# Synthetic Biology Engineering Research Center (SynBERC)

**SynBERC** is a **National Science Foundation** Engineering Research Center created in 2006 at the University of California at Berkeley.

SynBERC is a collaborative effort between **UC Berkeley**, **UC San Francisco**, **Harvard**, and the **Massachusetts Institute of Technology**.

## Educational Programs for K-14

SynBERC was created to lay the foundation for the **emerging field of synthetic biology**. Synthetic biology is the design and construction of **new biological entities**—such as enzymes, genetic circuits, and cells—or the redesign of existing biological systems. Synthetic biology seeks to transform biology in the same way that synthesis transformed chemistry and integrated circuit design transformed computing.

SynBERC researchers are **building microorganisms that function as chemical factories** to produce the anti-malaria treatment artemisinin for pennies instead of dollars. Another project's goal is to **develop the next-generation of tumor-fighting drug delivery** systems in the form of a novel microbe.

## Educational Opportunities in Biological Sciences for Pre-collegiate Students & Teachers

A primary goal of SynBERC faculty and researchers is to educate students about the opportunities and excitement offered by a career in science, engineering, and synthetic biology.

SynBERC's educational program for high school and community college students and teachers is multi-disciplinary with an emphasis on hands-on design:

**Summer Internships** — Students gain practical experience working in labs with graduate students and faculty. Internships enable students to explore their interest in science as a member of a university science lab. Internships last over the course of the summer and may even continue further depending on the student's interest and commitment level.

**Visiting Lecture Series** — A series of lively and informative talks presented by SynBERC researchers, faculty, and graduate students, with a focus on recent developments in biology and the impact of science on the world.

**A Day in Science** — A full-day program in which students shadow an undergraduate or graduate biology student as they work in the lab and attend class. Visiting students will be able to meet with the supervising professor, become acquainted with a college campus, and explore the educational and career opportunities that exist in science.

**Research Experience for Teachers Program** — Pre-college teachers are selected for a one-week summer "job shadowing" experience with participating faculty and postdoctoral fellows. Participants engage in discussions regarding emerging findings and technology in science, and are invited to attend the ongoing Synthetic Biology Seminar Series.

**For more information, please contact:**

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