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Mentoring Program

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Abstract

The Department of Chemical and Biochemical Engineering at the University of Iowa initiated a mentorship program during the 2012-13 academic year. This program involves pairing professional chemical engineers with a minimum of 5 years post-BS experience with chemical engineering sophomores. The resulting mentor-mentee relationships are intended to continue through graduation. The intent of this program is for the mentors to contribute to the professional preparation of the students for a successful career by interactively supplementing the students' formal education with the mentor's knowledge, experience, and counsel. This includes individualized help with career planning, resume preparation, interviewing savvy, internships, networking opportunities, lasting relationships and more. The development and implementation of this mentorship program will be discussed. Furthermore, the program's strengths and weaknesses will be reviewed.

Background

The successful mentoring program at the University of North Carolina - Wilmington Cameron School of Business was used as a model for developing the mentoring program in the Department of Chemical and Biochemical Engineering (CBE) at the University of Iowa (UI). The differences between Iowa City and Wilmington, particularly the fact that Iowa City is not a retirement community like Wilmington, necessitated that the UI system be somewhat different. Specifically, Wilmington has many potential mentors available locally, whereas most of the UI mentors are remote, thereby requiring that most communication between the mentors and students be conducted primarily by phone or electronically.

The intent of this program is for the mentors to contribute to the professional preparation of the students for a successful career by interactively supplementing the students' formal education with the mentor's knowledge, experience, and counsel. This could include individualized help with career planning, resume preparation, interviewing savvy, internships, networking opportunities, lasting relationships and more. Mentoring activities might also include guest lecturing in undergraduate classes, making presentations in Professional Seminar, helping students prepare resumes, doing practice interviews and sharing interviewing skills, participating in critiquing/judging student projects, etc.

Mentor Selection and Pairing With Students

The initial mentor recruitment consisted of sending an invitation via email to all alumni with 5 or more years of post-Bachelor's Degree experience. This invitation included a description of the program and a mentor application form (see Table 1). The alumni were asked to return the

completed form if they were willing to serve as a mentor. Once every year following program startup an invitation is sent to all alumni who graduated 5 years previously (e.g., in 2014 invitations were sent to 2009 graduates). Furthermore, every 2 to 3 years invitations are sent out to all alumni with 5 or more years of post-Bachelor's Degree experience to identify alumni who want to become mentors that did not sign up following previous invitation(s).

Students are informed of the mentorship program in a departmental sophomore-level course during the Fall semester. This involves a presentation given by members of the department's industrial advisory board (including the alumnus that is the Mentorship Program Director) and an upper level student who participates in the program. The students are given an application form (see Table 2) and asked to submit the completed form. Students that do not submit the completed form in a timely manner are repeatedly contacted and encouraged to participate in the mentoring program.

The Mentoring Program Director uses information from the application forms (see Tables 1 and 2), particularly the elective focus area information, to pair mentors and students. This pairing is intended to continue until the student graduates. Note that most mentors have multiple student mentees, with a maximum of three.

Mentor Expectations

Mentor expectations include the following:

- Work diligently to guide your assigned student to become a leader in his/her chosen career and to serve the society in which s/he lives.
- Contact and communicate with your assigned student within two weeks after the assignment is made.
- Communicate with your assigned student at least once a month during the school year.
- Coach your assigned student in her/his efforts to meet the student expectations.
- If your assigned student has interests in subjects outside your expertise, then arrange for your student to get the expertise needed. This may involve working through the Mentoring Program Director.
- Review your student's Enriching Activity plan and resume, and give appropriate comments and supervise revisions so that you are satisfied with the resulting plan and resume. Note that the student should also be utilizing the resume writing resources available in Engineering Professional Development in the College of Engineering at The University of Iowa.
- Review your student's job search plan and resume revision (this involves updating the resume prepared in conjunction with the enriching activity plan), and give appropriate comments and supervise revisions so that you are satisfied with the resulting plan and resume.

Student Expectations

Student expectations include the following:

- Accept the mentoring relationship with appreciation for the volunteer's time.

- Commit enough time to develop and sustain a good relationship with the mentor.
- Respond promptly to each contact by the mentor to establish and maintain a good relationship.
- Prior to your first correspondence with your Mentor, generate ideas (write them down) about what you want to accomplish from the relationship.
- Prior to each correspondence make a list of what you hope to accomplish.
- Allow time to build the relationship. Do not expect the mentor to know what makes you tick.
- Adopt a “learning” attitude about the information shared.
- Acknowledge feedback regarding strengths and weaknesses.
- Express your thoughts and feelings about the feedback and directions that you are receiving.
- Develop strong focused plans for action you and your mentor believe should be accomplished.
- Feel free to engage your mentor in a robust discussion, ask if you do not understand.
- Take responsibility for implementing your action plan.
- Be accountable for results, your behavior and any changes requested of you.
- During the Fall Semester of your Sophomore Year –
 - ✓ Complete the Mentoring Program questionnaire to provide information for matching you with a Mentor (this should be completed during the first 2 weeks of the semester).
 - ✓ Complete your Elective Focus Area Plan and get approval from your academic advisor.
 - ✓ Prepare a thorough draft of an enriching activity plan for review by your mentor. This plan should include details about how you will accomplish your enriching activity, e.g., finding an appropriate internship.
 - ✓ Complete a resume that has been reviewed and revised in consultation with your mentor and with Engineering Professional Development staff.
- During the Spring Semester of your Sophomore year implement (as appropriate) your enriching activity plan.
- During the Fall Semester of your Junior Year –
 - ✓ Prepare a thorough draft of a job search plan for review by your mentor. The draft should include how your courses and outside activities relate to your plan. Note that your plan should be modified if your goal following receipt of your B.S.E. degree is not industrial employment, e.g., if you plan to attend graduate school or professional school.
 - ✓ Update your resume in consultation with your mentor and with Engineering Professional Development staff.
- By the end of the Spring Semester of your Junior Year complete the job search plan in consultation with your mentor and the Engineering Professional Development staff.
- During the summer between your Junior and Senior Year successfully implement your job search plan.
- Be aware of all the expectations listed above.

Program Implementation and Evaluation

The mentors and student mentees are notified of the pairings by the CBE department staff. The Mentoring Program Director contacts the mentors and provides them with instructions regarding

contacting their student mentees. He encourages that the mentor initiates the first contact, either via phone or email. Furthermore, contact with the mentees should be made periodically as indicated above. Finally, the mentors are encouraged to have at least one face to face contact with their mentee if possible, e.g., this could occur if the mentor visited Iowa City to attend a football game or other activity. The content of the communication is guided by the mentor and student expectations noted above.

The Mentoring Program Director periodically contacts the mentors to obtain feedback regarding their contact with their mentees and follows up in cases where the level of communication has been below expectation. The feedback to date, while largely anecdotal, suggests that the program has been successful. A survey of the mentors and mentees will be conducted in the near future to provide feedback regarding the program's success and areas where improvement is needed.

Table 1. Mentor Application Form

Mentor Application
Mentoring Program
Department of Chemical and Biochemical Engineering
The University of Iowa

Name:

Email:

Phone:

Current Employer:

Current Job Description:

Employment History (list post-BS employers and job titles):

Explain why you wish to participate in the Mentorship Program:

Elective Focus Area(s) Qualified to Mentor (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> Biochemical Engineering | <input type="checkbox"/> Pharmaceuticals |
| <input type="checkbox"/> Business | <input type="checkbox"/> Polymers |
| <input type="checkbox"/> Chemical Process Engineering | <input type="checkbox"/> Pre-Medicine |
| <input type="checkbox"/> Energy & Environment | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Other (please explain): |

Indicate Chemical Engineering activities of interest (check all that apply):

- Mentor
- Guest lecturer in courses (please indicate courses/topics of interest):
- Speaker in Professional Seminar
- Professional Advisory Board Membership
(see <http://www.engineering.uiowa.edu/cbe/resources/professional-advisory-board-cbe>)
- Other (please list):

Approval

- I give my permission to forward my email address to the director of the mentoring program, who is an alumnus of Chemical Engineering at the University of Iowa.

Electronic Signature (type your name): _____

Table 2. Student Mentee Application Form

Student Application
Mentoring Program
Department of Chemical and Biochemical Engineering
The University of Iowa

Name:

Email:

Phone:

Expected Graduation Date:

Career Objective:

Explain what you would like to accomplish from participating in the Mentorship Program:

Elective Focus Area:

- | | |
|---|--|
| <input type="checkbox"/> Biochemical Engineering | <input type="checkbox"/> Pharmaceuticals |
| <input type="checkbox"/> Business | <input type="checkbox"/> Polymers |
| <input type="checkbox"/> Chemical Process Engineering | <input type="checkbox"/> Pre-Medicine |
| <input type="checkbox"/> Energy & Environment | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Other (please explain): |

Required Enriching Activity:

- Three semester hour equivalent of an approved research experience
- Cooperative education experience
- Internship experience
- Study abroad
- Entrepreneurial program (i.e., receive the corresponding certificate)
- Other multidisciplinary experience (please explain):