

EXECUTIVE SUMMARY [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.

The Biochemistry BS major is one of the fastest growing in the College of Math and Science at California State University at Northridge. The College has also recently added a Master of Science in Biochemistry as a formal degree offering. However, the experiments comprising the required Biochemistry laboratory coursework curriculum are in need of modernization to reflect standardized biochemical assays in routine use today. In particular, undergraduate and graduate students in our programs require training in modern techniques used to research cellular regulation. Experiments in cellular regulation must be conducted with live mammalian cells, for which the Department does not currently house the necessary facilities. Renovation of laboratory space and acquisition of required equipment are prerequisite to modernizing the experiments comprising formal course curricula.

We propose to introduce experiments into Biochemistry laboratory courses that illustrate the biochemical effects of hormones and drugs in certain cellular processes. Such experiments can only be evaluated in live intact cells because the physical structure of the cell itself participates in the process of hormone and drug regulation. Students will investigate these phenomena and gain exposure to complex cellular regulatory pathways as well as important cell culture and biochemical techniques.