

BIMS 813: TOPICS IN THE MOLECULAR BASIS HUMAN DISEASE
Fall 2007

Course Objective: The course will address the biologic/molecular mechanisms related to selected disease processes. The format consists of weekly meetings of 2 hours in duration and each topic will be covered in 2 sequential sessions with a combination of informal didactic presentations by the faculty and journal article discussions (**3 pre-assigned papers maximum**) by the students. Didactic-style presentation(s) are aimed at providing sufficient background on the relevant pathobiology, histopathology, and/or clinical manifestations for the students to read and discuss the literature assignments. A strong focus of the course will be the discussion of the basic pathobiologic processes and the contemporary biomedical translation of experimental science to the understanding and treatment of human diseases. When possible, visits to clinical or research laboratories will allow observation of diagnostic procedures or translational research techniques. All students are required to write an NIH-style mini-grant proposal based on one of the session topics. In the final session, students will participate in a mock study section to review and score the applications.

Enrollment: Enrollment will be limited to a total of 21 students with preference given to full-time graduate students in the Molecular Medicine Program, 1st year students in the Medical Scientist Training Program, and medical students participating in graduate research programs.

Credit: 1 unit

Grading: Pass/Fail

Course Director: Jim Mandell, MD, PhD (jwm2m)

Course Associate Directors: Adam Goldfarb, MD (ang3x),
Mani Mahadevan MD (msm8r)

Course Requirements:

- 1) Attendance at all sessions
- 2) Satisfactory completion of mini-grant proposal (5 pages maximum). The objective of this exercise is to develop the student's ability to ask questions, identify an important problem, and write a focused research proposal, in the style of an NIH grant application. Students may consult with course faculty during the preparation of the mini-grant proposal.
 - a. Format of grant proposal:
 1. Abstract: The abstract (<300 words) provides a brief summary of the proposed study, stated in terms accessible to the educated layperson.

2. Specific aims: This section (~1/2 page) should briefly list the questions to be addressed in the experiments and the hypotheses to be tested.
3. Background and significance: (~1 page) This section should provide the reader with a brief literature review of the topic and provide a sound rationale for the proposed experiments.
4. Methods: (~3 pages): The methods should briefly outline the experimental design and the general techniques to be employed. An explanation of procedures for data analysis should be included and a brief interpretation of the expected findings.
5. List of references: use any accepted scientific reference style. (Reference pages do not count against the 5 page limit).

3) Completion of course evaluation

**Wednesdays 2:00 PM – 4:00 PM, Health Sciences Library
Teaching Classroom 1336**

August 22 & 29

Iron Deficiency: A New Look at an Old Disease
Adam Goldfarb, M.D. (Pathology)

September 5 & 12

Molecular Basis of Hearing Loss
Jeffrey Holt, PhD
George Hashisaki, MD

September 19 & October 3

Adenosine Receptors and Renal Disease
Joel Linden, PhD
Mark Okusa, MD

October 17 & 24

Cystic Fibrosis
David Castle, PhD
Ben Gaston, MD
Larry Silverman, PhD

(Mini-Grant Proposals due Oct. 29; email to jwm2m@virginia.edu)

October 31: Mock Study Section