

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.

Obesity, type II diabetes, and related metabolic disorders are an increasing problem in the human population, and even in many non-human animals. Central to these disorders is improper regulation of glucose and fatty acid metabolism both in the liver and in adipose tissues. Synthesis of fatty acids within cells is regulated in response to both nutritional and hormonal signals within an organism, and it has been shown that ingestion of high-carbohydrate diets leads to both increases in insulin and blood glucose levels leading to the activation of two independent transcription factors (SREBP and ChREBP) that regulate glucose metabolism and lipid synthesis. By understanding the relative contributions of these two transcription factors to the regulation of lipid metabolism in both liver and adipose tissue increases our understanding of normal metabolism and has future implications in the development of possible therapies for disorders such as obesity, type II diabetes and non-congenital lipodystrophy.

California is a leader in the biomedical and biopharmaceutical industries, and educational programs that provide training in this field are essential to our continued success. The proposed research will give experience to several promising young minds who possess an interest in the field of biotechnology, and whose perspective and training will help to further advance California as a world center for biotechnology.