



# MODULE: RESEARCH EXPERIENCE FOR UNDERGRADUATES (REU)

## OVERVIEW

### Learning Objectives

At the conclusion of this module, you will be able to:

- Interpretation: Explain what the National Science Foundation (NSF) Research Experience for Undergraduates (REU) program is
- Interpretation: Discuss the benefits of participating in a program such as NSF REU
- Application: Navigate the NSF REU website and locate a potential opportunity based on your interests or research

### Checklist

Prior to meeting with mentor

- Review the Overview materials
- Review the NSF REU webpage to see the breadth of available technical programs and locations
- Five Minute Reflection

Discussion with mentor

- Can you do an REU this year? Maybe next year? How will you use your summer to further your goals?

Mentee Deliverables

1. **Deliverable 1: Printed copy of three REU programs/site that are potentially interesting to you.**
2. **Deliverable 2: Five Minute Reflection**



## Materials

- Handout 1: REU Handout 1 – Getting an REU

## Introduction to the NSF REU

### **Adapted from:**

It's REU Season! Here's How to Make the Most of it

Dan Gifford, June 24, 2011

<http://astrobites.com/2011/06/14/its-reu-season-heres-how-to-make-the-most-of-it/> {link verified 10/2024}

REU stands for [Research Experience for Undergraduates](#), and is a specific summer research program funded by the [National Science Foundation \(NSF\)](#). The program is aimed at students who may be interested in conducting scientific research at a graduate level. The whole idea behind REUs is to give you a chance to explore a field at a deeper level and see if graduate school is something you would like. Besides being a blast and giving you the chance to live in a different part of the country for a while, REUs give you a clear window into the life of a graduate student.

There are a limited number of these REUs available, so the competition is great. Many schools look mostly for students who have research experience at some level in some field; however, every program typically accepts one or more students from outside the field who show a genuine interest.

Each institution that hosts an REU program is free to make the experience unique, and that is exactly what happens. However, there are many common elements you can expect no matter where you go. Usually, students work with faculty or graduate student mentors who have planned a project for them ahead of time that can be finished within the length of the program (typically 10-12 weeks).

At these REUs, besides doing research you will go to colloquia (talks by professors or grad students), get to know your fellow REU students (who do research at other institutions around the globe), and meet their mentors in the program.

Making the most out of your experience is actually fairly easy. You are surrounded by some of the smartest, most driven undergrads you'll ever meet, who (just like you) want to make the most of their REU experience. You are under a deadline (the length of the program), and you are usually given a lot of tools and tutorials by the program to help you succeed. Some programs require you to write a paper that could be published, while others only require you to do the research. Almost every program will have you give a 10-15 minute talk about your work at the end of the summer to the department - a great opportunity to make an impression!

When application time rolls around for graduate school, knowing what kind of research you want to do (and don't want to do) can go a long way toward improving your application. Also, networking is always stressed to graduate students as an important part of their careers. The people you meet at your REU might in future be the people who review your papers, serve on selection committees for grants you want, and hire you one day. The importance of making a good impression and getting your name out there cannot be overstated. An REU is an excellent way to get your name out to many institutions at one time.



# Research Experience and Mentoring

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The best thing you can do on your REU to advance your career as an undergrad is keep your ears open and learn. Learn a new programming language. Read a new paper every day either on your research or on one of your peers' research. Talk with your peers about what they are learning and finding. Make an effort to meet other faculty in the department and have a chat with them about their research (even if they don't remember you, you will remember what they say).

Have a fun time! Really get to know your new friends in the program. These are people you have the chance to form lifetime friendships with, co-author papers with, and, hopefully, work with some day.

## Other Programs

The NSF REU is a specific summer program. It is very large and reaches most topics and institutions. However, there are many other summer research experiences to explore, and the NSF REU is just the beginning of your search. Consider:

- Other NSF Programs
  - The IRES program offers international research opportunities to undergraduate and graduate students.
  - NSF's Pathways Program, students can find paid internships in a variety of different science and engineering fields.
  - NSF's Summer Scholars Internship Program participants work in NSF offices that align with their academic interests.
- Other federal agencies
- University specific programs
- Individual faculty

To find additional opportunities not funded by NSF, do a keyword search in a web browser. Type in your major or your specific area of interest and the upcoming year followed by some of these possible keyword sets

- summer undergraduate research
- summer undergraduate internship

You will need some imagination and persistence to fully explore these options. Talk to your faculty about suggestions.

## Assignment(s) for this Module

Use "Handout 1: REU Handout 1 – Getting an REU" to start your search of the NSF REU website to identify three REU Programs/sites that seem interesting to you. Assemble a brief description of each of the three programs.

**Deliverable 1: Bring a printed copy of three REU programs/site that are potentially interesting to you.**



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## Five-Minute Reflection

How might you benefit from a summer REU program? What are the costs and benefits of your participation?

Come up with one question to discuss with your mentor (maybe a concept you are unclear on, something you found interesting, etc.)

What information did you feel was the most informative? Least?

**Deliverable 2: Bring a printed copy of your responses to the Five-Minute Reflection to the next meeting.**