

PROTEIN FUNCTION DISCOVERY

Courses

PROT 824 Biophysical Analysis of Proteins

This course will consist of seminars and lectures covering topics such as equilibrium binding, enzyme kinetics, hydrodynamics, fluorescence, light scattering and spectroscopy. Protein structure determination using x-ray crystallography and NMR spectroscopy will be covered.

Specific emphasis will be placed on the application of biophysical techniques to gain important insights into protein function, interactions and structure. A good working knowledge of introductory calculus and chemistry is required. Offered jointly with BCHM 824. PREREQUISITE BCHM 313 or its equivalent or permission of the coordinator. Enrolment is limited. Fall term, three hours.

PROT 825 Practical Approaches to Protein Function Discovery

A laboratory-based course designed to introduce students to a variety of state-of-the-art techniques to characterize proteins. Students will receive hands-on experience in techniques such as cell culture, protein expression and purification, 2D gel electrophoresis, mass spectrometry, analytical ultracentrifugation, surface plasmon resonance, micro-calorimetry, NMR spectroscopy, x-ray crystallography, immunofluorescence techniques and confocal laser microscopy. Students will learn the proper use of equipment and how to collect, analyze and present experimental data. Enrolment is limited. Fall-winter terms. Tutorials and laboratory.

COREQUISITE PROT 824

PROT 826 Laboratory Rotations in Protein Function Discovery Research

Students carry out three 10 week-long research rotations in the laboratories of faculty associated with the Collaborative Graduate Program. Rotations are chosen according to the interests of the students and in consultation with faculty. Upon joining a lab, the student becomes a fully participating member of the research group, engaging in various research and research-related activities. The rotations introduce students to many of the skills and concepts that they will use throughout their careers and provide a basis for the student's selection of a research area in which to perform dissertation research. At the end of each rotation period students will be evaluated on oral/written presentations.

Enrolment is limited. Fall-winter terms. Laboratory research. COREQUISITE PROT 824 and PROT 825