

National Science Foundation Graduate Research Fellowship Pathways

The following information is not a checklist or blueprint to winning a national award, but is rather a list of experiences that an individual can pursue and mold to fit their individual interests. Students should not try to “collect” every type of experience, but should work within a defined area of focus and passion. Students should demonstrate a *sustained* commitment and attention to *documenting impact*, whether that is in a field of study, research, or difference made in the community.

Award profile: A fellowship for students seeking a future M.A. or Ph.D. and *research* careers in natural sciences, mathematics, engineering, and the social sciences. The NSF-GRFP aims to ensure the U.S. produces highly-qualified researchers in the fields mentioned previously. Students planning to enter any medical professional fields should not apply unless their future work heavily focuses on research.

Goals:

- Students should look to develop sustained research experience in a defined area. Students can pursue research at UTSA and in summer programs beginning in their first year of college.
- By the time of application, students demonstrate significant research experience, which includes the development of original ideas (judged as intellectual merit).
- By the time of application, students demonstrate a commitment to their field beyond research and advancing knowledge, but also to the benefit of society (judged as broader impacts).

Notable award winners: Aldo Sepulveda (UTSA, 2020 – Physics), Favour Obuseh (UTSA, 20121 – Biomedical Engineering), Sarah Dibrell (UTSA, 2018 – Biochemistry), Daisy Paredes (UTSA, 2021 – Anthropology), Christian Strong (UTSA, 2021 – Chemistry).

Recommended Prep Programs:

- 1st and 2nd year: NSF Research Experience for Undergraduates (REU) summer programs: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517

The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. Students apply directly to REU Sites or to NSF-funded investigators and programs run at universities nationwide. To identify appropriate REU Sites, students should consult the directory of active REU Sites.

Recommended Experiences. Bold items represent substantial accomplishments involving significant work. Candidates without items in “bold” should not shy away from applying. Expectations and viability vary by discipline:

- 1st year: Present at UTSA/Regional undergrad research symposia/Honors College Experiential Learning Fair
- **2nd and 3rd years: Present at a national conference**
- Present at Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) [STEM Candidates]
- Present at UTSA First-Gen Creative Activity & Research Symposium

- **Co-author or author a paper in a nationally peer-reviewed research journal**
- **Conduct independent research projects**
- **Pursue a patent**
- Participate in student organizations and Honors Societies in your discipline, especially in leadership positions
- Civic engagement in your field: giving presentations at local high schools and museums
- Peer mentoring in your field

Other Scholarships or Experiential Programs to aid in development:

- Barry Goldwater Scholarships: Students in STEM should consider applying in their sophomore and junior year. The Goldwater Scholarship helps students develop career statement essays which will put them at a competitive advantage in terms of preparedness when applying for the NSF-GRFP.
- Summer research programs abroad such as DAAD-RISE (Germany), Fulbright MITACS Globalink (Canada), and Amgen Scholars (locations in Asia) will provide opportunities for students to understand research and the importance of international collaboration.
- Study Abroad Programs and Field Schools for students in the Social Sciences.

UTSA Programs that promote undergraduate research:

- ESTEEMED (1st and 2nd year students)
- MARC-RISE
- McNair Scholars
- UT System Louis Stokes Alliance Minority Participation (LSAMP) Summer Research Academy

Skill development:

- Which skills do you need to develop for your research?
- Where can these skills be acquired (at a lab at UTSA, in a lab at an REU site? Through coursework inside your major or in the CoS, CoE, HCAP, or COLFA?)

Resources:

- UTSA Research: <http://research.utsa.edu/academic-research/graduate-students/nsfgrfp/>
- UTSA Office of Undergraduate Research: <https://provost.utsa.edu/undergraduate-research/>
- UTSA NSF-GRFP Graduate School Initiative: <https://graduateschool.utsa.edu/current-students/Fellowship-Incentive-Program/Information.html>
- Alex Lang NSF-GRFP Database: <https://www.alexhunterlang.com/nsf-fellowship>



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