Summer Internships

Adapted from a presentation by Jose Manautou, PhD,
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Summer Internships: Why do it?

You have

- Status as an undergraduate in one of the STEM fields
- Outstanding grade point average
- Great foundational knowledge through course work
- Glowing recommendation letters from professors who taught courses you took
- Desire to participate in research
- Interest in attending graduate school

Why are Summer Internships Important?

- Opportunity to "test drive" the graduate school lifestyle
- Gain better appreciation of the process of scientific inquiry
- Learn to work independently
- Learn to work as part of a team
- Opportunity for networking
- Gain new skills
- Gain in-depth knowledge of a scientific discipline
- Establish relationships and gain new mentors

Why are Summer Internships Important?

- Your summer internship **may be a foot in the door for graduate school** at the institution and department.
- If your work and dedication as an intern impressed the faculty you will be probably be among the top applicants for acceptance into graduate school.
- If your internship was in industry or government, your work, connections, and networking can be beneficial once you complete your advanced degree for future job openings.

Why are Summer Internships Important?

- Your internship mentor/advisor gets to see your skills and potential for graduate school.
- Your mentor becomes an ideal reference for graduate school applications and future job opportunities.
- If you also had a graduate student or postdoctoral mentor, these individuals worked closely with you during your internship and can also serve as references, provide letters of recommendation, and continue to discuss your career interests with you.

Where to Start?

- Many professors in STEM disciplines are actively engaged in research
  - Talk to them outside of the classroom
  - Common misconception: **professors do not have the time to talk to students outside of the classroom**
  - Little known reality by undergraduates: professors **LOVE** to talk about their own research

Where to Start?

- Interested in non-academic summer research opportunities?
  - Government
  - Private sector (e.g., biotechnology, pharmaceutical companies)
  - Non-profit organizations and institutes (e.g., in areas of policy-making, regulatory)

Most Academic Institutions have an Office of Undergraduate Research

SOT Internship Listing

Provides

- General information
- Toxicology-related list
- Government opportunities
- Corporate and other research opportunities

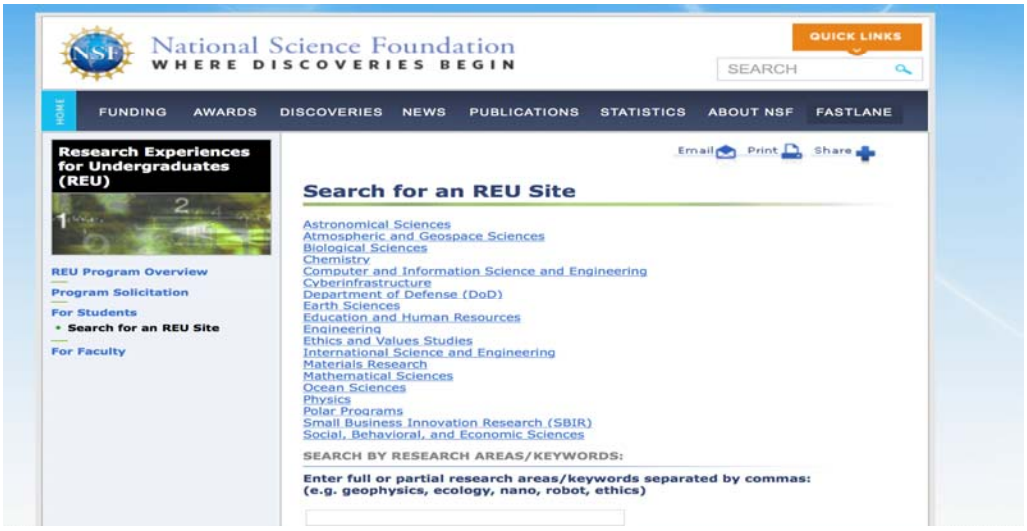
www.toxicology.org

Web Searches

- Other STEM disciplines have professional societies that provide useful career resources tools, including summer internships opportunities.
- Academic programs have internships, often federally funded.
- Also other sites provide internship leads. (e.g., Institute of Broadening Participation's Pathways to Science Internship Listings

NIH-Sponsored Summer Research Opportunities

NSF - Research Experiences for Undergraduates (REU)



Summer Internship Mentor: Your Expectations

- Learn how much time your faculty mentor will spend with you.
- Find out his/her goals for your internship work.
- Is the amount of work he/she proposes realistic for allotted time period?
- A good faculty mentor should dedicate several hours a week to one-on-one meetings with you (in addition to interactions through laboratory and group meetings).
- It is very likely that the day-to-day mentoring and training will be done by a senior member of the laboratory.

Summer Internship Mentor: Your Expectations

- Make sure you get constant feedback and a good assessment of your progress from your mentor(s).
- Make sure you are right on track?
- Make sure that your mentor has considered a backup plan if the proposed studies are not working as expected.

Summer Internship Mentor: Your Expectations

- Are there weekly or bi-weekly milestones to meet that your mentor wants you to meet?
- More experienced students can have their own goals and ideas of what they would like to learn. Make sure those are shared with your mentor.

Take Ownership of Your Project!

- Make sure you are comfortable in mastering the techniques required for the project.
- Seek assistance when a procedure, assay, or equipment does not seem to work.
- Be completely invested and learn how to troubleshoot experimental problems.
- Develop independence, but don't be afraid to ask questions or seek assistance when needed.
- A question that could seem stupid or trivial to you could be very relevant to your work and your ability to do it!

Good Practices to Maximize your Summer Internship Experience

- Interact with faculty members/scientists other than your mentor.
- Introduce yourself to the program directors, department heads, and deans.
- Attend scheduled seminars, doctoral defenses, and university-sponsored workshops and professional development activities during the summer.

Good Practices to Maximize your Summer Internship Experience

- Interact in social gatherings and out-of the laboratory activities that foster camaraderie.
- Get to know your peers outside of the lab setting.
- Get people to know you and to notice you!

Academic Versus Non-Academic Research Internships

- Research opportunities in the private and government sector can be equally beneficial.
- There is tremendous value in getting exposed to the research environment in these sectors.
- Offer good quality and highly dedicated mentors.
- Mentor-mentee relationship can be different (e.g., you may not have a graduate student peer-mentor).

Academic Versus Non-Academic Research Internships

- Opportunity to meet peers with similar interests since these internship programs will have other student interns.
- You will experience first-hand what it is to work in a non-academic setting.
- Great value in doing both academic and non-academic summer research internships.
- Good approach to develop and further build upon skills.

Take Home Messages

- Your summer internship experience can help you decide whether graduate school is the right path for you.
- Learn from graduate student or postdoctoral mentors what makes a successful graduate student.
  - Most likely you will hear: *"*hard work, persistence, patience, and passion for science.*"*
- Make friends and stay in touch.
- Many journeys for successful scientists got a start with a summer research internship.