

**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.

We have recently discovered a gene in fruit flies that codes for a key regulatory enzyme that controls the levels of an important class of cellular lipid molecules. We propose to analyze how mutations in that gene cause a severe skeletal muscle disorder in the mutant flies. There is a very similar gene in humans which performs the same function as the gene in flies, therefore it is likely that what we learn will be useful in understanding how human skeletal muscles work and how hereditary diseases can affect muscle function.