Chemical Biology Course, Fall 2021

The spirit of this course is to explore the complexities of modern biology using the tools of chemistry. The lectures cover amino acid chemistry, nucleic acid chemistry, posttranslational modifications of proteins, discovery and use of chemical probes to examine cellular mechanisms, membrane chemistry, chemical tools for imaging, and natural product biosynthesis. The method of evaluation is class attendance, active participation in the discussions and proposal presentation.

Tuesdays 1:00pm – 3:00pm Carson Auditorium

September 21	Tarun Kapoor Discovering Chemical Probes and Drugs
September 28	Tarun Kapoor Identifying the Physiological Targets of Chemical Inhibitors
October 5	Katya Vinogradova Posttranslational modifications
October 12	Katya Vinogradova Bioorgothonal Chemistry
October 19	Katya Vinogradova Functional Proteomics and Activity-Based Protein Profiling
October 26	Sean Brady Natural Product 1 - Polyketides
November 2	Sean Brady Natural Product 2 – Nonribosomal peptides
November 9	Sean Brady Natural Product 3 – Additional thoughts
November 16	Sean Brady Metabolites from the human microbiome
November 23	Meet with students to discuss proposals for presentation
November 30	Tarun Kapoor Using Chemical Probes to Examine Biological Mechanisms
December 7	Tarun Kapoor Using Chemical Probes to Examine Biological Mechanisms
December 14	Proposal Presentations

Attendance is required. If you have to miss a class please email Dr. Kapoor (kapoor@rockefeller.edu) in advance to discuss your absence.

Class notes will be distributed as pdf files via the class email: ruchembiol@gmail.com

Recommended background materials (not required):
Posttranslational Modification of Proteins: Expanding Nature's Inventory, Christopher Walsh
The Organic Chemistry of Biological Pathways, McMurry and Begley
Chemical Biology From Small Molecules to Systems Biology and Drug Design, Volumes 1-3, Schreiber, Kapoor, and Wess

Structure and Mechanism in Protein Science, Alan Fersht
The Molecules of Life Physical and Chemical Principles, Kuriyan, Konforti, Wemmer