

Empowering the next generation to address global challenges with bioscience.

The BioBuilderClub engages high school students around the world who combine engineering principles and biotechnology techniques to design, build, and test their own project ideas using synthetic biology. Within biodesign teams, budding scientists worked at their schools from October to March to develop meaningful projects that address real-world challenges.

- 501 Students
- 451 Hours of Mentorship
- 82 Teams
- 64 Projects Presented

DATA SNAPSHOT

Demographics

- 59% female
- 70% youth of color
- 50% first generation raised in the US

Team Data

- 67% of students are new to the BioBuilderClub
- 64% of schools are returning participants

Team + Mentor Geography



Teams tackled diverse issues with local and global impact through innovative bioengineering:

- Creating a topical product to alert to poison ivy exposure
- Combatting surgical site infections with bioengineered sutures
- Developing a low-cost visual biosensor diagnostic for colorectal cancer
- Using antifreeze proteins for deicing, cryopreservation, and food science
- Designing a non-invasive test to diagnose and stage diabetic retinopathy

Students are empowered to envision themselves as scientists, engineers, entrepreneurs, and changemakers.

By the end of the BioBuilderClub season, students reported increased knowledge of bioengineering content and life science career awareness. Students gained confidence in participating in student-led research and scientific communication.

- The largest confidence gains were in critiquing peers' work, presenting a scientific poster, and writing a research proposal.
- **87%** of respondents would recommend a class with BioBuilder content, and over **83%** report that BioBuilder supported their interest in advanced coursework or a life sciences career.

ABSTRACT BOOK



POSTER GALLERY



Voices of BioBuilderClub

“[The highlight of the season was] the opportunity to work as a student-led team doing research design and carrying out their experiment even when things don’t go smoothly.”

-Teacher Participant

“The final product from each team was really remarkable.”

-Mentor Participant

“It was empowering to feel like I knew my team’s project inside and out.”

-Student Participant

SEASON HIGHLIGHTS

BioTreks

the peer-reviewed journal for high school synthetic biologists

A record 40 BioBuilderClub teams submitted manuscripts based on their projects this season to *BioTreks* and participated in a peer-review conference to prepare for publication this fall.

Luminary Lecture

given by Dr. Jason Ekert, Head of Neuromuscular Function Area at UCB

Dr. Ekert opened the Boston Final Assembly by imparting lessons he has learned in his education and career and shared exciting directions for the future of biotech. His talk was followed by a Q&A.

Final Assemblies

at the Ragon Institute on 3.12.26 and Brookhaven City Centre on 3.26.26

The Boston Final Assembly had 200 in-person attendees and over 100+ online.

The first-ever Southeast BioBuilderClub Final Assembly, held in DeKalb County, GA, drew 160+ attendees and brought together teachers, students, and scientists from GA, TN, and NC.



BioBuilder gratefully acknowledges our partners for their support of the BioBuilderClub. Together we're growing the future through life science education.

