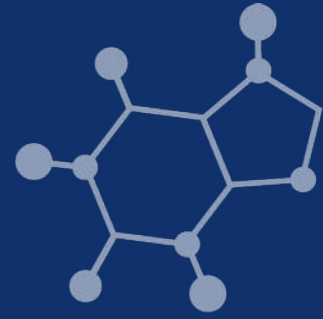


AMGEN BIOTECH EXPERIENCE

ABE brings critical hands-on biotechnology learning experiences into classrooms in select Amgen locations across the globe



THE ABE PROGRAM



ABE introduces secondary students to the excitement of scientific discovery.

ABE provides access to cutting-edge science through four key areas:



1. Teaching Resources & Equipment



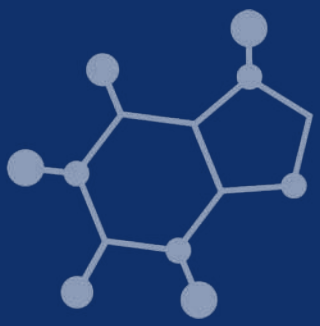
2. Teacher Professional Learning & Community



3. Connecting Scientists to Classrooms



4. Equity & Access in STEM



OUR HISTORY

ABE was developed in Los Angeles in 1990. Since then, we have expanded to 27 program sites in 16 countries and reached 1 million students around the world.

1 Million Students

27
Program Sites

16
Countries

1990
|
2024

ANNUAL IMPACT



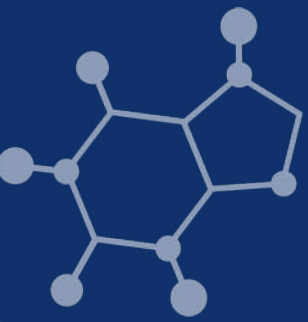
80,000 Students



1,500 Teachers

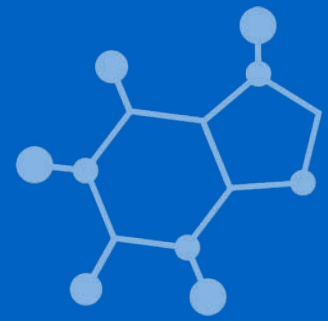


1,000 Schools





PROGRAM IMPACT



Evaluation studies indicate that ABE is effective with both teachers and students and is unique and valuable because it includes hands-on, real-life science.

An evaluation of student outcomes found that:

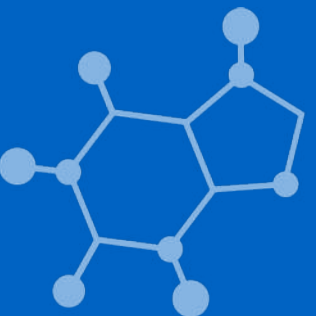
- Students improve their abilities to interpret experimental results and their knowledge of biotechnology skills.
 - Students gain new ideas about what happens in science laboratories and what science is.
 - Students increase their interest in science and science education.
-



TEACHER TESTIMONIALS

"ABE is an amazing opportunity to bring real science into the classroom. Students are able to gain valuable skills as well as apply the knowledge they learn in class that I would not be otherwise able to afford on our school budget."

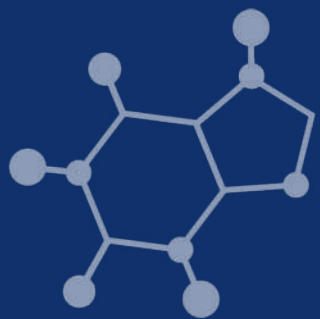
—— **Linda Crossno** (ABE Teacher)



EQUITY & ABE

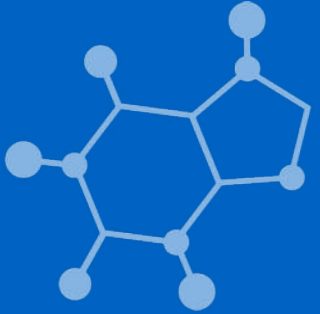
Systemic bias and discrimination affect STEM educational practices and opportunities.

ABE employs strategies and promotes practices to advance opportunities for underrepresented populations to succeed in bioscience.



ABE'S COMMITMENT TO EQUITY

- Prioritize and value equity, diversity, and inclusion across the program
- Include diverse perspectives and people as program designers, implementers, and participants



- Develop resources and supports to increase ABE's relevance and accessibility to diverse students and communities
- Expand program implementation models to increase access and opportunities for diverse populations

ABE SITES AROUND THE WORLD

- 1 ABE Los Angeles
- 2 ABE San Diego
- 3 ABE San Francisco
- 4 ABE Washington State
- 5 ABE Rhode Island
- 6 ABE Puerto Rico
- 7 ABE Massachusetts
- 8 ABE UK
- 9 ABE Ireland
- 10 ABE Australia
- 11 ABE Canada
- 12 ABE Hong Kong SAR
- 13 ABE France
- 14 ABE Germany
- 15 ABE Italy
- 16 ABE The Netherlands
- 17 ABE Singapore
- 18 ABE Tampa
- 19 ABE Türkiye
- 20 ABE Japan

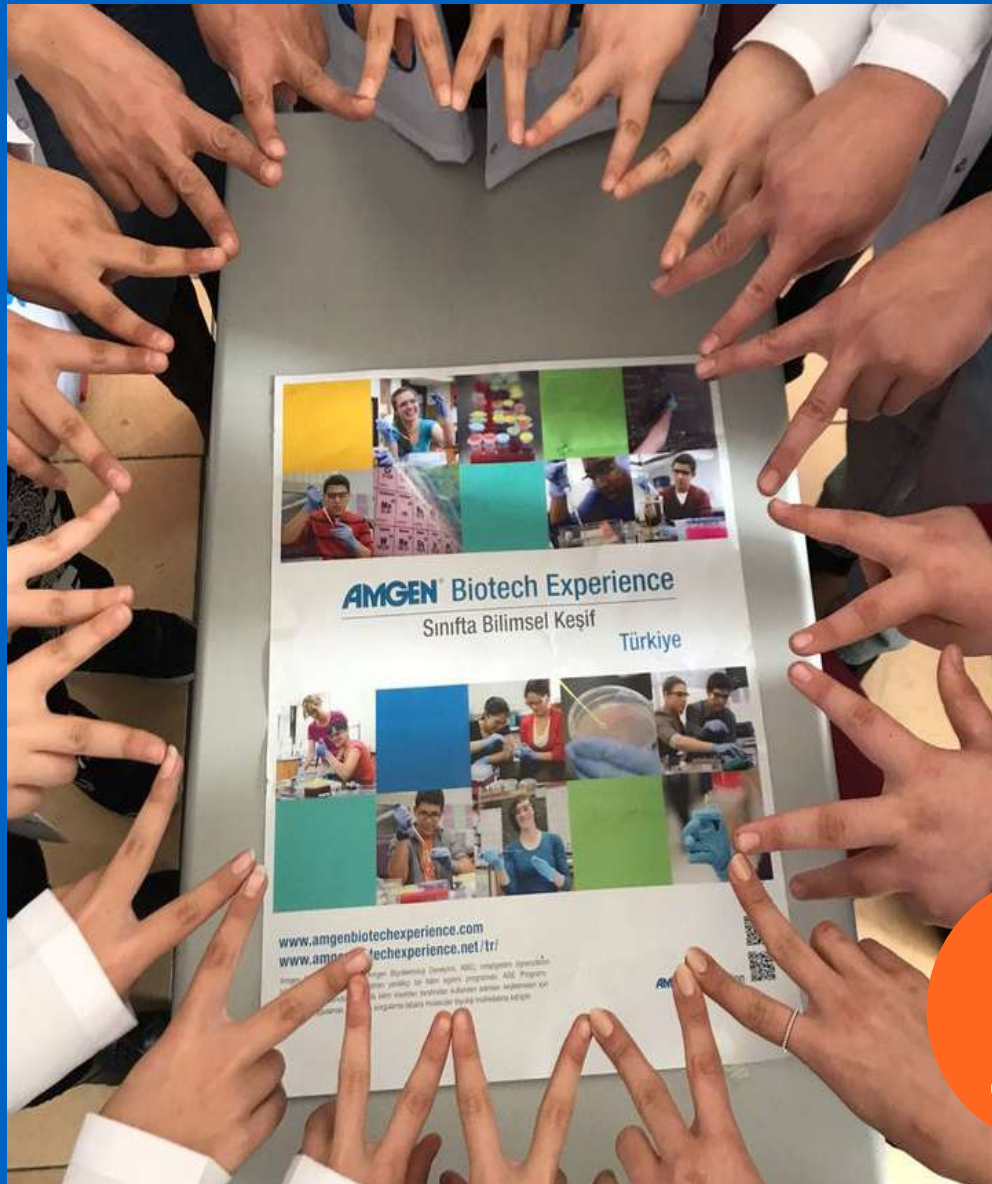
- 21 ABE Kentucky
- 22 ABE Mainland China
- 23 ABE North Carolina
- 24 ABE Central Ohio
- 25 ABE Mexico
- 26 ABE Brazil
- 27 ABE South Africa



Sites are in the order in which they joined the ABE program.



ABE EUROPE, AFRICA, THE MIDDLE EAST



France

South Africa

Germany

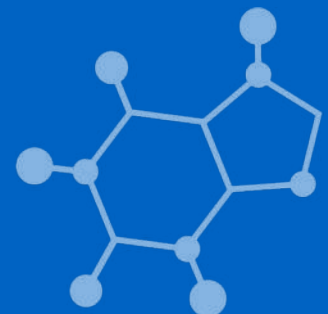
The Netherlands

Ireland

Türkiye

Italy

United Kingdom



ABE ASIA PACIFIC

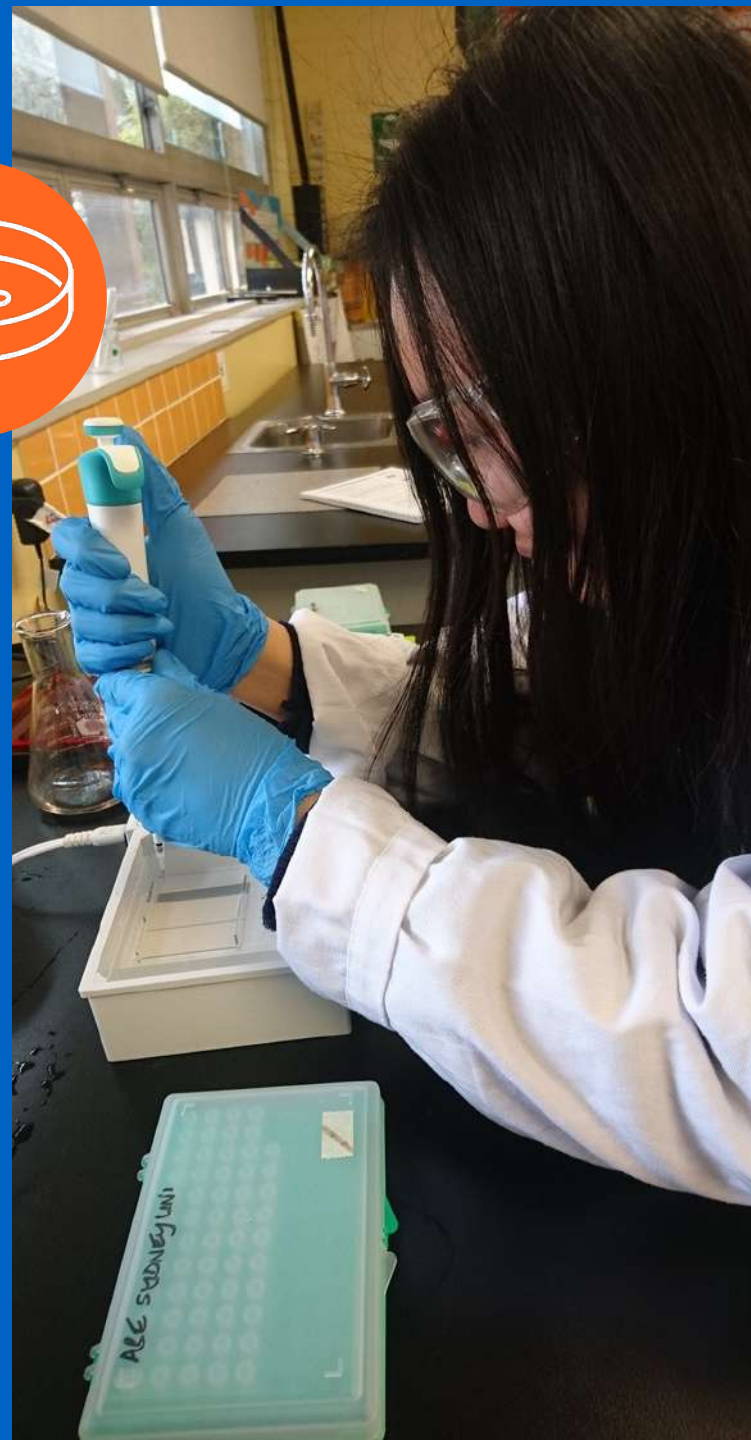
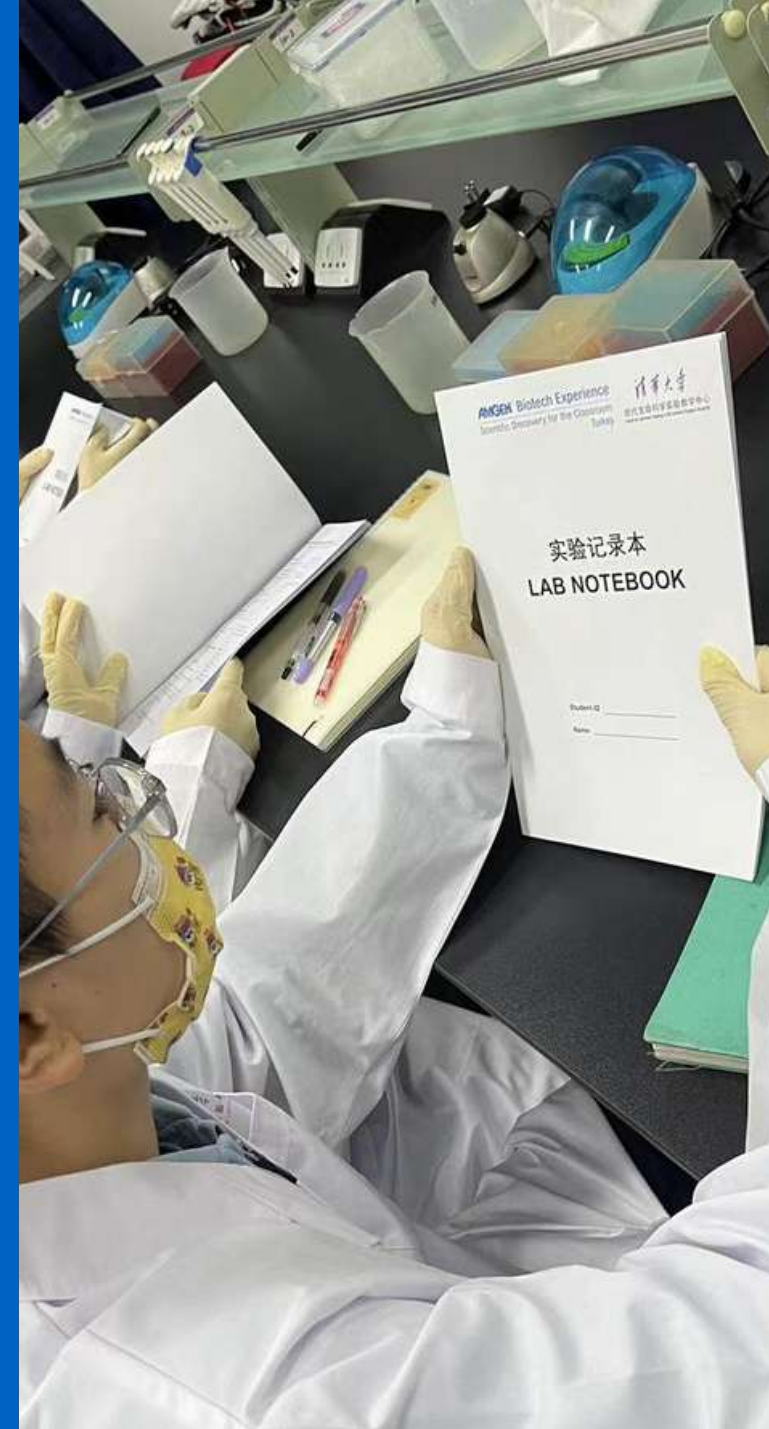
Australia

Hong Kong SAR

Japan

Mainland China

Singapore



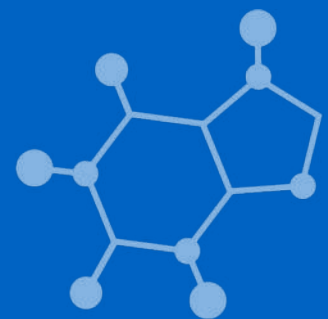
ABE THE AMERICAS

Brazil

Canada

Mexico

United States



ABE USA

Central Ohio

Rhode Island

Greater Los Angeles

San Diego
(affiliate)

Kentucky

San Francisco
Bay

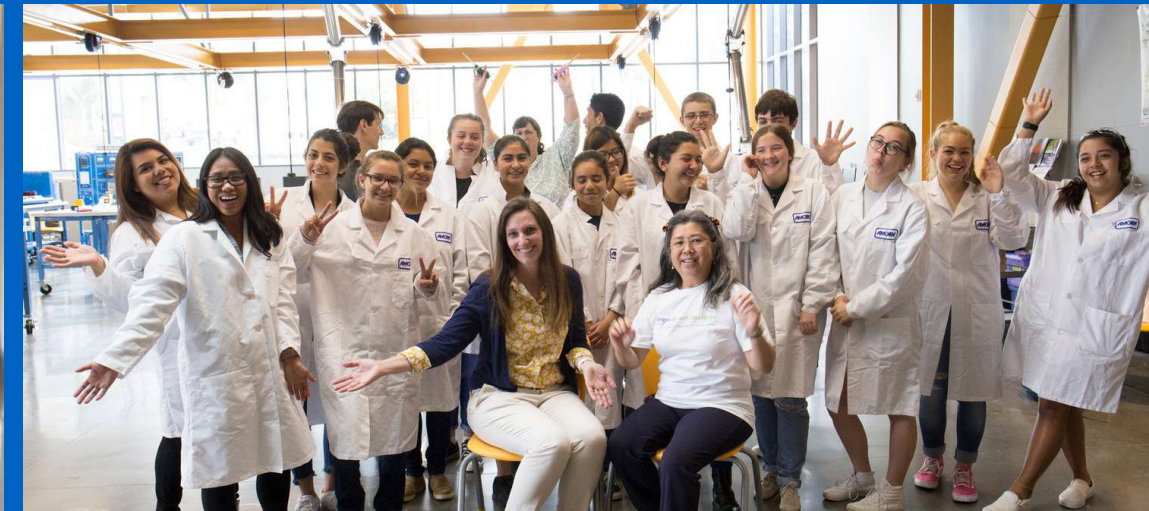
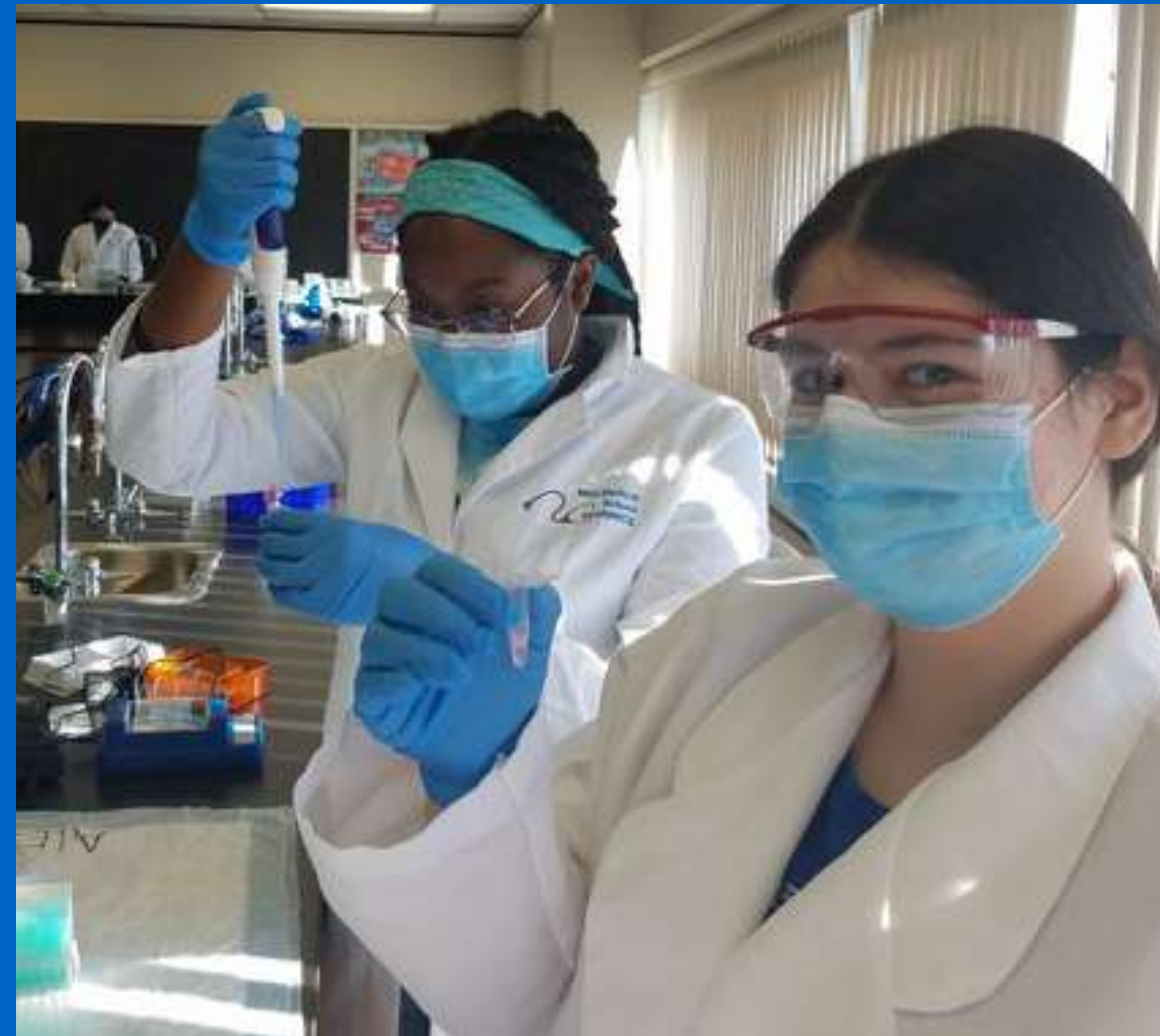
Massachusetts

Tampa

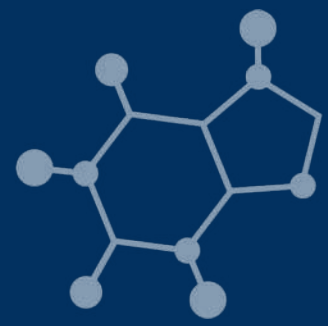
North Carolina

Washington
State (affiliate)

Puerto Rico



An affiliate site is not funded by the Amgen Foundation.



ABE PROGRAM SITES



**TEACHER
BENEFITS**



SITE STAFF

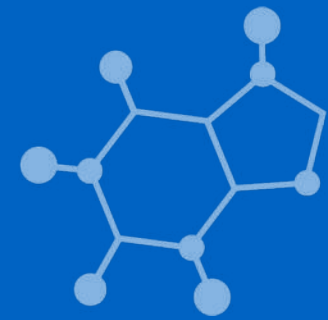


**COMMUNITY OF
PRACTICE**

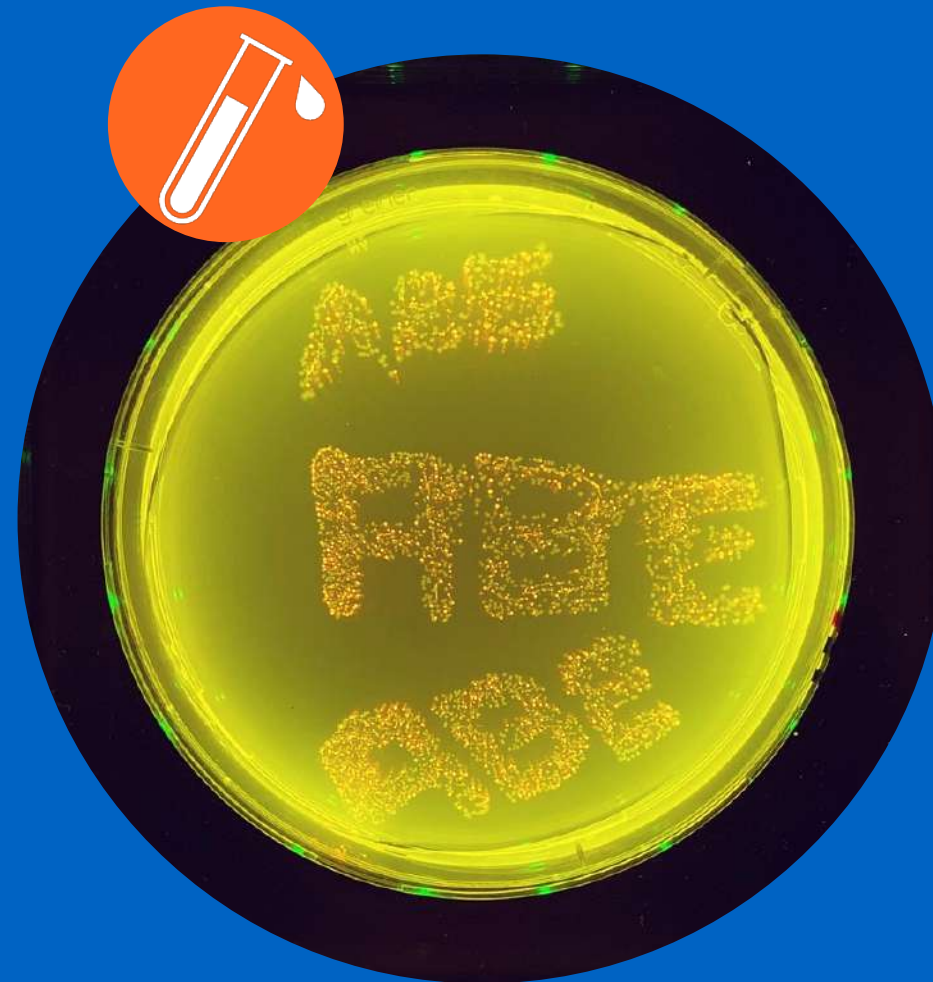


EVALUATION

TEACHER BENEFITS



TRAINING



TECHNICAL SUPPORT



**PROFESSIONAL
COMMUNITY**

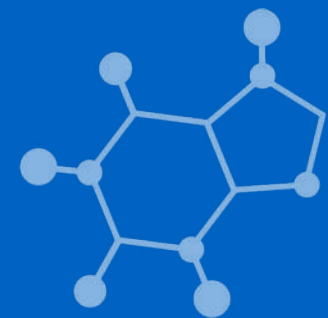
ABE teachers are part of a global community with opportunities for high-quality professional learning and leadership, access to Amgen staff and industry partners, and connections to ABE teachers globally.

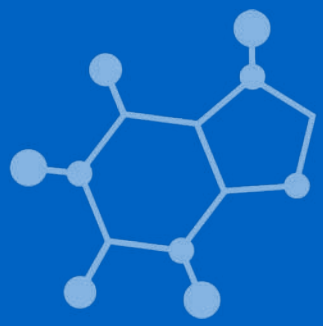
SITE STAFF

Program sites include staff with both the scientific and science education knowledge necessary for successful implementation of the ABE program.

Roles include:

- Site Director
- Site Liaison
- Site Coordinator
- Lab Technician
- Site Ambassador

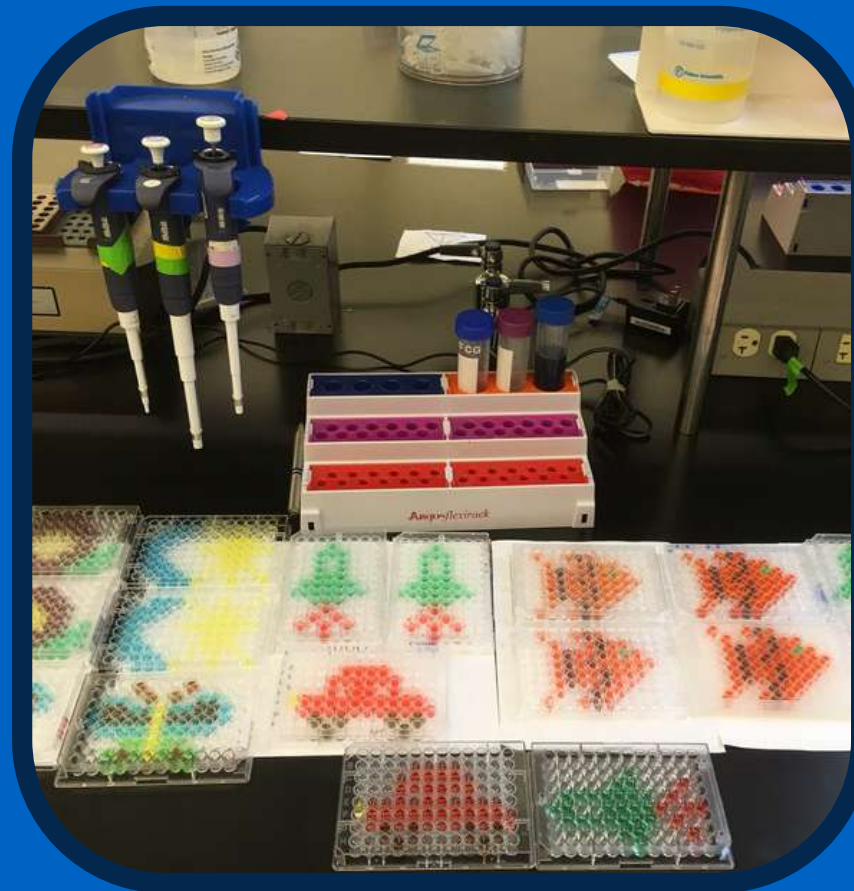




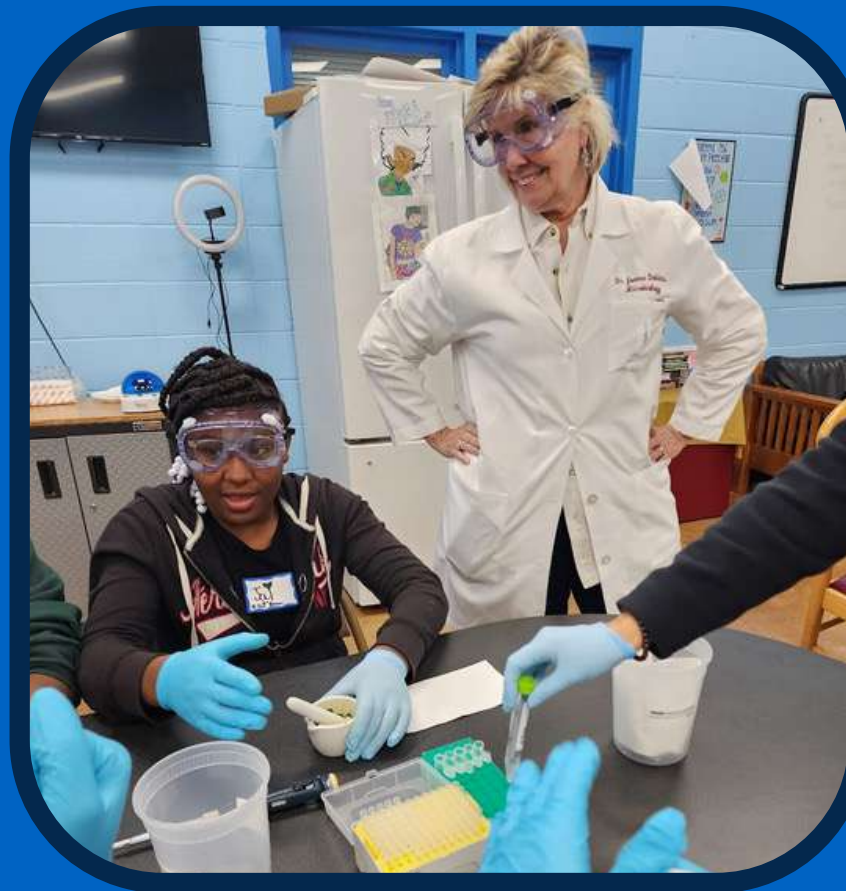
COMMUNITY OF PRACTICE



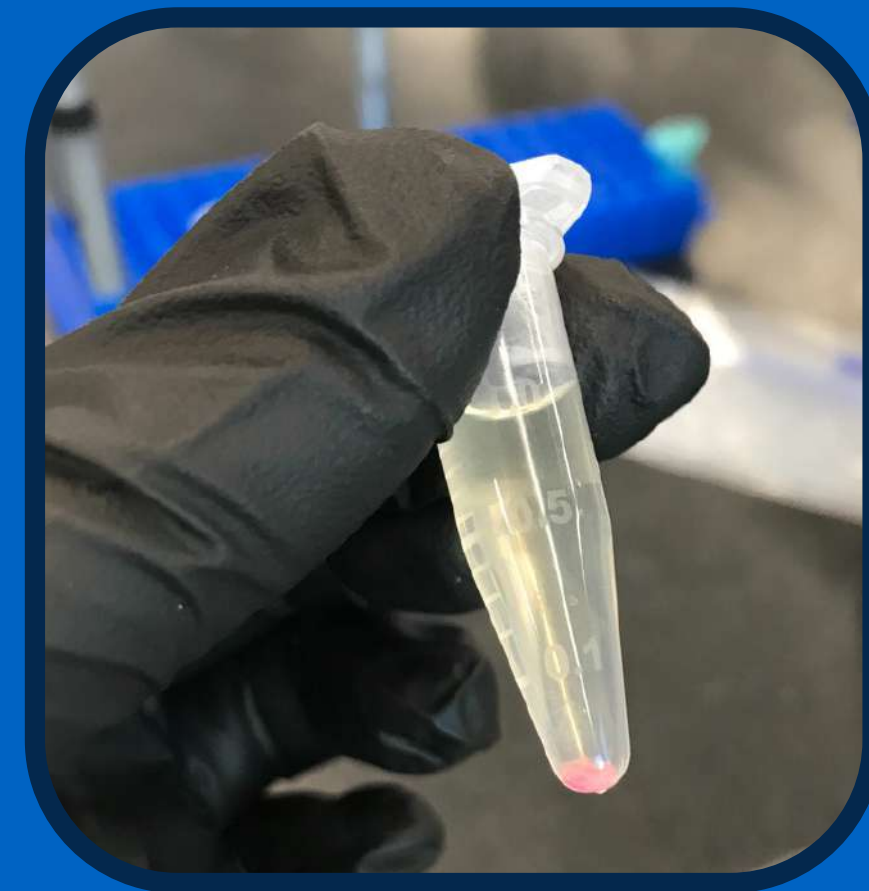
ABE program site staff engage in a global community of practice that helps them to:



Increase teacher capacity to implement ABE curriculum effectively



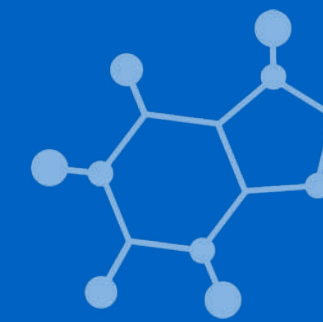
Develop lifelong engagement & interest in STEM for student participants



Develop site capacity to support effective ABE implementation within schools



SITE EVALUATION



ABE program sites evaluate their activities to support continuous improvement. This may include:

- Evaluation of professional learning, curriculum implementation, & program support
 - Evaluation of progress toward meeting equity goals
 - Evaluation studies to learn about teacher & student outcomes
-

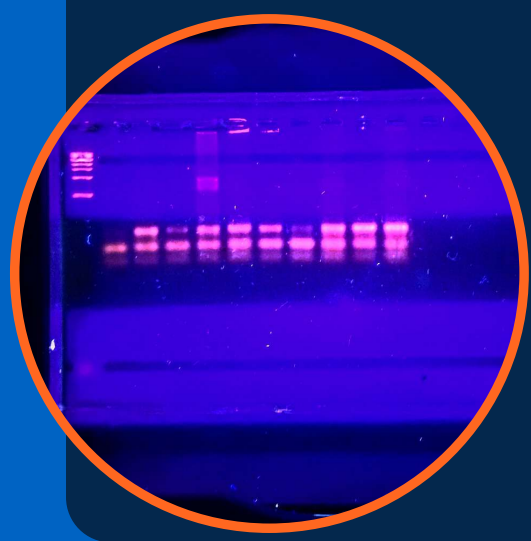
THE ABE PROGRAM OFFICE



**CONTINUOUS
LEARNING &
IMPROVEMENT**



SITE SUPPORT

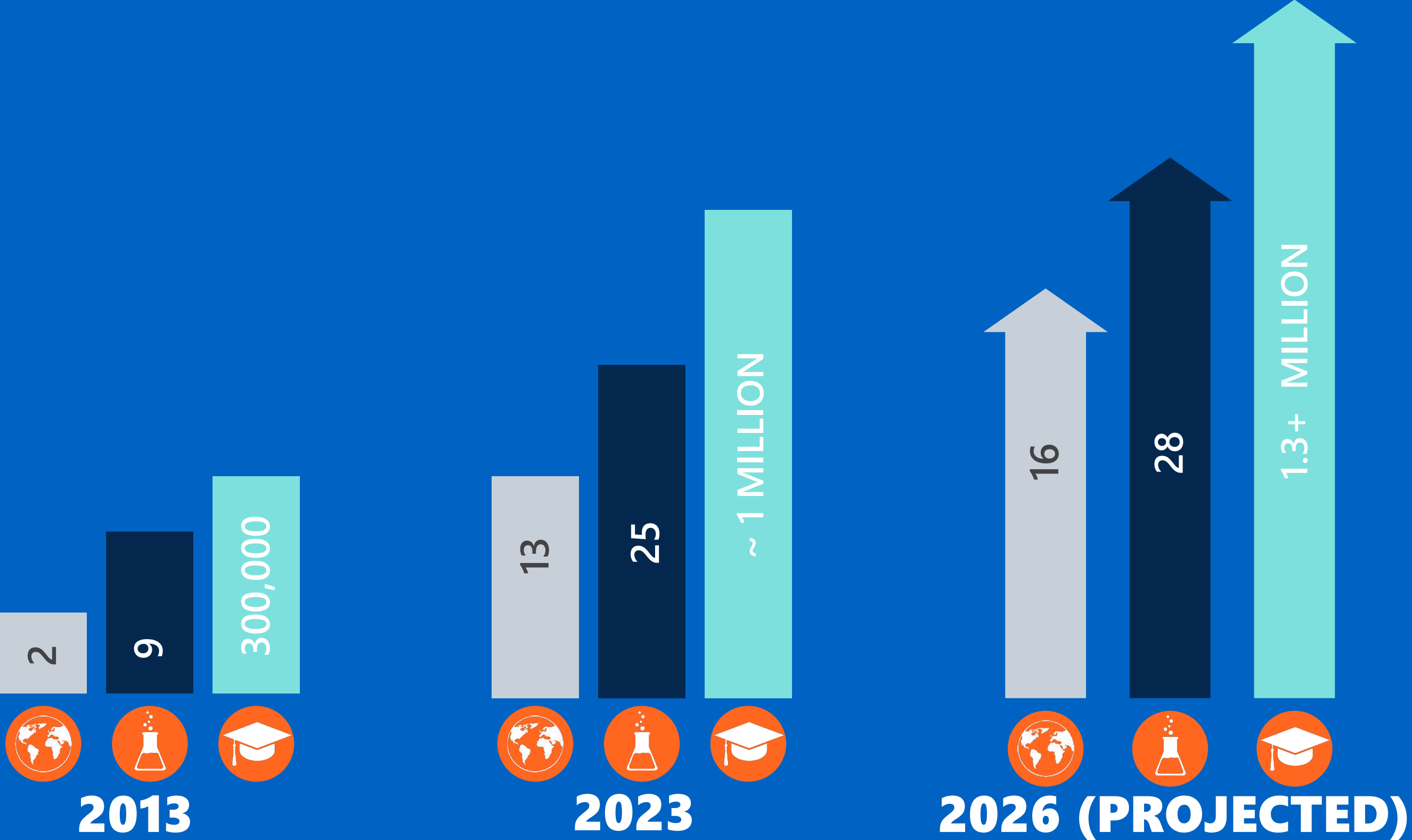


INNOVATION



SCALE

PROGRAM GROWTH SINCE ESTABLISHMENT OF PROGRAM OFFICE



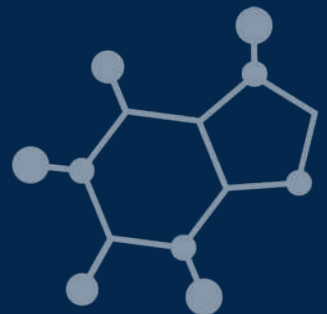
ABE CURRICULUM



LABORATORY- BASED



Introduces biotechnology laboratory techniques and concepts



CLASSROOM- BASED



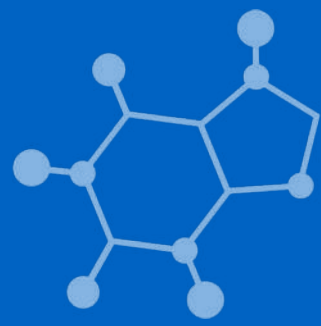
Hands-on activities to explore biotechnology in the classroom

WEB- BASED



Biotechnology investigations available in remote or hybrid learning environments

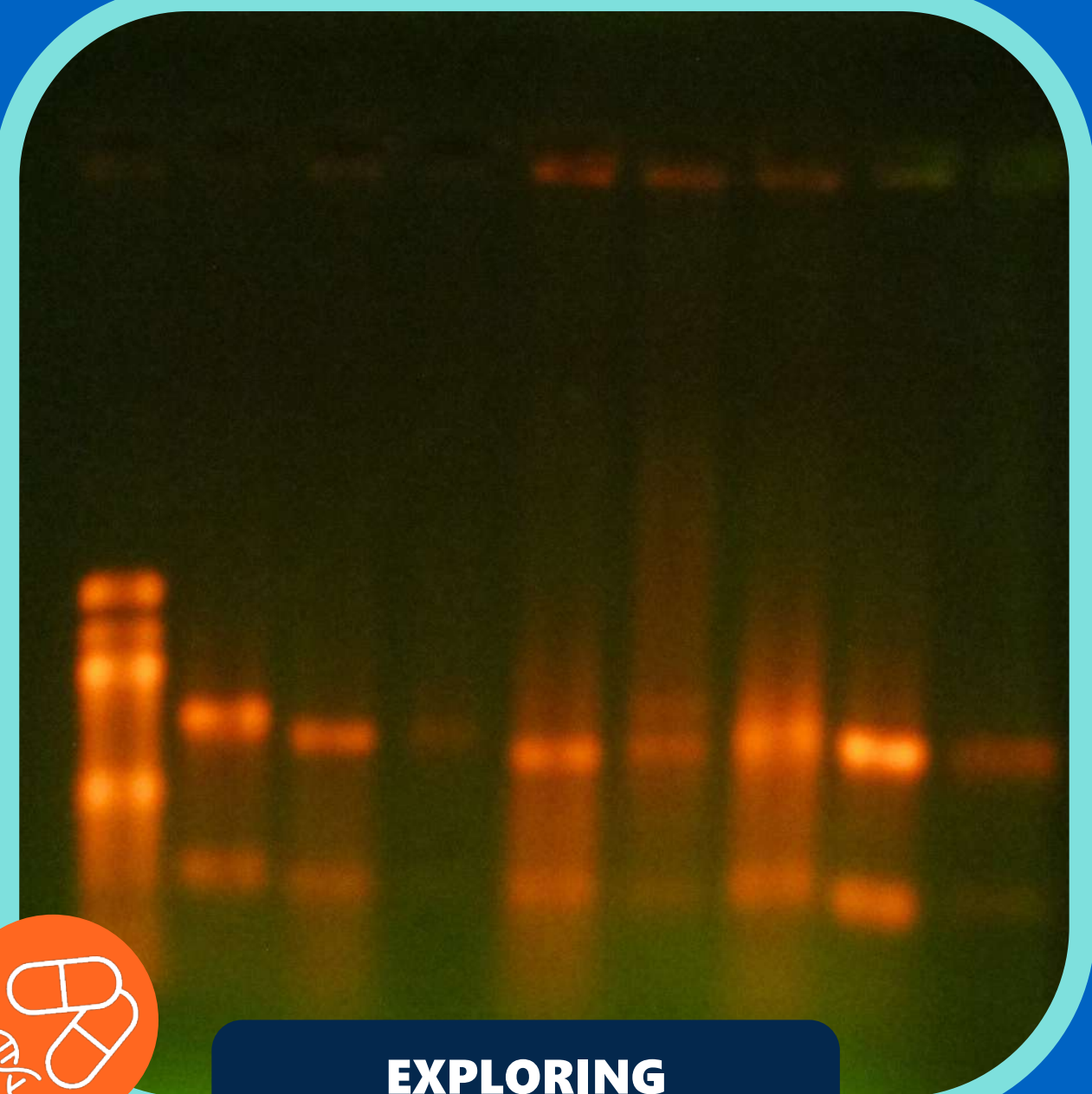




LABORATORY-BASED INVESTIGATIONS

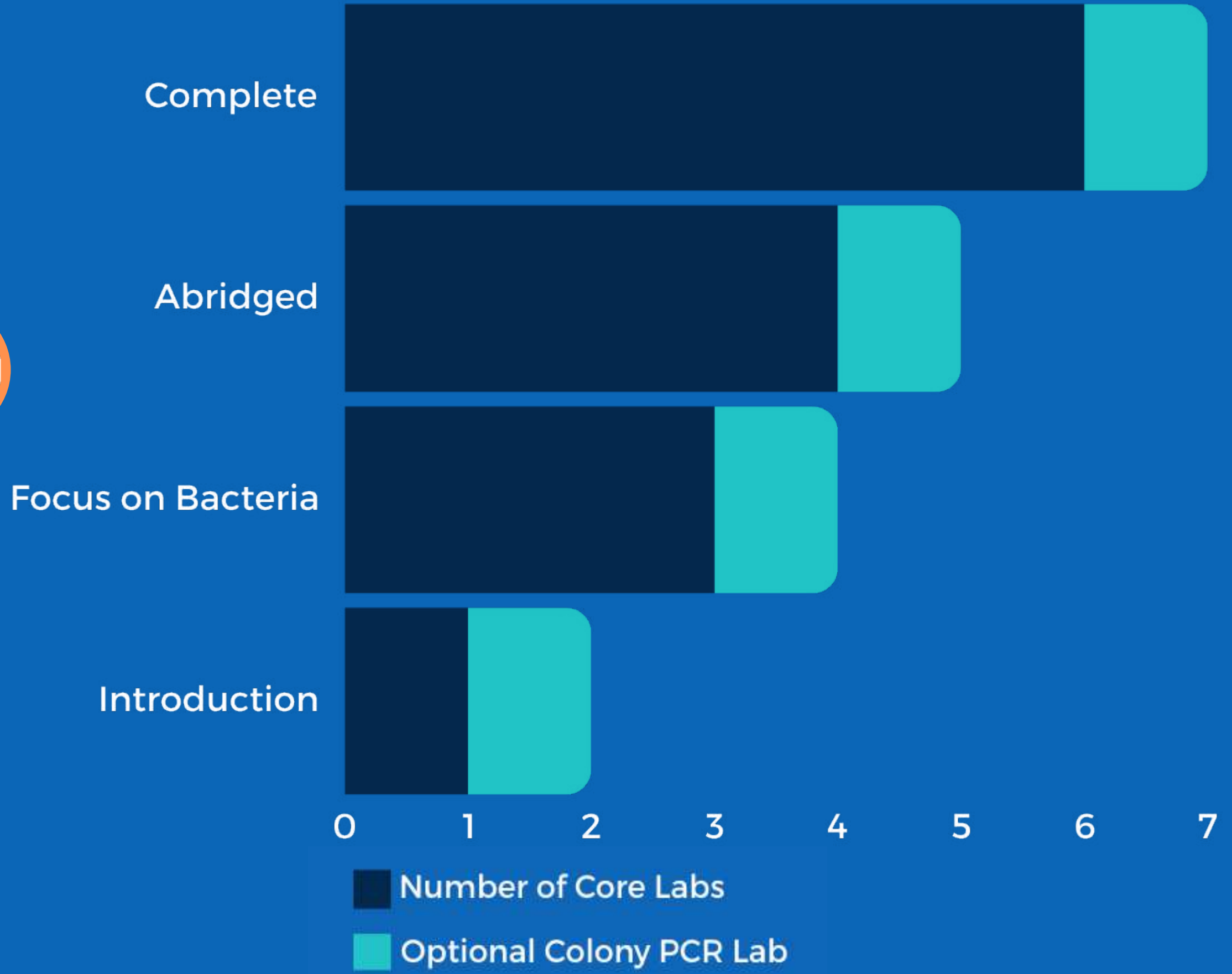
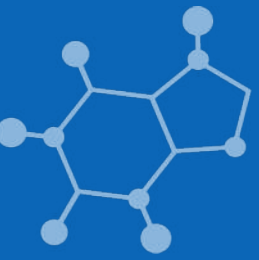
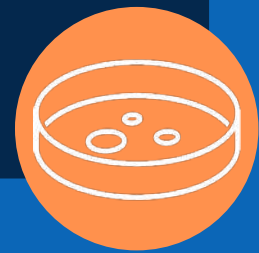


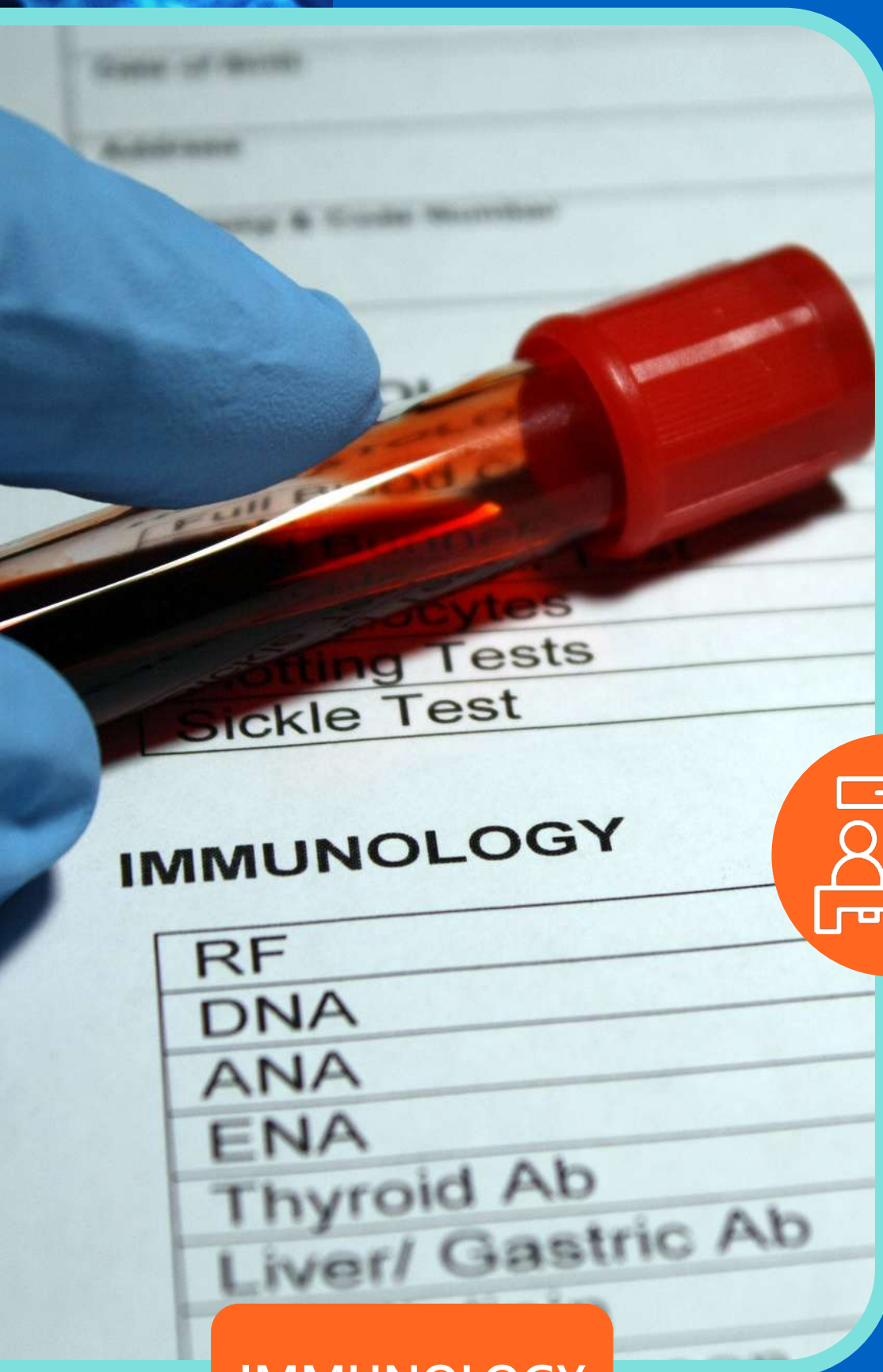
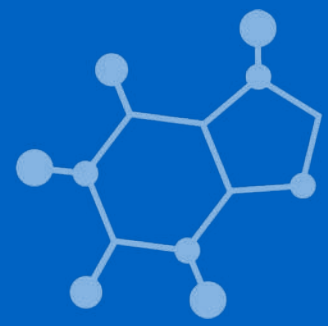
FOUNDATIONS OF BIOTECH



EXPLORING PRECISION MEDICINE

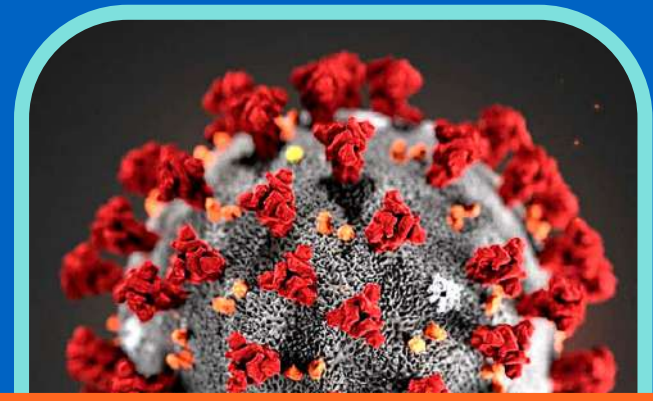
FOUNDATIONS OF BIOTECH HAS SEVERAL DIFFERENT LAB SEQUENCES AVAILABLE





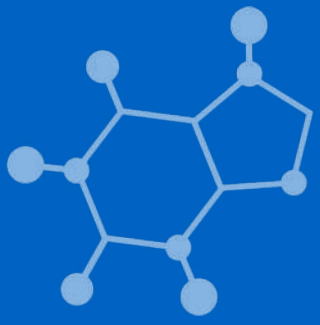
CRISPR

CLINICAL TRIALS

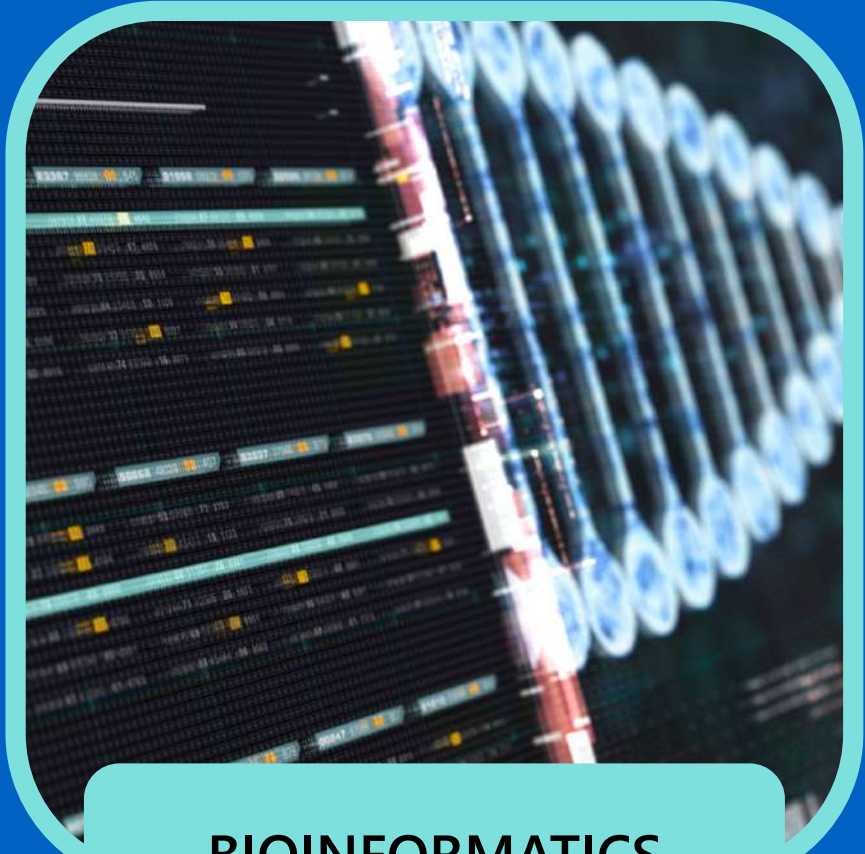


IMMUNOLOGY

CLASSROOM-BASED INVESTIGATIONS



**RESPONDING TO A
MYSTERY ILLNESS**



**BIOINFORMATICS
& DIABETES**



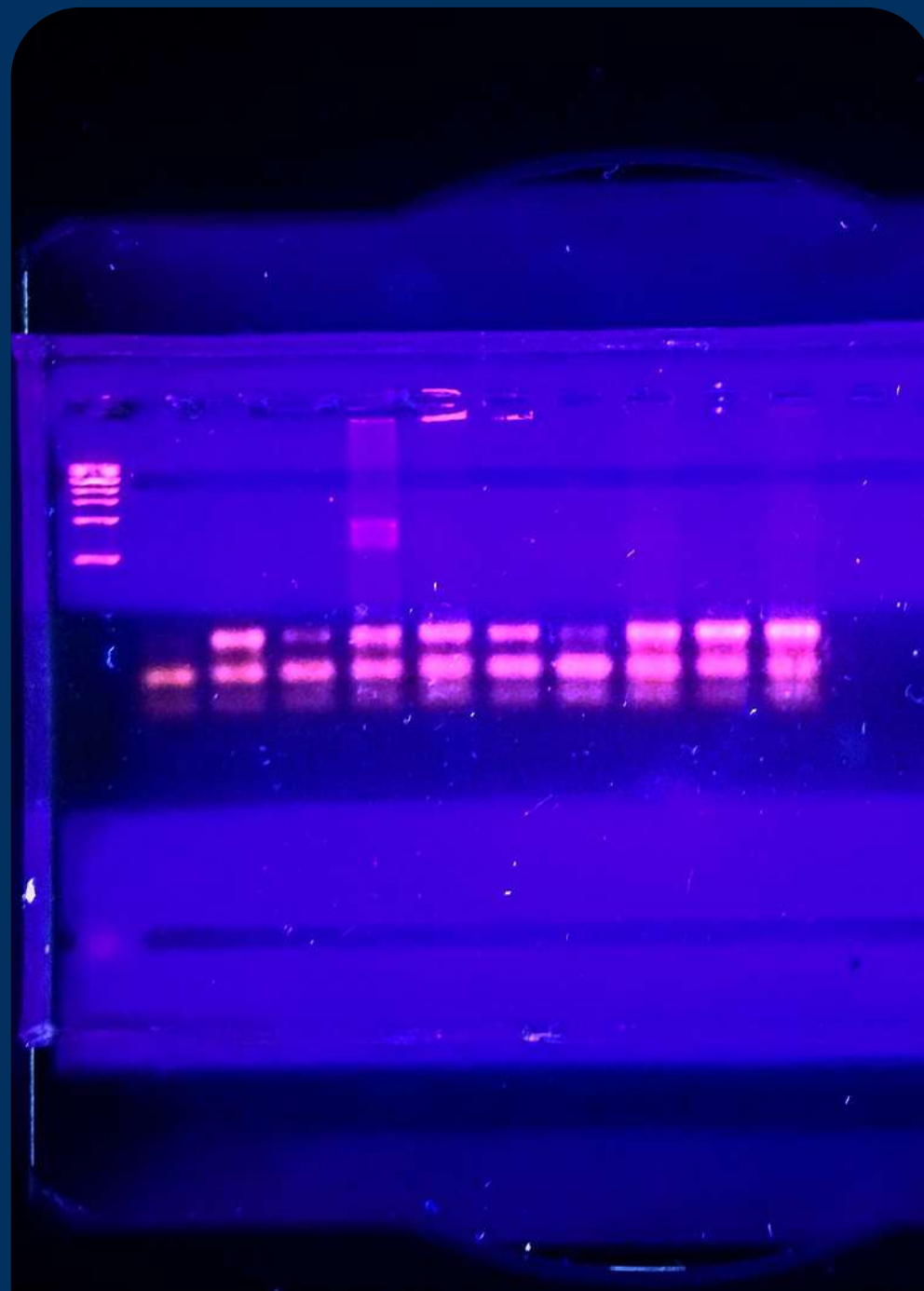
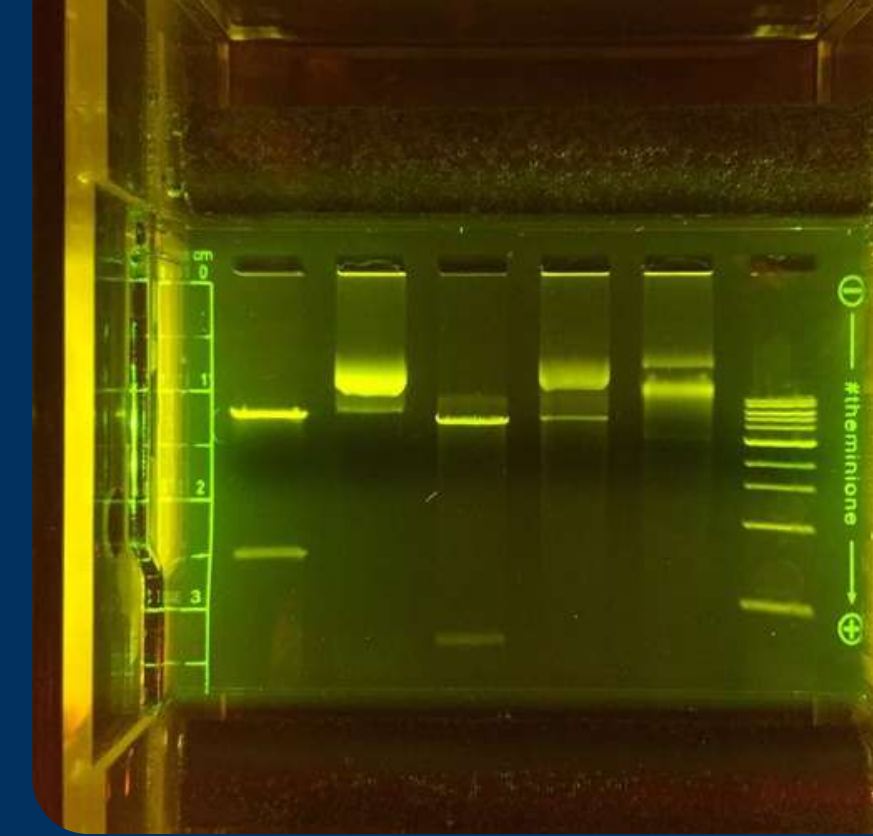
**BIOETHICS OF
GENE EDITING**



**SAVING
A LIFE**

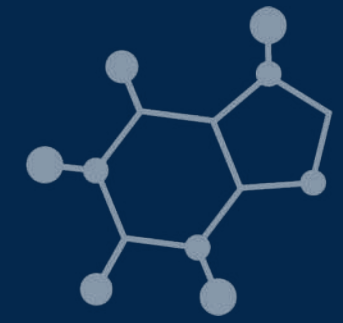
WEB-BASED INVESTIGATIONS

ABE EQUIPMENT & MATERIALS



PROGRAM SITES PROVIDE TEACHERS WITH RESEARCH-GRADE EQUIPMENT AND REAGENTS.

ABE PROFESSIONAL LEARNING



Resources support an international community of ABE teachers & program sites.

Resources reflect research-based culturally responsive strategies for adult learning.

Materials are practical, modular, & flexible, and are available in a variety of formats.



ABE PROFESSIONAL LEARNING



1

TEACHER CAPACITY

Increases teacher capacity to implement the ABE curriculum effectively

ABE supports sites and teachers through high-quality professional learning experiences, access to a global community of practice, and implementation resources.



2

SITE CAPACITY

Develops site capacity to support effective ABE implementation within schools



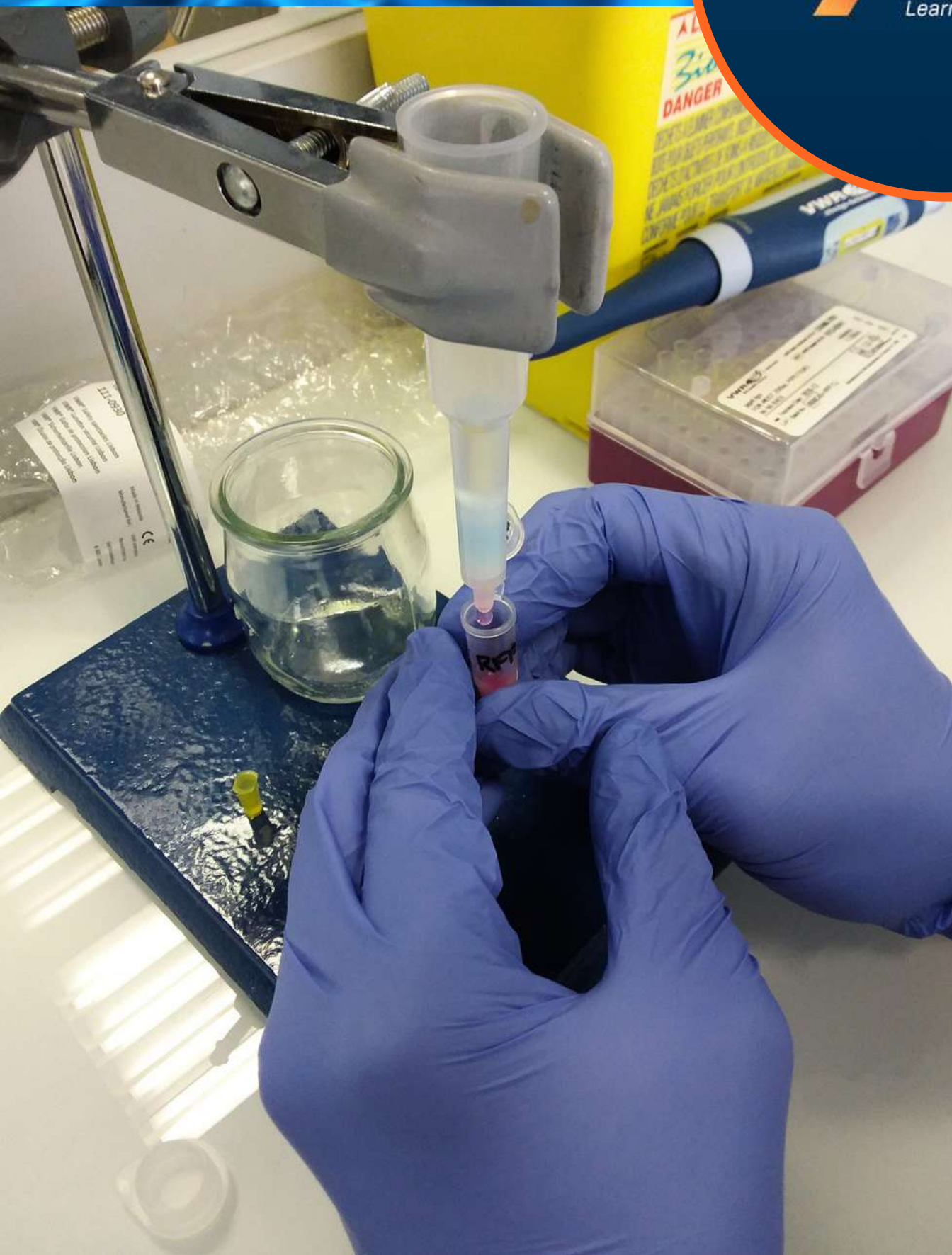
3

STUDENT ENGAGEMENT

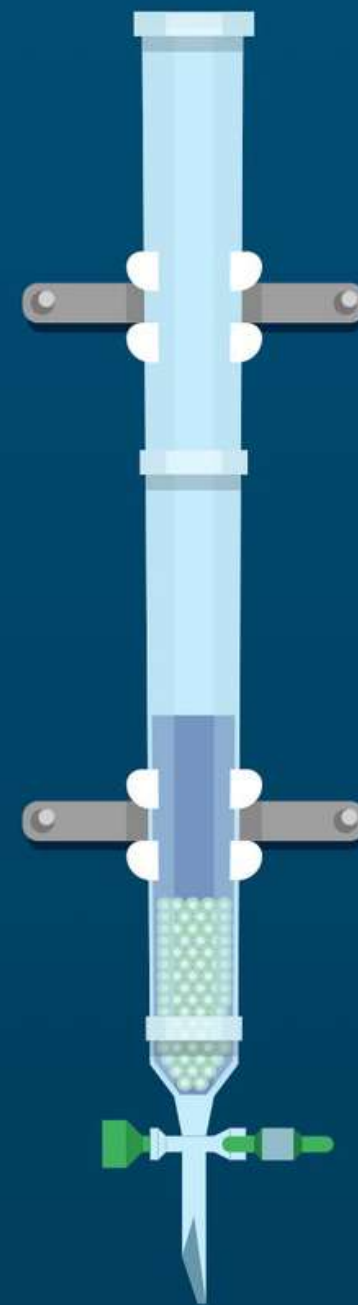
Develops lifelong engagement and interest in STEM as students become members of the future workforce and active civic participants



ABE PROFESSIONAL LEARNING & LABXCHANGE



Chromatography Column



150µl

E. coli (EC1)



Lysis Buffer (LyB)



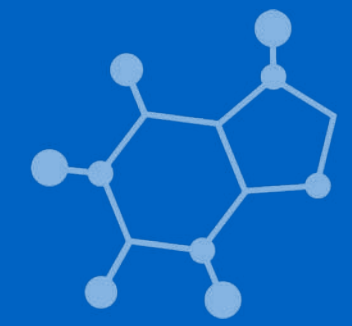
P200



The LabXchange platform can be a useful asset to educators who look to build, review, and expand their biotechnology skills.

ABE Foundations of Biotech and *Exploring Precision Medicine* are available on the LabXchange platform.

ABE MASTER TEACHER FELLOWSHIP



**ENVIRONMENTAL
AGENCY**



BIOENGINEERING



**BIOTECH
MANUFACTURING**

With support from the Program Office, ABE Master Teacher Fellows work independently and with other ABE teachers to explore a topic of personal interest in the biosciences, creating projects that push the boundaries of innovation within ABE.





THANK YOU!

amgenbiotechexperience.com

