EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]: State in layman's terms the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project relevant to California. Do not include proprietary or confidential information. This may be distributed before the funding decision has been finalized.

A primary goal of the Department of Biological Science, CSU Fullerton is to educate majors who possess a broad foundation in biological principles and who are highly skilled in the fundamentals of scientific research. To enhance the research and thinking skills of our majors, the department has reformed its lower division curriculum, including the implementation of "open-ended" or inquiry-based laboratory modules that provide students with opportunities to design experiments, implement procedures and analyze data. Inquiry-based laboratories are expensive both in terms of time and resources, however the benefits can be measured by the numbers of students retained in the major, the numbers of students engaged in independent research, and the overall quality of our graduates. Two of the four lower division core biology courses, *Cellular Basis of Life* and *Genetics and Molecular Biology*, provide students with an introduction to research in the area of biotechnology through "open-ended" laboratory modules related to Mendelian genetics, gene regulation and cell physiology. Many of these modules use plants. Funding from the National Science Foundation has supported the initial adaptation and implementation of these inquiry-based laboratories. Additional equipment for use in instruction and independent student research will further enhance the success in these lab courses.