

**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.

Actin cytoskeleton is a complex and dynamic machine that generates force and movement inside our cells. Changes in the actin cytoskeleton are required for heart muscles to contract, for cells of the immune system to crawl to a site of infection, for new brain cells to make the right connections, and for cancer cells to leave their original location and spread to other parts of the body. My goal is to understand how the changes in the actin cytoskeleton occur in a relatively simple organism, baker's yeast. The actin cytoskeleton proteins in yeast and in humans are very similar; therefore, what we learn about yeast cells should also apply to human cells. The goal of this project is to identify proteins that change their interactions with actin in response to various signals. These proteins may be the targets of inappropriate cell signaling in diseases. Learning how actin is regulated will help us understand how diseases such as cancer and muscular dystrophy develop and, hopefully, suggest novel routes for curing these diseases.