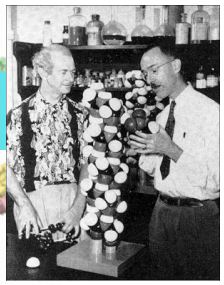
Spring 2014 BIOL 5102 Structural Biology Seminar



Class:	BIOL 5102		Th 3:00-3:50 Room 237 DLS
Instructors:	Steven Vik	svik@smu.edu	
Office:	236 DLS	214-768-4228	

Course Description: History of Structural Biology

This seminar course includes readings and discussions of the period 1933-1963, when structural molecular biology emerged. The course seeks to examine historical aspects of the development of structural molecular biology, which is now an essential component of modern biology. The readings include both original research articles and more recent retrospective articles. Some technical aspects will be discussed, in order to understand the significant advances that were made. Human dimensions of the scientists involved will also be examined.

The class will meet once per week for one hour.

Objectives

Students will be able to describe and analyze historical aspects of the history of structural molecular biology

Text

Present at the Flood: How Structural Molecular Biology Came About

by Richard E. Dickerson

Sinauer Associates, Sunderland Mass. 2005 ISBN 0-87893-168-6

The text contains copies of the original articles that will be read and discussed.

Format

Each week the instructor will provide an introduction to the material. One or more students will be assigned individual articles. They will be responsible for summarizing the material for the class, and with the assistance of the instructor, leading a discussion. All students will be expected to have read the weekly material, and to participate in the discussion. Topical questions appear at the end of each chapter.

Tentative Schedule

Jan 23	Chapter 1	Introduction
Jan 30	Chapter 2	Early Concepts of Proteins. Paper **A**
Feb 6	Chapter 3	Cyclol theory. Papers **ABCD**
Feb 13	Chapter 3	Dorothy Wrinch, W.T. Astbury Papers **EF**
Feb 20	Chapter 4	Folding and Coiling of Polypeptide chains. Papers **BC**
Feb 27	Chapter 4	Continued. Pauling, Perutz & Eisenberg. Papers **DEFG**
Mar 6	Chapter 5	Race for the DNA Double Helix, Chargaff Rules Papers **AB** Triple Helices. Pauling and Fraser Papers **CD**
Mar 13		Spring Break
Mar 20	Chapter 5	Diffraction of a helix. Watson, Crick, Wilkins, Franklin Papers **EFG**
Mar 27	Chapter 5	Publicity and Credit. Papers **HIJK**
Apr 3	Chapter 6	How to Solve a Protein Structure. Satirical paper **A**
Apr 10	Chapter 6	Hemoglobin Abstracts, Myoglobin Structure Papers **I-IX**, **BC**
Apr 17	Chapter 6	High Resolution Structures: Hemoglobin, Myoglobin. Papers **AB**
Apr 24		No Class -probably
May 1	Chapter 8,9, Appendix.	History and Art, Irving Geis Papers **7C**, App 3 **AB**
May 8		Finals week meeting, 1:00-2:00 PM

Additional assignment

Each student will also write a short paper related to the course topic. The papers will be discussed at the time of the Final Exam. Details to be announced later.

Grading

Grades will be based on the student presentations, participation in discussions, and the written paper.

HONOR CODE: It is expected that students have read sections of the University Bulletin concerning university regulations and academic honesty. In matters of homework, it is permitted to consult your classmates or others for assistance, but the work submitted must be your own.

Disability Accommodations: Students needing academic accommodations for a disability must first be registered with Disability Accommodations & Success Strategies (DASS) to verify the disability and to establish eligibility for accommodations. Students may call 214-768-1470 or visit http://www.smu.edu/alec/dass.asp to begin the process. Once registered, students should then schedule an appointment with the professor to make appropriate arrangements.

Religious Observance: Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)

Excused Absences for University Extracurricular Activities: Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue)