Syllabus: BCH 607 and MIC 607 - DNA Replication and Repair

Instructors: Tom Melendy & Mark Sutton (both instructors will be present at most class meetings)

Class Times and Location: To be arranged each semester to attempt to accommodate all enrolled students’ schedules: generally one 2-hour class one afternoon per week.

Topic and goals: This is an advanced seminar style course to look in depth at topics in DNA replication, DNA repair, and cellular DNA damage responses. The **learning outcomes** of the course are: 1) to increase the depth of the participants' knowledge in areas of DNA metabolism, 2) to improve and refine students’ presentation skills, 3) to hone participants’ abilities to read primary research articles in depth and critically evaluate the work, and 4) to learn how to put together and present a lecture de novo.

Prerequisites: Required prerequisites include courses covering genetics, advanced biochemistry (including sections on DNA replication and repair), and molecular biology. Students should have already had seminar style courses where they were required to individually present primary research articles. **Permission of the instructor is required for all students. Doctoral students in the Departments of Biochemistry or Microbiology are allowed to take this course twice for credit towards their degree.**

**Class Activities:** During this 607 course each student will be required to do two presentations. The first presentation will be to prepare and present a 45 minute class on an assigned area of DNA Repair/Replication/DNA damage response. This will increase the overall base of knowledge of all class members (learning outcome 1), which will be important for overall knowledge and for the latter half of the course. It will also provide the presenting student with vital experience in learning how to put together and present a lecture de novo (on your own without using a textbook as a guide) (learning outcomes 2 & 4). For the second round of presentations each student will give a formal presentation of a primary research article. This will be a presentation of the necessary background, including data from articles that led up to the paper being presented. This should be a presentation of the paper, but also a critical analysis of the results and conclusions of the paper (learning outcomes 2 & 3 for the presenter). Presenting students are expected to meet with one of the instructors in advance of their presentations to discuss what will be covered, how in depth to take it, and to get advice on presentation skills. During the introductory class we will hand out materials on advice for how to approach these assignments, and how to improve presentation skills (learning outcomes 2 & 3 for the presenter). During the primary research article presentations, other students in the class are expected to participate actively in discussion of the research article being presented. All students will have read the article prior to class, and are expected to contribute insightfully into the discussion, adding to the critical analysis of the research being presented (learning outcome 3 for the students not presenting). The overall outcome of this course will train students to prepare their own lectures, will hone their formal presentation skills, will improve their ability to critically analyze and evaluate primary research, and will increase their
knowledge base in the important areas of DNA metabolism, DNA replication and repair, and in cellular responses to DNA damage.

Grading: a passing grade will require acceptable class presentations and regular class participation when you are NOT the presenter. Class participation consists of substantive questions or input about the papers presented by others in the class, and not merely questions of clarification. Both the presentations and the class participation are vital parts of the grading in this course, so you must perform adequately in both categories to receive a passing grade.

Attendance: due to the interactive nature of this course, and the importance of the presentations and class discussion, attendance is imperative. In general one unexcused absence at a class where you are not presenting will be overlooked. If additional classes are to be missed it must be for a UB-defined “excusable absence”, students must notify both instructors ahead of time in writing (if at all possible), and if deemed necessary the instructors may assign compensatory alternative assignments to compensate for the time lost in class.

University Policies, Academic Integrity: Commitment to standards of academic integrity is at the very core of a UB education. Sources for figures or written material reproduced for presentations in class not created by the student must be cited appropriately. UB Graduate School Policies and Procedures regarding Academic Integrity can be found at: http://grad.buffalo.edu/Academics/Policies- Procedures/Academic-Integrity.html
Students with disabilities requiring accommodations for this course should be assessed at the UB Office of Accessibility Resources (http://www.student-affairs.buffalo.edu/ods/). This office will then coordinate with the instructors to meet the needs of these students in the course.