

# 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 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

The screenshot shows the UConn Office of Undergraduate Research website. The header includes the UConn logo and navigation links: Home, Students, Mentors, Funding & Programs, Events, News, and Contact Us. A search bar is located in the top right. The main content area features a large banner for "SUMMER UNDERGRADUATE RESEARCH FUND SESSIONS" with the text "What is SURF and how do you apply?" and "UConn offers thousands of dollars each summer to undergraduates doing research on and off campus." Below this, the dates and times for the sessions are listed: Monday, Nov. 2 (5-6 p.m., Oak 110), Tuesday, Nov. 10 (5-6 p.m., Oak 110), and Wednesday, Nov. 18 (5-6 p.m., Oak 110). To the right of the banner is a section for "Upcoming Events" with a list of events: 11/18 STEM Seminar - Robert Huggins, 11/18 SURF Information Session, 12/9 UConn IDEA Grant Drop-In Hours, 12/4 UConn IDEA Grant Drop-In Hours, and 12/10 SURF Office Hours. Below the banner is a section for "Recent News" with a list of news items: Student Accomplishments - September 2015, Student Accomplishments - May 2015, Congratulations, Summer 2015 SURF Award recipients!, and Congratulations, Spring 2015 UConn IDEA Grant Recipients! 2015 Mentorship Excellence Awards.

# SOT Internship Listing

## Provides

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



[www.toxicology.org](http://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

**NIH** National Institute of Diabetes and Digestive and Kidney Diseases

Search site... Search

Research & Funding for Scientists | Health Information | About NIDDK | News | Follow Us

NIDDK > Research & Funding for Scientists > Funding Process > Diversity Programs > Research & Training Opportunities for Students > Diversity Summer Research Training Program

**Research & Training Opportunities for Students**

Diversity Summer Research Training Program

Short-Term Research Experience for Underrepresented Persons (STEP-UP)

**Staff Contacts**

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T32 Diversity F31s, Research Supplements to Promote Diversity/Re-Entry, and R03 Diversity Awards

**NIDDK Diversity Summer Research Training Program (DSRTP) for Undergraduate Students**

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) through the Office of Minority Health Research Coordination invite students to submit their application for the Summer Research Training Program.

The overall goal of this program is to build and sustain a biomedical, behavioral, clinical and social science research pipeline focused on NIDDK mission areas. The NIDDK Diversity Summer Program is particularly interested in increasing students from backgrounds underrepresented in biomedical research, including individuals from disadvantaged backgrounds and individuals from underrepresented racial and ethnic groups.

At the end of the summer, students participate in the NIH Summer Research Program Poster Day. This provides an opportunity for students to present their work before the NIH scientific community. Students are also expected to participate in meetings and seminars in their individual laboratories. In addition, with permission from their preceptors, students may also attend formal lectures and symposia, which are listed in the weekly "NIH Calendar of Events." The NIH Calendar of Events is only available for students working at the NIH campus in Bethesda, Maryland.

Research performed by the laboratories and branches of the NIDDK covers an extraordinarily diverse area but is unified by a commitment to excellence in both basic and clinical investigation. The basic science laboratories include outstanding groups in many facets of modern molecular biology, structural biology, including x-ray crystallography and NMR, cell biology, and pharmacology. Systems under study include viruses, prokaryotes and eukaryotes, including yeast and mammalian cells. Developmental biology is represented by studies ranging from those on cellular slime molds to those on mouse oocyte development. Several laboratories use the most up-to-date techniques in receptor pharmacology, natural products chemistry, and organic chemistry to study a wide variety of compounds, particularly neuroactive agents. Not only biochemical but also mathematical and physical chemical methods are applied to a variety of fundamental problems.

# NSF - Research Experiences for Undergraduates (REU)

**NSF** National Science Foundation  
WHERE DISCOVERIES BEGIN

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SEARCH

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**Research Experiences for Undergraduates (REU)**

REU Program Overview

Program Solicitation

For Students

- Search for an REU Site

For Faculty

**Search for an REU Site**

Astronomical Sciences  
Atmospheric and Geospace Sciences  
Biological Sciences  
Chemistry  
Computer and Information Science and Engineering  
Cyberinfrastructure  
Department of Defense (DoD)  
Earth Sciences  
Education and Human Resources  
Engineering  
Ethics and Values Studies  
International Science and Engineering  
Materials Research  
Mathematical Sciences  
Ocean Sciences  
Physics  
Polar Programs  
Small Business Innovation Research (SBIR)  
Social, Behavioral, and Economic Sciences

SEARCH BY RESEARCH AREAS/KEYWORDS:

Enter full or partial research areas/keywords separated by commas:  
(e.g. geophysics, ecology, nano, robot, ethics)

## **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.