price of $1.23 based on the closing sale price of our common stock on November 7,

2018. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities in a public primary offering with a value exceeding more than one-third of our public float in any 12-month period so long as our public float remains below $75.0 million. During the 12-month period prior to and including the date of this prospectus supplement, we did not offer any securities pursuant to General Instruction I.B.6 of Form S-3.

Our common stock is listed on The Nasdaq Capital Market under the symbol “APDN.” On December 19, 2018, the last reported sales price of our common stock on The Nasdaq Capital Market was $0.70 per share.

The purchase of the securities offered through this prospectus supplement involves a high degree of risk. You should consider carefully the risk factors beginning on page S-14 of this prospectus supplement, on page 5 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 of Common Stock and Warrant	Total
Public offering price	$ 0.50	$2,750,000
Underwriting discounts and commissions [1]	$ 0.04	$192,500
Proceeds to us, before expenses [2]	$ 0.46	$2,557,500

(1) We have agreed to reimburse the underwriter for expenses incurred by it in an amount not to exceed $75,000. We refer you to "Underwriting" beginning on page S-43 of this prospectus supplement for additional information regarding total underwriter compensation.

(2) We have granted the underwriter an option for a period of 45 days to purchase up to an additional 825,000 shares of common stock and/or an additional 825,000 Warrants. If the underwriter exercises this option in full, the additional underwriting discounts and commissions payable by us will be $28,875 and the total proceeds to us, before expenses, will be $2,941,125.

Maxim Group LLC

Prospectus Supplement dated December 21, 2018

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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 and Warrants 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; and (2) the accompanying base prospectus dated May 26, 2017 and is included in our registration statement on Form S-3 (SEC File No. 333-218158) (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, rights or debt securities, 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. 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.

This prospectus supplement and the accompanying prospectus contain summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated herein by reference as exhibits to the registration statement, and you may obtain copies of those documents as described below under the section entitled "Where You Can Find More Information."

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

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.

Our trademarks in the United States include Applied DNA Sciences®, SigNature® molecular tags, SigNature® T molecular tags, fiberTyping®, DNAnet®, digitalDNA®, SigNify®, BackTrac®, Beacon® and CertainT® All trademarks, service marks and trade names included or incorporated by reference in this prospectus supplement are the property of their respective owners, including, without limitation, the PimaCott®, HomeGrown® LoneStar™ and HomeGrown Acala™ marks owned by Himatsingka America, Inc. and/or its affiliates.

In this prospectus supplement “Applied DNA,” “we,” “us,” the “Company,” and “our” refer to Applied DNA Sciences, Inc. and its subsidiaries.

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-14, 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, 2018, filed on December 18, 2018. Please read “Where You Can Find More Information” on page S-48 of this prospectus supplement.

Our Company

Overview

Using our large scale polymerase chain reaction (PCR) based manufacturing platform, we manufacture large quantities of linear DNA for various markets. Whether for supply chain security, brand protection, law enforcement or drug or biologic 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 SigNature molecular tag technologies are designed to deliver what we believe to be the greatest levels of security, deterrence and legal recourse strength. Under our wholly owned subsidiary, LineaRx, Inc. (LRx), we supply DNA for use in the in vitro medical diagnostics, preclinical biotechnology and preclinical drug and biologic development and manufacturing markets. We are also engaged in preclinical and animal drug candidate development, directly and with collaborators, focusing on therapeutically relevant DNA constructs manufactured via our PCR-based DNA production platform.

SigNature® molecular tags, SigNature® T molecular tags, fiberTyping®, DNAnet®, SigNify® BackTrac®, Beacon® and CertainT® comprise our principal security technology platform. The large-scale production of specific DNA sequences is used in the diagnostics and reagent industries. Contract research and drug development and commercialization relating to PCR-produced DNA constructs forms the basis of LRx.

SigNature molecular tags, the core of our supply chain security technology platform, are what we believe to be nature's ultimate means of authentication and supply chain security. We believe our precision-engineered molecular tags have not been broken. Additional layers of protection and complexity are added to the mark in a proprietary manner. SigNature molecular tags in various carriers have proven highly resistant to UV radiation, heat, cold, vibration, abrasion and other extreme environments and conditions. We work closely with our customers to develop solutions that will be optimized to their specifications to deliver maximum impact. Our products and technology are protected by what we believe to be a robust portfolio of patents and trademarks.

Using our tagging products and technology, manufacturers, brands, and other stakeholders can ensure authenticity and protect against diversion throughout a product's journey from manufacturer to use.

The core technologies of our supply chain security business are supplied as tag, test and track solutions for large complex supply chains. Our tag, test and track solutions allow our customers to use molecular tags to mark objects in a unique manner that we believe cannot be replicated, and then identify these objects by detecting the absence or presence of the molecular tag. We believe that our disruptive tracking platform offers broad commercial relevance across many industry verticals. Our underlying strategy in the tagging business is to become a solutions provider for supply chains of process industries in which contracts for our products and services are larger and of longer duration as compared to our historic norms, where the benefits to customers and consumers are more significant, and where our forensic security and traceability offer a unique and protected value. Consumers, governments and companies are demanding details about the systems and sources that deliver their goods. They worry about quality, safety, ethics, and the environmental impact. Farsighted organizations are directly addressing new threats and opportunities presented by this question: Where do these goods come from? This is the question and the concerns we are beginning to address for a growing number of companies. We supply key building blocks for creating secure supply chains with traceability of goods, which in turn can help ensure integrity in supply, honest sales and marketing claims, and ethical and sustainable sourcing.

Customers using our PCR-produced linear DNA products and services for use in in vitro medical diagnostics, preclinical biotechnology research and preclinical drug and biologic development and manufacturing receive a DNA product we believe is made cleaner and faster than historical manufacturing methods, thereby offering the opportunity for increased efficiency and turnaround times in their processes. We are also engaged in preclinical and animal drug candidate development activities focusing on therapeutically relevant DNA constructs manufactured via our PCR-based production platform. We seek to develop, acquire and commercialize, alone or with partners, a diverse portfolio of nucleic acid based drugs and biologics based on PCR-produced linear DNA which we believe will improve existing nucleic acid based therapeutics or create new nucleic acid based therapeutics that address unmet medical needs.

Our products and services are offered in the United States, Europe and Asia. At the present time, we are focusing our efforts on textile and apparel, pharmaceuticals and nutraceuticals, microcircuits and other electronics, legal cannabis and PCR-produced linear DNA products, as well as services for in vitro medical diagnostics, preclinical biotechnology research and preclinical biotherapeutic manufacturing. Currently, approximately twenty percent of our annual revenue comes from the textile market. The basic technology we use in various markets is very similar, and we believe our solutions are adaptable for many types of products and markets. In the future, we plan to expand our focus to include additional consumer products, food and beverage and industrial materials. The cotton ginning season in the United States takes place between September and March each year; therefore, revenues from our cotton customer contracts may be seasonal and recognized primarily during our first and fourth fiscal quarters, which may cause operating results to fluctuate significantly quarterly and annually. To date, the substantial portion of our revenues has been generated from sales of our SigNature and SigNature T molecular tags, our principal supply chain security and product authentication solutions. We expect to grow revenues from sales of our SigNature molecular tags, SigNature T molecular tags, SigNify and CertainT offerings as we work with companies and governments to secure supply chains for various types of products and product labeling throughout the world. In addition, we expect to continue to grow revenues from PCR-produced linear DNA products and services using our Triathlon™ PCR systems.

Signature Molecular Tags

SigNature Molecular Tags. The SigNature molecular tag is our patented molecular taggant technology, at the core of our platform. It provides forensic power and protection for a wide array of applications. Highly secure, robust and durable, SigNature molecular tags are an ingredient that can be used to fortify brand protection efforts; strengthen supply chain security; and mark, track and convict criminals. Through our SigNature molecular tags, custom DNA sequences can be embedded into a wide range of host carriers including natural and synthetic fibers, ink, varnish, thread, metal coatings, and pharmaceuticals and nutraceuticals. SigNature molecular tags can be made resistant to challenging environments such as heat, cold, vibration, abrasion, organic solvents, chemicals, UV radiation and other extreme environmental conditions, and so can be identified for numerous years after being embedded directly, or into media applied or attached to the item to be marked. Each individual molecular tag is recorded and stored in a secure database so that we can later detect it using a simple spot test, or the molecular tags can be forensically analyzed in our laboratories to obtain definitive proof of the presence or absence of a specific SigNature molecular tag (e.g., one

designed to mark a particular product). Our in-lab forensic testing capability delivers an expert witness Certificate of DNA Authentication ("CODA"). Because DNA is one of the densest information carriers known, and can be amplified with high fidelity, only minute quantities of SigNature molecular tags are necessary for successful analysis and authentication. As a result, SigNature molecular tags can fold seamlessly into production and logistics workflows at extremely low concentrations.

SigNature molecular tags have been subjected to rigorous testing by the Idaho National Laboratory, a U.S. National Laboratory, by CALCE (the Center for Advanced Life Cycle Engineering), the largest electronic products and systems research center focused on electronics reliability, and by verified procedures in our laboratories. The molecular tag has passed all tests across a broad spectrum of materials and substrates, and has met key military stability standards. SigNature molecular tags have also passed a strenuous "red-team" vetting on behalf of the U.S. Defense Logistics Agency.

SigNature molecular tags now exist on hundreds of millions of commodity quantities ranging from consumer product packaging to microcircuits to cotton and synthetic fibers; to our knowledge, none has ever been copied.

SigNature T Molecular Tags and fiberTyping

SigNature T Molecular Tags. SigNature T molecular tags are a unique patented tagging and authentication system specifically designed for textiles and apparel. Specially engineered to adhere tenaciously to textile substrates, including natural and synthetic fibers, SigNature T molecular tags are resistant to standard textile production conditions. The result: an enduring forensic level molecular tag that remains present from the fiber stage through to the finished product.

Our SigNature T technology allows for better quality control and assurance at any point in the supply chain. SigNature T molecular tags are currently used for brand protection efforts and raw material source compliance programs. For example, American grown cotton fibers can be tagged at the gin in the United States, verified as “American grown” and then traced through every step of the supply chain.

fiberTyping. Our patented cotton genotyping platform, known as “fiberTyping,” described below, complements our SigNature T molecular tag system. fiberTyping is employed to identify the genus and species of the fibers before or after they are tagged with SigNature T molecular tags. fiberTyping cannot be used to provide unique identity of a specific cotton through the supply chain.

fiberTyping is not a molecular tag, but a genotyping test of native cotton fiber DNA, which gives a clear result that determines whether the intended “nature-made” endogenous cotton DNA is present in fiber, yarn or fabric. Samples from the primary material are sent to our forensic labs for DNA analysis and authentication. Cotton classification and the authentication of cotton species after cotton has left its place of origin are issues of global significance, important to brand owners and to governments that must regulate the international cotton trade. The use of endogenous DNA to identify the cotton fiber content in textile supply chains, along with the SigNature T molecular tag system is a significant opportunity for brand license holders to control their intellectual property, for brands to shield themselves against legal liabilities, and for governments to improve their ability to enforce compliance with trade agreements between nations.

We believe that our proprietary DNA extraction protocols and methodologies are more effective than existing forensic systems. We believe that the combination of our SigNatureT molecular tags and fiberTyping solutions cover the

forensic authentication market for textiles and that the related protocols we have developed may be applicable to multiple industry verticals (such as ingredients in nutraceuticals and cannabis) and can mark and authenticate products at every stage of their life cycle, from beginning to end.

DNAnet, Smart DNA and Backtrac

Recognizing that DNA-based evidence is the cornerstone of modern-era law enforcement, we have developed what we believe to be the ultimate crime fighting tools – currently being used in vehicle and home asset marking, as well as commercial applications.

These molecular tags can be used to definitively link evidence and offenders to specific crime scenes. As the crime is investigated, the fluorescing molecular marker can assist police in linking the offender and stolen items to a specific crime scene, creating a greater ability to identify and convict.

These long-lasting tagging solutions contain unique molecular tags that can help return stolen or lost property to its rightful owner.

Beacon

Beacon locked optical markers deliver secure real-time inspection capabilities. A unique patented encrypted mechanism creates a protected, covert screening tool that can be easily adapted to packaging, security labels and high–value assets through inks, varnishes and coatings. When Beacon locked optical markers are combined with SigNature molecular tags, a strong and flexible security and screening solution is created where authenticity and provenance can be determined with confidence.

SigNify

Developing a secure method for real-time, in-field screening of molecularly-tagged items has long been a priority for us. We believe that standard fluorophores, up-converting phosphors, holograms and other more-traditional screening tools provide little to no defense against counterfeiting. We believe that secure in-field inspection backed with forensic-level molecular tag authentication is the key to maintaining a well-defended supply chain or asset management program.

The SigNify IF portable DNA reader provides definitive real-time authentication of SigNature and SigNature T molecular tags in the field. With SigNify IF, Signature molecular tags become a true, front-line solution for supply chain integrity.

Information Technology Systems

Applied DNA Sciences Portal. The CertainT and other customer applications include the use of a software platform that enables customers to manage the security of company-marked goods from point of marking to point of authentication or validation to end of life. The base platform is configurable to customer requirements which differ by vertical market, company business process and IT environment. Basic functions offered include molecular tag inventory management, program training and communications, a database of marked items information, associated documents and images, chain of custody and location tracking, sample authentication processing and CODA downloads, and other administrative functions. Designed for either cloud or local operation, the system supports mobile data capture using bar codes or other technologies. The system is architected as the controller and repository for other validation and authentication devices such as our SigNify DNA Readers, DNA Transfer Systems, and other third party devices and is designed to share data with third party applications through standard interfaces.

DNA Transfer Systems and Cannabis Tracking System. Our DNA Transfer Systems and Cannabis Tracking System are developed for DNA marking applications which are high volume with a need for monitoring and control. They are computer based, fully automated, offer remote internet access for real-time monitoring and can be configured for application-specific alerts and reporting online. They are being used to mark cotton at six U.S. cotton gins in the 2018-2019 ginning season and one location in Australia.

CertainT Supply Chain Platform

CertainT helps brands confirm their product's authenticity and origin with certified, trust, transparency and traceability through the seamless amalgamation of several of our platform technologies to tag, test and track. The CertainT trademark indicates use of the CertainT tagging, testing and tracking platform to enable proof of product claims for any material, item or product. Secure and proven, the CertainT Platform helps manufacturers, brands or other commercial organizations deliver on their promise that customers are buying products that are ethically-sourced, safe and authentic.

Large-scale production of specific DNA sequences using PCR.

Our patented Triathlon™ PCR systems allow for the large-scale production of specific DNA sequences. The systems are computer-controlled, self-contained and modular. DNA sequences produced through our processes and systems are being used by customers as components of diagnostic tests and reagents, which provide us the opportunity to cross-sell our DNA-based supply chain security solutions to this installed base and others. We believe we have the ability to manufacture longer DNA sequences valuable in gene therapies, adoptive cell therapies (such as CAR T), DNA vaccines, RNA therapies and diagnostics, with what we believe is a distinct competitive advantage in cost, cleanliness, and time-to-market. These types of DNA are distinct from our DNA security markers and represent a potential new entry into medical markets, where we believe there are opportunities for our broader platform. Customers using our PCR-produced linear DNA products and services for use in in vitro medical diagnostics, preclinical biotechnology research and preclinical drug and biologic manufacturing receive DNA product that we believe is made cleaner and faster than historical manufacturing methods, thereby offering the opportunity for increased efficiency and turnaround times in their processes.

Contract Research

Under LRx, we act as a contract research organization for the nucleic acid-based medical and biologic markets. In addition, LRx is providing contract research services to several RNA based drug and biologic customers for preclinical studies. These services include the design, development and manufacture of PCR-produced DNA templates for RNA.

Therapeutics

In addition, we seek to develop, acquire and commercialize, ourselves or with partners, a diverse portfolio of nucleic acid-based drugs and biologics based on PCR-produced linear DNA to improve existing nucleic acid-based therapeutics or to create new nucleic acid-based therapeutics that address unmet medical needs. We are also engaged in preclinical and animal drug candidate development activities focusing on therapeutically relevant DNA constructs manufactured through our large scale PCR production systems. LRx uses its PCR systems to rapidly produce customized DNA for use by our CRO/CMO clients, our preclinical drug and biologic clients and partners, and for our own preclinical drugs and biologics under development in the field of CAR T-cell immunotherapy. LRx's proprietary process enables large, gram-scale production of DNA through PCR for bio-based therapeutics, adoptive cell therapies, vaccines (including cancer), CRISPR and other nucleic acid-based therapies. Linear DNA does not require recombination, therefore, there is no need for a virus or for plasmids. This reduces the risk of unwanted DNA or other contaminants that would need to be removed.

Recent Developments

TheraCann International. During January 2018, we entered into an initial two-year $1 million contract for the development of molecular tracking systems for legal cannabis worldwide with TheraCann International Benchmark Corporation, ("TheraCann"), a leading full service cannabis consultancy with operations in the US, Canada, Australia, Europe and South America, for the integration of the Company's SigNature molecular tagging and testing technology into TheraCann's seed-to-sale Enterprise Resource Platform (ERP) for legal cannabis operations. Under the terms of the contract, the companies have entered into a development and marketing agreement whereby we will develop the technologies necessary to tag and authenticate legal cannabis throughout the supply chain and seamlessly integrate tagging and authentication data into TheraCann's ERP and Blockchain platform.

ACG Associated Capsules Private Limited (ACG) During January 2018, we entered into a Memorandum of Understanding with ACG to develop SigNature molecularly tagged empty hard-shell capsules to enhance product traceability and authentication. ACG is one of the world's largest pharmaceutical and nutraceutical capsule manufacturers, with the empty capsules market estimated to exceed $2 billion by 2023. Discussions between us and ACG toward a definitive agreement incorporating are underway, although no assurance can be given that a definitive agreement will be entered into.

Colorcon, Inc. On March 31, 2018, we entered into definitive licensing and cooperation agreement as well as a related supply agreement with Colorcon, Inc. ("Colorcon") for molecular tagging in the pharmaceutical and nutraceutical markets. Colorcon plans to use our SigNature molecular tags in Colorcon's product offerings and access to our associated authentication technologies. These Agreements follow the memorandum of understanding (MOU) announced on December 18, 2017.

Under the terms of the Agreements, Applied DNA grants Colorcon exclusive worldwide right to use the Company's molecular tags and associated authentication technologies in film coatings for solid oral dosage form ("SOD") applications, for which Colorcon is the largest global supplier, and non-exclusive rights to use our technologies in inks and colorants for SOD applications. Pursuant to the Agreements, we will supply taggant and authentication materials to Colorcon in exchange for long-term royalties on the sale of Colorcon products incorporating the Company's molecular tags and on the sale of authentication services related thereto. Further, the first of two milestone payments was payable to us with the signing of the Agreements. We will receive the second milestone payment upon initial approval by a regulatory authority for application in a SOD pharmaceutical or nutraceutical product application. The Agreements generally expire on the later of October 1, 2032 or the last expiration date of any patent licensed pursuant to the Agreements.

American & Efird (A&E) During April 2018, we entered into a statement of work with American & Efird (A&E), one of the world's leading manufacturers and distributors of industrial and consumer sewing thread, embroidery thread, and technical textiles, to evaluate our Beacon® technology for use in CertainT® enhanced secure sewing threads for brand protection. A prior statement of work dated July 25, 2017 between Applied DNA and A&E demonstrated Applied DNA's SigNature®T DNA-based authentication. This collaboration with A&E represents execution on the Company's growth strategy to expand its base of business in its core markets and broaden the application of it molecular tagging technology platform in adjacent markets.

BLC Leather Technology Center Limited (BLC) During May 2018, we completed a one-year research project with BLC under a sponsored research agreement we entered into in March 2017 for the development of a DNA-based supply chain track and trace system. The results of the research project helped validate that our technology can be used in the harsh leather-production environment to provide forensic traceability for leather from farm to shop. In November 2018, we entered a follow-on collaboration agreement with BLC to facilitate the commercialization of such technology. Under the terms of the collaboration agreement, we and BLC agree to jointly develop business and marketing plans, with BLC receiving a share of the revenue we receive relating to the DNA-based tracking system. The agreement expires in November 2023.

Takis S.R.L. and Evvivax S.R.L. During September 2018 we signed a joint development agreement with Takis S.R.I. and Evvivax S.R.L. ("Takis/Evvivax"), biotechnology companies focused on the discovery and development of DNA based anti-cancer vaccines for the human and animal targets, respectively. Under the terms of the agreement, we will jointly develop linear DNA expression vectors for two of Takis/Evvivax's anti-cancer vaccines candidates utilizing our linear DNA technology. Linear DNA amplicons carrying the DNA sequences for Takis/Evvivax's vaccine candidates will be delivered to preclinical animal models via Takis/Evvivax's proprietary electroporation technology. Antigen-specific immune responses aimed at achieving therapeutic effects will be studied.

iCell Gene Therapeutics, Inc. During October 2018, we entered into an exclusive North American licensing agreement and research services agreement with iCell Gene Therapeutics, Inc. (“iCell”) under which iCell licensed to us an anti-CD19 CAR T therapy candidate for non-viral delivery. We intend to utilize our non-viral, plasmid free platform, along with the in-licensed anti-CD19 CAR T therapy to develop, manufacture and commercialize LinCART19, a non-viral, plasmid free anti-CD19 CAR T therapeutic candidate. Under the terms of the agreements, iCell will receive a percentage of net sales derived from products incorporating the licensed CD 19 Antigen Receptor within North America, as well as development milestone payments and a fundraising milestone. The development milestone payments are triggered up on the completion of defined phases of clinical research for a product candidate incorporating the CD 19 Antigen Receptor. The fundraising milestone payment is triggered by an initial funding event of LRx.

Everledger, Inc. During December 2018, we entered into a Joint Development Agreement with Everledger, Inc. (Everledger), an independent emerging technology enterprise. We intend to develop and market a combined physical and digital supply chain traceability and certification solution utilizing the our CertainT molecular tagging and authentication systems together with Everledger’s blockchain-based platform.

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 the State of Nevada, and in 2002, we changed our name to our current name, Applied DNA Sciences, Inc. On December 17, 2008, we reincorporated from Nevada to the State of Delaware.

Our corporate headquarters are located at the Long Island High Technology Incubator at Stony Brook University in Stony Brook, New York, where we established laboratories for the manufacture of molecular tags, product prototyping, molecular tag authentication and bulk DNA production. 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 report.

To date, we have produced limited recurring revenues from our products and services, have incurred expenses and have sustained losses. Consequently, our operations are subject to all the risks inherent in the establishment and development of a biotechnology company.

FORWARD-LOOKING STATEMENTS

This prospectus supplement and the documents incorporated by reference herein contain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that are intended to qualify for the "safe harbor" created by those sections. In addition, we may make forward-looking statements in other documents filed with or furnished to the SEC, and our management and other representatives may make forward-looking statements orally or in writing to analysts, investors, representatives of the media and others.

Forward-looking statements can generally be identified by the fact that they do not relate strictly to historical or current facts and include, but are not limited to, statements using terminology such as "can", "may", "could", "should", "assume", "forecasts", "believe", "designated to", "will", "expect", "plan", "anticipate", "estimate", "potential", "position", "p "guidance", "intend", "seek", "budget", "project" or "continue", or the negative thereof or other comparable terminology regar beliefs, plans, expectations or intentions regarding the future. You should read statements that contain these words carefully because they:

- discuss our future expectations;
- contain projections of our future results of operations or of our financial condition; and
- state other "forward-looking" information.

We believe it is important to communicate our expectations. However, forward-looking statements involve risks and uncertainties and our actual results and the timing of certain events could differ materially from those discussed in forward-looking statements as a result of certain factors, including those set forth under "Risk Factors" and "Prospectus Supplement Summary – Our Company" set forth in this prospectus supplement and the documents incorporated herein by reference.

Accordingly, our actual results and the timing of certain events may differ materially from those expressed or implied in such forward-looking statements due to a variety of factors and risks, including, but not limited to, those set forth in this prospectus supplement under "Risk Factors" and those set forth from time to time in our other filings with the SEC.

All forward-looking statements and risk factors included in this prospectus supplement and the documents incorporated herein by reference are made as of the date hereof, based on information available to us as of such date,

and we assume no obligations to update any forward-looking statement or risk factor, unless we are required to do so by law. If we do update one or more forward-looking statements, no inference should be drawn that we will make updates with respect to other forward-looking statements or that we will make any further updates to those forward-looking statements at any future time.

Forward-looking statements may include our plans and objectives for future operations, including plans and objectives relating to our products and our future economic performance, projections, business strategy and timing and likelihood of success. 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.

Any of the assumptions underlying the forward-looking statements contained in this prospectus supplement could prove inaccurate and, therefore, we cannot assure you that the results contemplated in any of such forward-looking statements will be realized. Based on the significant uncertainties inherent in these forward-looking statements, the inclusion of any such statement should not be regarded as a representation or as a guarantee by us that our objectives or plans will be achieved, and we caution you against relying on any of the forward-looking statements contained herein.

SUMMARY OF RISKS

Before you invest in our common stock and 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-14 of this prospectus supplement. We believe that the following are some of the major risks and uncertainties that may affect us:

- substantial doubt relating to our ability to continue as a going concern;
- our lack of significant revenues;
- our limited experience in marketing our large-scale PCR-based manufacturing platform;
- our history of net losses, which may continue, and our potential inability to achieve profitability;
- the possibility that we may require additional financing, which may involve the issuance of additional shares of common stock or securities exercisable for common stock and dilute the percentage of ownership held by our current stockholders;
- difficulty in obtaining or inability to obtain additional financing if such financing becomes necessary;
- the possibility we may fail to make timely payments on our secured convertible notes and, as a result, the noteholders enforcing their remedies and ultimately realizing on their collateral which includes substantially all of our assets, including our intellectual property;
- volatility in the price and/or trading volume of our common stock;
- future short selling and/or manipulation of the price of our common stock;
- our inability to implement our short and long-term strategies;
- competition from products and services provided by other companies, including competition in the principal markets for our drug and biologic candidates and linear DNA;

- potential difficulties and failures in manufacturing our products;
- loss of strategic relationships;
- dependence on a limited number of key customers;
- lack of acceptance of our products and services by potential customers;
- potential failure to introduce new products and services;
- difficulty or failure in expanding/and or maintaining our sales, marketing and support organizations and our distribution arrangements necessary to enable us to reach our goals with respect to increasing market acceptance of our products and services;
- seasonality in revenues related to our cotton customer contracts;
- shifting enforcement priorities of U.S. federal laws relating to cannabis;

- inability to obtain and maintain regulatory approval in the pharmaceutical and biotechnology markets;
- inability of our collaborators, licensees, and customers to develop, obtain approval for and successfully commercialize products that incorporate our technology;
- inability of us, our collaborators, or customers to develop and timely manufacture complex biologic products and their components to exacting quality and safety standards;
- inability to attract and retain qualified scientific, production and managerial personnel, including Dr. Hayward, our Chief Executive Officer;
- failure to maintain the listing on, or the delisting of our securities from, The Nasdaq Capital Market;
- conflicts of interest with affiliates and related parties with whom we have engaged or entered into transactions;
- inability to compete effectively in the industries in which we operate;
- lack of success in our research and development efforts for new products;
- failure to manage our growth in operations and acquisitions of new technologies and businesses;
- inability to protect our intellectual property rights;
- intellectual property litigation against us or other legal actions or proceedings in which we may become involved;
- unauthorized disclosure of sensitive or confidential data (including customer data) and cybersecurity breaches; and
- adverse changes in worldwide or domestic economic, political or business conditions.

THE OFFERING

Securities offered:	5,500,000 shares of our common stock, including 5,500,000 shares of common stock underlying the Warrants Warrants to purchase 5,500,000 shares of our common stock
Combined offering price per share of common stock and accompanying Warrant:	$0.50 per share and Warrant
Common stock outstanding before the offering[(1)]:	30,112,057 shares
Common stock to be outstanding after the offering[(1)(2)]:	35,612,057 shares
Over-Allotment Option:	The Underwriting Agreement provides that we will grant to the underwriter an option, exercisable within 45 days after the closing of this offering, to purchase up to an additional 825,000 shares of common stock and/or an additional 825,000 Warrants, solely for the purpose of covering 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.
Listing and Symbols:	Our common stock is listed on The Nasdaq Capital Market (“Nasdaq”) under the symbol “APDN.”
Warrants:	We are issuing to purchasers of shares of our common stock in this offering a Warrant to purchase one share of our common stock for each share purchased in this offering for a combined purchase price of $0.50. The Warrants will be exercisable beginning on the Initial Exercise Date at an exercise price of $0.50 per share and will expire on the five year anniversary of the Initial Exercise Date. The Warrants include an adjustment provision that, subject to certain exceptions, reduces their exercise price if the Company issues common stock or common stock equivalents at a price lower than the then-current exercise price of the Warrants, subject to a minimum exercise price of $0.14 per share. See “Description of Securities we are Offering—Warrants.”

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-14 and on page 5 of the accompanying base prospectus, as well as 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 December 20, 2018 excludes 6,177,214 shares of common stock issuable upon exercise of outstanding options, at a weighted average exercise price of $3.13 per share, 9,473,527 shares of common stock issuable upon exercise of outstanding warrants at a weighted average exercise price of $3.60 per share, and 2,735,000 shares of common stock issuable upon exercise of outstanding warrants at a weighted average exercise price of $2.00 per share, which such weighted average exercise price will be reduced to $0.50 as a result of this offering, reflecting the reset provision in such warrants.

(2) The total number of shares of our common stock outstanding after this offering is based on 30,112,057 shares outstanding as of December 20, 2018 and does not give effect to any exercise of the Warrants.

RISK FACTORS

Investment in our securities involves a high degree of risk. 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.

See also the statements contained under the heading “Forward Looking Statements.”

Risks Relating to Our Business:

There is substantial doubt relating to our ability to continue as a going concern.

We have recurring net losses, which have resulted in an accumulated deficit of $248,366,083 as of September 30, 2018. We have incurred a net loss of $11,692,928 for the fiscal year ended September 30, 2018. At September 30, 2018, we had cash and cash equivalents of $1,659,564. We have concluded that these factors raise substantial doubt about our ability to continue as a going concern for one year from the issuance of the financial statements.

In addition, the report from our independent registered public accounting firm for the year ended September 30, 2018 includes an explanatory paragraph stating that our significant losses and need to raise additional funds to meet our obligations and sustain operations raise substantial doubt about our ability to continue as a going concern. We will continue to seek to raise additional working capital through public equity, private equity or debt financings. If we fail to raise additional working capital, or do so on commercially unfavorable terms, it would materially and adversely affect our business, prospects, financial condition and results of operations, and we may be unable to continue as a going concern. Future reports from our independent registered public accounting firm may also contain statements expressing substantial doubt about our ability to continue as a going concern. If we seek additional financing to fund our business activities in the future and there remains substantial doubt about our ability to continue as a going concern, investors or other financing sources may be unwilling to provide additional funding to us on commercially reasonable terms, if at all

We have not produced significant revenues. This makes it difficult to evaluate our future prospects and increases the risk that we will not be successful.

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 supply chain security and product authentication solutions. You must consider our business and prospects in light of the risks and difficulties we will encounter as a company operating in a 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 net losses which may continue, and which may harm our ability to obtain financing and continue our operations.

We incurred net losses of $11.7 million and $12.9 million for the fiscal years ended September 30, 2018 and 2017, respectively. These net losses have principally been the result of the various costs associated with our selling, general and administrative and research and development expenses as we expanded operations, acquired, developed and validated technologies and expanded marketing activities. 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, then our accumulated deficit will continue to increase which may 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 any necessary additional financing, we will most likely be forced to reduce or terminate our operations.

Our opportunities in pharmaceuticals and biologics will require substantial additional funding. We may not be successful in our efforts to create a pipeline of product candidates or to develop commercially successful products. If we fail to successfully identify, finance and develop product candidates, our commercial opportunities in pharmaceuticals and biologics may be limited.

We have no pharmaceutical or biologic products approved for commercial sale and have not generated any revenue from product sales. Identifying, developing, obtaining regulatory approval and commercializing pharmaceutical and biologic product candidates will require substantial additional funding beyond our current available resources and is prone to the risks of failure inherent in drug or biologic development. Developing product candidates is expensive, and we expect to spend substantial amounts as we fund our early-stage research projects, engage in preclinical development of early-stage programs and, in particular, advance program candidates through preclinical development and clinical trials.

Even if we receive regulatory approval to market any of our product candidates, we cannot assure you that any such product candidate will be successfully commercialized, widely accepted in the marketplace or more effective than other commercially available alternatives.

Investment in pharmaceutical and biologic product development involves significant risk that any product candidate will fail to demonstrate adequate efficacy or an acceptable safety profile, gain regulatory approval, and become commercially viable. We cannot provide any assurance that we will be able to successfully advance any product candidates through the development process or, if approved, successfully commercialize any product candidates.

Even if we are able to generate revenue from the sale of any approved pharmaceutical and biologic products, we may not become profitable and may need to obtain additional funding to continue operations. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our pipeline of product candidates or continue our operations, and cause a decline in the value of our common stock, all or any of which may adversely affect our viability.

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

Our revenue earned from the sale of products and services for the fiscal year ended September 30, 2018 included an aggregate of 65% of our total revenues from four customers. These four customers accounted for approximately 96% of our total accounts receivable at September 30, 2018. At September 30, 2018, one customer accounted for an aggregate of 82% of our total accounts receivable. Our revenues earned from sale of products and services for the fiscal year ended September 30, 2017 included an aggregate of 78% from four customers of our total revenues. These four customers accounted for approximately 97% of our total accounts receivable at September 30, 2017. At September 30, 2017, one customer accounted for 80% of our total accounts receivable. 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 if 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 DNA based technology, encapsulation, embedment and authentication products and services to date. Some of the factors that will affect whether we