



BioBuilder
Educational Foundation

Building the Biotech Workforce

The science has moved on. Classrooms haven't.

Biology is reshaping the world: medicine, materials, food and energy.

Yet too many students still learn biology by dissecting frogs and memorizing the Krebs cycle.

Employers can't recruit their way out of the talent gap if classrooms don't teach biotech.

BioBuilder turns “biology class” into a first step on the biotech career ladder.

BioBuilder modernizes biology education by giving students:

- Real hands-on lab experience
- Real tools & protocols
- Real pathways into biotechnology whether students pursue a 4-year degree or not



All **50** States



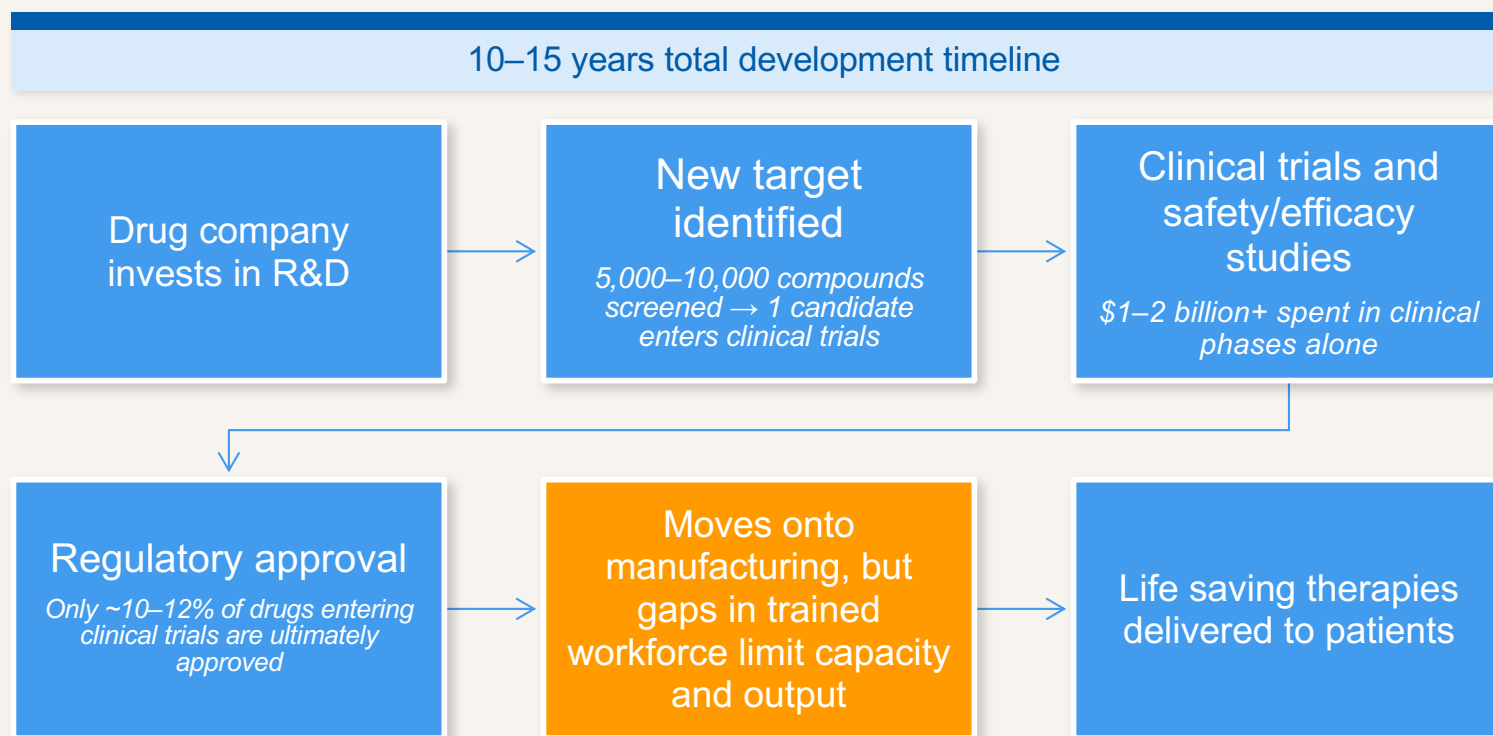
87 Countries



94,000+ Students

The bottleneck isn't science

More than half of companies say they **can't manufacture their therapies at full capacity** today because they cannot hire trained staff.



Breakthroughs only matter if there are people trained to take them from innovation to commercialization

The U.S. is meeting just 44% of the biotechnology talent demand today. That impacts all of us.

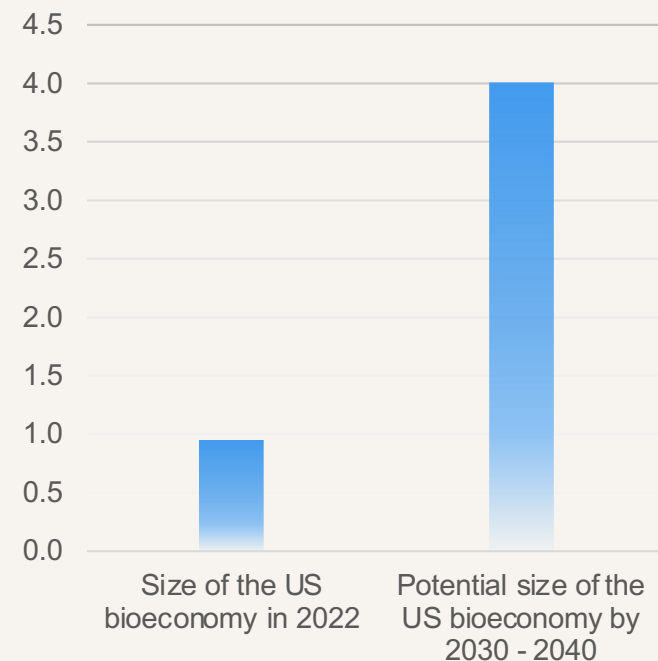
The US bioeconomy is expected to grow dramatically over the next two decades.

The industry is trying to get ahead by:

- recruiting harder
- retraining hires internally
- relying on college pipelines

But it's coming too late.

BioBuilder enters earlier, cheaper, broader, and with stronger retention effects – starting with science education.



The biotech talent gap is a gap in how schools prepare students



- We're stuck in an old way of training students - one built around vocabulary-heavy, theory-forward instruction and science classes that are “cookbook” labs (or no hands-on labs at all). The result is graduates who can describe concepts, but haven't had enough repeated, contextual practice to perform in a real lab.
- A better approach: align education with industry demand by creating credentialed, work-aligned pathways starting in high school and connecting training directly to jobs so employers can hire from a broader, more diverse talent pool that's prepared on day one.

The biotech talent gap starts in high school and so does the solution

BioBuilder brings **modern trade education for biotechnology** to every state to meet future workforce needs by exposing students to the reality of biotech as a career profession.

BioBuilder enables impact at the moment when students are forming career paths.

Early
education

High school

Early
workforce

Established
workforce

Nearly 6 in 10 Americans either never start or never complete a 4-year college degree yet many are in search of meaningful, purpose-driven work.

BioBuilder is a successful approach to **scalable, job-aligned training**

Founded with support from the National Science Foundation (NSF) and Massachusetts Institute of Technology (MIT), BioBuilder helps influence career decisions **before** students enter the hiring market, when intervention is cheaper, broader, and more durable.

- ✓ Offers hands-on curriculum and lab experiences that help students gain an engineering mindset
- ✓ Built with input from employers and grounded in real-world science, not just classroom theory
- ✓ Offers industry-aligned credentials and experiences that connect academic pursuits and industry needs
- ✓ Creates **purposeful pathways** for students, whether they choose to go directly into postsecondary education or enter the workforce

Some Of Our Industry Partners



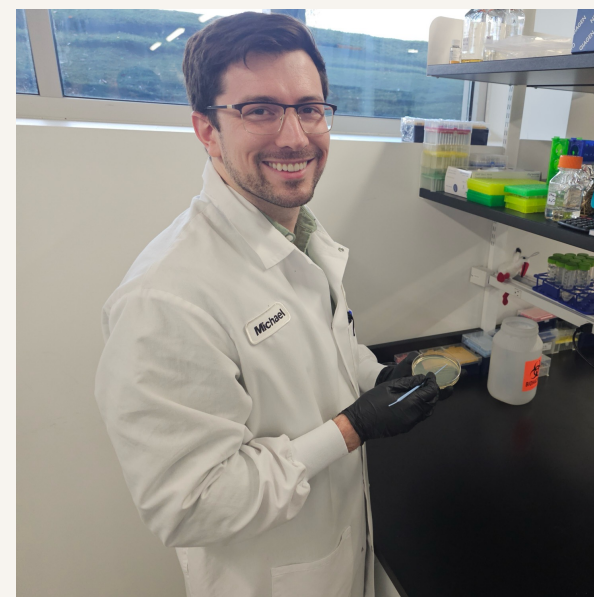
What happens when students are prepared early

From BioBuilder student to biotech innovator.

Michael discovered biotechnology through hands-on BioBuilder labs in high school. The experience helped him **“see himself as a scientist”** and begin building real lab skills. His experience with BioBuilder changed his trajectory, guiding him to undergraduate research opportunities and eventually inspiring him to pursue a PhD in Biomedical Engineering.

Today, he leads strain engineering at Sunflower Therapeutics, developing yeast-based biopharmaceuticals including work on a more affordable HPV vaccine tied to pending patents.

“BioBuilder showed me how biotechnology can improve lives and helped me build the skills I use every day.”



Michael Sheets, PhD, Associate Director of R&D

Bridging regional talent gaps



*Keaton,
IL*

"I enjoyed learning about others' projects, which helped to expand my imagination for what could be possible in a high school setting using synthetic biology."



*Nicolas,
MA*

"The skills I learned through BioBuilder are versatile. I can apply them to so many things I am doing. When I walk into a lab, I know what to do because of BioBuilder."



*Yesenia,
MA*

"I am so glad that BioBuilder was available to me in high school, it has really been a catalyst for pursuing my dream of being a scientist."



*William,
CA*

"The BioBuilder summer program was the most influential experience in shaping my interest in synthetic biology—working with a team on a shared project showed me what real biotech problem-solving looks like. Touring Ginkgo Bioworks was my first real exposure to the biotech industry and helped shape my path to bioengineering at Stanford."



*Hadeeqah,
TX*

"I honestly attribute so much of where I am now to BioBuilder welcoming me into my first-ever lab experience with open arms. You truly set me up for success and were such a pivotal part of both my life and career path."



*Liam,
TN*

"BioBuilder has forever changed my life. What started as a school project fostered a passion for synthetic biology."



*Nafisha,
GA*

"I learned what it truly means to conduct research. The program showed me that important scientific discoveries don't require expensive equipment, especially for underprivileged schools like mine."

Partner with us to build the biotech talent pipeline

Together, we can expand access to biotech education and create clear pathways into high-demand careers



Industry Advocacy

Help explain why there is an imminent need for BioBuilder's model in education and in your community.



Policy & Structural Support

Advocate for legislative and federal support that makes biotech education durable.



Align Curriculum with Real-World Needs

Help our students understand how their studies connect to the real world with tours, guest speakers, mentorship and job shadowing.



Workforce Pipeline Commitments

Create a clear pathway from classroom to career with employment opportunities such as internships or apprenticeships.

BioBuilder can help engage your team to build the pipeline locally

Create meaningful opportunities for employees to mentor, volunteer, and connect students to real biotech careers.

- ✓ **Boost employee engagement** through meaningful STEM mentorship and real-world connection
- ✓ **Flexible participation models** that fit demanding industry schedules – one-time events, classroom partnerships, mentoring and career panels
- ✓ **Invest locally** while helping build the next generation of biotech talent

Position your organization as a **committed community partner**, strengthening both your workforce and the regions where you operate.



Thank You!

For more information on partnering with BioBuilder,
email info@biobuilder.org or natalie@biobuilder.org

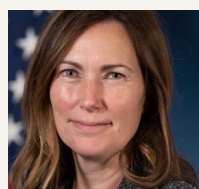


Leadership Team

Executive Board



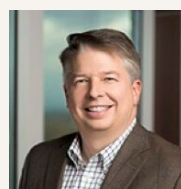
Natalie Kuldell
BioBuilder,
Founder and Exec. Dir.



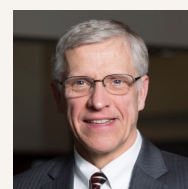
Kerri Dugan
SVP Biotech,
Applied Research Inst.



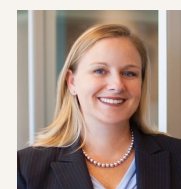
Drew Endy
Professor,
Stanford Univ.



David Golden
CEO, ETSU
Research Corp



Don Shobrys
Director, MIT Venture
Mentoring Service



Bridget Stewart
COO, Benchmark
Healthcare



Shannon Hughes
Senior advisor for research
strategy, Dana-Farber
Cancer Institute

Advisory Board



Keira Krausz
Chair, CMO, CRO



Samantha Atkins
Senior Advisor,
Eli Lilly



John Dellapa
General Counsel,
Neurimmune



Holly A. Gibbons
Health policy and
government relations



Katie Hart
Assist. Professor,
Williams College



Matt Kirkpatrick
Teacher, OPRF HS



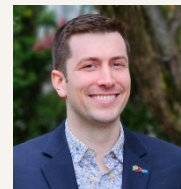
Erin Lavik
Dir of Student Eng,
Amer. Inst. of Physics



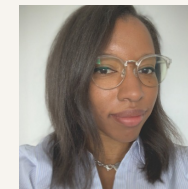
Allison Myers
Exec Dir,
StoryCollab



Rob Riordan
President Emeritus
High Tech High GEd



Micheal Sheets
Scientist, Sunflower



Racquel Kim Sherwood
Regional Director, Avantor



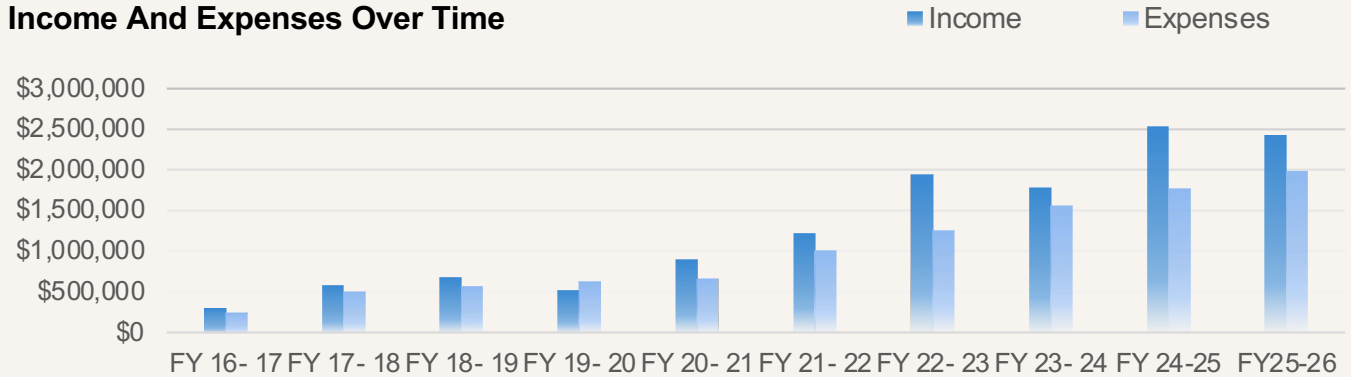
Justice Toshiba Walker
Professor, Univ of MD

BioBuilder Financial Snapshot

Some Current and Past Support



Income And Expenses Over Time



Assets And Liabilities Over Time

