

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.

The proposed study addresses the important issue of how cells of the immune system become activated to defend the body against microbes. As such, it is of significance to biomedical research and to human health. We propose to develop methodology that will allow us to visualize the behavior of proteins inside cells of the immune system, especially when these cells 'turn on' in response to microbial challenge. This technology and its application will provide us with insights that may potentially lead to the development of novel drug therapies for diseases where the immune system malfunctions (e.g. autoimmunity, cancer, immune deficiencies). As such, the derived data are of importance to public health and to the biotechnology economy of California. Both of the collaborators in this project are deeply involved in the apprenticeship training of students in the molecular life sciences. Therefore, the proposed project is also significant in terms of providing well-trained researchers for the biotechnology work force.