

Guidelines for Mentoring Student Researchers

An important part of our mission as educators in higher institutions is to introduce students to scholarly research and support their continued research interests. Faculty play an enormous role in the success of a student's research experience. It is expected that faculty leading the research will act as mentors to the students participating. It is an investment of time and energy that will reap rewards for the faculty's research agenda as well as the student's educational growth. These guidelines are intended to help faculty to design and oversee research experiences for students so that the research is conducted well and the student has a successful and educationally rich experience.

Types of Student Positions

Four distinct kinds of participation are most common at the iSchool:

- *Research Experiences for Undergraduates (REU)* – This funded experience on specific NSF projects provides a stipend to students participating on your project. It is open to US citizens and legal residents at the undergraduate level.
- *Graduate Research Assistant (GA or GRA)* – Students are hired for either 20 hours/week (full GA) or 10 hours/week (1/2 GA) usually for the academic year, sometimes for a single semester. Students receive tuition credits and health benefits. Graduate Assistantships are for Master and Doctoral students, and are registered with the Graduate School.
- *PhD Research Practica* – Practica are open to Doctoral students in the iSchool and are a requirement for the degree. No pay is involved
- *Hourly employment* – Students at any level may also participate as temporary employees, hired for any number of hours (usually up to 20/week during the academic year) at an hourly pay established by the faculty or by the school.
- *Postdoctoral researchers* – Postdoctoral students may participate on part or full time positions for a project.

Recruitment Plan

Prior to hiring, Faculty should write a description of what research tasks the student will be asked to do, what expectations will need to be met, and what skills and experience are needed to complete the work. One important consideration needs to be the attraction of underrepresented students (women, minorities and persons with disabilities). For some sponsored research, other specific criteria (like citizenship) may pertain. Table 1 outlines some of the kinds of responsibilities students can carry out, but it is by no means exhaustive.

Remember that students may begin the experience with very little knowledge of research practice and may be highly dependent on you for direction and guidance in the activities where they will participate. A well conducted experience should lead the student to a point where they can work more independently. Students should be encouraged throughout to ask questions, offer observations and otherwise interact with the research team.

When you meet with students, be sure to convey the nature of the project and expectations of the position, discussing them to encourage questions and clarification. The formal task description for the student should include information such as the following. Feel free to use any or all of these items for your particular student researcher task description and expectations:

Possible tasks:

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| Background reading of proposals and reports | Data Collection |
| Discussion of total research approach | Data analysis |
| Discussion of project management | Report writing |
| Discussion of conceptual aspects | Research dissemination |
| Discussion of appropriate methodology | Repackaging for Policy recommendations |
| Problem formulation | Literature review |
| Proposal writing | Writing publishable paper |
| Questionnaire development | Writing case study |
| Annotation of text | Writing scripts, and algorithms |

Expectations:

- expected time commitment? (Start/End dates; hours/week)
- attendance at project meetings
- work space and computing equipment
- specific research tasks
- expected deliverables (data, reports, presentations..)
- requirement to complete CITI training prior to beginning the experience
- safety concerns or pertinent regulations

Supervision and Mentoring

It is important for faculty to actively engage with the students involved in their research. Do not leave this critical role solely in the hands of another graduate student, such as your PhD student. In the initial meetings with the student, an overview of the project goals and activities should be discussed and useful relevant reading material provided. Be sure to arrange for any training that might be needed, for example, on particular software. Outline the roles of the various team members and how the student's work will fit in with the whole. Discuss the methodologies you will use and why. Provide clear direction on keeping research notes of their work as this is critical to the conduct of science, and for the accurate completion of time sheets.

Faculty should plan on individual meetings, or coffee breaks with students throughout the research period for such purposes as: mentoring to the research environment; evaluation of activities; discussion of issues; answering questions; providing additional avenues for growth. Stress the importance of asking questions and sharing their observations with you and the research team. Communicate on a weekly basis. It is the best way to stay informed and address issues that arise. It is the only way to know that the time sheets you approve are accurate. Be sure students know how to contact you if problems come up, and be sure they know they must contact you immediately if they are unable to attend meetings or otherwise complete their commitment.

An excellent resource for planning out a mentoring program is the *Post Doc Mentoring Plan* that can also be found in the Faculty Center.

Other resources

Check out the Faculty Guidelines for Undergraduate Students and for Graduate Students at this site, posted by several faculty :

<http://serc.carleton.edu/NAGTWorkshops/earlycareer/research/students.html#guidelines>

And useful advice in some other institutions' guides:

- Thompson Rivers University - supervision of graduate students:
http://www.tru.ca/_shared/assets/TRU_Faculty_Guide_to_Graduate_Student_Supervision20390.pdf
- University of Michigan – mentoring graduate students
<http://www.rackham.umich.edu/downloads/publications/Fmentoring.pdf>
- Miami University – mentoring undergraduates (useful for graduate students too)
<https://umshare.miami.edu/web/wda/undergraduateresearch/entoringGuide.pdf>
- University College of London – specific guidance aimed at preventing poor performance by student researchers and addressing it when it occurs:
<http://www.ucl.ac.uk/academic-manual/part-3/research-students-poor-performance>

WebGURU – Guide for Undergraduate Research provides information about many research topics such as the nature of research and the research team, professionalism, ethics and integrity, communication, intellectual property and career information.

<http://www.webguru.neu.edu>