PSD Principles for Mentorship

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The primary goal of the PhD degree is to train students to become independent researchers. The PhD degree is thus structured as an apprenticeship, and the advisor-student relationship is central to it. This relationship can take many forms, but, to be successful, both the advisor and the student must cultivate it. A successful relationship will lead to a shared sense of responsibility for the research pursued by the student and advisor, providing a foundation for making discoveries during the course of their work together and for their continued growth afterward.

Being at the University of Chicago is a privilege for both students and faculty members. It is a privilege for students in that they are supported to pursue their research passions, have access to top-tier and, in some cases, truly unique resources, and get to work with world leaders in their fields, as well as with peers who will be the next generation of world leaders. Faculty members benefit from access to an elite group of students from around the world. As leaders of their research groups, mentors to their advisees, and colleagues of each other, they are stewards of this exceptional environment.

This document seeks to define a framework for thinking about the advisor-student relationship in the Physical Sciences Division (PSD) and how to make it successful. One of the most important elements of any relationship is clear communication of expectations. Section 1 seeks to provide guiding principles for faculty members and graduate students as they approach mentoring relationships and, more generally, shaping the research environment. These principles must be translated to specific policies, and Section 2 provides questions that faculty members and students can use to structure their thinking about their goals, as well as a template for establishing shared responsibility through conversations about research expectations.

1 Guiding Principles

There is no single right way to structure an advisor-student relationship; different projects demand different approaches, and these approaches will be further informed by research styles and experiences. Nevertheless, one can define a framework for formulating expectations based on basic principles of respect for others and promotion of the long-term interests of the University community.

Creating a healthy research environment

- A healthy research environment is strongly motivating, which in turn promotes productivity and innovation.
- Faculty members and students should model not only dedication to research and scientific excellence but professionalism and respect for others. Care should be taken to treat others equitably, regardless of their roles, personal circumstances, research achievements, or career goals. Faculty members should lead by example.
- Physical presence in the office or laboratory promotes interactions that are the foundation for developing a collaborative atmosphere that brings together diverse perspectives in ways that are mutually beneficial for everyone's learning and advancement.
- While it is not possible to separate research, training, and service, advisors should be mindful of how activities support the student's development. Students should understand that advisor-student relationships take place within the contexts of faculty members' commitments to other students, their ongoing research projects, and the broader community. Being mindful of each other's perspectives and commitments is essential for creating strong working relationships.

- Even in the best of relationships, differences of opinion can arise. When they do, one should always strive to understand the other party's perspective and clearly communicate one's own. Both faculty members and students are encouraged to use departmental, Divisional, and University resources and support mechanisms as needed.

Using time effectively

- Often faculty members and graduate students frame their discussions around research effort in terms of hours of research activity (or physical presence), but scientific progress is not simply about working a certain number of hours and there is no set amount of hours that constitutes a degree. This is not to say that there is no relation between time spent on research and its progress. Critical thinking and discovery benefit from concentrated effort. However, discussions need to be framed in terms of how best to advance the research and the student's development into an independent researcher.

Establishing boundaries

- Advisors should be mindful that students have diverse competing commitments and responsibilities and may view scheduled activities outside regular business hours as an undue imposition. While it is good to seek feedback about meeting times and deadlines, advisors must also be mindful of the fact that there is a power differential, and students may not vocalize concerns.
- Faculty members should be cognizant that some graduate students' values, goals, and priorities regarding work-life balance may be different than theirs were at the same career stage. Students should understand that faculty members' guidance on how to achieve research excellence draws on their experience and knowledge of the field.
- Advisors should establish a consistent policy about vacation and other time off. Students should be purposeful in how they use this time.
- Flexibility on the parts of both advisors and students is important for enabling students to be responsive to the demands of a project.

2 Structuring conversations about advisor-student relationships

This section aims to provide a succinct PSD-specific template that advisors and students can use as they explore a prospective relationship. A wealth of further reading on effective mentoring and how advisors and students can facilitate a positive experience is available (see for example the "Mentoring Agreement" provided by the Provost's Office in their Mentoring Toolkit).

Advisors and students should think carefully about their values, ambitions, and expectations on their own before discussing them with the other. Students would ideally do this independently of considering any specific advisor, as it may help them think about which advisors they want to approach for conversations, and it will deepen the conversations when they do happen.

It is better to come to an understanding of different points of view and how they can be reconciled satisfactorily before entering into an advisor-student relationship. Students should be encouraged to ask explicit questions about expectations (see below) and to take part in helping to define the boundaries of the relationship. Faculty members may want to provide students with a written document that details their perspectives; the Dean of Students can provide feedback on such a document as requested. Everyone will be well-served by making information about expectations readily available.

Below are questions that can help students and advisors structure their conversations when considering a relationship. Despite its length, it is not an exhaustive list, and students and advisors should think about whether questions need further definition and whether there are additional points that should be discussed. Both students and advisors are encouraged to document their agreements on specific points.

Mentorship and Interaction

- How do the student and advisor each view their roles?
- What qualities do they seek in the other?
- What mechanisms of communication will be used, and what are the expectations for responding?
- How and when should the student share their progress with the advisor (individually and in group settings)?
- How and when will feedback be provided?
- In what ways does the advisor help the student prepare for key program milestones (e.g., candidacy exams, committee meetings)?

Courses

- Are there courses that the advisor views as important for pursuing research in their area?
- What is their view on taking courses beyond a program's requirements?
- Does the student have the opportunity to attend workshops and summer programs that are directed toward expanding their skill set?

Teaching and Educational Outreach

- Should a student teach if not required?
- How much time should they spend preparing their materials?
- Does the advisor encourage participating in activities focused on improving teaching skills?
- Are there opportunities for mentoring less experienced students?
- Does the advisor encourage participating in outreach activities?

Funding

- Does the advisor have funding to support the student?
- How closely tied is that funding to a specific project?
- Does it provide scope for pursuing objectives beyond those proposed by the advisor?
- Does the advisor expect students to apply for fellowships; to what extent is the advisor involved in this process, and in what ways?
- Do students participate in developing grant proposals?

Time Commitment

- What should a typical week look like for students of the advisor?
- Are there scheduled activities at which a student is expected to be present (e.g., group meetings, individual meetings)?
- Are there research activities associated with the project that require concentrated amounts of time (e.g., fieldwork, deployment of major equipment, scheduled access to shared facilities)?
- What is the appropriate balance of time working off campus versus in the office or laboratory?
- How much vacation and which holidays are appropriate?
- How does the advisor think about work-life balance?
- Can students participate in committees for their graduate program and the PSD?

Choosing Research Topics

- Who is responsible for developing research topics?

- Should the student pursue multiple projects at the same time?
- How does the advisor view student-initiated projects that are outside the scope of their present research?
- How is the thesis committee selected?

Timeline and Milestones

- What constitutes a sufficient body of work for a thesis?
- How many years do the advisor's students typically take to graduate?
- How will the student know that they are on track? That is, how will milestones for short, intermediate, and long terms be determined, communicated, agreed upon, and assessed?

Dissemination of Results

- What is the process for writing papers?
- Is there the opportunity to attend scientific conferences, and is funding available for doing so?
- To what extent does the advisor help the student prepare for presentations?
- How does the advisor approach authorship?

Service

- Are there chores needed to maintain the research environment (e.g., preparation of shared reagents in a laboratory)?
- What are a student's responsibilities to the advisor when leaving (e.g., training the next generation of students, documenting unpublished research)?

Career Development

- What are the student's career goals?
- To what types of careers do students of the advisor go after graduating?
- Does the advisor encourage students to pursue internships?
- Are there other opportunities for students to develop their professional skills?
- How does the advisor think about balancing research with developing application materials?

Climate

- What is the advisor's perception of the climate of the research environment and how do they think about their role in shaping it?
- What are the student's responsibilities for contributing to a healthy group atmosphere?

General

- Is there any other information that is important to share?