

TITLE: Split-Protein Engineering and Design: From Biosensors to Kinomics

Abstract

This seminar will focus on two major themes. The first theme comprises the design, development and application of a suite of turn-on split-protein methodologies for interrogating protein-protein interactions within the BH3 family; biosensors for recognition of nucleic acids and its chemical modifications, cell surface proteins and caspases. The second theme will focus on recent work broadly focused on kinomics or protein phosphorylation, which includes the design of new methods to target protein kinases; the development of a kinome scale small molecule profiling method; and finally new methods for designing small molecule activated kinases and phosphatases.

Biography

Professor Neel Ghosh, is the Emily Davis and Homer Weed Distinguished Professor'08 at the University of Arizona. His laboratory is broadly interested in Protein Design and the Chemical Biology with a focus on developing new tools and methods with a particular interest in split-proteins and protein kinases. Neel Ghosh is also a co-founder and Chief Scientific Officer for Luceome Biotechnologies. Neel received his doctoral degree in 1998 while working with Professor Jean Chmielewski at Purdue University. His doctoral research focused on designing inhibitors of protein-protein interactions and self-replicating peptides. In 1998 he joined Professor Andrew Hamilton and Professor Lynne Regan's laboratories at Yale University as a joint postdoctoral. At Yale, he discovered the first conditional split-Green Fluorescent Protein, which has been used as a means for measuring protein-protein interactions by many laboratories and the methodology is sometimes called fluorescent protein complementation. In 2001, Neel Ghosh joined the Department of Chemistry and Biochemistry at the University of Arizona as an Assistant Professor and was promoted to Associate Professor and then to the Davis & Weed Chair and Full Professor in 2011.