

EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]: State 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.

Biotechnology encompasses several fields such as the pharmaceutical, biopharmaceutical, medical devices and agricultural industries. The biotechnology industry is an important element of California's economy, where 40-50% of the nation's total biotechnology is found in California. To maintain a dominant role in biotechnology, California must provide a skilled workforce for this industry. The workforce problem is exasperated by competition from other states and a 10-year low in undergraduate enrollment in natural sciences, computer sciences and engineering.

Computational methods have gained an important place in biotechnology and continue to grow at a rapid pace. This project addresses the need for a skilled workforce in the computation domain of biotechnology. The project brings state-of-the-art computer software into the chemistry department computer laboratory. Student projects in the computational chemistry course will be designed around this new software. The object of this course is to provide a basic understanding of the methodology of molecular modeling and the use of professional-level software for this purpose. This should provide students with a lasting education in a rapidly growing field.