

# Graduate Student Mentorship Guide

UC Davis Physics and Astronomy Department

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## PURPOSE OF THIS GUIDE

This guide is primarily to help graduate students find advisors quickly and get off to a productive start early in graduate school. It also includes resources for helping to create a long-lasting and effective mentoring network.

**Don't stop here though, there are many more resources and seminars offered by Grad Pathways!**  
<https://grad.ucdavis.edu/professional-development>

This guide was created by the UC Davis Department of Physics and Astronomy 2020-2021 Graduate Studies Advising and Mentoring Pilot Committee.

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## MENTORSHIP FUNCTIONS AND FORMS<sup>1</sup>

Mentorship is a professional, working alliance in which individuals work together over time to support the personal and professional growth, development, and success of the relational partners through the provision of career and psychosocial support. Mentors can be faculty, postdocs, other graduate students, members of professional organizations, or anyone else who can provide valuable information or support relevant to your career development.

### Dyadic mentorship

A pairing between one mentor and one mentee. For example, the mentorship between an advisor and graduate student.

### Group mentorship

Mentorship amongst three or more mentors and mentees. A member of one of these structures may serve as a mentor, a mentee, or both depending on the particular interaction within a group.

### Network mentorship

The sum of a person's mentorship modes, support channels, and professional resources and organizations.

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<sup>1</sup> From The Science of Effective Mentorship in STEMM 2019 report  
<https://www.nap.edu/resource/25568/interactive/>

## WHERE TO FIND MENTORS IN THE DEPARTMENT

### For first year graduate students

- The Graduate Organization of Physics & Astronomy Students (GradOPS) runs a peer mentorship program where first year students are paired with more senior graduate student mentors. For more information, see the GradOPS website: <http://gradops.physics.ucdavis.edu/>, or email [gradops@ucdavis.edu](mailto:gradops@ucdavis.edu)

### For students seeking research advisors

- The course PHY295 provides an introduction to the different research fields and faculty in the department.
- When students are ready to start research, and/or if students cannot fulfill 12 credits with coursework, they should reach out to potential advisors and request research credits (PHY270 or PHY299). Consult with your first year advisor for guidance. You can also take 1-unit seminars for additional credits.
- If you're undecided on a research group or subfield, you can attend seminars and group meetings for several research groups in the same quarter. Seminars are always open; for research group meetings, ask the faculty member if you can sit in (most will say yes). You can also reach out to the students and postdocs in the group and ask them about their research and experience within the group.

### For students seeking additional mentors

- Consider attending group meetings outside of your primary research group.
- Tap into departmental resources by remaining in regular contact with your Qualifying Exam and Dissertation committees.
- Try connecting with academics and science communicators on social media, such as Twitter.
- Take advantage of on-campus organizations like GradPathways to connect with other graduate students and postdocs.

## WHAT TO ASK POTENTIAL MENTORS<sup>2</sup>

These are questions you might consider asking potential mentors, advisors, or peers when seeking a research group or figuring out mentoring structures.

### Questions to ask faculty

#### Prior experience and training

- Do you expect your students to come in with certain skills? What are they?
- How does a student get started in your group?
- How do you train your students? (One-on-one, paired with a student or postdoc, trial project, required courses/studies)
- Do students work on projects that have already been developed or are they expected to come up with their own?
- Do you consider a student's academic performance in classes or on the prelim when deciding to work with them?

#### Work expectations

- Regarding your typical interactions with your students: How often do you like to meet? In what format? (individually, group meeting, drop in)
- Do you have expectations for the number of hours your students should spend in the office or lab per week? (Physically, hours spent on work, specific hours, time off?)
- What are your expectations for the number of papers, authorship, and who does the writing?

#### Mentoring

- What (if any) is the mentoring structure in your group? Are new students mentored by older students and/or postdocs?
- Do you work closely with other faculty and their students? Are there broader collaborations?
- Do your students typically work together on projects, or does each have a completely independent project?
- What is your ideal group size and how big is it now?
- If a student is struggling with research, do you expect them to try to figure it out on their own first, or come to you for help? Do you have other mechanisms for them to seek help?
- What are your strategies for creating an inclusive environment in the department and/or within your own research group?
- How do you prefer to give and receive feedback?

#### Funding

- Are you accepting new students?
- What is your typical funding situation like? Can your students expect to be funded for a specific number of quarters each year?
- Do you send students to conferences? At what stage in their research? How are their conference expenses paid for?

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<sup>2</sup> Adapted from Diversity and Inclusion in Physics and Astronomy (DIP) resources (<https://dip.physics.ucdavis.edu/>)

- Do you encourage students to apply for external support? (e.g. fellowship, conference travel, professional development) Do you support students in the application process? (provide feedback, example materials, consultation on research ideas)

### Student outcomes

- What have your previous students gone on to do after graduating? Could I contact any of your former students?
- How many students have you supervised through their PhD?
- What is the average number of years it takes your students to finish?

## Questions to ask graduate students and postdoctoral scholars

### Research, courses, and requirements

- Are you mentored? By whom?
- Did your research interests change in graduate school? How easy is it to switch groups or research subfields?
- What is the process of finding a research group? How long did it take you? How easy is it to explore different groups?
- Has anyone left your research group? If so, why?
- What support is there to pursue work outside of academia?
- What are the course requirements for your subfield? How flexible is the timeline?
- What was your preliminary exam (written; general physics) experience like?
- What was your qualifying exam (oral; research plan) experience like?
- If you have struggled at any point in grad school, was your advisor a source of support? If so, how?

### Work-life balance

- Do you spend time outside of work with people in the department? Your year, research group, anyone else?
- Are you happy with your work/life balance? What does that look like? (How many hours do you spend doing coursework and/or research? First year vs other years? Extracurriculars?)
- Is it possible to start a family as a graduate student in this department/group?

### Inclusivity

- What is the make-up of your research group? (undergrad, post-doc, researchers, grad student, under-represented minority, women, LGBTQ+, first generation students, etc.)
- In what ways is the department/group environment inclusive to your/my identity?
- Are there faculty members (including your advisor) cultivating an inclusive environment?

### General advice

- What keeps you going in graduate school?
- What resources have you drawn on in graduate school?
- What was surprising about graduate school? If something did surprise you, is there any advice you would give related to that?
- Have you encountered administrative barriers? (e.g. reimbursement, paper work)
- What has been the hardest part of grad school for you? Easiest?
- What has been your most rewarding graduate school experience?

## SETTING ADVISING/MENTORING EXPECTATIONS<sup>3</sup>

Faculty advisors can complete this worksheet and use it as the basis for a discussion with individual students or as a group. Students can complete the worksheet to explore their own academic development and their personal philosophy on mentoring others. If students and advisors differ on an aspect by 2 or more points, this is an item that should be discussed.

**Directions:** Read each pair of statements describing end points on a continuum of advising philosophies. Estimate your position and mark it on the scale: 3 = both parties share equal responsibility, 1 = advisor has sole responsibility, 5 = student has sole responsibility.

It is the advisor's responsibility to select a dissertation research topic.	1 2 3 4 5	The student is solely responsible for selecting the dissertation topic.
The advisor should determine how often and when to meet with the student, and the meeting format.	1 2 3 4 5	The student should decide how often and when to meet with the advisor, and the format of the meeting.
The advisor should check regularly that the student works consistently on tasks.	1 2 3 4 5	Students should work independently without external management.
The advisor should be the first place to turn when the student has problems with the research project.	1 2 3 4 5	Students should try to resolve problems on their own/with others, before bringing a research problem to the advisor.
The advisor is responsible for providing emotional support and/or encouragement to the student.	1 2 3 4 5	Emotional support and/or encouragement are not the responsibility of the advisor, and students should look elsewhere.
The advisor should inspect all drafts of work to ensure that the student is on the right track, and assist in the writing.	1 2 3 4 5	Students should submit drafts of work only when they want input and feedback from the advisor, and should be the sole author.
The advisor should determine when and where to present or publish the research.	1 2 3 4 5	The student should decide when and where to present or publish the research.
The advisor should decide when the dissertation is ready to be submitted.	1 2 3 4 5	The student should decide when the dissertation is ready to be submitted.
The advisor is responsible for finding funding for the student.	1 2 3 4 5	Students must teach or find their own sources of funding.
The advisor is responsible for providing career advice and preparation to the student, and introducing the student to others in the field.	1 2 3 4 5	Students are responsible for finding career advice and preparation, and for building their own networks without the help of the advisor.

<sup>3</sup> Original from Ingrid Moses, 1985, Higher Education Research and Development Society of Australasia. Adapted by Margaret Kiley and Kate Cadman, 1997, Centre for Learning & Teaching, Univ. of Technology, Sydney. Further adapted by Chris M. Golde, 2010, Stanford University, and finally adapted here.

## MENTORING CHART<sup>4</sup>

Fill out the chart below to help you identify strengths and weaknesses in your mentoring network. You should aim to have at least one person, group, or organization listed for each of the four categories within your network, and if you have more examples than fit into the spaces provided, great! You can list the same person (such as your advisor) for multiple categories, but ideally you should have multiple mentors throughout your network. If you find yourself struggling to fill out a category, consider expanding your mentoring network by asking your peers and mentors about their networks.

	<p><b>Intellectual Community</b></p> <p>People and groups you can ask for substantive feedback on project ideas, papers, and presentations.</p>	<p><b>Professional Development</b></p> <p>People, groups, or organizations outside of your research that can help grow your professional network, build your CV/resume, and learn new skills.</p>	
	<p><b>Sponsorship</b></p> <p>Sponsors promote your work in talks, write rec letters, and provide you with access to new opportunities (e.g., funding and jobs).</p>	<p><b>Psychosocial Support</b></p> <p>Psychosocial or emotional support can come from family, friends, peers, mentors, role models, therapists, etc.</p>	

<sup>4</sup> Adapted from resources from the National Center for Faculty Development & Diversity (<https://www.facultydiversity.org/>)