

Course Offering for Fall 2023

Mass Spectrometry and Functional Proteomics

CPB 68000 Mass Spec & Proteomics (Lecture course)

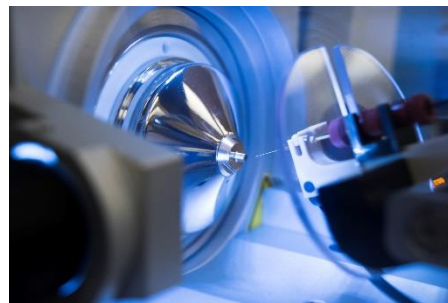
"Learn about rapidly advancing field of functional proteomics and discover how proteomics can be applied to your research for new discoveries".

Course date: August 21, 2023-December 9, 2023 (2 credits)

CRN 22678

Time and Place: WF, 10.30AM-11.20AM, MJIS 1083

Instructor: Uma K. Aryal; Comparative Pathobiology & Purdue Proteomics Facility; uaryal@purdue.edu



The aim of this course is to provide each student with the fundamental knowledge to design and perform their own proteomic experiments. The goal is to educate students to identify new opportunities and applications for proteomic approaches in their research and build future career.

Topics include:

- Principles of proteomics and mass spectrometry
- Top-down and bottom-up proteomics
- Proteomics sample preparation methods
- Bioinformatic strategies for data analysis
- Quantitative strategies –labeling and label-free methods
- Protein post-translational modifications
- Protein complexes, proteoforms, and interactions
- Proteomics and structural biology
- Applications:
 - ✓ Obesity, insulin resistance, and type 2 diabetes
 - ✓ Senescence and aging
 - ✓ Cancer
 - ✓ Neurological disorders