

BioBuilder



SUMMER RESEARCH PROGRAM IMPACT REPORT 2024

Taught by champion educators and PhD scientists from Harvard, MIT, and Boston University, the Summer Research Program is for high school students who want to engineer biology to make the world a better place.

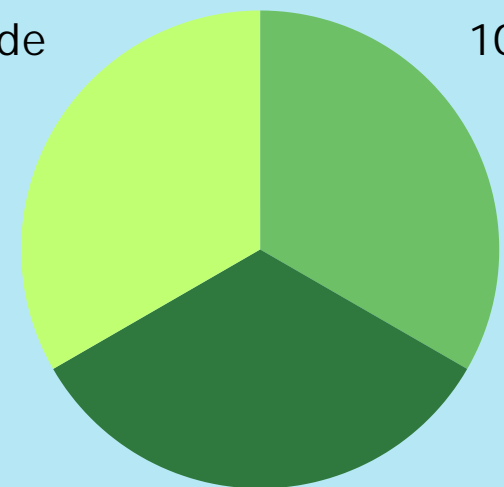
Over a two week period, students gained relevant scientific knowledge and technical training. Lessons emphasized problem solving through the application of technical content, creative thinking, data analysis, and research skills.

By The Numbers



- 33 students
- 56% female, 39% male, 5% prefer not to say
- 5 states + Canada represented

12th Grade
33.3%



10th Grade
33.3%

11th Grade
33.3%

Learning Outcomes

Increased interest in STEM education and careers



Desire to continue learning synthetic biology



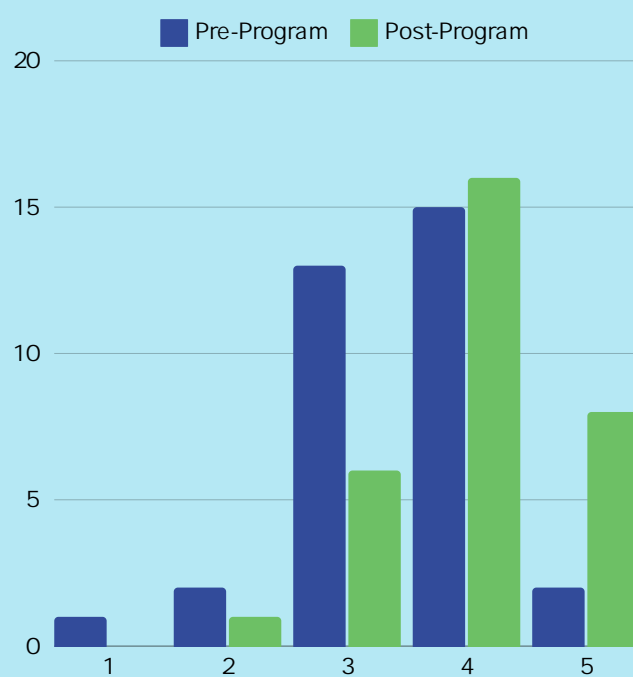
Improved understanding of synthetic biology



Learning Outcomes

Increased student understanding of modern life science:

Including molecular and cellular biology and control of gene expression



Percentage of students reporting confidence in STEM Skills:

- 100%: Using a pipette
- 91%: Interpreting laboratory experiment results
- 97%: Using the metric system of measurements
- 94%: Growing microbes
- 100% Following a protocol

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Students gained hands-on experience with DNA as a coding language for cells and then worked on a biodesign project, prepared a scientific talk, and presented their design to other students and scientists.



Biodesign Project Topics



- Food concerns
- Environmental Pollution
- Climate Change
- Public Health
- Sustainability



Highlights for Students

"I was surprised by how effective the program was for me and how engaging it was!"

"The most surprising part was the part where we were able to use all the lab equipment and run all the labs that I previously thought that I would never be able to run."

"The guest speakers has very interesting and informative topics. They helped with group project ideas as well."

"I really loved all of the tours we went on and the guest speaker talks. They all definitely covered a wide range of the biotech field and journeys, and it was really interesting getting to meet professionals very familiar with working in this field as a career."

Pre-professional training included tours of biotech companies, guest speakers who are practicing bioengineers, and inclusion in our BioBuilder alumni network.

