

**NON -TECHNICAL ABSTRACT:** *(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.)*

The rapid rise in the numbers of cases of type 2 diabetes mellitus is creating an unsustainable burden on the health care systems of the U.S. and world, and while there is no cure for the disease, there are therapies which alleviate some of the symptoms and complications. Several therapeutics activate a signaling pathway in pancreatic  $\beta$ -cells called the cyclic-adenosine monophosphate (cAMP) second messenger cascade which boosts insulin secretion after a meal. This proposal will characterize a new target of cAMP signaling, *microRNA-375*, which has the potential to be used as a complementary therapy to enhance the efficacy of existing therapeutics that target the cAMP signaling pathway.