

UCSC- MCD Biology  
BIO 186L-Undergraduate Research in MCD Biology-Syllabus

BIO 186L is a course intended for students working in the lab of an MCD faculty member who wants to receive upper division lab credit towards their degree for their research. This course is intended for students considering a career in laboratory based biological research and is not appropriate for students who merely seek upper division lab credit.

Enrollment in BIO 186L depends upon:

- 1) Consent of the instructor for BIO 186L
- 2) Consent of an MCD faculty member in whose lab you will conduct your research
- 3) Completion of BIO 20A, 20B and one of 100, 100A or 105

This is a 5 Unit course and it is expected that students will spend 12-16 hours per week in the lab. In addition to your lab work, the instructor and all students in BIO 186L will meet once a week for one hour. Subjects to be discussed in these meetings include:

- 1) Lab safety
- 2) Working in a communal environment
- 3) Record keeping in the lab
- 4) The organization and funding of basic biomedical research in United States
- 5) Hypothesis driven versus descriptive approaches to research
- 6) Presenting your work-Oral presentations and publication
- 7) Ethics, fraud and scientific misconduct
- 8) The scientific literature
- 9) Career issues

Reading:

- 1) On Being a Scientist: Responsible Conduct In Research, 2<sup>nd</sup> Edition, National Academy Press, 1995. Available for free at <http://www.nap.edu/readingroom/books/obas>
- 2) The Craft of Scientific Writing, 3<sup>rd</sup> Edition, by Michael Alley (1997), Springer-Verlag
- 3) The Craft of Scientific Presentations: Critical Steps to Succeed and Critical Errors to Avoid, by Michael Alley (2002), Springer-Verlag

Evaluation:

Students will be evaluated by their performance in the laboratory, as evidenced by the report of their lab supervisor, the quality of their lab notebooks, written reports and oral presentations. Attendance at weekly classes is mandatory.

### Application for Admission to BIO 186L

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- 1) Consent of the instructor for BIO 186L
- 2) Consent of an MCD faculty member in whose lab you will conduct your research.

-You must secure a place in a lab prior to enrolling in BIO 186L. Note that most faculty will expect a multi-quarter commitment from students who wish to work in their lab. If you are looking for a lab in which to work, look at the faculty research summaries on the MCD website (<http://www.biology.ucsc.edu/mcd/faculty.html>).

- 3) Completion of BIO 20A, 20B and one of 100, 100A or 105

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Name \_\_\_\_\_

E-mail address \_\_\_\_\_

Major \_\_\_\_\_ Class Level \_\_\_\_\_

Sponsoring Lab/Faculty Member \_\_\_\_\_

Proposed Project \_\_\_\_\_

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Expectations of Lab Sponsor \_\_\_\_\_

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The faculty lab sponsor will evaluate student performance based upon their performance in the lab, the quality of their lab notebooks and any other criteria listed above. In addition, students will be evaluated on the basis of their written reports and oral presentations in the weekly class sessions. Attendance at weekly classes is mandatory.

#### Signatures

##### **Faculty Sponsor**

I have reviewed and agree with this plan. I will provide any lab-specific safety instruction not covered in the standard training provided by the campus EH&S. I confirm that the student will receive laboratory training equivalent to a 5 unit, upper division biology lab.

##### **Student**

\_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_