SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATES: 
LIFE AND PHYSICAL SCIENCES, MATHEMATICS, 
ENGINEERING, AND SOCIAL SCIENCES

MARYLAND CENTER FOR UNDERGRADUATE RESEARCH

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WHY DO UNDERGRADUATE RESEARCH?

• Get hands-on experience in your field
• Understand how discoveries are made
• Learn new skills, procedures, and computer programs
• Develop professional contacts and friendships, useful for later recommendations and networking
• Great experience for graduate school & medical school
IF YOU **DON’T HAVE RESEARCH EXPERIENCE YET**, NOW IS A GREAT TIME TO GET STARTED HERE AT UMD **WHILE CONSIDERING OUTSIDE PROGRAMS**….  

• Begin by talking with your major advisor, grad student TAs, and course professors about what research is being done in your major  

• Contact people you might like to work with several weeks before the start of the semester  
  • Tell them why you're interested in working with them and what skills you bring to the table  

• Use the Maryland Student Researchers database of campus opportunities [here](#)
MARYLAND STUDENT RESEARCHERS (MSR)

- The MSR database is a great way to learn about research projects that are actively looking for undergraduate student assistance.
- Many MSR projects are open to beginners and provide training; others specify any required skills or background.
- About 150 projects are listed on the MSR database each semester.
- You can search for listed opportunities in your subject of interest here.
IF YOU ARE READY TO APPLY FOR SUMMER RESEARCH PROGRAMS:

• Formal application process including essay(s), CV, transcripts, and letters of recommendation (usually 2)

• These programs are competitive: Apply to at least 5-6 options that are a good match for your skills/interests/goals

• Deadlines usually are in January or February, so plan ahead!!!

• Some programs require prior research experience, a minimum GPA (usually 3.0 or above), and course prerequisites: read pre-reqs carefully

• Most programs target current sophomores and juniors; some are open to qualified freshman or graduating seniors—again, read guidelines carefully
COMMON FEATURES OF UNDERGRADUATE SUMMER RESEARCH PROGRAMS:

• Many larger programs take place at multiple locations
• Research full-time for 8-10 weeks
• Take part in an established research project supervised by professional researchers, usually as part of a team of 10-12 summer researchers
• Sizeable stipends ($3,000-$6,000), many cover room/board and travel costs
• Read guidelines carefully. Many programs have strict GPA and citizenship requirements, some prefer sophomores or juniors, or students with previous research experience
• Main purpose is to help students, especially underrepresented students, prepare for PhD and MD programs
EXAMPLES OF SUMMER UNDERGRADUATE RESEARCH PROGRAMS:

• National Science Foundation (NSF) Research Experiences for Undergraduates
• National Institute of Standards and Technology (NIST) Summer Undergraduate Research Fellowships (SURF)
• Amgen Scholars
• Lawrence Livermore National Laboratory Summer Internships
• And many more!!!
Eligibility: U.S. citizens or permanent residents

Deadlines: Vary depending on the research site – usually in January or February for the following summer

Benefits: Students receive stipends and for most sites, housing and travel expenses also

• Hundreds of opportunities in most STEM and Social Science fields
• NSF-funded researchers receive extra funds to bring in 10-12 students each summer
• Students apply directly to each REU site – separate application for each!!!
NATIONAL SCIENCE FOUNDATION
RESEARCH EXPERIENCES FOR UNDERGRADUATES (REU’S)
EXAMPLE SITE: JOHNS HOPKINS UNIVERSITY PROGRAM IN
NANOTECHNOLOGY FOR BIOLOGY AND BIOENGINEERING

- Experiences include hands-on research under the guidance of a faculty mentor, professional development workshops, practice presenting research orally and at a conference, and organized social activities.

- 10 weeks long, with a $5,250 stipend, housing near campus, and travel assistance.

- Aimed at students interested in applying to graduate school; particularly interested in recruiting minorities and people from groups with traditionally low STEM representation.

- Open to US citizens and permanent residents who are rising sophomores, juniors, and seniors with 3.5+ GPAs.

- Accepts 10 students each year.

- Online application opens in November and requires a personal statement, resume, official transcript, and two recommendation letters.
  - Personal statement addresses your relevant background experiences and professional goals.
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)
SUMMER UNDERGRADUATE RESEARCH FELLOWSHIPS (SURF)
NIST.GOV/SURF

• Open to students with physics, material science, chemistry, applied mathematics, computer science, or engineering majors
• Students should be considering MS or PhD
• NIST Research Campuses in Gaithersburg, MD and Boulder, CO
• Hundreds of students at 7 facilities—30+ UMD students annually
  • Nanoscale, Neutrons, Communications, Information, Engineering, Material Measurement, and Physical Measurement
• Application is through the UMD Engineering Co-op and Career Services Office’s Careers4Engineers: www.coop.eng.umd.edu

Eligibility:
Must apply through your university
Must be a U.S. citizen or permanent resident to apply
Must have a 3.0+ GPA

Deadline: February 7 in Engineering Co-op and Career Services Office

Benefits: $5,500 stipend and allowances for travel and housing
AMGEN SCHOLARS
AMGENSCHOLARS.COM/

- Students conduct research in Life Sciences and Related Fields, attend seminars and socials, and meet at an end-of-summer symposium
  - Includes biology, bioengineering, genetics, medicine, neuroscience, statistics, chemistry and more
- Hosts about 200 students at 10 major U.S. research universities
  - Including Caltech, Columbia, Harvard, MIT, NIH, and others

Eligibility:
- U.S. citizens or permanent residents
- Sophomores, juniors, or non-graduating seniors
- Cumulative GPA of 3.2 or above
- Strong interest in pursuing a PhD or MD-PhD

Deadline: February 1, with the exception of Cal Tech, which is mid-February

Benefits: $3,600-$6,000 plus housing and some meals and travel. Varies by institution
LAWRENCE LIVERMORE NATIONAL LABORATORY SUMMER INTERNSHIP PROGRAMS
INTERNSHIPS.LLNL.GOV

- Federal national defense laboratory in Livermore, California hosts 300+ undergraduate and graduate interns each summer
- Opportunities in engineering, physics, computer science, and other physical and life sciences, as related to counterterrorism, energy, and biosecurity

Eligibility:
Minimum GPA of 3.3 with 3.5+ preferred
Most programs require U.S. citizenship

Deadline: Varies

Benefits: Competitive salaries based upon students’ degree discipline and academic standing according to a salary schedule
Students must make housing arrangements; housing opportunities are listed on the program’s website.
THERE ARE MANY, MANY MORE SUMMER RESEARCH OPPORTUNITIES THAN THE ONES WE FEATURED!

- Pay attention to department listserv messages and postings on bulletin boards.
- Ask your advisor if he/she can recommend summer research opportunities and programs, particularly those that former students and advisees have completed.
- Check out these links especially on the MCUR Website:
  - Research in DC Area: http://www.ugresearch.umd.edu/current-DCresearch.html
  - Research in the U.S.: http://www.ugresearch.umd.edu/current-research-us.html
- Lastly, please feel free to make an appointment with the MCUR office by emailing ugresearch@umd.edu or bmulder@umd.edu