



**Company:** 20/20 GeneSystems

**Market:** Cancer Diagnostics

**Product:** Develops and commercializes diagnostic tests for the early detection of cancer

## Company Highlights

20/20 GeneSystems' mission is to reduce cancer deaths in the U.S. and around the world through early detection. Early detection of cancer can greatly improve the chances for successful treatment.<sup>i</sup> To detect cancers early, 20/20 GeneSystems (20/20) has developed patented blood test algorithms that combine protein biomarker levels with various patient-specific information such as their age, sex, smoking history, etc. These algorithms are boosted by state-of-the-art machine learning, a form of artificial intelligence.

20/20 is now bringing biomarker detection technologies to the U.S. that are currently used to screen individuals for cancer in countries like Japan, Korea, China, Taiwan, India, Brazil, and Russia. Recent studies suggest that these core technologies can detect several deadly tumors, many in their earlier stages, without too many false alarms.<sup>ii</sup> To build upon and improve the accuracies of these core technologies, 20/20 uses big data methods and machine learning algorithms while keeping these tests affordable and convenient to all who want them.

Individuals identified to be at increased risk for having one or more early-stage cancers are given recommendations for follow-up testing – often an X-ray or ultrasound – so that the cancer can be pinpointed, biopsied, and treated through surgery. 20/20 has used this approach with its current lung cancer blood test and plans to introduce a multi-cancer test that requires only one tube of blood.

- Has introduced blood tests that incorporate machine learning algorithms in the U.S. and China to aid in the early detection of lung cancer
- Has tested over 3,500 individuals with its PAULA's test for the early detection of lung cancer
- Clinical testing laboratory licensed by federal and state authorities (Clinical Laboratory Improvement Amendments)
- Expects to introduce the first multi-cancer screening blood test that is boosted by machine learning for enhanced accuracy in Q2 2018
- Assembled a bi-disciplinary technology team with expertise in cancer biomarkers and machine learning analytics
- Patented BioCheck kits for screening suspicious powder used by hundreds of emergency responder organizations worldwide
- Has 14 issued patents with numerous patent applications pending worldwide, and the CEO is a registered patent attorney
- Received a \$2 million equity investment from Ping An Ventures, the venture capital division of China's largest health insurer by market value, now a strategic partner of 20/20 in China<sup>iii</sup>
- Raised over \$2 million from investors associated with the Keiretsu Forum, a global investment community of accredited private equity angel investors, venture capitalists, and corporate/institutional investors
- Awarded more than \$4 million in government grants and contracts from the National Institutes of Health (NIH) in support of cancer diagnostic technologies

*\*All investments in this Offering are in exchange for stock (equity). Perks are intended as a gift from the Company to its new shareholders rather than as a condition of making the investment. The perks above are inclusive of lower dollar amount perks, except where otherwise noted. Test vouchers include laboratory testing services, test reagents, and algorithm/analytics. Excluded are physician examinations and phlebotomy (blood draw) services (if needed) and expedited refrigerated shipping of blood samples (if needed). Unforeseen logistical, technological, scientific, regulatory, financial, supply chain, commercial, or legal impediments could delay indefinitely the ability of the Company to provide any test.*

*\*\*Multi-cancer test ([www.OneTestforCancer.com](http://www.OneTestforCancer.com)) is expected to be available in the U.S. in the first half of 2018 and will be intended for individuals age 45+ without symptoms of cancer.*

*\*\*\*PAULA's Test for Lung Cancer ([www.BloodTestforLungCancer.com](http://www.BloodTestforLungCancer.com)) is currently available in the U.S. only (pending in Japan). Intended for individuals over age 50 who have a smoking history equivalent to at least one pack per day for 20 or more years.*

**\$600:** One transferable multi-cancer\*\* or lung cancer test\*\*\*

**\$1,000:** Two transferable multi-cancer or lung cancer tests

**\$2,500:** Six transferable multi-cancer or lung cancer tests

**\$7,500:** Twenty transferable multi-cancer or lung cancer tests

**\$18,000:** Lifetime of annual cancer screenings for one individual

**\$25,000:** Lifetime of annual cancer screenings for spousal pair

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## COMPANY SUMMARY

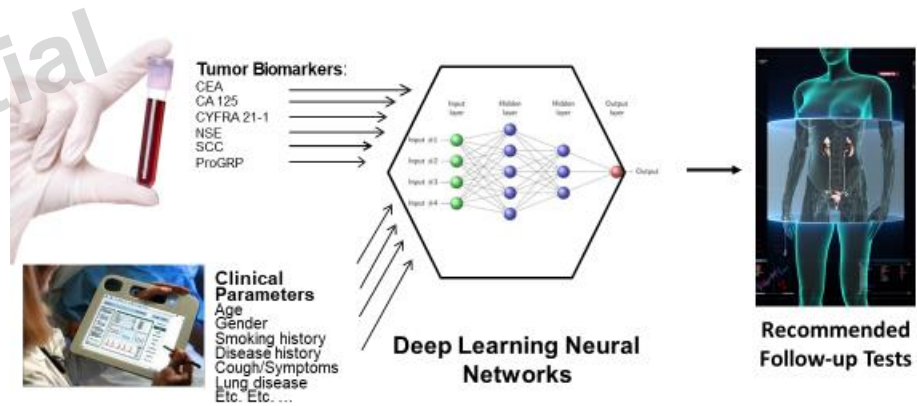
### Opportunity

According to the American Cancer Society<sup>®</sup>, an estimated 1.6 million new cases of cancer will be diagnosed in the United States in 2017.<sup>iv</sup> However, the number of people living beyond a cancer diagnosis reached nearly 14.5 million in 2014 and is expected to rise to almost 19 million by 2024.<sup>v</sup> This is due in part to a rise in early detection – thanks to both education to increase awareness and diagnostic screening – which greatly improves the chances for successful treatment.<sup>vi</sup>

For more than 30 years in the U.S., screening has been widely utilized for only four major cancer types: breast, colon, prostate, and cervical cancer. No new tests for cancers other than those four have gained widespread adoption in the U.S. since the early 1980s.<sup>vii</sup> In contrast, in many other countries, especially those in East Asia, biomarker blood tests are widely used for screening 10 or more cancer types,<sup>viii</sup> including those of the lung, liver, and pancreas, each of which are deadly unless detected at an early stage.<sup>ix</sup> While these biomarker tests are far from perfect, they have been documented to detect many types of cancer including 75% to 90% of lung, liver, and pancreatic cancers.<sup>x</sup> 20/20 and its collaborators have demonstrated that these detection rates can be significantly improved through analytical techniques that combine individual patient characteristics – such as their age, sex, smoking history, etc. – together with the biomarker levels. 20/20's proprietary big data and machine learning methods are expected to result in continuing year-over-year test improvements as more data is introduced into the algorithms.

## Product

Each of 20/20's cancer detection products combine the following four core elements: (i) a panel of three to eight protein biomarkers, (ii) individual patient characteristics and health history (age, sex, smoking history, risk factors, and medical imaging results, etc.), (iii) data from hundreds to thousands of patients previously tested, and (iv) machine learning and artificial intelligence-based analytics.



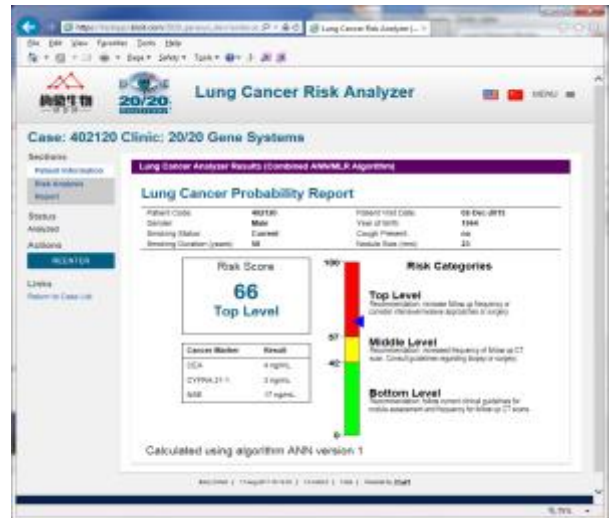
By leveraging its proprietary software and biomarker algorithms, combined with a patient's health information, 20/20 increases the accuracy of cancer tests without requiring new equipment or physician practices. All of 20/20's products utilize machine learning algorithms, which means the accuracy of the test (sensitivity, specificity, Area Under the Curve) is predicted to improve as more data is obtained both from archival sources and actual use of the tests in real-world clinical practice.

- **Blood test for lung cancer (U.S.):** 20/20's blood test for early lung cancer detection using a machine learning algorithm is called PAULA's (Protein Assays Using Lung cancer Analytes) Test+. The algorithm analyzes biomarkers (also known as tumor antigens) associated with non-small cell lung cancer. PAULA's Test+ is designed for patients who are at high risk for lung cancer due to long-term smoking. After a blood sample is drawn, the sample is sent to Genesys



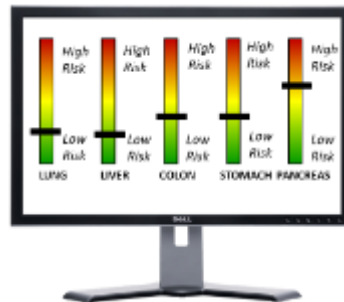
Biolabs (a division of 20/20 GeneSystems) for 20/20's proprietary biomarker test, which analyzes four proteins in the blood associated with lung cancer. Then, the physician is given a single numeric score indicative of the patient's risk of having lung cancer relative to other patients with similar age and smoking history. Patients with a high likelihood for lung cancer will then most likely be recommended by their physician to get a low-dose CT scan. See [www.BloodTestforLungCancer.com](http://www.BloodTestforLungCancer.com).

- **Blood test for lung cancer (China):** In August 2017, 20/20 debuted a lung cancer test in China similar to the U.S. test. Along with a more comprehensive panel of lung cancer biomarkers, advanced analysis of the patient's health information and relevant risk factors are used to generate the numeric score. The test is affordable and easy to implement by using standard lab in vitro diagnostic (IVD) instruments. In China, 20/20 also offers a cloud-accessible algorithm through its Shanghai-based marketing partner My Biomed that aids in the assessment of ambiguous pulmonary nodules following a CT scan. The algorithm integrates three data streams – biomarker levels, imaging results, and clinical factors – to generate a single risk score.



- **Multi-cancer test:** 20/20 plans to introduce OneTEST in 2018 (see <http://www.onetestforcancer.com/>). This test will identify cancer risk using tumor antigen markers enhanced with 20/20's proprietary algorithms that incorporate the patient's individual risk factors to give a more accurate cancer risk profile. While only limited cancer screening tests are available today under most medical insurance plans (such as breast, ovarian, and colon), other cancers do not have screening tests available to the general public at all. OneTEST will be available at an affordable price to help those interested in managing their own health get a better picture of their own cancer risks. OneTEST includes cancer marker tests associated with the following types of cancers:

- Lung
- Liver
- Stomach/Gastric
- Pancreas
- Colon
- Cervical/Ovarian



### Biological Detection

The company also has a separate business unit that makes and sells patented kits for screening suspicious powders called BioCheck®. This kit is used by fire departments and other emergency responders to quickly screen unknown suspicious powders for compounds such as ricin, anthrax, and other bioweapon agents and to identify false alarms in minutes at the site of a suspected bioterror threat. The powder screening kit works by quickly identifying the presence or absence of protein, a biomolecule found in all living materials. It therefore provides a rapid screen for the possible presence of multiple bioterrorism agents while ruling out most of the ordinary substances that citizens have frequently feared to be possible bio-agents of terror.



## Ping An Partnership

Ping An Ventures, the venture capital division of China's largest insurer by market value<sup>xi</sup>, invested \$2 million in 20/20 in January 2016. Ping An has a network of 10,000 health clinics in China<sup>xii</sup>, which are expected to use 20/20's analytics tools with their patients.



## Intellectual Property

20/20 GeneSystems owns or licenses 10 patent families related to cancer diagnostics and biowarfare detection. Currently, the company owns or has exclusive rights to 14 granted patents and 12 pending applications in the U.S. and various other jurisdictions, including Canada. The earliest patent family has a projected expiration date of 2020. Other family patents are expected to expire through 2037 based on priority date and projected expiration for pending applications or granted patents included in each family. No assurance is made that any pending patent applications within the portfolio will result in a granted patent.

## Use of Proceeds and Product Roadmap

The funds raised from this campaign will primarily be used to support the commercial launch of OneTest in the U.S. OneTest is a pan-cancer test that simultaneously screens for multiple tumor types from a single blood sample. As of October 2017, algorithm development is being finalized, but the test is expected to be used to screen for liver, lung, prostate, colorectal, and pancreatic cancers. The product is currently being developed based on data from over 40,000 individuals from East Asia that will be the foundation of a test to be introduced in the U.S. Efforts to collect data from Caucasian populations have been initiated. As a software analytics layer on top of existing equipment, 20/20's tests utilize established tumor marker detection kits and automated instruments available in thousands of clinical testing labs worldwide, thereby permitting the company to scale globally. 20/20 intends to market its tests and algorithms to the physicians in these networks of screening centers.

## Business Model

As a result of poor reimbursement from Medicare, Medicaid, and private insurance companies for PAULA's test, the company transitioned in 2017 to a patient self-pay model, with a cost of \$149. It is believed that the OneTest multi-cancer test will be offered for between \$170 to \$190 beginning in Q2 2018.

## HISTORICAL FINANCIALS

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For 2015 and 2016, product revenues from BioCheck and PAULA's test collectively have averaged over \$100,000 per calendar quarter (approximately \$400,000 per year.)

Year to date as of June 2017, the company's expenses have totaled over \$795,000 compared to approximately \$1,587,000 over the same period in 2016. In 2016, the company had close to \$2,594,000 in total expenses, compared to approximately \$2,800,000 in 2015. The decrease in expenses year over year was mainly due to a decline in research and development expenses as the company transitioned to commercial product launches.



Year to date as of June 2017, the company has generated a net loss of approximately \$658,000, a 52% improvement over the same period in 2016. In 2016, the company had a total net loss of around \$2,165,000, compared to a net loss of around \$1,871,000 in 2015. In 2016, the company's monthly average net burn rate was around \$180,000, compared to a monthly average net burn rate of approximately \$156,000 in 2015.

Note: 2017 financials have not been audited or subjected to financial review, and 2016 financials were only subject to a financial review.

## INDUSTRY AND MARKET ANALYSIS

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Cancer is the second leading cause of death in the world, responsible for 14 million new cases in 2012 and 8.8 million deaths in 2015. Worldwide, approximately one in every six deaths is caused by cancer.<sup>xiii</sup> However, early detection of cancer can prevent many cases from becoming fatal – over 90% of patients survive for at least 10 years if diagnosed at stage one.<sup>xiv</sup> The global cancer diagnostics market was valued at \$7.1 billion in 2015 and is projected to reach \$13.1 billion by the year 2020, increasing at a compound annual growth rate (CAGR) of 12.9% during this period.<sup>xv</sup>

20/20 GeneSystems' solutions historically focused on lung cancer, which is the second most common cancer (not counting skin cancer) and the leading cause of cancer deaths among both men and women.<sup>xvi</sup> The global lung cancer diagnostics market is forecasted to grow to \$3.64 billion by 2024<sup>xvii</sup> from an estimated \$1.63 billion in 2015. While the North American market generated the most revenue in 2015 (~\$520 million), the Asia Pacific market has the largest projected growth rate at a CAGR of 9.5% from 2013 to 2024.<sup>xviii</sup>

More recently, the company has prioritized the development and commercialization of a "pan" cancer test (i.e. screening for several cancers from one blood sample). This test has a substantially larger market than any single cancer test. In 2015, the global blood testing market was valued at \$51.5 billion<sup>xix</sup> and is expected to reach \$62.9 billion by 2024.<sup>xx</sup> Regionally, North America held the dominant market share with over 40% of total revenue in 2015. The Asia Pacific market is expected to grow rapidly due to rising awareness of necessary diagnostic needs and technologies. Furthermore, new uses for enhanced blood testing that allows for shorter hospital stays has led to an increased demand for blood testing services.<sup>xxi</sup>

Biomarkers are biological molecules obtained from blood, tissue, or other body fluids that are used to test for diseases or conditions. The global biomarkers market was worth \$27.95 billion in 2016 and is anticipated to grow at a CAGR of 13.8% to reach \$53.34 billion in 2021. Biomarker development is driven by increased diagnostic applications and research funding as well as the rising prevalence of cancers. If categorized by diseases and disorders, cancer leads with the largest biomarkers market share in 2016.<sup>xxii</sup> The global cancer biomarkers market was valued at \$10.3 billion in 2016 and is expected to reach \$33.7 billion by 2025, growing at a CAGR of 14.3%.<sup>xxiii</sup>

Artificial intelligence (AI) and machine learning are transforming healthcare by helping physicians diagnose and treat patients with precision which leads to simplified and cost-reducing solutions.<sup>xxiv</sup> The U.S. can potentially save \$150 billion annually by 2026 with key healthcare AI applications such as robot-assisted surgery, preliminary diagnosis, and virtual nursing assistants.<sup>xxv</sup> The global market for artificial intelligence in healthcare is forecasted to grow 52.7% from 2017 to 2022 to reach almost \$8 billion.<sup>xxvi</sup> As tech giants and pharmaceutical companies invest in this emerging technology<sup>xxvii</sup>, increased knowledge of AI applications will continue to fuel the growth – it's expected that 30% of worldwide healthcare systems will run real-time cognitive analytics on patient data to provide better personalized care by 2018.<sup>xxviii</sup>

**Immunovia (FN: IMMNOV):** Founded in 2007, Immunovia is a Swedish diagnostics company. The company has developed a platform called IMMray™, which combines a single-chain fragment variable antibody library and an algorithm to interpret information from a drop of blood. It can be used for IMMray™ PS, an instrument for proteome scanning for biomarker discovery. IMMray™ PanCan-d is the first test based on Immunovia's platform and can detect early-stage pancreatic cancer – it's currently undergoing clinical studies.<sup>xxxix</sup> Immunovia is also developing IMMray™ SLE-d to diagnose lupus.<sup>xxx</sup> As of September 14, 2017, Immunovia's market capitalization was kr1.77 billion<sup>xxxix</sup> (~\$220 million).

**VolitionRx (NYSE: VNRX):** Established in 2010 in Belgium, VolitionRX develops blood-based cancer tests (Nu.Q™) based on the science of Nucleosomics®, which identifies and measures nucleosomes in the bloodstream.<sup>xxxii</sup> Its lead product focuses on colorectal cancer, and the company has recently announced a colorectal cancer screening trial containing 13,500 subjects.<sup>xxxiii</sup> VolitionRx is also currently developing products for pancreatic and lung cancers.<sup>xxxiv</sup> On September 14, 2017, VolitionRX's market capitalization was \$76.11 million.<sup>xxxv</sup>

**OncoCyte™ (NYSE: OCX):** Founded in 2009 in California, OncoCyte is creating liquid biopsy (blood and urine) diagnostics to screen for lung, breast, and bladder cancer. Its diagnostics detect biomarkers associated with the specific types of cancer by using a proprietary set of cancer markers and a mathematical algorithm called a Gene Expression Classifier.<sup>xxxvi</sup> The company expects to commercially launch its lung cancer test in late 2017.<sup>xxxvii</sup> OncoCyte's market capitalization was \$187.86 million on September 14, 2017.<sup>xxxviii</sup>

**Onclmmune\* (LON: ONC):** Established in 2006 in Nottingham, UK, Onclmmune develops tests for early cancer detection using simple blood tests and autoantibody assay technologies. It launched its platform technology, EarlyCDT®, in 2009. Its first test, EarlyCDT®-Lung, launched in 2012 and is now available in the U.S., the UK, and other regions, with over 150,000 commercial tests sold. Onclmmune aims to further develop EarlyCDT®, specifically for liver and ovarian cancers.<sup>xxxix</sup> The company's market capitalization, as of September 14, 2017, was £67.64 million<sup>xl</sup> (~\$90.57 million).

**Biocept (NASDAQ: BIOC):** Founded in 1993, Biocept is a diagnostics company specializing in detecting and analyzing associated biomarkers found in circulating tumor cells (CTCs) and circulating tumor DNA (ctDNA) through its Targeted Selector™ technology.<sup>xli</sup> Patients or doctors can send blood samples to Biocept to test for lung, breast, gastric, colon, or prostate cancers, as well as for melanoma.<sup>xlii</sup> Results are received five to seven days after.<sup>xliii</sup> Biocept's market capitalization on September 14, 2017, was \$40.84 million.<sup>xliv</sup>

**GRAIL:** Founded in 2016 in Menlo Park, California, GRAIL is aiming to effectively diagnose cancers early in asymptomatic patients through blood tests. Its screening tests to detect ctDNA are powered by data science, clinical trials, and Illumina's (its parent company) sequencing technology. Although GRAIL is a new company, Illumina is a \$2.4 billion firm that makes a large percentage of DNA sequencing machines used by scientists and doctors.<sup>xlv</sup> GRAIL has already raised over \$1 billion in funding led by ARCH Venture Partners along with Amazon, Bezos Expeditions, Bill Gates, and other investors.<sup>xlvi</sup>

**Chronix Biomedical:** Established in 1997 and headquartered in San Jose, California, Chronix Biomedical offers blood tests for cancer detection and monitoring. With Next Generation Sequencing – a technique that allows the sequencing of the whole human genome – circulating cell-free DNA (cfDNA) from dying cells can now be detected and sequenced.<sup>xlvii</sup> The company's tests consist of CNi Monitor (early determination of cancer therapy success)<sup>xlviii</sup>, CNi Screen (early determination of cancer presence)<sup>xlix</sup>, and CNi Second Opinion™ (prostate and breast cancer evaluation).<sup>l</sup> In 2017, Chronix raised \$8 million in funding.<sup>li</sup>

**CellMax Life:** Founded in 2013 in Mountain View, California, CellMax Life detects and helps manage cancer at an early stage through its blood and saliva tests. Using its proprietary SMSEQ Platform, CellMax Life can detect ctDNA from a blood sample, and its CellMax-DNA Genetic Cancer Risk Test can identify 98 genes across 25 hereditary cancers from a saliva sample. Separately, its CMx Platform uses a biomimetic, lipid-bilayer microfluidic chip to detect CTCs in a blood sample.<sup>liii</sup> In 2016, the company received \$9 million in funding led by Artiman Ventures and multiple Taiwanese investors, bringing its total funding to \$14 million.<sup>liiii</sup>

## EXECUTIVE TEAM

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**Jonathan Cohen, Founder, President, and CEO:** Under Mr. Cohen's leadership, 20/20 GeneSystems has brought in approximately \$6 million in grant funding and launched two successful products. He is the co-inventor of an AI approach for improving tumor biomarker accuracy that is covered in a pending PCT International Patent Application. As 20/20's CEO, Mr. Cohen forged strategic alliances with Fortune 500 companies such as Johnson & Johnson, Eastman Kodak, Abbott, Smiths Detection, and Ping An Ventures. Active in public policy initiatives on behalf of the biotechnology industry, Mr. Cohen conceived of and helped bring about the passage of the Maryland Biotechnology Investment Tax Credit. He is a founding director of the Small Biotechnology Business Coalition. Before founding 20/20, Mr. Cohen was patent and general counsel for Ventana Medical Systems Inc. (acquired by Roche Diagnostics in 2008 for \$3.4 billion<sup>liiv</sup>) and Oncor®. Mr. Cohen is a registered patent attorney with more than 18 years of experience in biotechnology patents and licensing matters. He has a Master of Science in Biotechnology from Johns Hopkins University and a law degree from the American University.

**David Schodin, PhD, Business Development, U.S.:** Dr. Schodin is a PhD scientist with 10 years of experience in academic biochemical research and is an experienced lawyer, having worked at a private law firm and the Abbott legal division. He started off at Abbott as Senior Patent Counsel as a client-facing patent attorney for the Abbott Pharmaceuticals Oncology and Pain therapeutic teams. He became the Director of Business Development and Licensing at Abbott Molecular, where he was the lead negotiator and drafter. He worked on intellectual property settlements, licenses, corporate partnering agreements, non-standard supply agreements, and research and development agreements. Additionally, he led initiatives to incorporate cutting-edge technologies and key product assets into the business technology portfolio. Dr. Schodin holds a bachelor's degree in Chemistry from Knox College, a PhD in Biochemistry from the University of Illinois at Urbana-Champaign, and a JD from Illinois Institute of Technology.

## SCIENTIFIC AND TECHNOLOGY TEAM

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**Jeffrey Allard, PhD, Clinical Affairs:** Dr. Allard is a biochemist and is President of Lakeside Life Science, which provides consulting services and biospecimens to the biotechnology industry. He served most recently as Director of Development for Caris Life Sciences, where he designed and implemented a Product Development System, designed multiple clinical and regulatory strategies for novel multiplex oncology tests, wrote clinical protocols for prospective research and Premarket Approval (PMA)-submission trials, and designed a patient registry. As Vice President and Chief Scientific Officer of Fujirebio Diagnostics Inc. (FDI), Dr. Allard directed the Applied Research, Product Development, Clinical Affairs, Regulatory Affairs, and Process Engineering departments. Prior to joining FDI in 2004, Dr. Allard previously held positions as Vice President of Clinical Research and Development for Immunicon Corporation (Currently Veridex LLC, a division of Johnson & Johnson) where he designed and managed clinical trials that led to the worldwide introduction of the CellSearch Assay for measurement of circulating tumor cells (CTC). Dr. Allard designed three clinical trials that led to FDA clearance of CTC for prediction of overall survival and progression free survival in patients with breast, colorectal, and prostate cancers. Dr. Allard is an inventor on 12 patents for novel technologies, including new tests for gynecologic cancers, circulating tumor cells, complexed PSA for early detection of prostate cancer, and other diagnostic technologies. He is an author of over 50 manuscripts and has received numerous awards including the Professional Achievement Award from



Idaho State University.<sup>lv</sup> Dr. Allard holds a PhD in Biochemistry from Dartmouth College and a master's degree in Immunology from Idaho State University.

**Victoria Doseeva, PhD, Director of Diagnostics Development:** Dr. Doseeva managed pre-clinical and clinical studies of the CLIA-certified lung cancer test using retrospective and prospective patient serum samples and was able to improve its clinical sensitivity and diagnostic accuracy. Her recent accomplishments include analytical and clinical validation of a multiplexed Luminex-based immunoassay for the early detection of lung cancer under GLP and CLIA regulations. Dr. Doseeva has a wide range of experience in the biotechnology industry, having managed groups in diagnostic assay development, analytical methods development, protein production, and characterization, as well as having led a research and development group in support of development and validation of cancer diagnostics assays and companion diagnostic tests for molecularly targeted cancer drugs. Notably, from 2007 to 2012 she worked at Qiagen as an assay development manager. At Qiagen, she managed a team of scientists that successfully designed and developed several novel diagnostic assays. For example, she was the principal investigator in the design and development of novel DNA amplification assays for the rapid and sensitive detection of various pathogens. Additionally, Dr. Doseeva has published 27 journal articles and co-authored two patent applications. Dr. Doseeva has a PhD in Biochemistry and a master's degree in Chemistry from Moscow State University. She was a postdoctoral researcher at the National Cancer Institute, where she studied signal transduction pathways in cancer, and at Georgetown University Medical Center, where she studied DNA replication and recombination.

**Michael S. Lebowitz, PhD, BioAnalytics:** Dr. Lebowitz has more than 18 years of experience in biomedical research within the biotech industry, having previously served as Vice President of Research at Ariadne Diagnostics LLC. He has been directly involved in the commercial launch of six cancer diagnostic tests and the research leading up to a pharmaceutical Investigational New Drug (IND) approval. Dr. Lebowitz holds a PhD from the Johns Hopkins University (JHU) School of Medicine in Biochemistry, Cellular, and Molecular Biology. There, he subsequently completed a three-year fellowship in immunology in the Department of Pathology, Division of Immunopathology. He remains associated with JHU as an adjunct Lecturer in the Advanced Academic Program in Biotechnology within the Krieger School of Arts and Sciences.

**Peter Shindell, Machine Learning/Bioinformatics:** With three master's degrees (Computer Science, Applied Statistics, and Bioinformatics), Peter has more than 10 years of experience in data manipulation, data analysis, and predictive modeling as a statistician and data scientist. He also has extensive experience in clinical trial, pharmacokinetic / pharmacodynamic modeling, and Artificial Intelligence. Mr. Shindell has extensive experience in statistical methods to multi-source data and survey data including logistic regression, multiple regressions, mixture model, time series analysis, non-linear regression, classification and regression tree, Bayesian network, etc. He is currently a PhD student in Artificial Intelligence/Data Mining with the degree expected in 2018.

**Dr. Suzana Radulovich, CLIA Medical Director:** Dr. Suzana Radulovich joined the 20/20 GeneSystems team as Laboratory Medical Director in 2014. Dr. Radulovich has over 15 years of expertise in clinical microbiology and development of diagnostic methods, bacterial pathogenesis, and molecular biology, coupled with the experience in the treatment of the infectious diseases. Dr. Radulovich obtained her medical degree at University of Ljubljana, School of Medicine. She moved to the U.S. in 1992 to pursue postdoctoral training in the areas of infectious diseases, clinical diagnostics, microbiology, immunology, and pathogenesis at the University of Texas Medical Branch at Galveston (1992-1995). In 1995, Dr. Radulovich joined University of Maryland School of Medicine in Baltimore. There, she became the Assistant Professor of Microbiology and Immunology in 1998. She earned the Associate Professorship title in 2004. In 2009, together with Dr. Bala, she established the Bala Family Practice in Bel Air, Maryland, where she practices and leads all clinical diagnostic testing as their Laboratory Medical Director.

**Security Type:** Preferred Stock

**Round Size:** Min: \$75,000 Max: \$1,070,000

**Price per Share:** \$3.26

**Pre-money Valuation:** \$23 million

**Liquidation Preference:** The liquidation preference is pari passu with other series of preferred stock and senior to the common stock.

**Conversion Provisions:** Convertible into one share of common stock (subject to proportional adjustments for stock splits, stock dividends and the like) at any time at the option of the holder.

PRESS

**Business Wire:** [20/20's Lung Cancer Detection Technology Launches in China](#)

**PR Newswire:** [Ping An Ventures Takes Equity Stake in 20/20 GeneSystems](#)

**GenomeWeb:** [20/20 GeneSystems raises \\$4.5M in Series A Financing](#)

**PR Newswire:** [20/20 Gene Systems Partners With Zacks Investment Banking and AmeriTech Advisors for Growth Capital Campaign](#)

**Washington Business Journal:** [Mega-deal propels region to another massive quarter for venture capital](#)

**News Medical Life Sciences:** [Genesys BioLabs introduces PAULA's test for early lung cancer detection](#)

<sup>i</sup> <http://www.who.int/cancer/detection/en/>

<sup>ii</sup> *Clinica Chimica Acta* 450 (2015)273–276

<sup>iii</sup> <http://www.reuters.com/article/pingan-investment-idUSL8N1I60ND>

<sup>iv</sup> <https://cancerstatisticscenter.cancer.org/#/>

<sup>v</sup> <https://www.cancer.gov/about-cancer/understanding/statistics>

<sup>vi</sup> <http://www.who.int/cancer/detection/en/>

<sup>vii</sup> <https://www.cancer.org/healthy/find-cancer-early/cancer-screening-guidelines/chronological-history-of-acs-recommendations.html>

<sup>viii</sup> *Clinica Chimica Acta* 450 (2015)273–276

<sup>ix</sup> <http://www.businessinsider.com/deadliest-worst-cancers-2016-1>

<sup>x</sup> *Clinica Chimica Acta* 450 (2015)273–276

<sup>xi</sup> <http://www.reuters.com/article/pingan-investment-idUSL8N1I60ND>

<sup>xii</sup> <http://www.scmp.com/business/money/investment-products/article/2043685/ping-adds-10000-china-clinics-its-health-care>

<sup>xiii</sup> <http://www.who.int/mediacentre/factsheets/fs297/en/>

<sup>xiv</sup> <https://www.theguardian.com/society/2015/aug/10/cancer-survival-rates-higher-early-diagnosis>

<sup>xv</sup> <http://www.marketsandmarkets.com/PressReleases/cancer-diagnostics.asp>

<sup>xvi</sup> <https://www.cancer.org/cancer/non-small-cell-lung-cancer/about/key-statistics.html>

<sup>xvii</sup> <http://www.prnewswire.com/news-releases/lung-cancer-diagnostics-market-worth-364-billion-by-2024-grandview-research-inc-300283508.html>

<sup>xviii</sup> <http://www.grandviewresearch.com/industry-analysis/lung-cancer-diagnostics-market>

<sup>xix</sup> <http://www.grandviewresearch.com/industry-analysis/blood-testing-market>

<sup>xx</sup> <http://www.grandviewresearch.com/press-release/global-blood-testing-market>

<sup>xxi</sup> <http://www.grandviewresearch.com/industry-analysis/blood-testing-market>

<sup>xxii</sup> <http://www.marketsandmarkets.com/PressReleases/biomarker.asp>

<sup>xxiii</sup> <http://www.grandviewresearch.com/industry-analysis/cancer-biomarker-market>

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- xxiv <https://globenewswire.com/news-release/2017/05/11/982356/0/en/Healthcare-Artificial-Intelligence-Market-worth-over-10bn-by-2024-Global-Market-Insights-Inc.html>
- xxv <https://www.accenture.com/us-en/insight-artificial-intelligence-healthcare>
- xxvi <http://www.prnewswire.com/news-releases/global-artificial-intelligence-in-healthcare-market-2017-2022-market-is-expected-to-reach-usd-79888-million-at-a-cagr-of-5268---research-and-markets-300464679.html>
- xxvii <http://www.cnbc.com/2017/05/11/from-coding-to-cancer-how-ai-is-changing-medicine.html>
- xxviii <https://www.idc.com/research/viewtoc.jsp?containerId=259908>
- xxix <http://immunovia.com/about/>
- xxx <http://www.businesswire.com/news/home/20160509005743/en/Immunovia-AB-Immunovia-Joins-40-Global-Pancreatic>
- xxxi <https://finance.yahoo.com/quote/IMMNOV.ST?p=IMMNOV.ST>
- xxxii <https://www.linkedin.com/company-beta/1364072/>
- xxxiii <https://www.wsj.com/articles/PR-CO-20170718-905603>
- xxxiv <http://volitionrx.com/>
- xxxv <https://finance.yahoo.com/quote/VNRX?p=VNRX>
- xxxvi <http://www.oncocyte.com/technology/>
- xxxvii <http://www.oncocyte.com/products/lung-cancer/>
- xxxviii <https://finance.yahoo.com/quote/OCX?p=OCX>
- xxxix <http://oncimmune.com/about-oncimmune/>
- xl <https://finance.yahoo.com/quote/ONC.L?p=ONC.L>
- xli <https://www.linkedin.com/company-beta/80105/>
- xlii <https://biocept.com/technology/melanoma-offering/>
- xliii <https://biocept.com/patients/>
- xliv <https://finance.yahoo.com/quote/BIOC?p=BIOC>
- xlv <https://www.forbes.com/sites/matthewherper/2017/01/05/grail-which-aims-to-invent-blood-test-to-detect-cancer-to-raise-1-billion/#b409a4d37928>
- xlvi <https://www.linkedin.com/company-beta/10399839/>
- xlvii <http://chronixbiomedical.com/about-us/#technology>
- xlviii <http://chronixbiomedical.com/cni-monitor/>
- xlix <http://chronixbiomedical.com/cni-screen/>
- l <http://chronixbiomedical.com/cni-2nd-opinion/>
- li <https://finnewsdaily.com/chronix-biomedical-8-00-million-fundraising-john-dipietro-filed-jul-18-sec-filing/>
- lii <https://cellmaxlife.com/science/>
- liii <https://cellmaxlife.com/cellmax-life-raises-14m-venture-funding-launches-precision-cancer-testing-company-early-detection-optimal-management-cancer/>
- liv <http://www.nytimes.com/2008/01/22/business/worldbusiness/22iht-22rocheFW.9396266.html?mcubz=3>
- lv <http://www2.isu.edu/alumni/professional-archive.shtml>