

**EXECUTIVE SUMMARY:** *(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 for California.)*

Plague is still endemic throughout the world and was classified as a reemerging disease in 1997. The plague bacillus was used as a biological weapon on several occasions in the past, and more recently, genetically-engineered strains were constructed by the Soviets that were more lethal than the wild-type strain and resistant to common antibiotic treatment. No vaccine is currently available for plague in the US. The long-term goal of our research focuses on the identification of novel virulence factors of *Y. pestis* and consequently their utilization for the development of plague vaccines and therapeutics.

The potential benefits of this research project are far-reaching. The development of vaccines against infectious diseases is a growing and very dynamic field of biotechnology. Graduate students at Cal Poly Pomona who are majoring in Biology with emphasis in Biotechnology or Microbiology will have the opportunity to perform original research in the field of infectious diseases. Given that most of our graduates are employed by the local biotechnology and pharmaceutical industry in Southern California and the Bay area, this research project will provide an excellent training opportunity for future researchers who will be employed in the State of California.