



# BIOGENERATOR

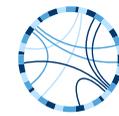
THE STARTUP ARM OF BIOS TL



**Building and Investing in St. Louis Bioscience Companies**



BioGenerator Labs bring together technology, talent, proof of concept grants, coaching, grant training, and innovative laboratory space in a suite of tools designed to accelerate new ventures.



**BIOGENERATOR**  
THE STARTUP ARM OF BIOSTL

## Building and investing in world-class St. Louis bioscience companies

BioGenerator, the startup arm of BioSTL, creates and grows innovative companies through its two complementary approaches — investing through BioGenerator Ventures and comprehensive startup support through BioGenerator Labs.

**\$34M**  
Amount  
Invested

**60+**  
Active  
Companies

**>\$2.7B**  
Follow-on  
Capital

**84%**  
Capital from  
outside of St. Louis

>200 global and strategic  
investors fund  
BioGenerator companies

**76:1**  
Leverage

For every \$1  
BioGenerator has  
invested, companies have  
raised an additional \$76



# Building and Investing in St. Louis Bioscience Companies

BioGenerator's team offers diverse scientific, entrepreneurial, and business experience

## BioGenerator Ventures



**Tom Cohen**  
Director



**Trey Suntrup**  
Principal



**Allyson Mayer**  
Investment Analyst



**Alex Stinson**  
Investment Analyst



**Ashley Niesen**  
Innovator Fellow



**Crystal Winkeler**  
Managing Director



**David Lee**  
T32 Resident



**Makenzie Norris**  
Pivot Fellow



**Danny Griffin**  
VC Fellow



**Daniel Ramirez**  
VC Fellow



**Chris Bethel**  
Senior Investment Analyst



**Zongxing Wang**  
Director



**Rhea Tandon**  
Intern



**Charlie Bolten**  
Senior Managing Director

## BioGenerator's Extended Team



**Eric Gulve**  
President



**Martha Schlicher**  
EIR



**Ken Bertram**  
Medical Director, CDM



**Mary Fernandes**  
EIR



**Shawn Soutiere**  
Director, CDM



**Anjie Sanford**  
Manager



**David Smoller**  
EIR



**Jim Howard**  
EIR Alumnus



**Mike Davies**  
Operations Manager



**Mark Lewis**  
VC Fellow Alumnus



**Luis Copeland**  
EIR



**Kamyla Tomiser**  
Executive Assistant



**Shelby Wright**  
Data Analyst



**Chad Stiening**  
EIR



**Elaine Haynes**  
EIR Alumna



**Edward Weinstein**  
EIR



**Paul Olivo**  
EIR



**Morgan LeBaige**  
Database Administrator



**Tim Cooke**  
EIR



**Jennifer Richards**  
VC Fellow Alumna



**Michael Thomas**  
EIR



**Maggie Crane**  
Director, Communication



**David Christenson**  
EIR



**Davis Walp**  
EIR



**Amiad Fredman**  
VC Fellow Alumnus



**Michael Tones**  
EIR



**Lu Alleruzzo**  
EIR



**Stephen Von Rump**  
EIR



**Matt Milton**  
EIR



**Donn Rubin**  
Chairman

## OVERVIEW

- Benson Hill is a food technology company with a mission to deliver food made better from the beginning
- Its CropOS® technology platform, which combines data science, plant science, and food science, leverages the natural genetic diversity of plants to develop food ingredients that are more nutritious, better tasting, more sustainable, and more affordable

## HIGHLIGHTS

- Forged partnerships with Kellogg’s MorningStar Farms® to incorporate Benson Hill soy ingredients and Denofa, the leading protein producer in Scandinavia, to create value in the European aquaculture market
- Built 160,000 sqft state-of-the-art headquarters in the 39 North Innovation District of St. Louis
- Founded in 2012 and entered the public market in 2021, valued at \$1.35B

## BIOGENERATOR CONTRIBUTIONS

- BioGenerator supported the relocation of Benson Hill’s principal operations to St. Louis
- BioGenerator led an initial seed financing for the company in 2013 and went on to make four additional investments to support the company’s growth
- BioGenerator’s due diligence package was important in securing critical side-by-side investors in the early stages of the company’s maturation
- BioGenerator served on the company’s Board of Directors until substantial institutional capital was secured. BioGenerator has invested a total of ~\$775K in Benson Hill



**“BioGenerator played a critical role in leading our initial financing - putting together the due diligence and orchestrating additional investors.**

Their commitment to supporting Benson Hill in multiple ways beyond their share of invested capital is part of the reason we are excited to call St. Louis home.”

**-Matt Crisp**

*Co-Founder & CEO, Benson Hill*





## OVERVIEW

- Readout Health (Biosense) is a behavior-modification data startup focused on large, chronic disease markets
- The company is commercializing multiple metabolic programs to address the significant gap in personalized, data-driven insight for weight loss and chronic care programs

## PRODUCT SNAPSHOT

- Personalized user objectives and guidance are paired with the handheld Biosense breath device that tracks precise fat oxidation in breath as it changes with diet, fasting, and exercise. Aimed at consumers, clinics, and researchers, the self-care behavioral modification in-app programs fueled by a personalized Fat Burn Score include outcomes such as:
  - Weight loss
  - Anti-inflammation
  - Longer healthspan
  - Metabolic flexibility

## BIOGENERATOR CONTRIBUTIONS

- BioGenerator moved the company's principal operations from the Bay Area to St. Louis
- Jim Howard, BioGenerator Executive in Residence, joined as Readout's CEO and Trey Suntrup, BioGenerator Venture Capital Fellow, served as Head of Product
- Charlie Bolten, Senior Managing Director of BioGenerator Ventures, serves on the company's board
- BioGenerator Ventures led the company's first financing



**“BioGenerator’s resources provide an unfair advantage to St. Louis startups, that other cities simply don’t**

**have.** I was introduced to the scientific founders of Readout by the BioGenerator team and saw an opportunity to build a great company that will help solve one of America’s greatest medical problems.”

**-Jim Howard**

*BioGenerator EIR*

*President & CEO, Readout Health (Biosense)*





## OVERVIEW

- Research tools company focused on products and services to advance drug development. Key technology allows for multiplexed spatial profiling of tissue and cell samples
- Acquired by Bruker (Nasdaq: BRKR) in 2020

## HIGHLIGHTS

- Founded and raised initial round of funding without technology - value based solely on strength of leadership team
- Acquired Zellkraftwerk in Germany and Core Diagnostics in the Bay Area to expand portfolio in 2019
- Built international team of 70+ employees
- Acquired less than 4 years after raising initial capital and launching operations

## BIODEVELOPMENT CONTRIBUTIONS

- Charlie Bolten, Managing Director of BioGenerator Ventures, conceived of and co-founded the company
- Crystal Winkler, then a BioGenerator Ventures Analyst, co-founded the company and served as COO
- BioGenerator EIRs David Smoller and Ed Weinstein were co-founders and key management
- Recruited the management team
- First investor in the company
- BioGenerator invested \$1.2M and led Canopy's Seed and Series A rounds totaling ~\$4M
- BioGenerator Labs client



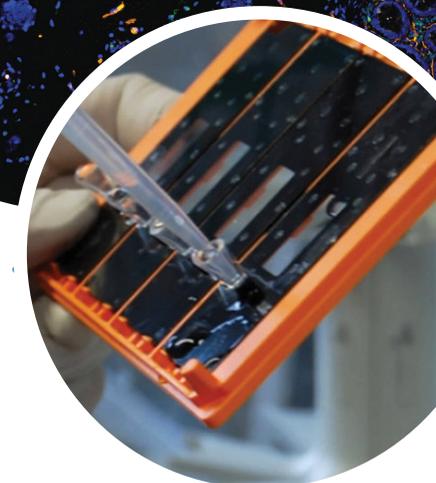
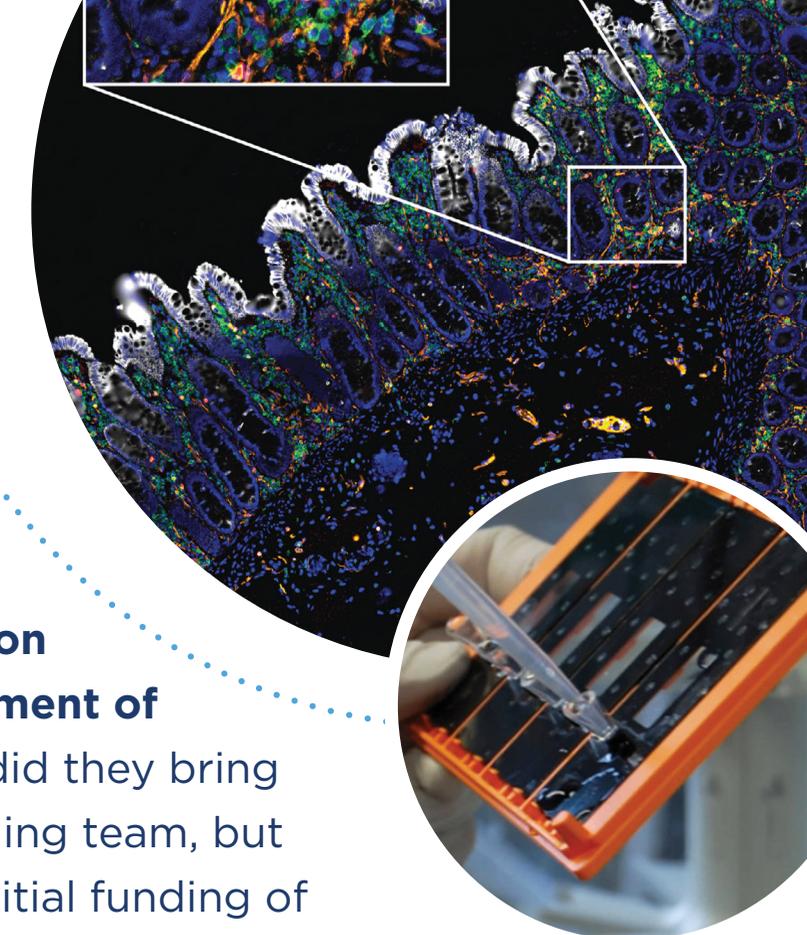
**“BioGenerator played a critical role in the formation and early development of**

**Canopy.** Not only did they bring together the founding team, but they also led the initial funding of the company and provided access to the BioGenerator labs and a network of expertise. Canopy’s acquisition by Bruker validates the ability of the BioGenerator team to build successful companies.”

**-Edward Weinstein, PhD**

*BioGenerator EIR*

*Co-Founder & CEO, Canopy Biosciences*



## OVERVIEW

- Confluence, now publicly traded Aclaris Therapeutics, is a clinical-stage biopharmaceutical company developing a pipeline of novel drug candidates to address the needs of patients with immuno-inflammatory diseases who lack satisfactory treatment options
- Aclaris has a multi-stage portfolio of drug candidates powered by a robust R&D engine exploring protein kinase regulation

## HIGHLIGHTS

- Confluence raised multiple rounds of venture-capital financing and established a profitable business unit
- Confluence was acquired by Aclaris Therapeutics (Nasdaq: ACRS), providing returns to investors
- As Aclaris Therapeutics, the Confluence drug candidates continue to advance in clinical trials

## BIOGENERATOR CONTRIBUTIONS

- BioGenerator was Confluence's first investor and continued as the lead investor through multiple early rounds of financing, then continued to invest up until the exit
- Confluence was the first client of the BioGenerator Labs and leveraged BioGenerator's facility from inception through acquisition
- BioGenerator was the only investor in Confluence's CRO subsidiary, Confluence Discovery Technologies
- Charlie Bolten, Senior Managing Director of BioGenerator Ventures, served on the company's board from first financing through successful exit



**“BioGenerator was deeply committed to working with the founders to build a successful company. Without the ongoing support of BioGenerator, the Confluence story would never have happened.”**

**–Joseph Monahan, PhD**  
*Co-Founder and CSO, Confluence*





## OVERVIEW

- CoverCress is developing a new winter oilseed crop that provides multiple benefits: it allows corn and soybean farmers to add a new crop into their rotation on existing land during winter, and it offers the ecosystem benefits of a cover crop, including improved soil health and carbon sequestration
- Starting with field pennycress, the company is using plant breeding to improve yield and maturity combined with advanced gene editing tools to improve fiber and oil composition

## HIGHLIGHTS

- Raised Series A and B rounds of financing with participation from venture capital and strategic sources of capital
- Built a strong team of industry experts with decades of agtech experience
- Established key strategic partners
- Developed CoverCress to the point of initial commercial launch

## BIODEGENERATOR CONTRIBUTIONS

- From 2012-2014, BioGenerator incubated CoverCress as the only source of capital beyond the company founders
- A BioGenerator EIR served as founding CEO
- BioGenerator was the first professional investor in the company in 2014
- BioGenerator led or co-led multiple rounds of venture financing
- Charlie Bolten, Senior Managing Director of BioGenerator Ventures, served as the company's Chair

**“BioGenerator was instrumental in getting CoverCress started, both in capital and supporting the process of our company’s formation.**

Many of us were new to the startup scene and this support saved us time, money, and helped us make smarter decisions. The BioGenerator-led St Louis ecosystem has been a key reason for our continued success.”

**–Jerry Steiner**

*Co-Founder & Chairman, CoverCress*





## OVERVIEW

- Empowering patients and providers to transform gastrointestinal health through innovative diagnostics
- Geneoscopy has developed a novel method to reliably extract and quantify eukaryotic RNA biomarkers in stool samples (seRNA). These seRNA biomarkers are being used to develop multiple assays that improve the ability to noninvasively evaluate gastrointestinal disease

## HIGHLIGHTS

- Completing CRC-PREVENT U.S. Pivotal Trial with 10,000 patients
- A previous clinical study demonstrated better sensitivity in detecting advanced adenomas and colorectal cancer compared to all other non-invasive tests on the market
- In 2021, closed \$105M Series B

## BIOGENERATOR CONTRIBUTIONS

- From inception, Geneoscopy operated from the BioGenerator Labs
- BioGenerator provided non-dilutive funding to test the company's initial hypothesis
- Through its diagnostics team, BioGenerator ventures invested in Geneoscopy's seed round and provided board service
- BioGenerator's professional due diligence helped catalyze the company's \$105M Series B

**“BioGenerator played a critical and diverse role in Geneoscopy’s development and maturation.**

From the financial, mentoring, and physical infrastructure support provided to launch Geneoscopy through the BioGenerator Labs five years ago, to most recently leading an independent diligence process to catalyze our Series B, which resulted in a key strategic investor joining the round, BioGenerator has been instrumental to our company’s success.”

**-Andrew Barnell**

*Co-Founder and CEO, Geneoscopy*



## OVERVIEW

- Impetus has developed a novel approach for quickly and cost-effectively designing and producing new biochemicals for the control of crop-damaging insects
- New product leads have two modes of activity: dramatically enhance activity of current products against specific insects and generate activity against other insects that are not currently controlled

## HIGHLIGHTS

- Demonstrated laboratory proof of concept in multiple insect pests
- Secured seed company collaboration and multi-national strategic partner for lead spray-on product
- Closed initial Series Seed with venture capital and strategic investors
- R&D advisory team that represents the “Who’s Who” that created the \$6B first generation biotech insect-control trait

## BIOGENERATOR CONTRIBUTIONS

- BioGenerator co-founded company
- Assembled management team, and BioGenerator EIR serves as CEO
- Led or co-led all financings, including providing diligence to side-by-side investors
- Impetus has leveraged the BioGenerator Labs @ 39N
- Provided critical FTO/IP assessment that guided company strategy
- Charlie Bolten, Senior Managing Director of BioGenerator Ventures, serves on the company’s board

**“St. Louis has a tremendous opportunity to build innovative startup companies by leveraging its deep strengths in agriculture and food technologies.**

In my role at BioGenerator, I am helping to create new St. Louis companies that address global issues in food production and food quality.”

**-Martha Schlicher, PhD**

*BioGenerator EIR  
CEO, Impetus Ag*





## OVERVIEW

- MediBeacon is developing and commercializing biocompatible optical diagnostic agents for physiological monitoring, surgical guidance, and imaging of pathological disease
- Product portfolio includes a renal function system that uses an optical skin sensor combined with a proprietary fluorescent tracer agent that glows in the presence of light

## HIGHLIGHTS

- Pivotal clinical study underway to directly measure and monitor Glomerular Filtration Rate (GFR) or kidney function
- First-in-human studies focused on GI permeability completed in patients with active Crohn's disease
- Clinical study IDE and IRB approvals in place to image eye vasculature in macular degeneration and diabetic retinopathy
- Clinical study collaboration is in process to visualize the ureters in laparoscopic abdominal surgery

## BIOGENERATOR CONTRIBUTIONS



- BioGenerator Ventures led the company's first financing and has invested in multiple rounds to date
- BioGenerator provided full due diligence to side-by-side and follow-on investors, facilitating the company's early financings
- MediBeacon initially leveraged the BioGenerator Labs for operations
- Charlie Bolten, Senior Managing Director of BioGenerator Ventures, served on the company's board



**“The network BioGenerator has is really invaluable and their active support from pre-company licensing through our Series A round was critical in getting the company to where it is today.”**

**-Steve Hanley**

*Co-Founder and CEO, MediBeacon*





## OVERVIEW

- Omniose is expanding the range of bioconjugate vaccines to fight more bacterial threats
- Technology is based on the discovery of a new class of conjugating enzymes, allowing for the efficient production of complex conjugate vaccines

## HIGHLIGHTS

- Established proof-of-concept for prevention of multiple antibiotic-resistant bacterial infections
- Expanded team in April 2022, including Timothy Cooke as CEO and Roman Fleck as Chairperson, along with a highly experienced SAB, collectively bringing deep industry expertise in infectious disease, drug, and vaccine development
- Next round of funding will allow for enhanced POC and progress toward clinical development

## BIOGENERATOR CONTRIBUTIONS

- BioGenerator is the sole investor
- Provided grant support resulting in \$4.6M of non-dilutive capital
- Recruited and hired EIR, who became current CEO of company
- BioGenerator Labs client
- Generated due diligence package that has been shared with outside investors to syndicate next round

**“Omniose combines great science with a dedicated team on a mission to protect people from serious bacterial infections. Our approach greatly expands the universe of bacterial targets that can be addressed by bioconjugate vaccines.”**

### -Timothy Cooke, PhD

*BioGenerator EIR  
CEO, Omniose*





# Plastomics

## OVERVIEW

- Plastomics is a novel biotechnology company developing a new and better way of introducing biotech traits into row crops like corn and soybeans
- The company is developing a transformative platform for trait introduction via the chloroplast that has the potential to provide new and improved solutions to enhance crop production

## HIGHLIGHTS

- Secured multiple strategic partnerships and \$7.1M Series A
- Demonstrated soybean platform proof of concept
- Assembled strong Scientific Advisory Board who developed and commercialized the first generation of biotech traits
- Expanded leadership and R&D team with key hires

## BIOGENERATOR CONTRIBUTIONS

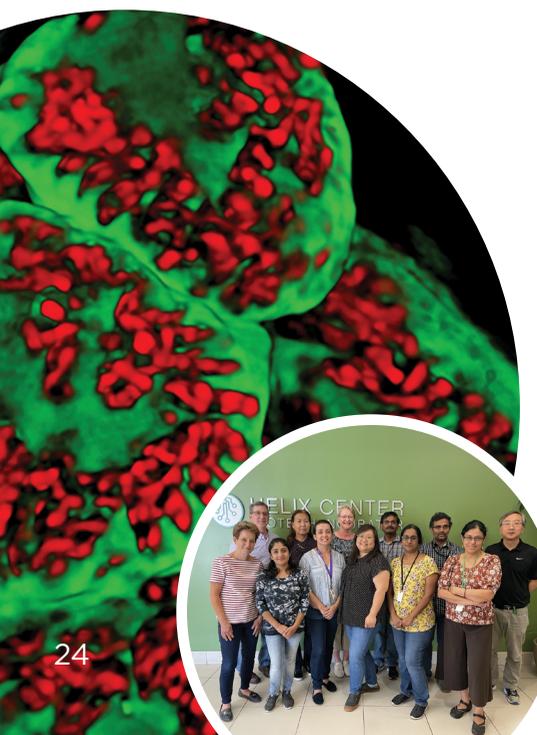
- BioGenerator provided pre-company non-dilutive funding to secure FTO
- BioGenerator Ventures led the company's first financing and has invested in all rounds to date
- Plastomics has extensively leveraged the BioGenerator Labs @ 39N
- Martha Schlicher, a BioGenerator EIR, serves as CEO
- Charlie Bolten, Senior Managing Director of BioGenerator Ventures, serves as company Chair



**“BioGenerator has been with Plastomics since pre-company formation and has been instrumental in Plastomics’ progress.** From providing validation of the potential of the technology, mentoring and financially supporting company formation, assessing IP and FTO, guiding cap table structure, leading a seed round to allow for conversion of our notes that was instrumental in getting Series A funding, BioGenerator has been the foundation for us to succeed as a new company.”

**-Martha Schlicher, PhD**

*BioGenerator EIR  
CEO, Plastomics*





## OVERVIEW

- Spun out of Washington University Medical School, SentiAR is developing the first application of mixed reality technology for use during interventional procedures
- Initially focused on cardiac ablation procedures, including the treatment of atrial fibrillation

## HIGHLIGHTS

- Received \$2.2M NIH grant to advance technology platform
- Recruited industry-experienced CEO and independent director
- Raised Series A and B rounds from professional venture capital funds
- Established critical strategic partnerships enabling broad access to market
- Demonstrated advantages of technology in clinical studies; presented clinical data in multiple peer-reviewed formats

## BIODEGENERATOR CONTRIBUTIONS

- BioGenerator Labs' resources enabled pre-company de-risking and strategy
- BioGenerator strengthened non-dilutive grant applications through its Grants-2-Business program
- BioGenerator EIRs assisted the founders in developing their business plan and raising capital
- Charlie Bolten, Senior Managing Director of BioGenerator Ventures, served on the company's board
- With Cultivation Capital, BioGenerator Ventures co-led multiple financing rounds

**“BioGenerator has been instrumental in launching our company—from learning how to be successful academic founders to the details of starting and financing SentiAR, our spin out from Washington University. They have made crucial introductions to industry leaders at appropriate times and invested in our company. We could not have embarked down this path without all the support from the BioGenerator team!”**

**-Jennifer N. Avari Silva, MD**

*Co-Founder & Chief Medical Officer, SentiAR*





## OVERVIEW

- Solis Agrosciences provides premium, highly specialized research capabilities to AgTech innovators
- Rapidly tests and delivers new plant traits, launching with an end-to-end pipeline for gene-edited and transgenic plant generation & characterization
- A continually expanding suite of service offerings are planned as Solis seeks to become the high-end provider of research support to the rapidly growing Agtech venture-backed ecosystem

## HIGHLIGHTS

- Secured initial pre-seed capital
- Recruited management team and established initial operations
- Since a pilot launch in April 2022, Solis has secured \$650k in contracts from venture-backed ag biotech companies, demonstrating strong customer interest

## BIOGENERATOR CONTRIBUTIONS

- Solis was conceived of by BioGenerator Ventures Senior Managing Director Charlie Bolten and EIR, Martha Schlicher
- Tom Cohen, a BioGenerator Ventures Director, is co-founder and is serving as CEO of Solis' parent entity, Hypha Life Sciences
- BioGenerator EIR Mary Fernandes is serving as President of Solis
- BioGenerator EIRs David Smoller, Ed Weinstein, and Martha Schlicher are all co-founders and serve key leadership or board roles



“Solis is proud to be a BioGenerator-built company. BioGenerator developed the concept for Solis, provided initial funding and has been a tremendous help in setting up our operations at the Helix Center. I am quite excited to continue working with the BioGenerator team as we build Solis into a world-class institution and a valuable addition to the St. Louis ecosystem.”

**-Mary Fernandes, PhD**

*BioGenerator EIR*

*Co-Founder, Solis Agrosciences*





## OVERVIEW

- Founded by RiverVest and Washington University School of Medicine scientists, Wugen is a clinical-stage biotech developing the next generation of off-the-shelf memory natural killer (NK) and CAR-T cell therapies for cancer
- Wugen is leveraging its proprietary platform and deep expertise to pioneer a new class of memory NK therapies to treat hematological and solid tumor malignancies

## HIGHLIGHTS

- Licensed multiple CAR-T and NK technologies from Washington University School of Medicine
- Advanced into clinical trials
- Closed \$172M Series B led by venture capital and crossover investors
- Expanded operations and built standalone facility in the Cortex Innovation Community

## BIOGENERATOR CONTRIBUTIONS

- BioGenerator Ventures invested \$1M in the company's initial financing, side-by-side with RiverVest
- BioGenerator VC Fellow Mark Lewis became one of the company's earliest employees and is now VP of Finance and Operations for the growing team
- BioGenerator built laboratory and office space for the company within the BioGenerator Labs, enabling Wugen to rapidly grow to >40 employees before needing to develop standalone space

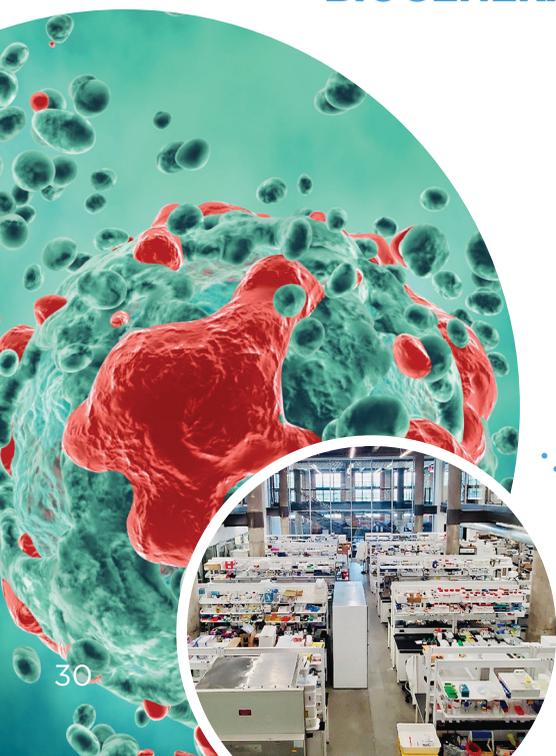


**“I quickly recognized the potential significance of Wugen’s technology and am excited to be part of the Wugen team as we advance forward into clinical trials.”**

**–Mark Lewis, PhD**

*BioGenerator VC Fellow*

*VP Finance and Operations, Wugen*



### TO LEARN MORE

about growing the St. Louis innovation economy by supporting BioSTL and BioGenerator, please contact **Mike Higgins, [mhiggins@biostl.org](mailto:mhiggins@biostl.org)**

### TO LEARN MORE

about investing in BioGenerator portfolio companies, please contact **Charlie Bolten, [cbolten@biogenerator.org](mailto:cbolten@biogenerator.org)** or **Crystal Winkeler, [cwinkeler@biogenerator.org](mailto:cwinkeler@biogenerator.org)**



**BIOGENERATOR**  
THE STARTUP ARM OF BIOSTL

4340 Duncan Avenue | St. Louis, MO 63110  
[info@biogenerator.org](mailto:info@biogenerator.org) | (314) 615-6355