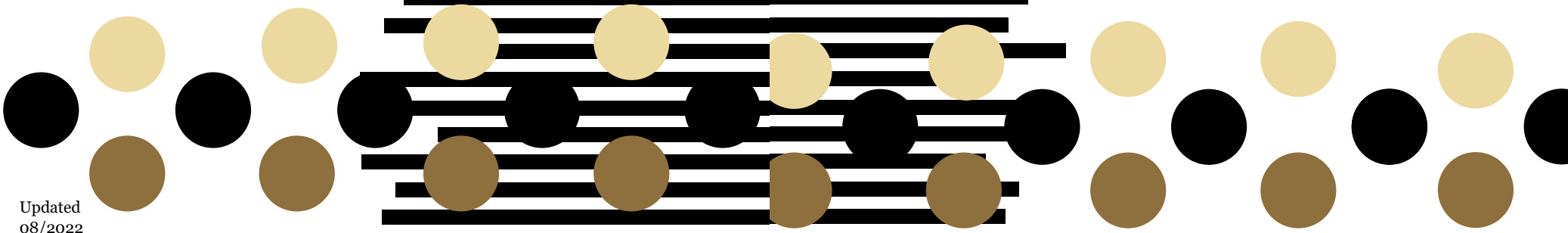
Mentoring:

For Graduate School and Beyond

STUDENT EDITION



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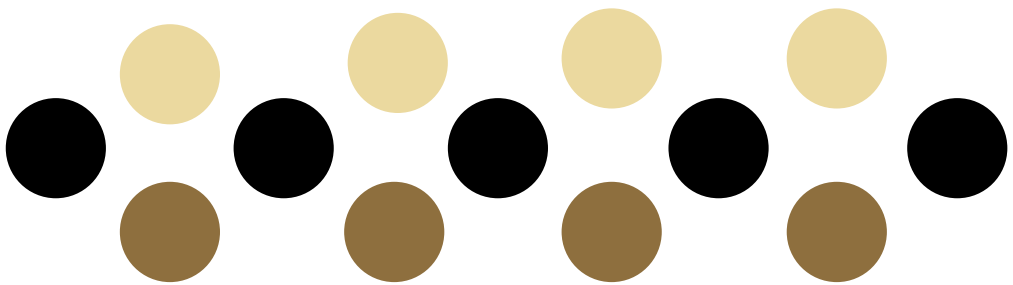
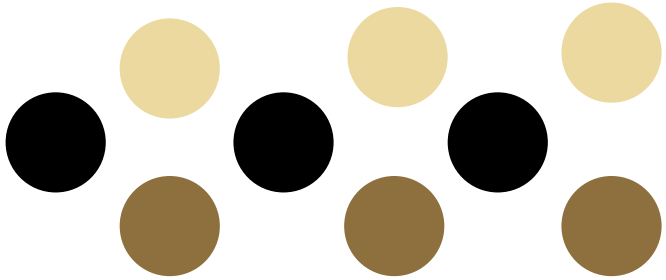
GRADUATE ENGINEERING





Notes

Mentoring:
For Graduate School and Beyond

STUDENT EDITION

Campus Resources

Center for Instructional Excellence (CIE)

- www.cie.purdue.edu/
- Offers workshops and seminars to develop your teaching proficiency.

Oral English Proficiency Program (OEPP)

- www.purdue.edu/oepp
- Offers English as a second language instruction to prospective teaching assistants.
- Provides a screening and certification service for the oral English proficiency of teaching assistants whose first language is not English.

International Students & Scholars (ISS)

- http://www.iss.purdue.edu
- Provides information and assistance in all matters relating to Immigration and Naturalization Service and State Department regulations to students, staff, and faculty.
- Offers counseling and help with personal and academic problems of international students. Handles all international undergraduate admissions applications and evaluation of credit from non-U.S. institutions.

The Graduate School

- https://www.purdue.edu/gradschool/
- https://www.purdue.edu/academics/ogsps/professional-development/
- This website provides access to professional development opportunities and resources at Purdue University.

The Writing Lab

- http://owl.english.purdue.edu
- Campus resource for assistance in writing.

This manual was developed by James Cawthorne and Dr. Audeen Fentiman of Purdue University.

Section 6: Additional Sources of Information

On-line Graduate Student Mentoring Guides

University of Michigan

- http://www.rackham.umich.edu/downloads/publications/mentoring.pdf

University of Washington

- https://grad.uw.edu/for-students-and-post-docs/core-programs/mentoring/mentoring-guides-for-faculty/how-to-mentor-graduate-students/

University of Nebraska

- Reference 10 was created in 2008 and is no longer available.

Other Mentoring Resources

Michigan State University

- http://msu.edu/

North Carolina State University – Dr. Richard Felder

- http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Learning_Styles.html
- Website provides an explanation of different learning styles, including a short quiz you can take to identify your learning style.

The University of British Columbia

- http://www.grad.ubc.ca/current-students/gps-graduate-pathways-success/graduate-game-plan
- Website based around a four-part plan for professional development as the student advances through graduate study. It targets topics of interests at various stages of the graduate student journey. This may be useful as a reference for what you should be considering given your current progress.

Table of Contents

Acknowledgements 1
Section 1: Introduction 2
Section 2: Mentoring 3
- Being a Mentee 3
- Being a Mentor 4
- Benefits of Mentoring 4
- General Suggestions for Mentees 5
- Recognizing the Importance of Diversity 5

Section 3: The First Meeting 6
- Preparing for the First Meeting 6
- Initial Meeting 7
- Beyond the Initial Meeting 7

Section 4: Bibliography 8
Section 5: Career Mentoring Resources 9
- First Meeting: Faculty Planning Worksheet 10
- First Meeting: Graduate Student Planning Worksheet 11
- First Meeting Agenda 12
- Career Development Planning Worksheet 13

Section 6: Additional Sources of Information 16

Acknowledgements

We would like to acknowledge the several published manuals on helping graduate students get the mentoring they want by peer institutions that informed our thinking in this manual.

- *How to Obtain the Mentoring You Need: A Graduate Student Guide* by Dan Wulff and Suzanne Ortega at the University of Washington
- *How to Get the Mentoring You Want: A Guide for Graduate Students* from the Rackham Graduate School at the University of Michigan
- *Online Graduate Mentoring Guidebook* by the Office of Graduate Studies at the University of Nebraska-Lincoln

Section 1: Introduction

This manual is designed to provide engineering graduate students with information on career mentoring. The manual is part of a program designed to encourage graduate students to consider a career in academia and to help them prepare for success in that career. However, the material in the manual can be helpful regardless of the career path a student selects.

The following is an overview of the sections in this manual.

◊ Section 2: Mentoring
- This section is an overview of mentoring, including tips for identifying potential mentors, understanding your role as protégée, and thinking about the role of diversity in choosing your team of mentors.

◊ Section 3: The First Meeting
- This section lays out a general approach to initiating the career mentoring process. The first meeting is important in setting the stage for a productive collaborative experience.

◊ Section 4: Bibliography

◊ Section 5: Career Mentoring Resources
- This section consists of several worksheets referenced within previous sections of this manual to assist mentors and mentees in thinking about, and working through, the process of career mentoring.

◊ Section 6: Additional Sources of Information
- This section lists additional sources of information related to mentoring and career development. It includes links to on-line resources available at Purdue University and web links to resources at other campuses. Key among these links are the connections to more in-depth graduate mentoring manuals developed by the University of Michigan, University of Washington, and University of Nebraska-Lincoln.

Goal: Work/Life Balance

□ Goal met □ Making Progress □ No Progress

Planned Activities: _____

Planned Accomplishments: _____

Anticipated Obstacles: _____

Goal: Additional Mentors

□ Goal met □ Making Progress □ No Progress

Planned Activities: _____

Planned Accomplishments: _____

Anticipated Obstacles: _____

Goal: Engagement/Service

□ Goal met □ Making Progress □ No Progress

Planned Activities: _____

_____

_____

Planned Accomplishments: _____

_____

_____

Anticipated Obstacles: _____

_____

_____

Goal: Personal Development

□ Goal met □ Making Progress □ No Progress

Planned Activities: _____

_____

_____

Planned Accomplishments: _____

_____

_____

Anticipated Obstacles: _____

_____

_____

Goal: Networking

□ Goal met □ Making Progress □ No Progress

Planned Activities: _____

_____

_____

Planned Accomplishments: _____

_____

_____

Anticipated Obstacles: _____

_____

_____

Section 2: Mentoring

Mentoring can be defined in many ways depending upon one's profession and the type of human interaction desired [1-4]. In general, mentoring for graduate students refers to an individual with recognized expertise, usually a faculty member in their department, who takes time to "focus on [developing the] human relationships, commitments, and resources that help graduate students find success and fulfillment in their academic and professional pursuits" [5]. This manual provides graduate students tips to consider as they engage mentors in talking about professional and career development. This section of the manual discusses the roles of the mentee and mentor, the benefits of mentoring for the graduate student and faculty member, and some general thoughts about the influence of diversity on the perspectives both the mentor and mentee may bring to the relationship.

Being a Mentee

The process of becoming a mentee occurs when a graduate student identifies a professional in the discipline – from the faculty, administration, or industry – whom he or she believes can provide guidance in one or more areas of their professional development [6, 7]. A graduate student can select a mentor based upon mutual interests, motivation, or perceived skills and strengths [6]. The mentoring relationship, regardless of how the mentor is selected, centers on the graduate student and mentor identifying and clearly communicating the expectations for the relationship. The primary purpose of mentoring for graduate students is access to a faculty member, familiar with the professional nature of the discipline, who can guide the mentee's preparation. The graduate student's roles and responsibilities in the mentoring relationship are to [6-9]:

- Make efficient use of a faculty mentor's availability. Take responsibility for scheduling and keeping meetings, as well as submitting material, such as papers, drafts, or graphs, in the format agreed upon and on time.
- Be responsible for your work and career.
- Accept, and learn from, constructive criticism.
- Ask thoughtful questions, while providing feedback when asked.
- Maintain confidentiality and boundaries.

Being a Mentor

What does it mean to be a mentor? As a mentor, the faculty member takes on the responsibility of acting as (1) a disciplinary guide, (2) a skills development consultant, and (3) a career consultant to the graduate student. To be successful in the aforementioned responsibilities, faculty members typically are [2, 4, 5, 10]:

- Authentically interested in the professional and personal development of the graduate student.
- Willing to work to develop a strong professional relationship with the graduate student.
- Prepared to help the student articulate his or her goals and to guide the graduate student as he or she advances toward those academic and professional goals.
- Prepared to alter their mentoring style and content for each graduate student they mentor as every graduate student is a unique person coming from a unique background.

Benefits of Mentoring

A good mentoring relationship provides benefits for both the graduate student and the faculty member. Specific benefits to the graduate student and faculty member are listed below.

Graduate student benefits from mentoring include [5, 10-12]:

- Training in the discipline from both an academic and research perspective.
- Opportunities for networking and collaboration.
- Development of "scholarly citizenship" within a discipline [5].
- Exposure to the academic, social, and political aspects of their discipline and the academy.
- An understanding and appreciation of the conventions of the discipline.
- Experience and intellectual development through which the student begins to build the confidence to participate fully in the scholarly community.

Faculty benefits from effective mentoring of graduate students include [4, 5, 10, 11]:

- Production of quality research by the graduate student
- Development of a graduate student who may be a future collaborator and extend the faculty member's network.
- Ability to stay current with a broader range of research through the work of the graduate student.
- Opportunity to have a hand in developing tomorrow's leaders in the discipline.
- Fulfillment from the establishment of rewarding personal and professional relationships through the mentoring process.

Career Development Planning Worksheet

This worksheet is available for download at
https://engineering.purdue.edu/Engr//Academics/Graduate/ProfessionalDevelopment/CareerPlanning

Faculty Member: _____
Graduate Student: _____
Date of Meeting: _____

Career Goal:
What career is the graduate student targeting?

_____
_____
_____

Goal: Teaching Development

☐ Goal met ☐ Making Progress ☐ No Progress

Planned Activities: _____
_____
_____

Planned Accomplishments: _____
_____
_____

Anticipated Obstacles: _____
_____
_____

Goal: Research and Scholarship Development

☐ Goal met ☐ Making Progress ☐ No Progress

Planned Activities: _____
_____
_____

Planned Accomplishments: _____
_____
_____

Anticipated Obstacles: _____
_____
_____

First Meeting Agenda

(Adapted from: *Worksheet 1: Mentor expectations* part of the online Graduate Faculty Mentoring Guidebook (2010). Lincoln, NE. Office of Graduate Studies)

Faculty Member

Professional Background

1. Be prepared to discuss highlights of your professional past.
2. Explain how you view the mentoring process and how it benefits you and the graduate student?

Research

3. Discuss your research. What are you doing? How did you progress to this point?
4. Define your expectations of a graduate student working for you, including the expectation of ethical behavior.
5. Reinforce the importance of performing rigorous and ethical research.

Academic Advancement

6. Explain the academic progression process.
    a. What classes should the student take?
    b. When should graduate students file a Plan of Study?
    c. When are the major milestones (qualifiers, preliminary exam)?
    d. How should the student balance taking classes and performing research?
    e. What are the University's and School's requirements for graduating?
7. Identify experiences you feel are important to a student's academic/professional development.

Graduate Student

1. What are your career aspirations?
2. How did you come to be a graduate student at Purdue?
3. What do you expect out of the mentor/mentee relationship?
4. What questions do you have about the process of obtaining the MS or Ph.D.?
5. Are there certain professional experiences you would like to have before graduating?
6. What research areas interest you? Why?

Next Step

This meeting agenda is designed to help the faculty member and graduate student begin preparing a career development plan. Leaving this meeting, the faculty member and student should agree to think about the following items for the next meeting on career development.

1. What are the career interests of the graduate student?
2. What professional development activities should the student pursue while at Purdue to be prepared for future career opportunities? Does the student need to reach out beyond Purdue for certain professional development activities?
3. How can professional development opportunities be aligned with the advisor's research endeavors and the mission of the student's department?

General Suggestions for Mentees

The following suggestions may help graduate students enhance their mentoring experience.

1. "Develop a vision of the mentoring you need" [5].
    a. Identify your objectives in graduate school and your career goals.
    b. Reflect on the type of mentoring required to meet your objectives and goals.
2. Identify potential faculty mentors.
    a. Acquaint yourself with faculty members' work to learn about their past research and future interests.
    b. Speak to other graduate students about their mentoring experiences with various faculty members. This is important for gaining insight into the various working styles of faculty.
3. Remember faculty mentors are unique individuals with differing backgrounds, goals, and capabilities.

Recognizing the Importance of Diversity

Every individual is a member of some group that has unique characteristics [12, 13]. Both graduate students and faculty should be cognizant the following factors of diversity may play a role in the mentoring relationship.

- Gender
- Race and ethnicity
- Country of origin
- Disabilities
- Age
- Sexual orientation
- Family responsibilities
- Prior work experiences
- Socio-economic status

For more discussion of mentoring students from diverse backgrounds, refer to the University of Washington's mentoring guide for faculty (https://grad.uw.edu/for-students-and-post-docs/core-programs/mentoring/mentoring-a-guide-for-faculty/)or Chapter 8 of the guide book from the University of Michigan (http://www.rackham.umich.edu/downloads/publications/Fmentoring.pdf).

Section 3: The First Meeting

The first formal meeting between a faculty member and a graduate student is very important in setting the tone for the mentor-mentee relationship and establishing expectations. This section of the manual is designed to provide graduate students with suggestions on how they can prepare for the first meeting. Three documents are briefly discussed: (1) a worksheet to guide student thinking prior to the first meeting, (2) a faculty planning worksheet for the first meeting, and (3) proposed topics for discussion during the first meeting. The documents, themselves, are in Section 5.

Preparing for the First Meeting

Careful preparation for the first meeting can help establish a good foundation for the mentor-mentee relationship. Two worksheets, located in Section 5 of this manual, are designed to assist both the faculty member and the graduate student in preparing for the first meeting. The worksheet entitled "First Meeting: Graduate Student Planning" is a series of questions to guide the student in reflecting on his or her background experiences and thinking about future career options.

The first set of questions, under the heading of *basic background information*, contains questions the graduate students should be prepared to answer in the first meeting with a mentor. These questions identify learning styles, previous accomplishments, and what the graduate student perceives as his or her strengths and weaknesses. The *open-ended thought questions* section is a series of probing questions to prompt the graduate student to think about how he or she envisions the upcoming mentoring relationship, possible work expectations, and opportunities the student wishes to have during graduate school. It is **important to note**, that although you should have been thinking about these questions, you may not have concrete answers, particularly about career aspirations, and it is okay to have fluid answers depending upon who asks and in what context. Section 6 lists a collection of web resources that can be useful when conducting additional research about career mentoring.

The other worksheet in Section 5, entitled "First Meeting: Faculty Planning Worksheet," is designed to guide faculty members in preparing for the first meeting with a potential mentee. This worksheet prompts the faculty member to think about his or her views as a researcher, mentor, and person before entering into this new mentor-mentee relationship. Reviewing the questions leads the faculty member to make sure he or she is up to date on current academic policies, such as graduation requirements, and professional development opportunities at Purdue. The worksheet is divided into three sections: *professional background, research and mentor-mentee relationship, and academic advancement*, which mirror the agenda for the first meeting.

First Meeting: Graduate Student Planning Worksheet

This worksheet presents a series of questions that graduate students should think about before meeting with their advisor for the first time, or while in the process of selecting an advisor. It is in no way intended to limit what may be discussed between the student and the mentor.

Basic Background Information

(1) What are my career aspirations?
   a. Upon graduation
   b. Further down the road (15-20 years)
(2) Relative to teaching, research, service, and general professional capabilities
   a. What are my interests?
   b. What are my strengths? Why do I consider them strengths?
   c. What are my weaknesses? Why are they weaknesses?
(3) What is my working/learning style?
(4) What are my accomplishments to this point in time?

Open-ended Thought Questions

(1) Why do I want this faculty member as a mentor? What benefits do I hope to gain from having this individual as a mentor?
(2) Recognizing that this is a professional relationship, what expectations can I anticipate the faculty member will have of me?
(3) What are some questions I could ask my faculty mentor that will assist me in establishing rapport with him/her, without prying?
(4) What are some "hurdles" that I am currently facing, or that I foresee (*such as having an ill parent or being hearing impaired*), which may keep me from realizing my career aspirations? Do I have any strategies for overcoming these "hurdles?"
(5) Are there any experiences (internship, publishing, presenting at conferences, teaching) that I absolutely want to have before graduating?
(6) What questions about the graduate program do I want to be sure are answered in this early meeting with my advisor?

First Meeting: Faculty Planning Worksheet

(Adapted from: *Worksheet 3: Planning for first meetings – A mentor's checklist* (2005). Seattle, WA, Wulff et al.)

The questions below can be used in preparing your thoughts for talking to graduate students about degree requirements, your research, and the mentor-mentee relationship you envision.

Thought Questions

Professional Background

(1) In establishing rapport, what can I share about my professional development that is relevant to the graduate student?
(2) Reflecting on my past experiences with mentoring (as both mentee and mentor), what type of mentoring experience do I want to provide my mentee?
(3) What are my working and learning styles? Am I prepared to work with someone whose style may be different?

Research and Mentor-Mentee Relationship

(4) Why do I want to be a mentor to a graduate student? What benefits do I hope to gain from having a graduate student as a mentee? How much time do I feel will be required for the relationship? How will this time be found?
(5) What are my expectations of the graduate student as a mentee with regard to
    a. Working within my research group/on my research?
    b. Performing rigorous and ethical research?
    c. Advancing through the program?
    d. Managing work-life balance?
(6) What expectations can I anticipate the graduate student will have of me?

Academic Advancement

(7) What are the requirements for obtaining a doctoral, or master's degree within the discipline? What are the major milestones the student must pass through? Are there "hurdles" to the process which I can forewarn the student about?
(8) What academic activities do I believe will most benefit this graduate student's career?
(9) What experiences e.g. (internship, publishing, presenting at conferences, teaching) do I believe the graduate student must have before graduating? Be prepared to explain why these experiences are beneficial and necessary.

Initial Meeting

The initial meeting between the graduate student and faculty member should focus on the exploration of goals and interests of both individuals and a discussion of expectations for this relationship. In Section 5, a worksheet entitled "First Meeting Agenda" provides a working guideline for the conversation. This worksheet lists the various topics a faculty member and graduate student should discuss before considering actual career mentoring. The agenda should not be used as a script for the meeting, but rather a guide to ensure all important topics are covered. Conversation, hopefully, will be less formal, more engaging, and more productive.

The agenda worksheet has two sections labeled by participant. It is hoped that the topics listed under the participant (i.e. faculty member or graduate student) will be addressed by that individual in the course of conversation. It is not necessary to cover every topic in the first meeting. It is recommended, however, that upon completing the agenda items listed for the first meeting the graduate student and faculty member stop and take some time, perhaps a week, to think about the questions at the bottom of the "First Meeting Agenda." Answers to these questions can help both the faculty member and graduate student identify career options and appropriate professional development opportunities. The final document in Section 5, "Career Development Planning Worksheet," provides a template for recording desired professional development goals in multiple arenas such as research, teaching, and service. This worksheet is a living document and a means of tracking progress toward those goals.

Beyond the Initial Meeting

The initial meetings between a faculty member and a graduate student are only the beginning of the mentoring, and specifically the career development process. Over time, as the graduate student matures as a scholar, the mentoring between faculty and graduate student will evolve to ensure the graduate student continues to be challenged with opportunities to succeed, as well as opportunities to fail and learn. The "Career Development Planning Worksheet" mentioned above should be revisited to determine what goals have been accomplished, what goals have not been met and why, and whether new goals should be added. Included in Section 6 of this manual, as *Other Mentoring Resources*, are links to additional resources that identify professional development opportunities a graduate student may consider pursuing at various stages of his or her graduate program.

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Section 5: Career Mentoring Resources

This section contains a series of worksheets referenced in Section 3 of this manual and adapted from a variety of sources to assist in facilitating the conversation between graduate students and faculty about career mentoring.

Worksheet #1: *First Meeting: Faculty Planning Worksheet*

This worksheet is designed to prompt a faculty member's, or any other mentor's, thinking before initially meeting with the graduate student for whom he or she becomes a professional mentor.

Worksheet #2: *First Meeting: Graduate Student Planning Worksheet*

This worksheet is designed to prompt the graduate students' thinking before initially meeting with a faculty member they are considering as a potential advisor, or mentor.

Worksheet #3: *First Meeting Agenda*

This worksheet is designed to serve as a guide to the conversations that should take place in the first meeting(s) between a faculty member and graduate student initiating a mentor-mentee relationship. The agenda is designed as a checklist of topics rather than a script for the meeting. Items identified under the title of faculty member, or graduate student, refer to information that individual should be expected to address in the course of the conversation.

Worksheet #4: *Career Development Planning Worksheet*

This worksheet is a possible template for a dynamic document that can be used by faculty and graduate students to identify and track opportunities for development related to different components (teaching, research, personal, etc…) of overall professional development.