BMB 650-Spring 2013
Dr. George Raiziss Rounds

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TA: Sandya Ajith (ajiths@mail.med.upenn.edu)

Meeting Times:
Wednesdays:  12:15-1:30   Room 255, Anatomy/Chemistry
Thursdays:   noon-1:00     Austrian Auditorium, CRB
             1:00-2:15      JF Library, Anatomy/Chemistry

TA office hours:
Mondays 2:00-3:00 (Location: Room 906, Stellar-Chance)

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 (Sandya is available to help explain methods during her 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 17
Ann Hochschild, Ph.D. (Harvard University)
Bacteria-based tools for studying prions and amyloid formation

January 24
Barbara A. Baird, Ph.D. (Cornell University)
Zooming in on spatial control of receptor mediated cellular responses

January 31
Hashim Al-Hashimi, Ph.D. (University of Michigan)
Breathing life into nucleic acid structure: Dynamics at atomic resolution

February 7
Taekjip Ha, Ph.D. (University of Illinois, Urbana-Champaign)
Single molecule fluorescence force analysis of protein dynamics on single stranded DNA

February 14
Chuan He, Ph.D. (University of Chicago)
Reversible epigenetic methylation of DNA and RNA in mammalian cells

February 21
Lewis Kay, Ph.D. (University of Toronto)
Seeing the invisible by solution state NMR spectroscopy

February 28
Philip A. Cole, M.D., Ph.D. (Johns Hopkins Medicine)
Chemical approaches to sorting out cell signaling mechanisms

March 7
Spring Break

March 14
Steven G. Boxer, Ph.D. (Stanford University)
Stark realities: quantitative measures of electrostatics and dynamics in proteins

March 21
Arshad Desai, Ph.D. (University of California, San Diego)
Fidelity in Chromosome Segregation

March 28
Elizabeth Vierling, Ph.D. (University of Massachusetts)
Capturing denaturing proteins: small heat shock protein structure and activity

April 4
Petra Fromme, Ph.D. (Arizona State University)
TBA

April 11
Lila Gierasch, Ph.D. (University of Massachusetts)
The alloseric mechanism of an Hsp70 molecular chaperone

April 18
Donald Hamelberg, Ph.D. (Georgia State University)
Probing the intricate coupling between enzyme dynamics and substrate turnover during catalysis