PROGRAM LEARNING OBJECTIVES: Molecular Structure & Signaling (MSS)

MSS Program Learning Objectives

The goal of the PhD program in Molecular Structure and Signaling (MSS) is to train students to become future leaders in academic, industrial and other related biomedical fields, with specific focus on new therapeutic target identifications. The ultimate goal of MSS program is to provide students with a comprehensive understanding and the skills of taking bench side discoveries to preclinical and eventually clinical studies. MSS does not focus on one specific human disease, rather the knowledge and experimental approaches that apply to understanding of a variety of human disorders, such as diabetes, atherosclerosis, Alzheimer and cancer. Specifically, MSS program is about the structural and functional relationship of a single molecule, post-transcriptional regulation of the molecule and role of the molecule in the complicated signaling networks in the cell.

1) To understand advanced knowledge of proteins’ structural and functional relationships.

2) To understand how proteins transmit biological signals in the context of cellular signaling networks.

3) To understand the principles of key experiments for investigating protein structure and signal transduction.

4) To master quantitative measurements of proteins and perform calculations during experimental design, execution, and interpretation of the data.

5) To understand the importance of molecular structure and signaling concepts in at least one human disease.

By the end of MSS program training, students are expected to develop a clear idea about their future careers in various fields of medical sciences such as academic research, industrial drug development, science writing, and even a patent lawyer. MSS puts special emphasis on competitiveness of its students on the job markets.