Mentoring Undergraduate Researchers

Kaneb Center Workshop

"In every art beginners must start with models of those who have practiced the same art before them. And it is not only a matter of looking at the drawings, paintings, musical compositions, and poems that have been and are being created; it is a matter of being drawn into the individual work of art, of realizing that it has been made by a real human being, and trying to discover the secret of its creation. " ~ Ruth Whitman

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From *How to Mentor Undergraduate Researchers*, pp. 13-14 & 18.

What Mentors Should Expect

- Mentoring students is first and foremost an educational activity.
  - For most students, undergraduate research is an introduction to research. It is important to give students projects for which they can take intellectual ownership; …
- Undergraduate research students are not graduate students!
- Mentors must accommodate to students' varying levels of preparation, skills, and abilities.
  - If a mentor assumes that the student has more experience or knowledge than the student in fact does, the mentor may provide insufficient support at the beginning stages of the project…
- It takes time to mentor an undergraduate student.
- Mentors' letters of recommendation will be very important.

What Students Expect

- Mabrouk and Peters (2000), students report the most important aspect of their undergraduate research experience is the relationship with the mentor.
- Students often expect to achieve something significant by the end of their projects.
  - Sometimes they do. More often the slow pace of their research surprises them… Mentors must encourage students to persist through these periods when the project seems stalled and to value the importance of quality, not necessarily quantity, alone.

Expectations that Should Be Addressed Up Front are:

- expected hours;
- techniques and methods that will be used;
- proper note keeping/documentation of progress;
- care and maintenance of materials or equipment;
- expected timeline for activities;
- expected meeting times.

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"One's mind, once stretched by a new idea never regains its original dimensions." ~ Oliver Wendell Holmes

Advice for New Mentors (From *Advisor, Teacher, Role Model, Friend*, p. 8)
For most people, good mentoring, like good teaching, is a skill that is developed over time. Here are a few tips for beginners.

- **Listen patiently**. Give the student time to get to issues they find sensitive or embarrassing.
- **Build a relationship**. Simple joint activities – walks across campus, informal conversations over coffee, attending a lecture together – will help to develop rapport…
- **Don't abuse your authority**. Don't ask students to do personal work, such as mowing lawns, baby-sitting and typing.
- **Nurture self-sufficiency**. Your goal is not to "clone" yourself but to encourage confidence and independent thinking.
- **Establish "protected time" together**. Try to minimize interruptions by telephone calls or visitors.
- **Share yourself**. Invite students to see what you do, both on and off the job…
- **Provide introductions**. Help the student develop a professional network and build a community of mentors.
- **Be constructive**. Critical feedback is essential to spur improvement, but do it kindly and temper criticism with praise when deserved.
- **Don't be overbearing**. Avoid dictating choices or controlling a student's behavior.
- **Find your own mentors**. New advisers, like new students, benefit from guidance by those with more experience.

Handy Mentoring Tips (from *How to Mentor Undergraduate Researchers*, p. 19)

- Be patient.
- Target explanations of concepts to the student's level. Students often remark that mentors forget that "I am just a student."
- Encourage questions.
- Be available. Make time for students. Everyone is busy. If you agree to be a mentor, you need to make the time.
- Be ready. If you are not prepared when the student arrives, it does more than cause him or her to do "busy work" to kill time, it sends a message about how much you value the student, his or her contribution and worth.
- Set aside time every week for mentor-protégé question and answer period. The purpose of the sessions is to encourage students to ask all the "stupid questions" they may hesitate to ask.
- Use the sessions to talk about career plans, and if the mentor deems it appropriate, he/she should encourage the student to consider graduate school. Many students, even very bright and capable students, do not feel able or worthy and sometimes only have to be asked.

Resources

Merkel, Carolyn A. & Baker, Shenda M. (2002). *How to Mentor Undergraduate Researchers*. Council on Undergraduate Research, Washington, D.C.

Grossblatt, Norman, Ed. (1997). *Adviser, Teacher, Role Model, Friend: On Being a Mentor to Students in Science and Engineering*. National Academy Press, Washington, D.C.