

## BISC 502B Molecular Genetics and Biochemistry

**Time:** Spring 2016, MW 2:00-4:00 pm

**Location:** RRI 301

**Course Coordinator:** Prof. Fabien Pinaud

**Office:** RRI 204A; **Phone:** (213) 740-2262; **email:** [pinaud@usc.edu](mailto:pinaud@usc.edu)

**Office Hours:** TTh 1-2 PM

**Description:** This course is a graduate-level survey course covering the following topics: Cell biology and microscopy, Structural biology, Development, Germline specification and development, and Population genetics. The goal of this course is to introduce graduate students to basic concepts on these topics, with particular emphasis on experimental methods and practical reasoning. The course is designed for graduate students in the Molecular and Computational Biology PhD programs. Graduate students in related fields with a suitable background in biological sciences may also be admitted at the discretion of the faculty. This course assumes familiarity with Cell and Molecular Biology principles and methods. It is not appropriate for undergraduate or non-scientists students.

**Format and material:** The course will be taught in a mixed format of lectures and analysis of primary scientific literature. No book is required. Resources and scientific articles will be uploaded on Blackboard (<http://blackboard.usc.edu>). Background reading in any Cell and Molecular biology, Structural biology, Microscopy or general Genetics textbooks may be helpful.

**Grading:** Each topic includes an exam in the form of a problem set, questions (essay or short answer) or other evaluation of the material (50 pts). The exam is submitted by the Professor lecturing the topic.  
Total Grade: 250 points

**Requirements** All students are expected to attend lecture. Additional material will be provided on Blackboard. Students should monitor the Blackboard site for course announcements and new materials.

### Instructors:

Fabien Pinaud, Assistant Professor [pinaud@usc.edu](mailto:pinaud@usc.edu) (Course director)

Sean Curran, Assistant Professor [spcurran@usc.edu](mailto:spcurran@usc.edu)

Matthew Michael, Associate Professor [mattm@usc.edu](mailto:mattm@usc.edu)

Lin Chen, Professor [linchen@usc.edu](mailto:linchen@usc.edu)

Vsevolod "Seva" Katritch, Assistant Professor [katritch@usc.edu](mailto:katritch@usc.edu)

Sergey Nuzhdin, Professor [snuzhdin@usc.edu](mailto:snuzhdin@usc.edu)

Date	Lecturer	Topic
M 11 Jan	Pinaud	Cell biology and microscopy
W 13 Jan	Pinaud	Cell biology and microscopy
M 18 Jan	HOLIDAY	
W 20 Jan	Pinaud	Cell biology and microscopy
M 25 Jan	Pinaud	Cell biology and microscopy
W 27 Jan	Pinaud	Cell biology and microscopy
M 1 Feb	<b>Exam</b>	Cell biology and microscopy
W 3 Feb	Curran	Development
M 8 Feb	<b>No course</b>	
W 10 Feb	Curran	Development
M 15 Feb	HOLIDAY	
W 17 Feb	Curran	Development
M 22 Feb	<b>No course</b>	
W 24 Feb	Curran	Development
M 29 Feb	<b>Exam</b>	Development

W 2 Mar	Michael	Germline specification and development
M 7 Mar	Michael	Germline specification and development
W 9 Mar	Michael	Germline specification and development
M 14 Mar	SPRING BREAK	
W 16 Mar	SPRING BREAK	
M 21 Mar	Michael	Germline specification and development
W 23 Mar	Michael	Germline specification and development
M 28 Mar	Exam	Germline specification and development
W 30 Mar	Chen	Structural biology (basics of diffraction theory)
M 4 Apr	Chen	Structural biology (Modern technologies of crystallography)
W 6 Apr	Chen	Structural biology (Examples of structural study)
M 11 Apr	Katritch	Structural biology (computational structural biology – homology modeling and structure-based drug discover)
W 13 Apr	Katritch	Structural biology (computational structural biology – hybrid approaches)
M 18 Apr	Exam	Structural biology
W 20 Apr	Nuzhdin	Population genetics
M 25 Apr	Nuzhdin	Population genetics
W 27 Apr	Nuzhdin	Population genetics
M 2 May	Nuzhdin	Population genetics
M 4 May	Exam	Population genetics

**Disclaimer:** It may be necessary to make some necessary adjustment to the syllabus during the semester.

### General Policies

**Exam:** Exam dates are firm. If a student misses an exam due to a true emergency (an acceptable written excuse or presentation of a doctor's note must be provided), we MAY schedule a make-up exam, or at our discretion MAY permit the use of the average of other exams in determining the course grade. No one will be admitted to an exam after the first student has left the exam. Exams will be kept in Dr. Pinaud's office for the required period.

**Exam Regrading:** Regrading of exams will be done only by the professor who wrote the questions. Regrading can only be done within one week of the day the exam is initially returned to the class, and will only be considered for exams written in ink. If you use pencil on an exam, we will accept the exam, but we will not allow regrading in the event of a dispute.

**Academic Integrity:** Academic integrity policies of the university will be strictly followed. Infractions can result in severe penalties. Students are expected to familiarize themselves with the USC standards for academic integrity (<http://usclibraries.adobeconnect.com/academicintegrity>)

**Disabilities:** Students requesting academic accommodations based on a disability are required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP when adequate documentation is filed. Please be sure the letter is delivered to Dr. Pinaud as early in the semester as possible. DSP is open Monday-Friday, 8:30-5:00. The office is in Student Union 301 and their phone number is (213) 740-0776.