

Path 2 MIMG Research Experience Mentoring Responsibilities

Executive Summary

Undergraduates participating in the Path 2 curriculum will do discovery-based or hypothesis-driven research with faculty mentors actively contributing to their scholarly development as scientists. **By signing the agreement on page 5 thereby accepting a Path 2 research student into their laboratory, faculty mentors consent to follow the guidelines outlined below.** These guidelines are explained in detail on pages 2-4.

- Directly supervise undergraduate or designate post doctoral scholar, graduate student or technical assistant with mentoring experience as direct supervisor.
- Evaluate student performance using guidelines provided in the document entitled [“Assessment of Student Learning and Assignment of Grades for 196A & 196B”](#)
 - Discuss learning goals and expectations at beginning of research experience.
 - Keep students informed by meeting regularly to discuss progress and provide feedback about project and overall performance in the laboratory. These activities will help students gauge their strengths and weaknesses as well as recognize areas in need of improvement.
- Review and sign off on all reports & posters prepared by student for 196A & 196B.
- Ensure student gives a Power Point presentation at least once during 196A or 196B in a journal club or lab meeting.
- Review slides and abstracts prepared by student for 180A and 180B seminar courses to ensure student understands scientific content.
 - Help students identify journal articles that will provide background knowledge needed to achieve broader sense of project and explain overall problem/question being addressed during their presentations.
 - Make sure student understands overall experimental strategy as well as specific techniques they are performing in the laboratory.
 - Ensure students are able to describe the results and evidence-based conclusions derived from their data.
- Communicate with 180A and 180B seminar instructors, who will be monitoring student progress on their research project. This responsibility may involve responding to short questionnaires or engaging in short discussions by email or phone.
- Submit performance evaluation, which involves completing the document entitled [“Assessment of Student Learning and Assignment of Grades for 196A & 196B”](#), and grades to [MyUCLA Gradebook](#) at the end of 196A and again at the end of 196B.
 - Provide students a copy of each performance evaluation.

Detailed Overview

Mentoring an undergraduate student through a Path 2 research experience is a responsibility that involves active faculty participation in the program. Undergraduate students participating in the Path 2 research experience are expected to do discovery-based or hypothesis-driven research under supervision. This research experience should be comprised of activities that extend their learning of scientific principles and practices. Students are not to be assigned menial tasks that do not expand their scientific scholarship. If the student's project involves performance of repetitive techniques or if the student works in a team rather than independently, then the student must understand the overall question or problem being addressed and achieve a broader sense of the project so they can relate their contributions to the bigger scientific picture.

During a Path 2 research experience, the faculty member or his/her delegate should introduce and reinforce the concepts of scientific integrity, ethics, initiative, collaborative vs. independent work, cost-consciousness, laboratory safety, keeping a good notebook, maintaining high standards with respect to producing data and presenting results, and setting goals. The faculty member and/or his/her delegate also should actively **encourage the student to present a poster** at UCLA Science Poster day or other professional venues.

Faculty members are expected to follow the guidelines presented below once they accept a Path 2 research student into their laboratory. Faculty members are expected to interact with the MCDB/MIMG 180 seminar instructors to ensure student performance in the seminars reflects their contributions and progress in the laboratory, and vice versa.

Active participation in 196A & 196B by faculty mentors involves the following:

1. **Supervision:** Undergraduate students must be supervised directly by a faculty mentor. Otherwise, a post doctoral scholar, graduate student or technical assistant with mentoring experience should be assigned as their direct supervisor by their faculty mentor.
 - a. If the direct supervisor is a postdoc, graduate student, or technical assistant, the faculty mentor should discuss the student's progress with the immediate supervisor on a weekly basis. Both the faculty mentor and the immediate supervisor should review and sign off on any documentation prepared by the student such as contracts, research proposals, poster materials, abstracts, and draft, progress and final reports.
 - b. The faculty mentor and the immediate supervisor should meet with the student at the beginning of quarter to discuss expectations in accordance with grading guidelines for 196A and 196B (See detailed guidelines in the document entitled "[Assessment of Student Learning and Assignment of Grades for 196A & 196B](#)"). Feedback should be provided to the student to help him/her achieve the defined performance standards for excellence. Ongoing feedback should be given throughout each quarter. Suggested benchmarks: Week 3 (one-on-one meeting), Week 6 (one-on-one meeting and/or lab meeting presentation), Week 8 (draft research paper), and Week 10 (196A progress report or 196B final paper).
 - c. The faculty mentor, whether directly supervising student or not, should meet one-on-one with the student at least once each quarter to discuss general progress,

- assess overall understanding of the project, inquire about problems or challenges, and ask how the student is addressing those issues, etc. This also is a good time to discuss the student's future education plans or career goals because these conversations will help the faculty mentor write a good letter of recommendation for the student in the future. This should not be the responsibility of the faculty mentor's delegate, but of the faculty mentor him- or herself.
2. **Presentations:** Undergraduate research students need to learn how to convey their ideas and present scientific results in an oral format to a variety of audiences.
 - a. Students are expected to present at least once during 196A or 196B in a journal club or lab meeting in their faculty mentor's research laboratory. The student should give a Power Point presentation and include his/her data at this meeting. Feedback on the student's research progress should be provided as part of a one-one-one meeting following their presentation. The student will submit a PDF of the Power Point presentation to the 180 seminar instructor; the faculty mentor needs to be copied on this email which will serve as an electronic signature confirming the student completed this activity.
 - b. Students are expected to make a Power Point presentation at least once during MCDB/MIMG 180A: **Introduction to Research Seminar** (taken concurrently with 196A). This seminar presentation will introduce other MCDB/MIMG 180A group members to the student's proposed project and the question or problem being addressed. The presentation should include background literature for the student project. Faculty mentors or their delegates should help the student identify journal articles, discuss the contents of the papers with the student, and assist the student as they prepare their Power Point presentation by reviewing their slides and talking about approaches for giving effective talks.
 - c. Students are expected to make a Power Point presentation at least once during MCDB/MIMG 180B: **Research Seminar** (taken concurrently with 196B). Students should be able to identify the question or problem their project has been designed to address, explain techniques and overall experimental strategy, describe results, and discuss evidence-based conclusions. Faculty mentors or their delegates should advise their student as they prepare their abstract and slides.
 - d. Students will submit a PDF of the Power Point slides to their 180 seminar instructors and copy faculty mentor on the email. At the end of class, seminar instructors may follow up with faculty mentors or their delegates with questions or general inquiries to confirm student performance in the seminars reflects their contributions and progress in the laboratory. Faculty mentors are expected to communicate with instructors as necessary.
 3. **Writing:** The faculty mentor or his/her delegate should read and edit the draft research paper due during the 8th week of each quarter as well as any other written works that the student prepares. The final 196A progress report or 196B research paper and the 8th-week draft with faculty (or delegate) comments should be signed by the faculty member. Electronic copies will be submitted to the faculty mentor and seminar instructor by the students; signed, paper copies of these reports also will be submitted to the MCDB or MIMG Undergraduate Office.

4. **Evaluation:** Faculty mentors should submit a performance evaluation to the MIMG or MCDB Undergraduate Office at the end of 196A and again at the end of 196B. Refer to the document entitled “[Assessment of Student Learning and Assignment of Grades for 196A & 196B](#)”. The student may request a copy of each performance evaluation to help them gauge their strengths and weaknesses, recognize areas in need of improvement, and be informed of their overall performance level. It would be beneficial to both student and mentor to discuss the performance evaluation. Faculty mentors also must submit a grade for 196A and 196B to [MyUCLA Gradebook](#).

Timeline with Overview of Mentoring Responsibilities

| Class | Week Due | Assignment |
|---|--|--|
| Research Acquaintance (RA) Quarter | By 5:00 PM on Friday of 5 th week | <input type="checkbox"/> Eligible students apply to enroll in Path 2 Research Experience. Requires faculty mentor’s signature on: <input checked="" type="checkbox"/> Cover Page of Project Proposal Also requires faculty mentor to complete and sign: <input checked="" type="checkbox"/> Faculty Mentoring Agreement |
| 196A ▪ taken concurrently with 180A | 1 | <input type="checkbox"/> Meet with student (and direct supervisor if post-doc, graduate student, or technical assistant has been delegated this responsibility) to discuss expectations using guidelines provided in “ Assessment of Student Learning and Assignment of Grades for 196A & 196B ”. |
| | Presentation week | <input type="checkbox"/> Provide guidance during student preparation of 180A presentation ; sign off on student PPT slides; communicate with seminar instructor as needed |
| | 3 | <input type="checkbox"/> Meet with student; discuss experience and experimental progress; give feedback |
| | 6 | <input type="checkbox"/> Meet with student; discuss experience and experimental progress; give feedback |
| | 9 th week | <input type="checkbox"/> Return review of Draft 196A Progress Report to student (turned in by student no later than 5:00 PM on Friday of 8 th week) <input type="checkbox"/> Provide feedback/suggested revisions to student |
| | Finals week | <input type="checkbox"/> Evaluate 196A Progress Report (turned in by student no later than 5:00 PM on Monday of Finals week) <input type="checkbox"/> Complete form entitled “ Assessment of Student Learning and Assignment of Grades for 196A & 196B ”. <input type="checkbox"/> Submit form to Undergraduate Office <input type="checkbox"/> Give student grade for 196A on MyUCLA Gradebook |
| 196B ▪ taken concurrently with 180B | Presentation week | <input type="checkbox"/> Provide guidance during student preparation of 180B presentation ; sign off on student PPT slides; communicate with seminar instructor as needed |
| | 3 | <input type="checkbox"/> Review draft of student’s abstract for 180B <input type="checkbox"/> Meet with student; discuss abstract and overall research experience/progress; give feedback |
| | Presentation week | <input type="checkbox"/> Sign off on student PPT slides for 196B Lab Meeting <input type="checkbox"/> Provide constructive feedback to student following lab presentation |
| | 9 th week | <input type="checkbox"/> Return review of Draft 196B Final Report to student (turned in by student no later than 5:00 PM on Friday of 8 th week) <input type="checkbox"/> Provide feedback/suggested revisions to student |
| | Finals week | <input type="checkbox"/> Evaluate 196B Final Report (turned in by student no later than 5:00 PM on Monday of Finals week) <input type="checkbox"/> Complete form entitled “ Assessment of Student Learning and Assignment of Grades for 196A & 196B ”. <input type="checkbox"/> Submit form to Undergraduate Office <input type="checkbox"/> Give student grade for 196B on MyUCLA Gradebook |

Faculty Mentoring Agreement

Research Course: MIMG 196A/B

Quarters to be Enrolled (Circle): Fall Winter Spring Year _____

Name of Student (print): _____

Student UID: _____

Student's E-mail address: _____

Faculty Mentor Name (print): _____

Faculty Mentor's Department: _____

Faculty Mentor's E-mail Address & Phone:

Name of Student's Direct Research Supervisor (Print):

(Graduate Student, Post-doc, or Technical Assistant)

I accept the mentoring responsibilities outlined on pages 1-4 and will actively participate in the research experience for the above named undergraduate.

Signature of Faculty Research Sponsor (Instructor of Record for 196A & 196B courses)

Date