



# SUMMER RESEARCH PROGRAM

## SUMMER 2025

**44 STUDENTS**  
from 32 schools  
AT 2 LEARNING LABS

**3 US STATES**  
and 4 countries represented

### HANDS-ON BIOTECH EDUCATION

Led by champion educators and PhD scientists, our two-week Summer Research Program brings rising 10th–12th graders into BioBuilder’s state-of-the-art bioengineering Learning Labs in Boston’s Seaport District and Allston.

Students get hands-on training, apply biology to real-world challenges, and visit biotech companies to hear directly from working scientists about their paths.

### REAL-WORLD SCIENCE

Summer research students use BioBuilder’s curriculum to launch independent, student-led biodesign projects. Teams tackle problems that are meaningful and relevant to their lives. The program culminates in a scientific talk to peers and the scientific community.

### SAMPLE PROJECT TOPICS



- Restoring life to bleached reefs
- Capturing Microplastics



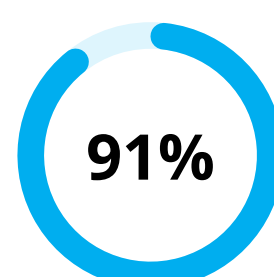
- Mitigating fruit diseases
- Automatically adjusting soil pH



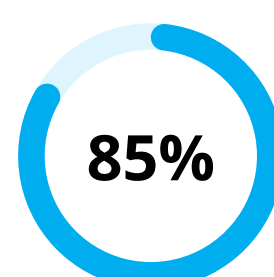
- Developing a nonaddictive painkiller
- Detecting cancer with biosensors



### STUDENT OUTCOMES

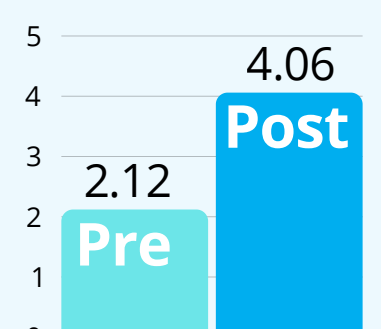


confirmed their interest in STEM education and careers



have a strong or very strong desire to learn more about synthetic biology

Student understanding of synthetic biology nearly doubled



BioBuilder Learning Labs In:



ALLSTON  
LABWORKS

**BIOBUILDER.ORG**





# SUMMER RESEARCH PROGRAM

## SUMMER 2025



### TOP SKILLS STUDENTS LEARNED

- Design of genetic circuits and plasmids
- Microbial culture and aseptic technique
- Methods for analyzing DNA and proteins
- Using laboratory equipment for PCR, gel electrophoresis, and spectrophotometry
- Reading and analyzing scientific papers
- Communicating scientific ideas and research



### STUDENT VOICES: PATHWAYS INTO BIOTECH

Following a site visit to Alexion, one student reflected, *"It opened my eyes to a possible future in research."*

After hearing from a guest speaker, another student shared, *"She opened a new door to something I want to explore more."*



### HIGHLIGHTS OF THE PROGRAM

*"I was (happily) surprised by how many different experiments we completed and ideas we learned over the course of the program."*

*"I was surprised that I could apply a lot of what I learned in school to what we did in the lab."*



### STUDENTS DEVELOPED CONFIDENCE IN LAB



Pipetting



Following protocols



Interpreting  
scientific papers



Working as a team



Troubleshooting  
mistakes



Interpreting results

**BIOBUILDER.ORG**