Resources for Research at Primarily Undergraduate Institutions

GRANTED WV Statewide Conference, May, 2024

1. NSF, National Science Foundation

A summary can be found here of Institutional funding rate trends, awards by State or NSF managing directorate, most recent new awards, and largest currently active awards, including figures for EPSCoR states (Established Program to Stimulate Competitive Research).

https://new.nsf.gov/about/about-nsf-by-the-numbers

NSF Facilitating Research at Primarily Undergraduate Institutions
Research Opportunity Awards (ROA)
Research in Undergraduate Institutions (RUI)
Research Experiences for Undergraduates (REU)
Division of Undergraduate Education (DUE)—Three programs

Advanced Technological Education (ATE)

Improving Undergraduate STEM Education: Directorate for STEM Education (IUSE: EDU)

NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)

NSF-ADVANCE Organizational Change for Gender Equity in STEM Academic Professions. The website includes posted webinars https://new.nsf.gov/funding/opportunities/advance-organizational-change-gender-equity-stem/announcements/94684

NSF-HBCU-UP Historically Black Colleges and Universities Undergraduate Program https://new.nsf.gov/funding/opportunities/historically-black-colleges-universities-1

NSF-LSAMP Louis Stokes Alliances for Minority Participation https://new.nsf.gov/funding/opportunities/louis-stokes-alliances-minority-participation

PAESMEM Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring -- Nominations are especially welcome from EPSCoR states https://paesmem.nsf.gov/paesmem/about

2. NASA, National Aeronautics and Space Administration
https://www.nasa.gov/learning-resources/established-program-to-stimulate-competitive-research/

A guide for proposers is posted here:

https://www.nasa.gov/wp-content/uploads/2023/09/2023-nasa-proposers-guide-final.pdf?emrc=7b5d89

3. NIH, National Institutes of Health, WV INBRE Idea Network of Biomedical Research Excellence

"The IDeA Network of Biomedical Research Excellence (INBRE) is a competitive federal research program established by the National Institutes of Health in 2004. Investigators at Marshall University—in partnership with researchers at West Virginia University—have been awarded significant INBRE funding to help increase West Virginia's competitiveness for federal biomedical research funding. Through a network of partner institutions, the program impacts biomedical research at all levels and in all regions of the state."

https://wvresearch.org/wp-content/uploads/2010/09/WV-INBRE.pdf

https://www.marshall.edu/murc/files/2009/10/INBRE-brochure.pdf

4. STaR Science Technology and Research

EPSCoR (the NSF's Established Program to Stimulate Competitive Research) is facilitated by the West Virginia Higher Education Policy Commission's Division of Science, Technology & Research (STaR).

https://wvresearch.org/

The Division of Science and Research provides proposal review services at no charge to faculty!!   Also, "strategic leadership for the development of competitive research opportunities in science, technology, engineering and mathematics disciplines." The Science and Research Council provides expertise and policy guidance to the division. They also organize

Undergraduate Research Day at the WV Capitol
https://wvresearch.org/outreach/undergraduate-research-day

5. WV Grant Resource Centers
https://wvgrantcenters.com/

"Through a full partnership between Marshall University and West Virginia University, the WV Grant Resource Centers will assist communities and other eligible applicants in developing competitive grant applications. The focus is on the pre-award process to help applicants identify funding opportunities, put together competitive proposals, and submit complete application packages."

All services provided by the WV Grant Resource Centers are 100% free.

6. The Grant Advantage

https://www.thegrantadvantage.net/grantwriting

The Grant Advantage was founded in 2006 to help nonprofit organizations have a greater impact on their communities through funding. They "use a systematic planning method to help you develop and refine programs and projects to fulfill your mission…[working] one-on-one with your organization to make sure you have written resources that explain your background, need, objectives, approach, evaluation, budget, and more."

They help with "not only writing grant proposals, but managing grant awarded projects as a program director….[with] sensitivity to the needs of an organization's staff to manage, implement, assess and report on grant activities after the award is made."

7. CLASP Continuous Learning for Administrators of Sponsored Programs Toolbox, maintained by the University of Rochester Office of Research and Project Administration (ORPA)

https://www.rochester.edu/orpa/clasp/toolbox/

Here you will find many resources, including: TEMPLATES and CHECKLISTS for Comparing Actual and Budgeted Effort or calculating Summer Salary or Fringe Benefits, as well as an NSF Proposal Review Checklist

https://www.rochester.edu/orpa/_assets/pdf/tool_NSF_PropRevCklst.pdf

There is also a link to NIH FREQUENTLY ASKED QUESTIONS with answers about Biosketches (including a Powerpoint presentation on recent updates and changes to Biosketches for NIH and NSF), Multiple principal investigators, Post-submission materials, How to calculate person months, Final and Grant closeout reports, Data sharing policy, and All personnel reports

https://www.rochester.edu/orpa/_assets/pdf/tool_Appx_JJ_FAQs.pdf

8. CLASP Colleges of Liberal Arts Sponsored Programs

"The Colleges of Liberal Arts Sponsored Programs Community of Practice (CLASP) is a free and open resource that currently represents more than 330 predominantly undergraduate institutions, particularly institutions that fit within the liberal arts college framework (PUI LACs) across the nation."

"CLASP hosts a "Collaboratory" which is a Google-document based repository of resources that archives materials and resources from past meeting sessions….and also hosts annual meetings…the upcoming 2024 meeting will be held in person at North Central college in Naperville, IL Nov. 13-15. Typically, 60-90 people attend."

CLASP was founded to help people working at institutions where there may be only one person who "must inform the institution of risk, stay abreast of federal funding trends and priorities, and perform research development, research administration, and compliance functions." A member of CLASP co-authored this article:

Cuhel-Schuckers, Amy, Cara Martin-Tetreault, and Carol Withers. "The Grants Office and the RA Generalist: Parallel Life-Cycles and Development at Small PUIs." *Journal of Research Administration* 47.2 (2016): 80-93.

https://files.eric.ed.gov/fulltext/EJ1152273.pdf

To become part of the CLASP community, email:
Charlotte Whited (Principal Investigator)
cwhited@carleton.edu

9. NORDP National Organization of Research Development Professionals

https://nordp.org/

"NORDP was established in 2010 as part of a grassroots movement to build a community of Research Development professionals driven to enhance the research enterprise at their institutions. The organization grew from an informal network of individuals engaged in research development activities at universities and research institutions across the United States and is **now more than 1,000 members strong**, representing a diverse set of institutions and sectors, and including RD professionals from multiple countries from around the globe. Beginning in 2010, NORDP has held an annual conference that brings together its members."

https://nordp.org/page/2024_conference

10. CUR Council on Undergraduate Research
Founded in 1978, this national organization promotes undergraduate scholarship represents over 900 colleges and universities. They put out a quarterly journal, where this annotated bibliography was published: *Assessing the Impact of Undergraduate Research Experiences on Students: An overview of Current Literature by Crow and Brakke*

https://www.cur.org/wp-content/uploads/2023/09/summer08CroweBrakke.pdf

On the CUR website, you will also find RUBRICS and CHECKLISTS, such as:

https://www.cur.org/wp-content/uploads/2023/09/COEUR_for_AACU.pdf

https://www.cur.org/wp-content/uploads/2023/08/CUR-COEUR-2014_Checklist.pdf

11. PULSE, Partnership Undergraduate Life Science Education

Although this NSF-funded organization focuses on Biology teaching, their RUBRICS for assessment and institutional support are useful across disciplines. A complete bundle of them can be downloaded from

https://pulse-community.org/rubrics

12. AAC&U, American Association of Colleges and Universities

The AACU is a "global membership organization dedicated to advancing the democratic purposes of higher education by promoting equity, innovation, and excellence in liberal education."

The AACU has created valuable Assessment RUBRICS, including those for Experiential Learning, which are available free of charge (though you do need to register first).

https://www.aacu.org/initiatives/value-initiative/value-rubrics

AAC&U also runs **Project Kaleidoscope**, a center for STEM Higher Education Reform

https://www.aacu.org/initiatives/project-kaleidoscope

13. SERC Science Education Resource Center, Carleton College

SERC hosts dozens of websites for science educators, each with its own focus and community, as well as lists of resources:

https://serc.carleton.edu/serc/site_guides/index.html

A list of aspirational institutions are profiled here, each describing in detail how they integrate research into their requirements and as capstone experiences for their undergraduate STEM majors. The benefits of student research are showcased and analyzed here:

https://serc.carleton.edu/liberalarts/capstones/index.html

And in this report by the Teagle Foundation

https://www.teaglefoundation.org/Teagle/media/GlobalMediaLibrary/documents/resources/The_Senior_Capstone.pdf?ext=.pdf

also

Charting a Required Senior Capstone: Diverse Scaffolding for Transformative Experiences – Coates, Knupsky, and Caballero CURQ on the Web, Summer 2014

Other articles useful for making a case for research at your PUI

Seymore, Elaine, Anne Barrie Hunter, Sandra L. Laursen and Tracee DeAntoni "Establishing the benefits of research experiences for undergraduates in the sciences: First findings from a three year study" *Science Education* 88, no. 4 (2004) 493-534,

Hunter, Anne Barrie Sandra L. Laursen and Elaine Seymore "Becoming a scientist: The role of undergraduate research in students' cognitive, personal, and professional development" *Science Education* 91, no. 1 (2007) 36-74.

14. IBP Institute for Broadening Participation, Pathways to Science

https://www.pathwaystoscience.org/Library.aspx

This organization focuses on career development and diversity in STEM. They have created a mentoring manual and maintain lists of funding sources and webinars for faculty (and students!)

15. HHMI Howard Hughes Medical Institute

57 colleges and universities received 1 million dollar grants from HHMI to redesign their research offerings for undergraduates to make them more inclusive. They each wrote a report about the experience, all of which are available here:

https://www.hhmi.org/programs/inclusive-excellence-1-2

16. Sigma Xi Scientific Research Honor Society

Sigma Xi is a non-profit honor society for scientists and engineers. Founded in 1886 it is one of the oldest and most prestigious honor societies

Sigma Xi offers Grants in Aid of Research (GIAR; up to $2000 for undergraduate projects, with 32,000 grants awarded since 1922) https://www.sigmaxi.org/programs/grants-in-aid-of-research

Sigma Xi also runs a student research showcase every year https://www.sigmaxi.org/meetings-events/student-research-showcase

17. Mission West Virginia

Small colleges are powerful influences on their local communities, and the science faculty at these schools may wish to consider working with community-building organizations and applying for more local grants, in addition to or before

applying for larger federal grants. One such community-building organization is Mission WV:

https://www.missionwv.org/

SPACE BELOW TO NOTE ANY OTHER RESOURCES
MENTIONED AT THE CONFERENCE