

“We constantly have former students come back to tell us that they chose to major in science, biotech or related fields because of this experience.”

– Jim Mauch, High School Science Teacher



### Quick Facts

- Each year, ABE reaches nearly **90,000 students** and nearly **1,500 teachers**
- Program curriculum, professional development, and all materials needed are provided free of charge
- The program has impacted nearly **700,000 students to date**
- Independent and rigorous evaluation data found that students exposed to ABE have significant and substantial learning in biotechnology and increased interest and confidence in doing science and biotechnology
- A total of **900,000 students** will have experienced hands-on biology education through ABE by 2020 because of the Amgen Foundation's **more than \$25 million** commitment to the program
- ABE is currently available in the following regions: Australia, Canada, China, England, France, Germany, Hong Kong SAR, Ireland, Italy, the Netherlands, Singapore, and the United States (*Los Angeles, San Diego, San Francisco, Massachusetts, Rhode Island, Washington D.C., Tampa, and Puerto Rico, with affiliate sites in Colorado and Washington*)

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**The Amgen Biotech Experience (ABE) is an innovative science education program that introduces secondary school students to the excitement of scientific discovery. ABE provides secondary school teachers with the loan of research-grade equipment, supplies, curriculum and professional development at no cost.**

#### BIOTECHNOLOGY

Biotechnology has brought about the discovery and development of a new generation of human therapeutics. Advancements in both cellular and molecular biology have allowed scientists to identify and develop a host of new medicines for patients with serious illness. Biotechnology provides the tools and techniques for modern pharmaceutical research and drug development, and it is critical that future citizens are knowledgeable about this field.

#### PROGRAM BACKGROUND

The ABE program began nearly 30 years ago through a unique collaboration of Amgen scientists and educators with a passion for sharing the joy of science and discovery. With the vision to bring the excitement of biotechnology to the fingertips of students, they developed a robust curriculum that is now available in 20 regions across the globe. In 2013, the Amgen Foundation joined forces with Education Development Center, Inc., a global nonprofit organization with deep experience and expertise in science education, to establish a Program Office to support and strengthen the program worldwide.

#### THE PROGRAM AND CURRICULUM

The ABE program integrates a curriculum that allows students to explore the steps involved in creating biotechnology therapies. Aligned with the core biology curriculum, the program supports the larger goal of fostering scientific literacy. In addition to the curriculum and teacher professional development to understand the lab protocols and science, participating teachers receive a loaned kit, free of charge, with research-grade equipment and supplies that allow students to participate in advanced science laboratories.

#### THE LAB AND MATERIALS

The ABE labs parallel some of the important steps taken by the biotechnology industry to develop medicines to treat a variety of diseases. The labs incorporate core technologies used by scientists in the discovery of human therapeutics, so that students will better understand the role of biotechnology and the potential impact of this industry on our future. In addition, by engaging in this program, students may be more motivated to understand the underlying science concepts and perhaps even pursue careers in science.

#### ABE MASSACHUSETTS

The ABE-Massachusetts program is offered through the Life Sciences Outreach Program at Harvard University, which has an established reputation for enhancing high school biology education in New England through professional development programs for teachers and hands-on laboratory experiences for students. The ABE-MA program is in its sixth full year of offering opportunities for high school teachers and students to gain valuable experience with biotechnology laboratory protocols, generating familiarity with a variety of important techniques.



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