



**PennState**  
College of Engineering

**ENGINEERING SCIENCE  
AND MECHANICS**

# **ENGINEERING SCIENCE AND MECHANICS MENTORING HANDBOOK**

**REVISION 0**

**SEPTEMBER, 2017**

## Table of Contents

1.	Introduction.....	1
2.	Roles and Responsibilities.....	1
2.1	ESM Alumni Society Board.....	1
2.2	Mentoring Advisory Board .....	2
2.3	Mentors.....	2
2.4	Students .....	2
3.	Registering for the ESM Mentoring Program.....	3
4.	Tips for a Successful Mentorship: Student .....	3
4.1	What to Do: .....	3
4.2	What Not to Do: .....	3
4.3	How will you benefit? .....	4
5.	Student Guidelines.....	4
5.1	Interacting With Your Mentor.....	4
5.2	What Your Mentor May be for You.....	5
5.3	What Your Mentor Cannot be for You.....	5
6.	Mentor Guidelines .....	6
6.1	Communication .....	6
6.2	Action Plan.....	6
6.3	Characteristics of a Successful Mentor .....	6
6.4	Five Tasks of a Mentor.....	7
6.5	Some Things to Keep in Mind: .....	7
7.	Sample Questions A Student Might Ask Their Mentor.....	8
8.	Sample Questions A Mentor Might Ask.....	9
9.	Year-End Review.....	10

## 1. Introduction

The Engineering Science and Mechanics Department (ESM) Mentoring Program connects future engineers with professionals who can help them succeed in their academic and professional lives. A one-on-one relationship is created between a current student, either under-graduate or graduate, and an alumnus for guidance, information, and networking related to the student's professional development. The mentoring program matches students with a mentor alumnus based on the student's area of interest and the type of industry they are interested in. The matching process will occur shortly thereafter and both the student and mentor will receive an email to initiate the relationship.

It is quite likely that the majority of the ESM mentors will not live in the State College area. As a result, most of the interaction will be by email and/or telephone. However, mentors oftentimes come to campus for events such as the career fair, senior design showcase, alumni meetings, and sporting events. Students are encouraged to meet their mentors in face-to-face meetings whenever possible.

The benefits of an alumni-student mentoring program are immeasurable. Your shared objective should be to identify initial and long term career goals and to achieve a successful start to a good career. Within that overall objective, what you do with your mentor, and how you do it, is up to the two of you to agree upon. The mentoring program provides students with the opportunity to forge personal relationships with professional engineers who were once students themselves. Students may ask curriculum and career-oriented questions, observe the professional work environment and learn more about how specific companies and industries operate. Students may receive career guidance, professional resources, words of encouragement and advice on important issues affecting their chosen major. Students' time management, communication, decision-making, and critical-thinking skills are enhanced through a mentoring relationship. In addition, students who seize the opportunity to pair with an alumni mentor often build stronger connections to the College and the University.

In past mentoring surveys from other mentoring programs, one student noted, "It has been great talking with my mentor. It's another perspective on careers, school, etc. from somebody who has experience in the field." Another student added, "It's so nice to know our mentors are there if we need them."

## 2. Roles and Responsibilities

The key participants in the mentoring program are the ESM Alumni Society, the Mentoring Advisory Board, the ESM students, and the ESM alumni. The roles and responsibilities of the key participants are as follows:

### 2.1 ESM Alumni Society Board

The ESM Alumni Society is responsible for working with the Mentoring Advisory Board to establish the mentoring program to address the needs expressed by the students, periodically assessing whether the program is providing effective mentoring to the students, and modifying the Mentoring Program as appropriate.

## Engineering Science and Mechanics Mentoring Handbook

### 2.2 Mentoring Advisory Board

The Mentoring Board is responsible for updating the mentoring program to address evolving student interests. The Board is responsible to establish the mentor-student matches, and to monitor the progress of the relationship as it evolves. If it is determined that the mentor-student match is not effectively meeting the needs of the student, a different mentor may be assigned.

### 2.3 Mentors

Alumni Mentors serve the Mentoring Program on a volunteer basis. They offer their personal experience and knowledge in order to nurture the professional interests of their protégé. All mentors must have graduated from the ESM Department with an undergraduate and/or a graduate degree.

While the students should take the lead in establishing a mentor-student relationship, mentors can contribute to a good mentoring relationship by doing the following:

- Suggest a Skype/Facetime or face-to-face meeting to get acquainted
- Respond to emails or phone calls within 48 hours when possible
- Prepare for first meeting by reviewing list of questions that students may ask
- Consider what you might want to know about and offer to your student
- Complete the end-of-year survey to evaluate the ESM Mentoring experience

### 2.4 Students

Students bear the primary responsibility for driving the mentor-student relationship. Once matched with a mentor, the students will attend a Mentor Program kickoff meeting. The students should contact their mentor within a week of receiving the name of their mentor. Students are expected to respond to mentor communications within 48 hours (to at least acknowledge receipt of a phone call or email).

Prepare for the first meeting by reviewing the list of questions mentors may ask. If you are having trouble contacting your mentor, contact the Coordinator for Alumni, Development, and Advancement at 212 Earth and Engineering Sciences Building (814-867-1569).

Some examples of activities for mentor-student pairs are the following:

- Participate in phone or Skype/Facetime conversations
- Perform mock interviews in person or on the phone
- Discuss majors or changes of major and how to market an ESM degree
- Discuss job fields and general career advice
- Review resumes, cover letters, and graduate school essays
- Meet during spring break, winter break, summer or University holidays
- Participate in campus ESM Department activities together, as schedules permit
- Sponsor summer visits to see what a "real" job environment is like

The ESM Mentoring Program will officially sponsor and nurture the mentoring relationship for a one-year term. Protégés are welcome to re-apply to the program to be matched with the same mentor or a new mentor every year.

### 3. Registering for the ESM Mentoring Program

Separate registration forms are available for the students and the mentors. Links to the registration forms are provided below.

Mentor Registration: <https://goo.gl/forms/h6bNceSXkSqOxcoC3>

Student Registration: <https://goo.gl/forms/wq8rJ8RiY6mkCjLA3>

Students are encouraged to sign-up for the mentoring program early to allow for the most opportunity for interaction with their mentor.

### 4. Tips for a Successful Mentorship: Student

#### 4.1 What to Do:

1. Keep communications open. Let your mentor know what your goals are and what you hope to take away from the program.
2. Maintain Contact. Be polite and courteous, ask questions, and always keep appointments with your mentor. Consider scheduling your next conversation at the end of each meeting.
3. Approach the mentoring relationship with an open mind, professionalism, and respect.
4. Be receptive to suggestions and feedback.
5. Get to know your mentor. Ask thoughtful questions about your mentor's interests, experiences, and background.
6. Be open and interactive. Make an effort to have great conversation by being receptive to your mentor's questions and asking questions in return.
7. Be prepared. Think about questions that you would like to ask your mentor before your conversation.
8. Ask for advice, not help. Feel free to discuss the career and internship search process, resume building, and networking.

#### 4.2 What Not to Do:

1. Do not ask your mentor for a job at their place of employment. Instead, ask for general advice on searching for and obtaining jobs or internships.
2. Do not expect the relationship to be transactional. This mentoring relationship should be reciprocal with both parties participating equally and respecting each other's time and opinions.
3. Do not skip scheduled meetings or phone calls with your mentor. If you need to cancel or reschedule a meeting, notify your mentor as far in advance as possible.

### 4.3 How will you benefit?

1. Build a professional network
2. Develop and enhance professional and communication skills
3. Connect academics and career
4. Receive recommendations regarding experiences and courses that would be of the greatest benefit
5. Explore new ideas and areas of interest
6. Gain exposure to career options, advice, and job search tips

## 5. Student Guidelines

The goal of the ESM Mentoring Program is to help foster one-on-one relationships between a current student and one or more alumni. The program's intent is to facilitate the establishment of this relationship to provide guidance, information, and networking related to the student's professional development.

### 5.1 Interacting With Your Mentor

Do not worry if you feel nervous about contacting or talking to your mentor. Remember that your mentor volunteered to help answer your questions, give you advice, and to help you reach a greater understanding of your field of interest and your educational and career goals. The best way they can help you is if you are enthusiastic and not afraid to ask plenty of questions. Be assertive.

It is important to work with your mentor to develop an action plan that guides your mentoring relationship. It will help you to start getting acquainted while developing your goals and the basic steps that you and your mentor can take together to achieve them. Your shared objective should be to achieve a successful start to your career. You should set the direction, this is your career.

Respect your mentor's commitment by making good use of their time. Be prepared for meetings and start on time. It is always your choice whether to accept or act on any advice or help that your mentor offers. But if you ask your mentor to do anything, then you should make use of what they have done.

The focus of your relationship with your mentor should be career and professional development. Within this context, you should feel free to discuss any subject with your mentor. Most discussions will probably relate to your course work and your relationships with other students, faculty, advisors, extra-curricular activities, and other school related subjects.

For ideas in stimulating initial discussions with your mentor, see Section 7: [Sample Questions A Student Might Ask Their Mentor](#).

Remember, mentors will not do your career development work for you. They may provide contacts or review your resume. You must call the contacts or write the resume.

Some tips to remember:

- The student bears the primary responsibility for driving the relationship.
- Mentors are generally busy professionals.
- Have fun with the relationship, but keep it professional.
- Share your student experiences.
- Ask for advice, not help.
- It is appropriate to ask your mentor if they would mind critiquing your work, such as your résumé, papers, projects, presentations, etc.
- Keep in mind that confidential information about you will not be discussed with anyone.
- Discuss guidelines with your mentor, such as appropriate times for both of you to meet, call, and how to handle appointments that must be rescheduled, etc.
- Be prepared and do not reschedule appointments unless it is absolutely necessary, especially at the beginning of a mentoring relationship.
- Maintain regular contact with your mentor.
- Be patient and flexible when trying to schedule appointments.
- Be grateful. If your mentor takes the time to critique your work, thank them.

### 5.2 What Your Mentor May be for You

- Advocate
- Coach
- Developer of talent
- Friend
- Positive role model
- Sponsor
- Trainer
- Facilitator of self-esteem and self-confidence
- Career skills advisor
- Job reference

### 5.3 What Your Mentor Cannot be for You

- A parent
- A professional counselor
- An employment counselor

## 6. Mentor Guidelines

Mentors serve many purposes. During the course of most mentor relationships, mentor roles are likely to involve the following:

### 6.1 Communication

Benchmarking information from other Penn State mentoring programs strongly suggests that personal contact between the mentor and the student is highly recommended to establish trust and enable open communication. Consequently, regular personal contact is desirable but if that is not possible, we recommend a face-to-face meeting early in the student/mentor relationship. However, if your relationship consists mostly of e-mails, regular contact will go a long way toward establishing the kind of relationship in which the protégé's potential is fostered.

If you are having difficulty contacting your student, please contact the Coordinator for Alumni, Development, and Advancement at 212 Earth and Engineering Sciences Building (814-867-1569).

### 6.2 Action Plan

Working together with your student on an action plan for the mentoring relationship is a great way to get started. It will help you to start getting acquainted while developing your goals and the basic steps you and your student can take together to achieve them.

### 6.3 Characteristics of a Successful Mentor

In performing the role of mentor there are a number of characteristics that you need to keep in mind.

1. Listen intently to the student, and offer comments only when the student is receptive.
2. Be supportive but not a crutch.
3. Respect the student's confidentiality except in cases of potential harm to the student or other people.
4. Respects the student's commitment by making good use of their time and by being prepared and on time for meetings.
5. Do not abuse the relationship by asking the student for personal favors such as lining up football tickets or arranging for a place to stay in Happy Valley.
6. Follow through commitments made because the student is depending on it.
7. Keep the focus of the relationship on career and professional development. If the student needs other kinds of assistance, direct them to the best place to get it.



### 6.4 Five Tasks of a Mentor

1. Establish a positive, personal relationship. This relationship is the most important task in mentoring. It requires building trust and may take a while to cultivate, but be patient. The student/mentor relationship is unique to each mentoring relationship. It encourages regular interaction and specific support, should be enjoyable and fun, should enhance the student's self-esteem. As in a professional sense, it should be a good working relationship.
2. Help develop appropriate career skills, such as goal setting, time management, critical thinking, decision making, perseverance, dedication, and accountability.
3. Assist the student in obtaining additional resources. Discuss what resources and courses are needed to pursue and achieve goals and ambitions. Act as an advisor, guide and advocate. Be a resource and a network to help identify openings, as appropriate.
4. Increase the student's ability to interact with people from different backgrounds. Respect differences; do not promote your values as superior to theirs. Help the student understand the behaviors and attitudes needed to interact in the workplace and the larger society. Challenge the student to think about the importance of respecting and functioning in a diverse world.
5. Help to develop competencies by providing positive feedback on his or her work. Share accomplishments and roadblocks you had to overcome in order to be successful. Encourage him or her to seek new opportunities and experiences.

### 6.5 Some Things to Keep in Mind:

1. You are agreeing to help your student with their career and professional development. Your shared objective should be to have the student achieve a successful start to their career. You should get the protégé to set the direction, it is their career. If they ask for input, offer options, rather than a single direction.
2. Mentors should encourage their student to talk about their goals and concerns. Even when much of the relationship might be via e-mail or phone, it is very important to understand clearly the student's point of view before commenting. However, as in conversation, the mentor should put aside impulses to direct the student in favor of encouraging a process of self-direction.
3. A mentor can help link students to resources they might not know exist or be able to otherwise access and utilize. Please take advantage of connections and associations you have on behalf of your student.
4. Whenever possible, approach the goals, issues and/or problems of your student in a positive light, building on related strengths that he or she has demonstrated. You can be the one to help your student see the connection between actions of today and dreams and goals of tomorrow. Be as concrete and relevant as possible. Mentors can help build self-confidence and self-esteem to last a lifetime by focusing on the talents, assets, and strengths of the student.

5. Keep an eye out for learning opportunities and teachable moments. If your student expresses an interest in something, take advantage of the situation to help him or her develop the interest further. You may find that you develop a rewarding relationship with your student in the course of your work together, which may continue beyond graduation. If so, great! But even if this does not develop, you can still get the satisfaction of helping a Penn State engineer get off to a great start in their career.

## **7. Sample Questions A Student Might Ask Their Mentor**

1. Did you change your major? If so, why?
2. What was one of the most challenging experiences during college and how did you overcome it?
3. What was the most valuable aspect of your honors experience?
4. What was your thesis topic and why did you choose it?
5. Have you ever gone to graduate school? If so, what did you study; and why did you choose to go when you did (i.e., right after college or after working for some years)?
6. What did you first do when you graduated college?
7. What led you to the job you are in today?
8. Tell me about what you do in your position.
9. Have you ever changed jobs? If so, what was the trajectory of your career path?
10. What expected and unexpected obstacles did you encounter in the workplace?
11. How closely did your major correlate to the career you chose?
12. Is there something you wish you had done while in college to prepare yourself better for your career?
13. What activities were you involved with in college that helped you to succeed in the workplace?
14. How is your career different from what you had expected while in college?
15. How do you manage the balance between work and your personal life?
16. What do you like most/find most interesting about your work?
17. What skills/abilities do you find are most important in your work?
18. What trade journal or magazine I should review to learn more my future career
19. What is the typical work environment like for a person in this career area?
20. What are the basic prerequisites for jobs in this field?
21. Are there any specific courses a protégé might take that would be particularly beneficial in this field?

22. Are there entry-level jobs available in your chosen field?
23. What special advice would you give to a person entering this field?
24. How great is the demand for people in this field?
25. Do you view this field as a growing one?
26. What is the best way to obtain a position that will start me on a career in this field?
27. How much flexibility does one typically have regarding: innovation, life-style, self-expression, working with colleagues (co-workers), hours of work, and decision-making (authority)?

## 8. Sample Questions A Mentor Might Ask

1. Tell me about yourself
  - Keep the focus on yourself, not your family or friends;
  - Concentrate on your interests and goals.
2. How is school going?
  - Be specific; mention classes, subject matter, grades and activities.;
  - Try to balance negative experiences with positive steps you are taking.
3. What do you plan to do after college?
  - It is expected to be uncertain or to be are considering several options;
  - Be specific if you have definite plans.
4. Where do you hope to be in five years?
  - State your goal, if you have one. Be realistic, five years isn't that far away.
  - Focus on your career plans. If you are comfortable with the idea, you can include your personal life.
  - You might also want to ask your mentor the same question.
5. How can I best help you? (Read the following list and see if you can get some ideas):
  - Preparing for graduate school, applications and interviews.
  - Advice on graduate school process (how to network with faculty, goals for publishing and presentation, etc...).
  - Helping me to network in my field.
  - Assistance with internship or job search (how to network, ideas for possible opportunities, resume and cover letter advice).
  - Exploring career possibilities.
  - Providing new experiences and opportunities to learn.

- Helping with decision making and goal setting.
- Keeping me motivated and focused on my goals.
- Advice with my studies (majors, classes, etc...).

## 9. Year-End Review

At the end of each academic year, both the mentors and students are asked to complete an assessment of the mentoring program. The evaluation form can be accessed using the following links:

Mentor Evaluation: <http://www.esm.psu.edu/alumni/>

Student Evaluation: <http://www.esm.psu.edu/alumni/>

The deadline for completing the review form is the end of the last full calendar month prior to the end of the academic year. In most years, this will be the month of April.