BIOTOOLS INNOVATOR™

Lookbook 2024

BioTools Innovator is the premier nonprofit competition and accelerator for life science tools and diagnostic companies. Our mission is to improve human health by accelerating the commercialization of a broad spectrum of biotechnology products, platforms, and services.

BioTools Innovator advances the development of best-in-class startups through directed mentorship and a virtual curriculum. Selected companies receive unparalleled access to leading corporate strategics, investors, and other members of the BioTools Innovator ecosystem. Each company also competes for cash awards.

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BroadOak Capital Partners

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Meet Our Team

Paul Grand
Founder & CEO

Kathryn Zavala
COO & Managing Director, BioTools Innovator

Brian Benson
Senior Vice President

Daphne Radfar
Chief of Staff

Ayelet Marom
VP, Programs

Nicole Black
Program Director, U.S.

Jerry Ciolino
Director of Operations

Jim West
Associate Director, BioTools Innovator

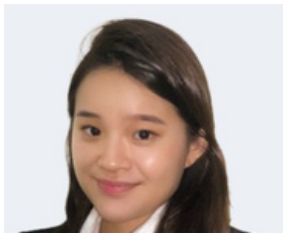
Ari Marcellino
Program Manager, BioTools Innovator

Fredrik Nyburg
Managing Director, Asia Pacific

Glen Lim
Senior Programs Director, Asia Pacific

Bernice Tan
Assistant Manager in Marketing & Events, Asia Pacific

Jermaine Lok
Partnership Manager, Asia Pacific



Nerissa Yu
Program Manager, Asia Pacific

Branden Morris
Senior Director of Marketing

Eve Jimenez
Marketing & Data Specialist

Gabby Dardano
Marketing & Events Assistant

Jeff June
Specialty Track and Community Programs

Andrew Friedrich
Director, Engineering & Product

Peter Kemper
Full Stack Software Engineer

COMPANY PROFILES

EVENT AGENDA

BIOTOOLS INNOVATOR

9:00 AM | Registration

9:00 AM - 11:30 AM | Pre-Event

Pre-event: Startup Stage and Informal networking with 2024 Cohort Companies
Explore the BioProcess International Exhibit Hall

11:30 AM - 11:50 AM | Opening remarks

11:50 AM - 12:30 PM | Panel

Advancing Pharma and Biotech: Trends, Technologies, and Strategies in Life Science Tools

Vince Stoyanov, *Advancion Corporation - Moderator*
Cynthia Hong, *Novartis*
David Sheehan*, Nucleus Biologics, Stoic Bio*
Hong Chen*, Novo Nordisk*
Kasia (Katarzyna) Glanowska*, PhD, Lonza*
Sarah Tao*, Sanofi*

12:30 PM - 12:50 PM | Program Expansion announcement

12:50 PM - 1:40 PM | Lunch Break

1:45 PM - 2:30 PM | Rapid Fire Panel

Venture Investment Landscape, Trends, & Future Outlook in the Life Science Tools Space

Kelly Kaihara, *General Inception - Moderator*
Carl Schoellhammer, *DeciBio*
Charles Purtell, *Danaher Ventures*
Courtney Matson, *BroadBranch Advisors*
Jessica Davis*, Avant Bio*
Paxton Major*, Northpond Ventures*
Rowan Cade, *BARDA*

2:30 PM | Best Video Award Ceremony

3:00 PM | Grand Finals

4:30 PM - 6:00 PM | VIP Reception

MedTech Innovator Founding Partner

RESEARCH CORPORATION TECHNOLOGIES

www.rctech.com

EXPERIENCE

More than 30 years and 75 investments supporting the life science ecosystem

FLEXIBILITY

Equity and debt to launch and grow healthcare companies

PATIENCE

Over $500M in long-term capital to be your partner

anvil DIAGNOSTICS

Anvil Diagnostics upgrades existing PCR hardware to tackle new challenges in precision medicine

Cambridge, MA | anvildiagnostics.com

Invasive infections are a leading cause of death and expense in hospitals. The pathogens behind the infections are detectable in blood as live cells or DNA. Today's diagnostics slowly only look for live cells, culturing a sample over at least 1-2 days and often missing infections altogether. These diagnostic gaps indefinitely leave patients on broad-spectrum antibiotics which sometimes fail to cover the underlying pathogen and are a separate driver of mortality via secondary complications and drug resistance.

Anvil Diagnostics is building rapid, DNA-based blood tests that can comprehensively detect all critical pathogen genes for a given patient indication. Traditional PCR cannot scale to cover enough pathogens, and DNA-sequencing is too slow for critical care and too complex and expensive for routine use. We are developing ML-designed DNA sensors and statistical algorithms that couple with existing digital PCR hardware to cover hundreds of pathogen genes. Originally developed at Rice University, our approach looks for signature combinations of DNA "keywords" in individual molecules of DNA, and we stitch this data together to detect and quantify what is in the sample. With just 2 FTE, we brought the concept research to a working prototype in less than a year to cover 10X the number of bacteria, function in human samples, and gain initial traction.

Leveraging existing hardware gives our team unusual capital-efficiency and market access. While most of our competitors are planning to sell custom hardware to hospital labs, we are developing test kits to deploy to the clinical labs that already have compatible hardware and are positioned to serve the right patients. Our first product will focus on immunocompromised patients with suspected pneumonia. Most of these patients have cancer, and specialized cancer centers have been early adopters of digital PCR.

Our long-term goal is to change the standard of care in infection management. We aim to become the frontline test of choice for a growing set of patients, including even those presenting with suspected sepsis in the ER. Our quantitative results could allow doctors to track pathogens in patients over time to ensure treatment efficacy, optimally time de-escalation, and even screen high-risk patients to catch infections before they are symptomatic. Disrupting decades-old clinical practice is challenging but necessary, and our efficient path to market will allow us to build the necessary evidence so that critically ill patients can receive targeted therapy.

DEVELOPMENT STAGE: Prototype Developed

SEEKING: $3MM Seed

Pavan Kota
CEO

Aric Brown
Senior Scientist

Alec Barclay
Advisor

autolomous

Make cell & gene therapies affordable and available to every patient, with our scalable, secure, data-centric SaaS platform

London, UK | autolomous.com

Bridging the gap between cell and gene therapies and patients worldwide

The current manual, siloed, and paper-based processes hinder the development and manufacturing of life-saving cell and gene therapies. There is a crucial need to transform these operations to ensure critical treatments reach patients and maintain the highest quality standards while being scalable and cost-effective.

By empowering innovation across R&D, Process Development, Manufacturing, and Quality, the autoloMATE platform equips teams with the digital tools necessary to achieve groundbreaking results with fewer resources.

Key benefits of the **autoloMATE ecosystem-driven platform**:

- **Patient-centric approach:** Connects patients to their therapeutic journey, providing transparency and reassurance
- **Data-driven decision making**: Objective patient selection through cross-referencing data from multiple sources, optimizing clinical trial enrollment
- **Streamlined operations:** Configurable electronic batch records and release-by-exception workflows eliminate inefficiencies
- **Enhanced quality:** End-to-end traceability and secure data capture ensure the highest quality standards are maintained, with any human errors being minimized
- **Accelerated delivery:** Streamlined processes get therapies to patients faster and more efficiently

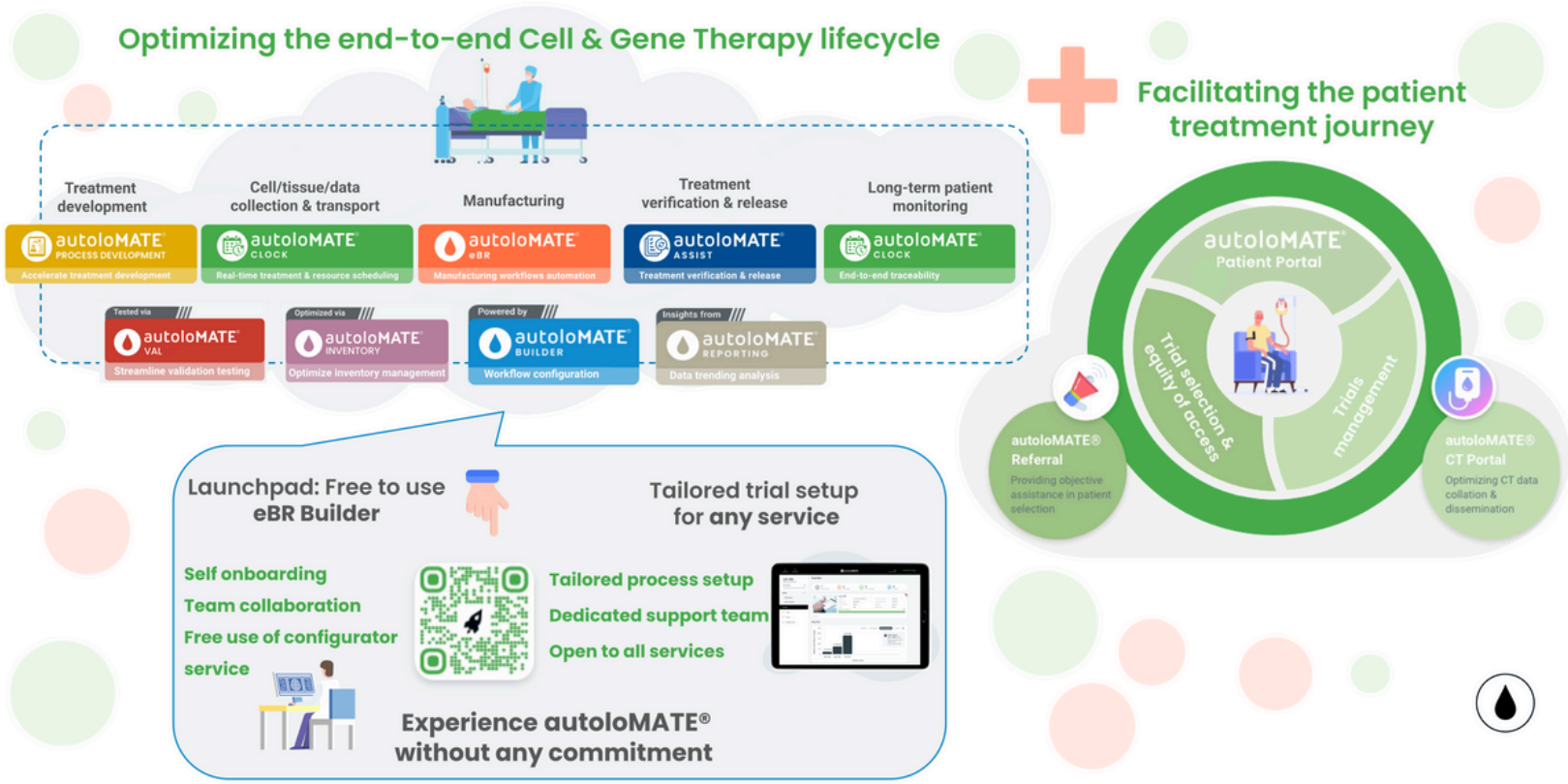
DEVELOPMENT STAGE: Revenue generating, 18 clients

SEEKING: $6MM Series A

Alexander Seyf
CEO

Alexis Blain
CTO

Walid Fahme
COO



AXOLOTL BIOSCIENCES

We provide high quality bioinks for 3D printing human tissues.

BC, Canada | axolotlbiosciences.com

Axolotl Biosciences addresses the unmet need for reliable, human-relevant tissue models in drug discovery and development. End users, such as pharmaceutical companies and research institutions, require accurate and reproducible 3D models to predict drug efficacy and toxicity more effectively than traditional 2D cultures or animal testing. Our technology is essential for those seeking to reduce the high costs, time, and failure rates associated with bringing new drugs to market.

Axolotl Biosciences is uniquely positioned in the rapidly growing 3D bioprinting market with protected bioink technology that meets the critical needs of drug discovery and tissue engineering. Our specialized bioinks enable more accurate and reliable drug screening processes, reducing costs and increasing the success rate of new drug development. With strong IP, industry leading team members, and a clear path to market, we offer a compelling opportunity for significant growth and impact in the biotech industry.

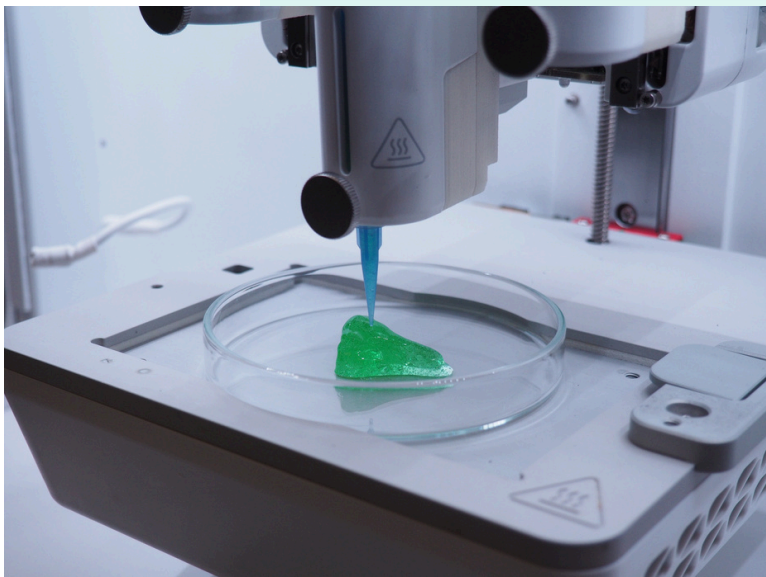
Stephanie Willerth
CEO & Co-Founder

Laura De la Vega, PhD
CTO & Co-Founder

Kali Scheck
Production Manager

DEVELOPMENT STAGE: Paying Customers

SEEKING: $5MM Pre-Seed



Proud Founding Partner of BioTools Innovator

BroadOak Capital Partners

GROW WITH US

Investment and advisory solutions for life science tools, diagnostics, and services companies

broadoak.com

CELLREV

CellRev provide solutions to cell-based vaccine, therapy, and drug developers to enhance the efficiency of manufacturing processes

England, United Kingdom | cellrev.co.uk

CellRev enables more cost-effective, scalable and clinically translatable processes; moving us one step closer to mass market accessibility and ensuring that today's emerging therapies are tomorrow's first-line treatments.

The process bottlenecks that CellRev address occur in almost all cell culture applications, from clogging in analytical tools, to clumping in large established bioprocesses. The opportunity to address aggregation in microcarrier processes alone represents a 252m USD opportunity- this is the company's immediate focus. The company are operating in the high value reagents market with a current market value of 11bn and growing.

CellRev have developed rich IP and significant know how which is now being leveraged to launch value-additive products. Once adopted at scale, CellRev's products return several million USD per annum in recurring revenue per contract.

So, the opportunity is big, the products are differentiated, and we are building a scalable and highly profitable business with significant exit potential.

This is a business on the cusp of something special. With time, CellRev have the potential to deliver significant returns for existing and future shareholders.

Chris Green
CEO

Martina Miotto, PhD
CSO

Laura Duffy
Head of Operations

DEVELOPMENT STAGE: Paying Customers

SEEKING: $6MM Convertible Note

cerillo
illuminate possibility

Empowering researchers with advanced cellular analytics tools that convert data into actionable insights, resulting in rapid innovation and groundbreaking discoveries

Charlottesville, VA | cerillo.bio

Biological research is inherently complex. To minimize this complexity, current experimental design *limits the inputs* to better understand the outputs. To gain a better understanding of larger systems, this same limited model is used, until the complexity becomes too great, costs too much, and incremental value becomes too low. Scaling biological discovery and product development has reached its upper limit under current research methodologies.

Cerillo addresses these limits and complexities by delivering an intelligent platform that produces deep insights enabled by the creation of rich data ready for computational models versus data creation limited by human intolerance for complexity. We created an application-agnostic platform (hardware, consumable, software, and intelligence) that generates and transforms biological and environmental data into research insights using scalable intelligent computational models.

Meet our Platform:
Co-culture Duet System: World's first standardized consumable technology that enables microbial interaction studies at scale
Miniaturized microplate readers: Rugged, portable, and stackable readers that collect data in any environment
Labrador Software: Intuitive GUI that measures biological data in real time

Moving forward, Cerillo will continue expanding our scalable, accessible computational systems within our best-in-class software, modifying the form-factor of our consumable to scale biofermentation studies, and adapting our hardware to become best-in-class miniaturized bioreactor platform. With over 1,500 total units sold globally, Cerillo's strong footprint will expedite continued expansion as we advance our product technologies to combat increased time and costs in scaling biological product development.

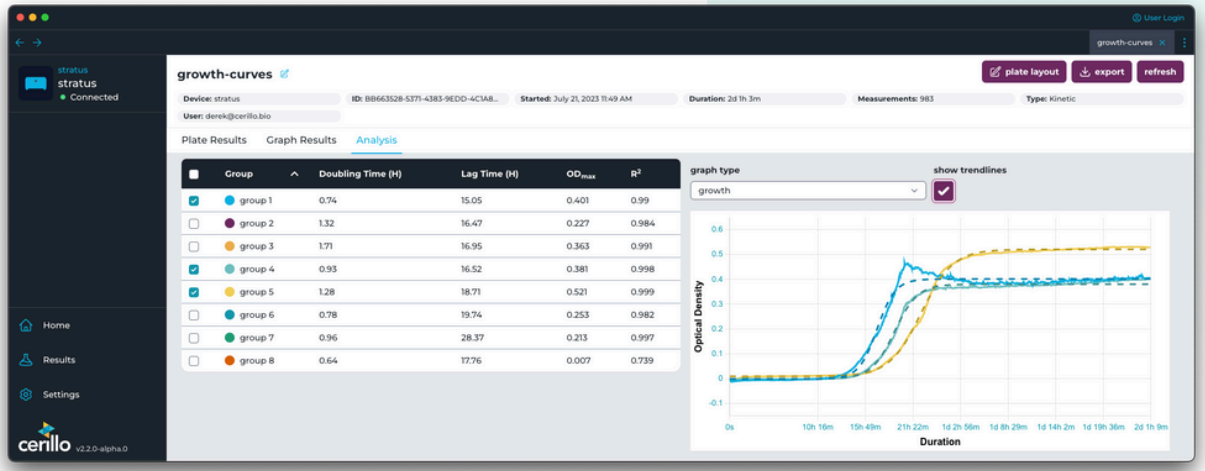
DEVELOPMENT STAGE: Paying Customers

SEEKING: $5MM Series A

Eric Mayton
Founder & CEO

Kevin Seitter
Co-Founder & CTO

Julia Swavola, PhD
Head of Product



CytoRecovery®

The CytoR1 provides label-free, gentle, and viable cell enrichment, sorting, and recovery.

Blacksburg, VA | cytorecovery.com

Your body is composed of trillions of individual cells which are the foundational unit of life. Living cells are the basic units of all forms of life. The ability to separate and recover cells is foundational to medical research, diagnostic development, and pharmaceutical discoveries. However, cell sorting currently requires the" labeling" or tagging of cells with biologically active molecules. This process, both time consuming and expensive, can alter the nature and the behavior of cells and render them unusable after initial sorting. CytoRecovery has developed, transitioned into production, and commercialized a completely new label-free way to sort and recover living cells that is faster, gentler, and generates the highest quality samples, even preserving the cells in their original, native state. These workflows are critical as markets continue to grow and emphasize the needs for these high-quality samples in areas like individual genomics, cell therapeutics development, and personalized medicine. Our vision is to bring these new solutions to the global medical research community, generating important advances in our knowledge of disease onset, progression, therapeutics, and wellness. Personalized medicine requires precision cell recovery to begin unlocking individualized healthcare.

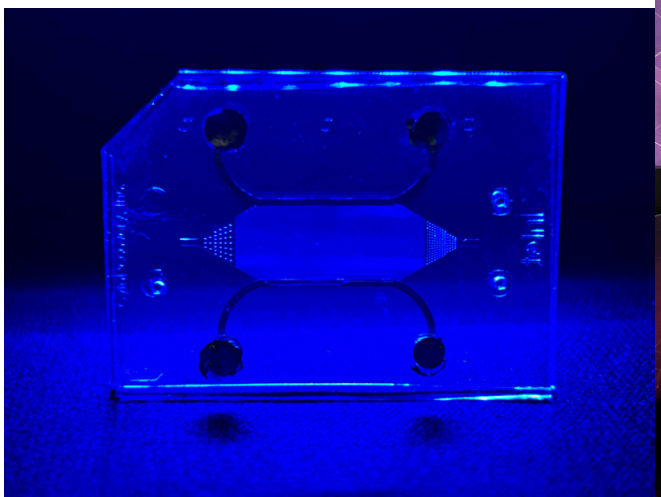
DEVELOPMENT STAGE: Product Developed

SEEKING: $3-5MM Preferred Stock

Stephen Turner
Founder & CEO

Alex Hyler
VP & CSO

Mr. James Ramey
Board Member



EMGENISYS

EmGenisys is improving pregnancy outcomes of embryo transfer and in vitro fertilization (IVF) with computer vision / machine learning methods to evaluate embryo health in real-time.

Houston, TX | emgenisys.co

Our novel, patented technology represents the world's only and fastest method for evaluating mammalian embryo health in real-time. This proprietary solution uniquely enables real-time observation of embryo cellular activity which reveals critical insights regarding embryo health, stress, viability, and sex – using standard cameras and microscopes.

Our team has extensive experience in both animal and human embryology and actively serves some of the most prominent beef and dairy operations in the country which has enabled us to amass extensive datasets, positioning us not only as technology leaders but a data powerhouse. We are set to leverage these data sets to analyze a wide range on economically significant embryonic features and scale into other market verticals, including human IVF.

The IVF technology market is currently experiencing significant growth, with a projected value of $20 billion and rising, due to declining fertility globally.

EmGenisys' flagship product, EmVision, is a SaaS solution offering a noninvasive analysis of embryo development and cellular activity in real-time, which reveals economically critical embryonic characteristics such as embryo health, viability, abortion risk, freeze-ability, and sex. To use the system, embryologists simply record 30 second videos of embryos with their smartphone camera. To the human eye, these embryos look like static groups of cells, but the videos can capture hidden cellular activity. Once the videos are uploaded to our web-based platform, our analysis begins. Results are displayed on our web-based platform in less than a minute. Reports provide a probability score ranging from 0-100 which represents the embryo's likelihood to result in a full-term pregnancy. Embryologists can use this information to make data-driven embryo transfer management decisions. EmGenisys technology surpasses the industry gold standard for embryo assessment and requires a fraction of the time and cost.

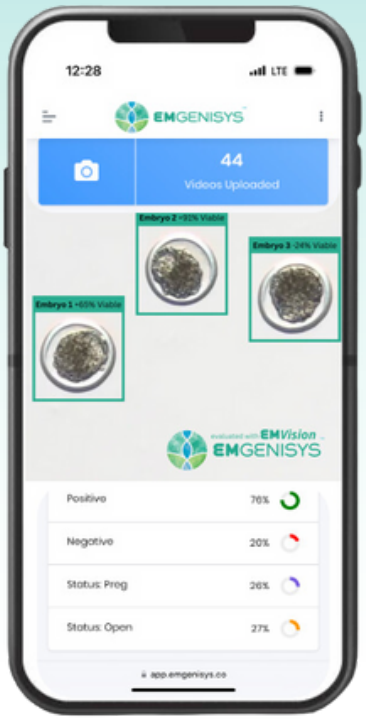
DEVELOPMENT STAGE: Paying Customers

SEEKING: $1.5MM Seed

Cara Wessels Wells, PhD
CEO

Russell Killingsworth, DVM
Chief Veterinary Officer

Tracy Druce, JD
Intellectual Property Management



EpiPaws

EpiPaws is developing epigenetic biomarkers for age and health monitoring for dogs and cats.

Fort Lauderdale, FL | epipaws.com

EpiPaws is developing the first platform to understand pet health using epigenetic biomarkers, which can also translate to human health. This technology provides critical information that not only aids pet owners in their ability to make good healthcare decisions for their pet, but also aids major pet industry players (i.e. food, pharmaceutical companies, etc) in their ability to develop new products to help pet owners better care for their pets. Our current product in the market, the Pet Age Test, estimates the chronological (calendar) age of dogs or cats with 5X more accuracy than previous methods from a mouth swab of DNA that can be done from home. Knowing a pet's age aids in making major health decisions such as food, exercise and treatment plans when pets get sick or injured. Our product pipeline uses similar technology (i.e. DNA methylation from mouth swabs or blood) to measure the health of different organs and help diagnose diseases. Since pets can't tell us when they are feeling bad and are good at hiding their pain and discomfort, we need more sensitive and accurate diagnostics to help identify health issues earlier on so adjustments can be made to optimize their health. Our most valuable asset is our epigenetic and environmental dataset which will allow us to continually make more connections between health and lifestyle factors to help us with our goal to learn how to avoid disease development in the first place.

Our core technology is epigenetics, so unlike genetic data, our health insights are rooted in real-time occurrences of health issues, not just future risk analyses that may never come to fruition, making our data more valuable and actionable than genetic data. In addition, we have a long pipeline of individual test products currently under R&D. Our founder, Dr. Andria Beal, has a technical background in this core technology, and we have a small, lean, and well-rounded team with complementary expertise that further supports the goals of the company. We are currently raising a pre-seed round that is almost full with a close date of Oct 30. This current funding round presents a unique investment opportunity to obtain equity in a company that is set to become profitable without investment in Q2 of 2025 and the investment will be used for acceleration of milestones that will grow the company value by at least 10X over the next two years before a subsequent fundraising round.

Andria Beal, PhD
Founder & CEO

Ke Cheng, PhD
Advisor and investor

Ron Davanzo
CFO

DEVELOPMENT STAGE: Paying Customers

SEEKING: $0.5MM Pre-Seed

FemtoFluidics

FemtoFluidics: Where Drug Discovery meets Moore's Law

Excelsior, MN | femtofluidics.tech

Discovering a drug generally means finding a compound that binds to a specific target, disabling a disease. This is a numbers game: the more compounds one can try, the greater the chances of finding one that binds. Thousands or even millions might not be enough. Billions are needed. Pharma companies use liquid-handling robots – automated pipetting machines – to synthesize compounds. At great expense, they deploy rooms or even warehouses full of such robots and operate them for months or even years to create such large "libraries" of compounds. We have invented electronic technology for synthesizing and screening drug libraries. Unlike liquid-handling robots, our device has no moving or mechanical parts. Instead, it moves droplets with electric charge.

Compared to liquid-handling robots, our technology can:

1. Move 1,000x as many droplets simultaneously;
2. Move the droplets 1,000x faster;
3. Operate on droplets that are 1,000x smaller.

Whereas the current robotic technology moves droplets that are microliters in volume, our technology can move droplets that are nanoliters. Whereas the robots can only move tens of droplets at once, at a speed of one operation per second, our tech can move tens of thousands of droplets at once at a rate of thousands of operations per second. Operating at small volumes slashes reagent costs. Operating at such high speeds, and with so much parallelism, slashes the synthesis time from months to hours. By miniaturizing with electronics, we solve both the problems of cost and time for synthesizing and screening drug libraries. This will allow our customers to disrupt the drug discovery market.

Marc Riedel, Ph.D
Co-Founder & CEO

Zachary Xiong
Co-Founder, CSO

Tim Hoang
Co-Founder, CTO

DEVELOPMENT STAGE: Prototype Developed

SEEKING: $2.5MM Seed

limitless possibilities for a brighter future

Strategic Investment
Fund development of technologies in support of Nissan Chemical's vision

Cooperative R&D
Supplement startup research and development from our research centers

Expanding Reach
Access to our relevant distribution networks within the Japanese market

Strategic Planning
Advise startups on strategy from the perspective of an established corporation

Nissan Chemical America Corporation

Life Sciences and Materials Department

Cell and Gene Therapy · Drug Discovery Technologies (siRNA, Small Molecule)
Stem Cell Manufacturing · Peptide Manufacturing · Cultivated Meat

Life Magnetics

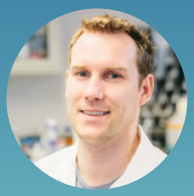
Graphene nanobead platform for extraction, stabilization, and delivery of RNA and DNA, designed for diagnostic and therapeutic applications

Ann Arbor, MI | magnetics.life

Life Magnetics' technology platform has the potential to revolutionize a range of applications, from livestock diagnostics to nucleic acid transfection kits and, ultimately, RNA therapeutic delivery. Our technology binds RNA, stabilizes it, and ensures its gradual release within cells. We have translated these unique mechanisms of action into marketable products that validate various aspects of our technology while demonstrating our company's commercial readiness. We are committed to demonstrating product viability through market adoption at every step we take toward our goal of building the next-gen RNA delivery vector.

Our initial product, an extraction kit for detecting Mastitis in dairy milk—which accounts for global losses of up to $32 billion—significantly reduces testing costs by eliminating the need for lysis and reducing protocol complexity. This enables farmers to conduct precise and timely PCR testing, which is crucial during pathogen outbreaks but currently cost-prohibitive. Quick decision-making on culling and treatment is vital, especially in modern herds that are largely genetically homogenous and thus more susceptible to diseases.

The second product is an LNP kit with a graphene core for in-vitro RNA transfection, which is currently in development. Compared to the industry gold standard, which typically allows expression for up to 2 days, our bead technology enhances transfection efficiency, reduces cell mortality, and importantly sustains expression for over 7 days. This makes it ideal for use in scenarios where frequent transfections escalate production complexity and are poorly tolerated by cell lines, such as in reprogramming cells into iPSCs or their differentiation into neurons



Dr. Kevin Hagedorn
CEO/Founder

Andy Reader
Business Advisor

Max von Wels
Business Development Lead

DEVELOPMENT STAGE: Product Developed

SEEKING: Currently not Fundraising

NARWHAL BIO

Narwhal Bio revolutionizes cell therapy and target discovery by enabling large-scale cell purification through the interrogation of single-cell behavior and AI-driven insights.

San Diego, CA | narwhal.bio

The cell therapy market is growing rapidly beyond autologous CAR-T and toward allogeneic and iPSC-derived therapies where the purification of differentiated cell types is key to success in the clinic. Yet, current purification techniques rely only on the expression of cell surface markers which do not always capture desired cell characteristics and require specific antibodies with high regulatory cost. Cell purification techniques that utilize deep single-cell insights are lacking, limiting the reach and success of these therapies in new indications.

Narwhal's A1 combines single-cell imaging and AI to deeply characterize and purify cells for in vivo use at clinical scale. For example, cell therapy developers can use Narwhal A1 to purify allogeneic NK cell therapy starting material in a single step. Previously, they avoided purification due to multiple low-yield steps that resulted in cell loss.

FDA approvals for cell therapies are accelerating and the manufacturing segment of the field ($4.7B) is growing rapidly (18.2% CAGR), supporting the current $18B in sales that is projected to reach $60B by 2030. Much of this growth is due to the field moving from traditional CAR-T to allogeneic and iPSC-derived cell therapies, also known as "Off the Shelf" cell therapies. However, the current cell purification methods are inadequate in providing functionally pure cell products in these new therapeutic modalities. Because of these macro trends, Narwhal is experiencing a tremendous market pull for its technology that combines single-cell imaging and AI to provide functionally pure cell products for cell therapies. The company plans to deploy its AI-guided marker-free cell purification technology to cell therapy developers as the Narwhal A1 platform, first as a service, and then as an instrument, consumable, and software solution.

Behrad Azimi, PhD
CEO & Co-Founder

Jack Beierle, PhD
CSO, VP R&D, Co-Founder

Mike Geremia, MBA
Member Board of Directors

DEVELOPMENT STAGE: Prototype Developed

SEEKING: $3.0MM Convertible notes/SAFEs that will convert with the Series A round. Open to a priced round.

Nyctea Technologies

Nyctea creates affordable medicine by introducing a new purification technology removing a bottleneck in the manufacturing process that drastically reduces the cost-of-goods

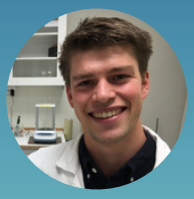
Gothenburg, Sweden | nycteatechnologies.com

There is a need to reduce cost and time for manufacturing of biologics, in particular new modalities in cell and gene therapy space. Fundamental enhancement of chromatography, which is used to manufacture, and analyze, all biopharmaceuticals produced today.

Chromatography is used in the production and analysis process of all pharmaceuticals. Nyctea has the opportunity to fundamentally enhance chromatography and this makes our addressable market and potential impact uniquely large.

DEVELOPMENT STAGE: Paying Customers

SEEKING: $5.0MM Seed



Gustav Ferrand-Drake
Co-Founder & CEO

Andreas Dahlin
Co-Founder, Inventor

Maria Kiriakidou
Technology Developer

The collaborative canvas for translational science, Pluto enables scientists to analyze multi-omics data to discover novel targets and biomarkers, without needing to code

Denver, CO | pluto.bio

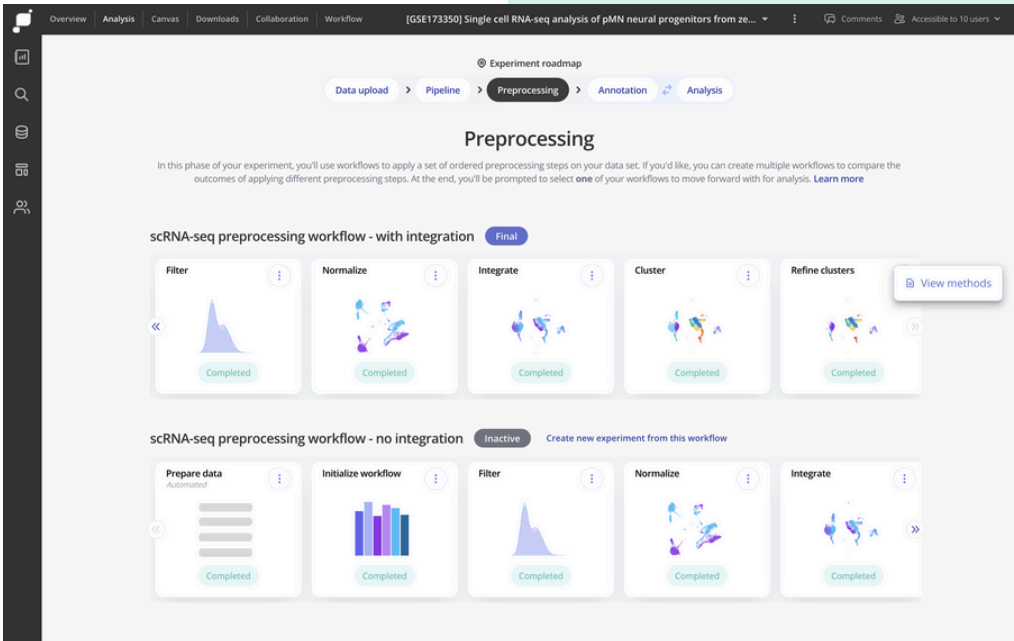
Pluto Bio is at the forefront of revolutionizing computational biology by providing a scalable, user-friendly platform that democratizes access to advanced bioinformatics. Our cloud-based solution enables researchers of all levels to efficiently manage and analyze large-scale biological data, accelerating scientific discovery and reducing time to insight.

With a rapidly growing user base, strategic partnerships with leading academic and industry players, and a proven track record of delivering high-impact results in complex research environments, Pluto Bio is well-positioned to capture a significant share of the expanding bioinformatics market. Our technology not only addresses a critical unmet need in the research community but also offers a compelling business opportunity through scalable SaaS revenue and potential expansion into adjacent markets.

DEVELOPMENT STAGE: Paying Customers

Rani Powers, PhD
Founder & CEO

Jim Hanifen
Head of Product



POLYBIOMICS

Polybiomics system enables comprehensive live cell analysis in a single well and creates Polydata™ & actionable insights for Research, Drug Discovery & Development

Berkeley, CA & Kirkland, WA | polybiomics.com

Polybiomics accelerates the development of effective therapies by generating Polydata™ and deep insights from comprehensive live cell analysis. Using live cells to treat diseases such as cancer or in regenerative medicine is becoming the dominant treatment approach. Unlocking the full potential of cell therapy relies on a deep understanding of live cell properties and functions. Current cell analysis methods are inadequate, relying either on limited snapshot, static data from single analysis instruments or on dynamic but sparse datasets from testing various cell samples at different times using multiple instruments. This complicates precise cell-based decisions and increases costs.

Polybiomics transforms live cell analysis, accelerating the development of superior therapies. Its patent-protected technology enables the simultaneous measurements of multiple dynamic cell properties from the same live cell sample, currently up to 16 readouts in real-time. Its non-invasive approach generates comprehensive datasets from human-derived cell samples, providing previously unattainable, AI-powered actionable insights into cell properties and functions. These insights empower informed cell-based decisions, leading to the development of effective therapies.

Our approach enables drug developers and life science researchers who use live cells in their pipelines to make precise cell-based decisions. It also reduces initial capital costs, cell sample prep, lab space required, instrument maintenance, operator FTE time, data variation, and analytics time while increasing operational consistency and efficiency. By integrating comprehensive live cell analysis into a unified yet modular platform, our innovation revolutionizes cell-based medicine by displacing multiple specialized instruments, thereby reducing complexity, human error, and costs. This enables more precise and scalable cell therapy analysis and production. Our system enhances data quality and therapy effectiveness through real-time monitoring and adaptive feedback. This empowers discoveries in research institutions, biotech companies, and Pharma, democratizing access to advanced treatments and benefiting patients in need.

DEVELOPMENT STAGE: Prototype Developed

SEEKING: $3MM Seed-2

Mandana Veiseh, PhD
Founder, President & CSTO

Ben (Bahram) Bahrami, PhD
Co-Founder, CEO

Robert Smith-McCollum, MBA
Head of Marketing

QurCan THERAPEUTICS

Advanced nanoparticle platform technology for safer and tissue-selective delivery of nucleotide therapeutics

Toronto, Canada | qurcan.com

The biopharmaceutical industry urgently requires new gene delivery technology that is non-toxic, non-immunogenic, non-viral and capable of safeguarding RNA/DNA therapeutics from in-vivo degradation while enabling selective delivery beyond the liver. Current lipid nanoparticles (LNPs) accumulate primarily in the liver and are unsuitable for repeat systemic dosing due to immunogenicity at therapeutic doses. QurCan's TERP technology overcomes these limitations, offering superior safety, tolerability, manufacturing ease, and stable storage.

The company has three major strengths:

1. Innovative Technology: Our cutting-edge technology addresses significant unmet needs in both clinical settings and the industry.

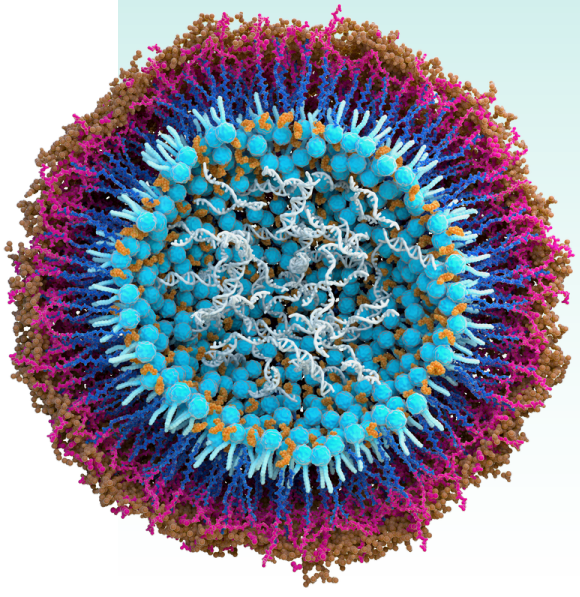
2. Experienced Team: We have a seasoned team with decades of experience in pharmaceuticals, corporate development, and product manufacturing.

3. Strong Business Development: We have already established multiple partnerships with pharma and biotech companies, demonstrating solid business development traction.

Mohammad Ali Amini, PhD
President & CEO

Shirley Wu, PhD
Chief Scientific Officer

John Reid, PhD
Chief Business Officer



DEVELOPMENT STAGE: Product Developed - Beta Testing

SEEKING: $14MM Series A

REACT4LIFE
mirroring human complexity

React4life develops clinically relevant organ on chip platforms for mirroring human complexity in vitro

Genova, Italy | react4life.com

React4life is a biotech company that develops Organ-On-Chips (OOC) for better human disease models and drugs testing. We have patented the MIVO OOC-technology, and we aim to spread our cutting-edge MIVO base products, to make the preclinical drug development faster and more predictive, finally fostering the animal use reduction. Our goal is to also boost personalized oncological medicine.

The strength of our company lies in the know-how we have built starting from science and refined based on the needs we have identified from our customers. We have extreme resilience and industrial intelligence, demonstrated by the fact that with the small amount of money raised (about 1.2 million), we have patented, prototyped, industrialized, created a sales force, sold the product to a significant customer base (pharma, hospitals, academia), and continue to produce new products suitable for various realities. The market we target (drug testing and personalized medicine) is enormous, and we have proven our unique ability to identify business opportunities, pursue them, and generate revenue. Our business model is mainly based on selling of the MIVO platform, which is based on equipment and disposable chips. We are moving from one-shot selling to subscription model.

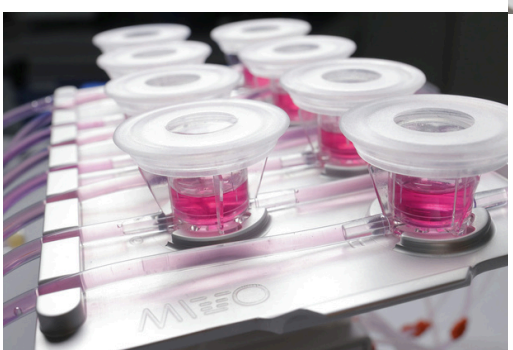
Maurizio Aiello
CEO

Silvia Scaglione
CSO

Elisabetta Palamà
Senior Cell Biology Scientist

DEVELOPMENT STAGE: Paying Customers

SEEKING: $7MM Preferred Stock similar to the previous rounds



Redbud Labs
ADVANCED MICROFLUIDIC TECHNOLOGIES

Redbud Labs is simplifying molecular testing with a new platform for compact, robust, easy-to-use sample prep automation

Research Triangle Park, NC | redbudlabs.com

Sample prep for molecular assays (qPCR, sequencing) is a large ($1.5B) market with little innovation and frustrating solutions. For most labs, it remains the most time-consuming, error-prone part of the workflow. The solution is to automate sample prep, but existing automation platforms are large, complex, and expensive. Labs need automation that's simple, robust, and affordable.

Redbud is the first new platform for mainstream sample prep in 20 years. It delivers unmatched ease of use in combination with the most trusted chemistry. We're addressing the biggest inconvenience in molecular testing for the vast majority of users, from PI-driven researchers to clinical labs.

Meanwhile, Redbud Labs is the most cash efficient device engineering team in the industry. We built our platform entirely in-house—electrical, mechanical, software, microfluidics, assay chemistry, materials engineering, manufacturing—with fewer than 30 people and less than $20M, of which less than $2M was private capital.

DEVELOPMENT STAGE: Market Ready

SEEKING: $1.5MM Series A

Richard Spero, PhD
CEO

Jay Fisher, PhD
Chief Scientific Officer

Dale Barnes, LT(SS) USN (RET)
VP of Operations

RYGHT.

Ryght is a healthcare technology company with the next generation of safe and secure generative artificial intelligence (GenAI) solutions designed to streamline clinical trials and accelerate workflows for trial sites, sponsors, and life science professionals

Laguna Beach, CA | ryght.ai

Clinical research is an $80B industry globally and is run very manually. Generative AI promises to unlock opportunities to automate and connect patients, providers and those companies developing drugs and managing clinical trials. Our team successfully built and sold an AI company (Deep Lens, acquired in 2022 in an all cash deal at a high multiple) and is now going bigger with Ryght to positively affect all aspects of clinical research. Knowledge workers will save huge amounts of time, avoiding the painstaking processes that were previously required and sponors (biopharma) will get their drugs to market years earlier.

We are the only GenerativeAI software company focused on clinical research that is also building a global site network. In addition, as a platform we have tools that our customers' AI builders can use to develop their own co-pilots and applications.

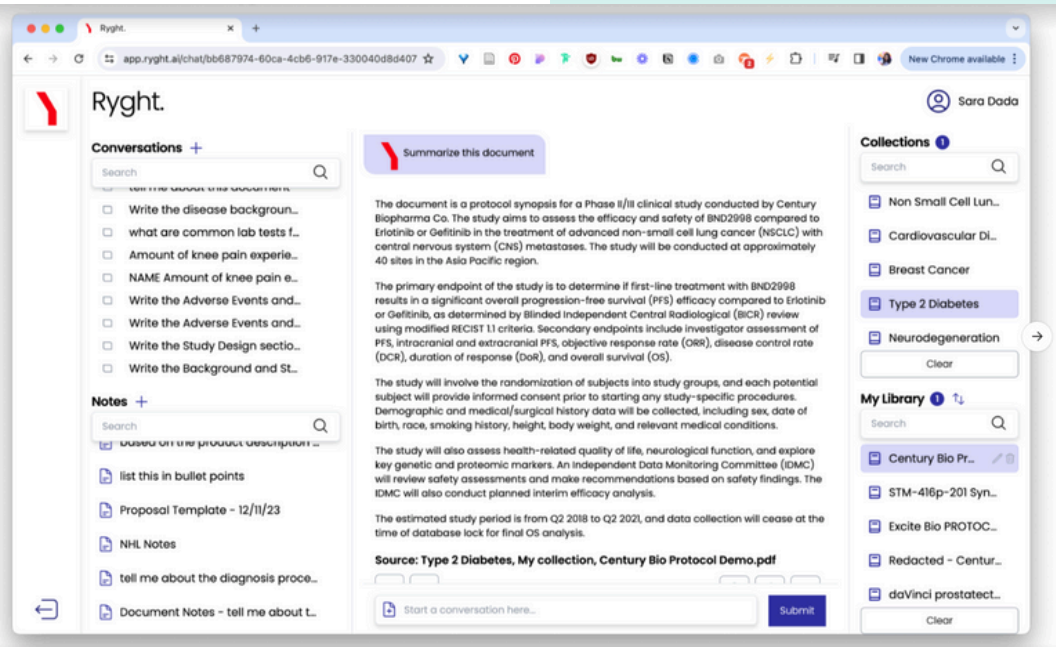
Simon Arkell OLY
Co-Founder & CEO

Johnny Crupi
Co-Founder & CTO

Alex Dickinson
Co-Founder & Chair

DEVELOPMENT STAGE: Paying Customers

SEEKING: $10MM Series A



Sarcura

Sarcura, a deep tech startup based in Vienna, is powering new possibilities in cell therapy manufacturing. By utilizing silicon chip technology, Sarcura aims to develop a miniaturized and autonomous cell therapy manufacturing platform. This innovation is expected to increase manufacturing capacity by 100 times and reduce costs by 10x.

Klosterneuburg, Austria | sarcura.com

Current manufacturing concepts in cell therapy are limited by capacity constraints and lack scalability, falling short of meeting today's demand and far from addressing future needs. At Sarcura, we didn't set out to simply improve existing technologies that were not designed for purpose; instead, we reimagined and transformed these concepts to achieve an exponential increase in scalability while dramatically reducing costs.

Our breakthrough lies in the miniaturization of the entire cell therapy manufacturing setup, enabled by our unique access to advanced semiconductor technologies. This miniaturization is the prerequisite for integrating proven process analytical and quality control technologies into a compact, efficient system. It also serves as the foundation for our approach to autonomous process control, which sets us apart from competitors who focus on predefined automation concepts. By miniaturizing the system, we enable real-time analytics and adaptive process management—allowing our system to react to specific materials and situations without manual intervention. This capability is crucial for achieving mass customization of autologous cell therapies, representing a quantum leap in the scalability and accessibility of these life-saving treatments.

As a deep tech startup, we acknowledge the challenges ahead—higher capital intensity before revenue generation, longer development cycles, and elevated technology and development risks. However, with only 3% of eligible patients currently accessing the seven approved cell therapies, and a robust pipeline of over 2,000 clinical trials, the market's growing need demands disruptive innovation, not incremental improvements. Our solution addresses this critical gap, positioning us to make these essential treatments safe, affordable, and accessible to all eligible patients. The substantial growth and demand in this market make the associated risks worthwhile, promising significant returns for those willing to invest in the future of cell therapy manufacturing technology.

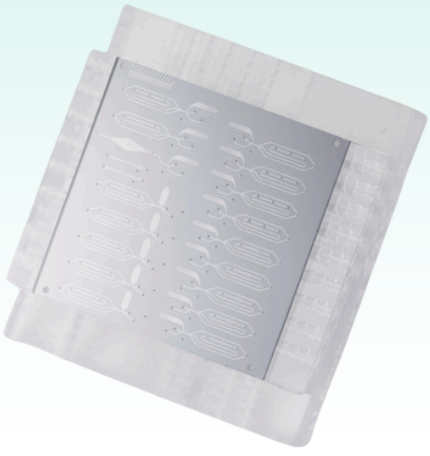
DEVELOPMENT STAGE: Prototype Developed

SEEKING: $15MM Series A

Daniela Buchmayr
CEO

Gerald Kreindl
CTO

Erwin Gorjup
CSO



syenex

Syenex is democratizing access to advanced cell & gene therapy biotechnologies

Chicago, IL | syenex.com

Syenex is a synthetic biology platform company that is making the world's most advanced bioengineering technologies accessible to all cell & gene therapy drug developers. Our initial offerings comprise advanced gene delivery vehicles that are designed to provide a 10x increase the scalability, efficacy, and precision of genetically engineered immune and stem cell therapies—a class of medicines with the potential to offer cures for millions of patients over the next 10 years.

We aim to maximize the impact of our biotechnologies by pursuing an Open Science business model: providing all academia, biopharma, and manufacturers non-exclusive access to our growing suite of biotechnologies. To-date we have granted access to over 30 partners and are on track for our gene delivery vehicles to be used in five clinical programs by year-end 2025.

Jay Rosanelli
CEO & Co-Founder

Joshua Leonard
Acting CSO & Co-Founder

Matteo Stoppato
Head of Delivery Vector Engineering, Sr. Director

DEVELOPMENT STAGE: Commercial

SEEKING: $7MM Seed

Apply to be a part of our 2025 Cohort!

biotoolsinnovator.org

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