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

MARYLAND CENTER FOR UNDERGRADUATE RESEARCH

1201 MARIE MOUNT HALL• UGRESEARCH@UMD.EDU

WWW.UGRESEARCH.UMD.EDU
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
SUMMER RESEARCH OPPORTUNITIES FOR MINORITIES AND UNDERREPRESENTED STUDENT GROUPS:

• Programs seeks to diversify the students who participate in research and graduate study, particularly PhD and MD/PhD programs

• Underrepresented students includes
  • Women in STEM
  • Diverse racial/ethnic background
  • First-generation college students
  • Low-income applicants
  • Military veterans
  • Students of non-traditional age
  • Students with physical disabilities
  • And others
SUMMER RESEARCH OPPORTUNITIES FOR MINORITIES AND UNDERREPRESENTED STUDENT GROUPS:

• Leadership Alliance
• BTAA SROP (Big Ten Academic Alliance Summer Research Opportunities Program)

…and many more opportunities listed on the MCUR website!!!!

MARYLAND CENTER FOR UNDERGRADUATE RESEARCH

www.ugresearch.umd.edu
THE LEADERSHIP ALLIANCE
THELEADERSHIPALLIANCE.ORG

- Includes hands-on summer research, a national symposium, and ongoing skill building and mentorship after the summer ends
- Research areas include applied math, computer science, education (UVA only), engineering, humanities, life sciences, math, physical sciences, psychology, and social sciences
- Applicants submit 1 application with resume, statement of purpose, two recommendation letters, official transcripts, and list of preferred research sites

Eligibility:
- Have completed at least two semesters and have at least one semester remaining of their undergraduate education by the start of the summer
- GPA of 3.0 or above
- Interest in pursuing graduate study (PhD or MD-PhD)
- U.S. citizen or permanent resident

Deadline: February 1

Benefits: Stipend, and travel/housing expenses from the research institution

Participating Institutions:
- Tufts University
- University of Chicago
- University of Colorado Boulder
- University of Maryland, Baltimore County
- University of Miami
- University of Pennsylvania
- University of Virginia
- Vanderbilt University
- Washington University in St. Louis
- Yale University

Maryland Center for Undergraduate Research
www.ugresearch.umd.edu
AN EXAMPLE OF A LEADERSHIP ALLIANCE RESEARCH PROGRAM:

Eligibility:
- Rising sophomore, junior, or senior
- US citizen or permanent resident

Deadline: February 1
Funding: $3,000 stipend plus housing

- Johns Hopkins School of Medicine Summer Internship Program (SIP)
- Fields: biomedicine and public health
- Components include hands-on research, related reading, group meetings, poster presentation
### BTAA-SROP (BIG TEN ACADEMIC ALLIANCE - SUMMER RESEARCH OPPORTUNITIES PROGRAM)

BTAA.ORG/STUDENTS/SROP/INTRODUCTION

<table>
<thead>
<tr>
<th>Participating Institutions:</th>
<th>Eligibility:</th>
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<tbody>
<tr>
<td>University of Illinois at Urbana-Champaign</td>
<td>U.S. Citizen/permanent resident</td>
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<td>University of Iowa</td>
<td>Enrolled full-time</td>
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<td>University of Maryland</td>
<td>GPA of 3.0 or above</td>
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<tr>
<td>University of Michigan</td>
<td>Completion of at least 2 semesters of UG with at least 1 semester left</td>
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<tr>
<td>University of Minnesota</td>
<td>Strong interest in pursuing a PhD</td>
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<tr>
<td>University of Nebraska-Lincoln</td>
<td><strong>Deadline:</strong> February 10</td>
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<tr>
<td>Northwestern University</td>
<td><strong>Benefits:</strong> Stipends of $3,000-$6,000 plus housing and travel; some institutions also pay for meals</td>
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<tr>
<td>Ohio State University</td>
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<td>Pennsylvania State University</td>
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<td>Purdue University</td>
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<td>Rutgers University</td>
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<td>University of Wisconsin-Madison</td>
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- Includes hands-on research, workshops about research skills and graduate school preparation, end-of-summer symposium, and enrichment activities
- **Research areas** include STEM, social sciences, and humanities
- **Application** requirements vary by school. Not all institutions accept shared BTAA application
EXAMPLES OF SUMMER UNDERGRADUATE RESEARCH PROGRAMS OPEN TO ALL STUDENTS:

• 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!!!
National Science Foundation
Research Experiences for Undergraduates (REU’s)

NSF.GOV/CRSSPRGM/REU/REU_SEARCH.JSP

- 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!!!

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

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)
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
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