

Arizona State University

Undergraduate initiatives linking education and research

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**Undergraduate
initiatives linking
education and
research**



ASU ethos

Undergraduate
research impact

ASU models

Work remaining
to be done

part I:
ASU ethos

The New American University

ASU Charter

ASU is a comprehensive **public research university**, measured not by whom it excludes, but by **whom it includes** and **how they succeed**; advancing **research and discovery** of public value; and assuming **fundamental responsibility** for the economic, social, cultural and overall health of the **communities** it serves.

8 Design Aspirations

1. Leverage our place
2. Transform society
3. Value entrepreneurship
4. Conduct use-inspired research
5. Enable student success
6. Fuse intellectual disciplines
7. Be socially embedded
8. Engage globally

part II:
undergraduate
research impact

Defining undergraduate research

“An inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline.”

Council on Undergraduate Research

<https://www.cur.org/>

Impact on student

Cognitive and intellectual growth

- Creativity, critical thinking, problem-solving skills
- Disciplinary technical skills, & interdisciplinary intersections
- Sense of belonging (eg underrepresented students)

Career readiness

- Graduate program enrollment
- Collaborative team work
- Communication skills
- Deeper integration into the profession

Impact on student

Academic achievement

- Course grade increases
- Persistence in major

Personal growth

- Stimulation of curiosity
- Independence in learning
- Development of personal initiative & confidence
- Understanding of lifelong learning
- Greater recognition by peers – academic role model

Impact on faculty

Research, scholarly & creative outcomes

- Remain current in field & advance a research program
- Establish collaborations, disciplinary + interdisciplinary

Enhanced teaching skills

- Mentor quality & engaged students
- Academic role model
- Lower barriers between faculty & students

Increased job satisfaction

- Intellectual stimulation & confidence
- Internal and external recognition

Impact on institution

- **Increased academic reputation**
- **Increased retention and graduation**
- **Enrichment of the curriculum**
- **Collaborations/partnerships across departments**
- **External resources/partnerships**
- **Engagement with local communities**

part III:
ASU models

New College of Interdisciplinary Arts & Sciences Undergraduate Inquiry and Research Experiences (NCUIRE)

- 4 programs requiring different levels of commitment and skills (individual & team)
- Open to students in any major or year
- Awards come with stipend OR course credits
- Symposium; undergraduate research journal
- Demonstrated higher graduation rates
- Video at <https://newcollege.asu.edu/ncuire>

Fulton Schools of Engineering Undergraduate Research Initiative (FURI)

- Student-initiated proposal & budget (alignment with one of Fulton's 5 research themes: Energy, Education, Health, Security, Sustainability)
- Open to on-the ground and online students
- Travel grants for conference presentations
- Research workshops (undergraduates, master's)
- Awardees featured online <https://undergraduate-research.engineering.asu.edu/meet-student-researchers/>

College of Public Service and Community Solutions Undergraduate Research Program

- Faculty-initiated
- Provides undergrads with research, presentation and publication experience
- Scholarships: \$500, \$750, \$1000 (minimum 10 hours/week); no course credit
- Spring Faculty Panel & competition, Scholars Reception

Voices: Students

- “Take advantage of research opportunities to get a leg-up on jobs, obtain experience for graduate school, and see hands-on why the time in the classroom really matters.”
- “This has been one of the most fulfilling experiences during my entire undergraduate career. I have gained invaluable experience about the nature of being a scientist conducting research...The knowledge I have gained from this I will take with me my entire career.”
- “Navigating undergraduate biomedical research: From textbook to test-tube” <http://substrate.asbmb.org/2018/01.31/>

Voices: Faculty

“It is amazing to see how hard they work when they see that their contributions are impacting projects funded by government agencies or industry, and that they can be co-authors on papers and...present at major conferences.”

“It’s really rewarding working with motivated undergraduate students. We all received and continue to receive mentorship throughout our careers, so it’s really important to mentor students as well and attract strong talent into the pipeline.”

part IV:
work remaining
to be done

Initiatives currently under consideration

- Centralized Office of Undergraduate Research & dedicated personnel to coordinate offerings, expand pool, provide hub of information
- Centralized website
- Steering committee
- Institutional membership in Council on Undergraduate Research (CUR)

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