Course Description: This is a discussion-based class in which students study, read, and present the published work of the invited Raiziss Rounds seminar speakers. The goal of the class is to develop the students' ability to understand the rationale behind the experiments, critically analyze the work, communicate their thoughts to others, and to engage in focused scientific discourse. The Wednesday classes will run in a journal club format with students giving presentations of the papers for that week's speaker. Thursday will be the noon seminar by the invited speaker, followed by lunch with the speaker.

Grading will be broken down as follows:
Oral presentation: 45%
Participation in group discussions: 30%
Attendance: 25%

Presentations: In each Wednesday class, we will discuss 1-2 papers recommended by the invited speaker for that week. Students will be assigned to prepare presentations on a rotating basis, and are required to send the papers in PDF format to the TA on the Friday prior to class. Presentations should be prepared in Powerpoint or similar format. There should be sufficient time allotted for background and introduction at the start of each presentation. Papers should be discussed in detail, with emphasis given to assessing the rationale for each experiment and whether or not the experiment succeeded in testing the hypothesis in question. At the end of each paper, there should be a summary of what the main findings were, what is left unanswered, and a proposal for an experiment to solve the unanswered aspects of the work. Identify the weak spots of the paper, and what should be done to further support or even refute the hypotheses ventured. Any difficulty in understanding methods should be figured out prior to the presentation (Joe is available to help explain methods during office hours). Presenters should be prepared for interruptions throughout the talk, since this is a discussion-based class (see below).

Group discussions: All students are required to read the assigned papers prior to coming to class. During the presentations, all students are expected to take an active role in the discussions. Questions regarding experimental rationale and/or technical details are desired since they lead to more discussion. Providing answers to these questions are important contributions, as well. Comments and opinions regarding the quality, importance, or logic behind the work under examination are also very helpful ways to participate in these discussions.

Attendance: All students are required to attend every class and seminar. A rotation of students having lunch with the seminar speakers will be established, and it is required for each student to attend their assigned lunches. Unexcused absences that are not approved by the TA prior to the class or seminar will negatively affect the final grade, and three such absences will result in a failing grade.
Thursday Seminar Dates/Titles:

January 22
Tanja Kortemme, Ph.D. | University of California, San Francisco
Design of modified and new biological functions - from proteins to cells

January 29
Emily Balskus, Ph.D. | Harvard University
Elucidation and study of biosynthetic pathways and enzymes in microbes and the microbiome; development of synthetic methods compatible with microbial chemistry

February 5
Or Gozani, M.D., Ph.D. | Stanford University
An unexpected journey: the lysine methylome, epigenetic signaling, and disease

February 12
Danica Fujimori, Ph.D. | University of California, San Francisco
Chromatin and small molecule-mediated regulation of histone demethylases

February 19
Michael Hecht, Ph.D. | Princeton University
Molecular underpinnings and the search for novel therapeutics in Alzheimer’s disease; synthetic biology and the design of proteomes

February 26
Elsa Yan, Ph.D. | Yale University
Roles of thermal stability of G protein-coupled receptor rhodopsin in dim-light vision and vision disorders

March 5
Geert Kops, Ph.D. | Universitair Medisch Centrum, Utrecht
Attachment issues: chromosome segregation and the spindle assembly checkpoint

March 12 (Spring Break – no class)
Jin Hyung Lee, Ph.D. | Stanford University
Optogenetic fMRI and the investigation of global brain circuit mechanism

March 19
Silvia Cavagnero, Ph.D. | University of Wisconsin, Madison
New spectroscopic avenues to study protein folding at high sensitivity and resolution

March 26
Elaine Fuchs, Ph.D. | Rockefeller University
Transcriptional networks in skin stem cells: nuts and bolts

April 2
Alison Sweeney, Ph.D. | University of Pennsylvania
Multi-scale molecular modeling: generating physical insights when experiments are hard or impossible

April 9
Peter Baumann, Ph.D. | Stowers Institute
Biogenesis and regulation of telomerase

April 16
Georgios Skiniotis, Ph.D. | University of Michigan
Cryo-EM visualization of a modular polyketide synthase during its catalytic cycle

April 23
Tom Muir, Ph.D. | Princeton University
Chromatin as an expansive canvas for chemical biology