

# Expanding Undergraduate Research: Identifying Federal Funding to Support Student Involvement

December 1st, 2022





# Agenda



- Welcome by Dr. Betsy Cantwell

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- Faculty Panelists

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- Student Testimonies

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- Federal Funding Opportunities- NSF and NIH

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- Student Recruitment and Mentoring

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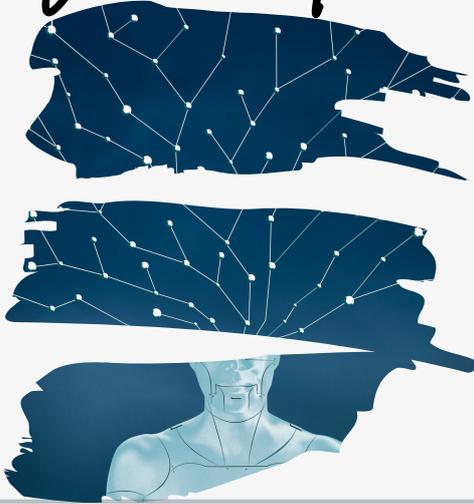
- SECD Support and Outreach

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- Q & A



Welcome!



Dr. Betsy Cantwell

Senior Vice President for Research and Innovation



# Meet your Panelists



**Dr. Michael Johnson**

- Associate Professor, Immunobiology
- Director of Graduate Studies, Industrial Microbiology Track, Applied Bioscience Program
- Director of the National Summer Undergraduate Research Project (NSURP)

Topics for Discussion:  
Successful proposal  
development  
Lessons learned/surprises  
Challenges  
Rewards



**Dr. Allison Huff**

- Assistant Professor, Family and Community Medicine (Research Scholar Track)
- Collaborative Research: HSI Implementation and Evaluation Project: Transfer Students' Success in Quantum Information Science and Engineering

# National Summer Undergraduate Research Project



**NSURP.org Twitter: @NSURPorg #NoLabNoProblem**

Sounds like a great idea, I'm totally game for figuring something out!

Gonna try and get some sleep right now, but will write back in the next couple of days with (hopefully) some ideas. Chat later in the week?

Take care, truly  
-d

**From:** Johnson, Michael D L - (mdljohnson) <[mdljohnson@arizona.edu](mailto:mdljohnson@arizona.edu)>  
**Sent:** Tuesday, June 2, 2020 10:54 PM  
**To:** Baltrus, David A - (baltrus) <[baltrus@arizona.edu](mailto:baltrus@arizona.edu)>  
**Subject:** Gotta be something we can do

Hey Dave,

Bunch of Ugrads are coming calling. There is no way all of them are going to get the research experience they need to move on. Wondering what it would look like if there was a massive multi-research program for ugrads. Like a massive multiplayer online role playing games, but for science. I'm trying to think of things like this instead of drowning in the news. Wondering if we could brain storm.

Michael

Michael Johnson

# How this happened (Honestly!)

**CAUTION: EMAIL**

Hiya Michael,

Thanks SO much for the call this morning; I've been feeling energized about the idea ALL DAY and in this weird time, having something to get excited about is such a gift.

I started a Google Doc with some notes and some brainstorming around logistics and potential process: <https://docs.google.com/document/d/1nU82SxzCETy6m-34SSjxl0nTYsXZLz9atwnO6I9cP5w/edit?usp=sharing> is the link and you should be able to edit it. When you've got a minute, jump in there and have at it – we can use this a sort of asynchronous brainstorming tool. When you're ready to look at it together and come up with a few next-step action items, email me back and we get a quick call on the calendar or do a Whats App chat or something :)

Jenn

**Jennifer Gardy, PhD**  
Deputy Director, Surveillance, Data, and Epidemiology  
Malaria | Global Health

## National Summer Undergraduate Research Project



- Virtual research opportunity
- Mentor driven project
- We provided a matchmaking platform, student professional development resources, and student funding

**NSURP.org Twitter: @NSURPorg #NoLabNoProblem**

# Allison J. Huff, DHEd

Allison Huff

Assistant Professor, Department of Family and Community Medicine,



## **FRONTERA:**

Focusing Research on the Border Area (multiple cycles)

**(AZ-AHEC)**

## **BLAISER:**

Border Latino & American Indian Summer Exposure to Research (multiple cycles)

**(AZ-AHEC)**

## **IOU-NA:**

Integrated Optics for Undergraduate Native Americans (multiple cycles)

**(NSF REU)**

## **CQN-Pima SRE:**

Center for Quantum Networks-Pima Community College Summer Research Experience

**(NSF HSI-IUSE)**

### Proposal Development

- ~4 months –
- Read FOA
- Develop your idea
- Meet with PO
- Identify Partners and leadership
- Further develop your idea together
- Letters of Support/Collaboration
- Form grant writing team
- Re-read FOA
- Assign writing sections with deadlines
- Work the budget
- Supplemental Material
- Review and Edit
- Route and Submit

### Important to Include

- Impact to students
- Activities
- Timeline
- Assessment Plan

### Fully Funded?

- Notify and mobilize team
- Re-read proposal
- Make sure accounts set up
- Develop action plans with timelines

### Conditionally Funded?

- Respond to reviewers' feedback and make requested changes (this may hurt your ego)

### Not Funded?

- If it was reviewed, ask for reviewer feedback
- Revise as appropriate
- Ask a 3rd party to read for logical flow of ideas and activities within reasonable timeline

### Multiple Iterations of Grant

- Depends on PO/funding
- Previous grant impact data
- What is different in this new submission?
- Incorporate previous interns

### Lessons Learned

- Start early
- Your team is a game-changer
- Respect your partners and their strengths
- Make sure you have a strong coordinator
- Support the students
- Be available
- Be supportive
- Communicate often
- Support the Mentors
- Communicate often
- Be a liaison

### Value to Students

- Potential to change their trajectory
- Builds confidence and self-efficacy
- Teaches them research skills
- Provides professional skills development
- Assists with academic scholarship
- Helps them build their network
- Builds friendships in similar academic paths
- Provides financial assistance so students can focus on school
- Opens up doors to scholarships, other internships, letters of support

### Value to PI

- Allows you to give back to students
- It's amazing to watch their growth in just 10 weeks
- Expands collegial network with mentors
- Expands community partnerships
- Increases your funding
- Opportunities for publications
- Teaches project management skills



# Why Undergraduate Research? Student Testimonies





Christa DeCoursey  
UA Graduate Student - 2nd Year  
Astrophysics PhD Program



Sarah Stamer  
UA Junior  
Double Majoring in  
Astronomy and Physics





# NSF REU Site Grants

- Next deadline to apply: **Sept 6, 2023**
- About 180 new awards each year
- Average budget: \$80,000 - \$130,000: host 8--10 students/year
- Usually 3 years of funding
  
- Program rationale: Involving students earlier in research experiences can help attract & retain students who might not otherwise consider these majors/careers
- Participants are usually juniors or seniors. Projects that involve first or second-year undergrads are highly encouraged
- Student research can be conducted in summer and/or during the academic year
- At least half of the student participants must be from institutions with limited research opportunities (including community colleges)



Students at Biosphere 2 REU Site Grant (Earth System's Research for Environmental Solutions) do both field research and lab work



Involve students earlier: this could help attract students in STEM who might not otherwise consider these major or careers.

Sites: Can also use cyberinfrastructure to facilitate research, learning and collaboration over distances, can support “virtual projects.” Significant number of student participants must be from outside of the host organization and at least half recruited from institutions where research opportunities are limited (including community colleges).

Encouraged to include training on mentorship for research mentors.

SUPPLEMENTS: Generally supports one or 2 undergrads. If it's a large research effort you can ask for more students, in tandem is the size and nature of the project. Mentoring is important here too, as with Site grants. You are expected to mentor students on the culture of research in your discipline and help them connect their research experience with their overall course of study. How to apply for supplement:

1. You are submitting a new (or a renewal) research proposal to NSF.
2. You have an NSF research award and want to request REU supplement.

In both cases, the procedure is to contact the appropriate NSF program officer. If of interest, can also apply for special opportunities such as: Dept. of Defense or International projects.

More in REU Sites: Usually 3 years and usually hosting 8–10 students each year. Awards are

\$80 -- \$130K/year. Student trainees are paid via a stipend, not considered wage employment.



# REU Site: How to Apply

15-page Project Description



- Nature of student activities
  - Example research projects
  - Significance of this research
- High-quality student recruitment and selection process
  - Which institutions with few research opportunities are included?
  - How will members of underrepresented groups be attracted?
  - Include information about our HSI status
- Plan for development of student/faculty interaction and student/student communication
- Student mentorship plans
  - Training on responsible and ethical conduct of research
  - Training of research mentors
- Project evaluation plan



## REU Site Budget



Stipends  
\$600/student/week



Housing



Meals/Meal  
Stipends



Travel



Lab Use &  
Workshop Fees

*Modest costs outside of participant support are allowed*

- 1 month salary for PI
- Time for program administration/coordination
- Costs to train mentors

Student stipends typically \$600/student/week. Generally, total project costs should not exceed \$1,350/student/week. Exceptions for some situations, including international activities.

Example from one site budget:

33% goes towards staffing support and mentors.

\$7K /grad student mentor at 50% time for 10 weeks, not including fringe benefits

50% time is the minimum the program recommends

1 grad student for every 2 mentees

.05 of a summer month for the faculty supervisor for the grad students



# REU Supplement: How to Apply

3-page project description



- Contact program officers for the new (or renewal) proposal or the program officer who manages your current program
- Description should include:
  - Nature of each prospective student's involvement
  - Your own experience (and other prospective mentors' experience) working with undergraduates on research projects
  - Nature of the planned mentoring
  - How students will be selected (include Bio Sketch of the student if they are pre-selected for an ongoing award)

Usually these supplements are for 1- 2 students. Budget guidelines are the same as REU Sites.

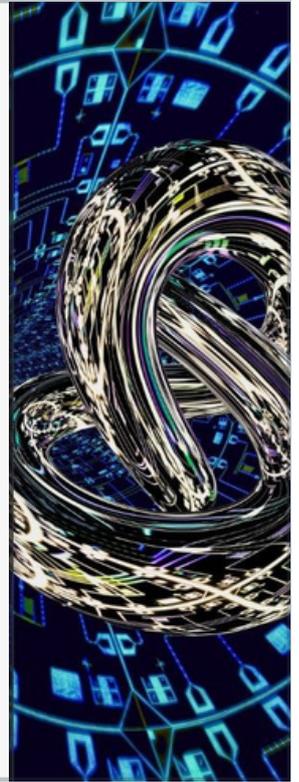
When requesting REU as part of a new or renewal grant: This will be included as part of your proposal. You'll add a description of up to 3 pages. You'll include the REU activity costs in your main budget. Note: This program is NOT for students to serve as technicians on your project. In that case, you would include your undergraduate project staff as undergrad personnel in the budget.



# Dear Colleague Letters

- Available for PIs with active NSF awards
- Published throughout the year.
- Supplements for either 1 Undergraduate OR 1 Graduate student
- Participation by underrepresented groups highly encouraged

Example: Supplemental Funding for Space-Related Preparation and Awareness for Career Equity\_(SPACE).



Sometimes these have a specific deadline. Other ones: no deadline, just need to apply before your current award ends. I am subscribed for updates on these, and may reach out to current UA NSF awardees when a call comes out that pertains to your award.



# NIH: National Institute of General Medical Sciences

## Diversity Supplements

- Funds the recruitment and support of high school, undergraduate, graduate/clinical students, or postdocs from backgrounds underrepresented in health-related research
- Due date varies depending on the participating NIH Institute or Center
- Must work within the scope of the original project and show potential to contribute to research career of the candidate
- Start by contacting your NIGMS program officer and [DS Program Officers](#)
- Budget: \$5,000 - \$100,000 (depending on candidate career level)
- Time span is usually 2 years with 1 year remaining in parent grant
- Encouraged to recruit more than one high school or undergraduate student (in pairs, at least)



## Diversity Supplement Requirements

- *PI's personal statement*
- *Candidate's personal statement (2 pages max)*
  - Short & long term education and career goals
  - Why they wish to pursue a research career
- *Research Experience & Mentoring Plan (4 pages max)*
  - Describe how the candidate's proposed research relates to one or more aims of the parent project
  - Specifics on how the candidate will
    - Contribute intellectually to the research
    - Enhance her/his research skills and knowledge
  - Opportunities to interact with research team
  - Milestones to be reached
- *Candidate Eligibility Statement*
  - See example (last slide)
  - Signed by institutional official

Undergraduate Students: As part of this supplement program, undergraduate students with a demonstrated interest in or desire to pursue research training in health-related sciences, may participate in a research project during the summer months and/or the academic year. This experience is separate from any requirement of the regular academic program. The student may be affiliated with either the applicant institution or another academic institution. Any eligible undergraduate student interested in health-related research is encouraged to participate in this program.

Undergraduate Students: The salary for an undergraduate student should be consistent with institutional salary policies. Institutional rates for undergraduate salary that exceed \$12 per hour must be justified. An additional amount of \$200 per month for supplies and travel may also be requested. Students are expected to devote the equivalent of at least three months of full-time effort to the research project and related activities in any one year; in most cases, the period of support for any individual should last at least two years. Exceptions to these requirements will be considered, depending on the circumstances of the applicant, the parent grant, and the specific request.

Example 1 budget:

2 students supported at \$650/week for 52 weeks/years = \$33,800 x 2 = \$67,000 + Fringe benefits of \$21,564

Travel = \$2,000

Total requested = \$93,164

Note: Total for this budget is for participant support, so no IDC applied.

Example 2 budget:

1 graduate student at 50% time for 6 months = \$27,540

Fringe = \$3,498

Tuition remission = \$12,106

Materials and supplies = \$4,000

IDC = 53.5% or \$18,745

Total cost = \$65,889



# Research Development Services

Contact us for

- general support developing your proposal narrative
- help with any required institutional letters of support

List of 35 Training and Diversity Grant Opportunities



**Courtney Coffey, Ph.D.**

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# Program Design Consultation

- Project design & evaluation
- Leveraging campus and community partners
- Broader impacts statements
- Inclusive mentoring
- Best practices in designing undergraduate research programs
- Literature to support your frameworks



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# Guidance on Program Implementation

## **Timeline**

- October: Launch REU website
- November - January: Recruitment
- February: Selection
- March - May: Logistics for students
- Summer: 10 weeks

## **Mentor Trainings**

Trainings for research mentors to foster an inclusive and welcoming environment for students of all backgrounds are currently in development. Expected Summer 2023!

## **REU Guide**

Important dates, information, and tips gathered from faculty and staff with experience running REUs



# Recruitment and Advertising



[ur.arizona.edu](http://ur.arizona.edu)  
[career.arizona.edu](http://career.arizona.edu)

Front page shows upcoming events,  
carousel highlights important information



**Handshake**

Post Opportunities in Handshake.  
(Request the Undergraduate  
Research Label!)



**UR community listserv**

URA weekly updates, newsletters,  
faculty opportunities, and more!



**Email Campaigns**

Specify your target population



**Instagram**

@uazugresearch



**UR Ambassadors**

1-on-1 student meetings, workshops,  
and invited presentations



Student Reach

LifeLab

Emails to advisors

Visit <https://career.arizona.edu/>





Email  
[UndergradResearch@arizona.edu](mailto:UndergradResearch@arizona.edu)





# Questions and Discussion



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# NIH Diversity Supplements: Example Eligibility Statement

General [Link](#) to diversity supplement program page description and instructions.

**Example language for Eligibility Statement:**  
Statement of Applicant Eligibility

Application Title: (Title of the parent grant)

Proposed Project period: (Start and end date; usually 24 months)

(Name of student) is an undergraduate students and lab member with (name of PI). As an applicant for an administrative supplement to promote diversity in health-related research, the University of Arizona certifies that (name of candidate), by merit of her (insert characteristics that the candidate shares with individuals underrepresented in biomedical research) and U.S. citizenship, is eligible for the Research Supplements to Promote Diversity in Health-Related Research, PA-21-071.

(signature)

\_\_\_\_\_  
Principal Investigator  
Name  
Title  
Department

(signature)

\_\_\_\_\_  
Authorized Institutional Official  
Sponsored Projects Services  
  
Research, Innovation and Impact  
University of Arizona

## NIH's definition of underrepresented in biomedical research

### ***Includes:***

Blacks or African Americans, Latinos, American Indians or Alaska Native, Native Hawaiians and other Pacific Islanders.

Individuals with disabilities (physical or mental).

### ***Disadvantaged background, defined as meeting two or more of the following:***

Were or currently homeless.

Were or currently in the foster care system.

Were eligible for Free and Reduced Lunch Program.

Have/had no parents or legal guardians who completed a bachelor's degree.

Were or currently are eligible for Federal Pell grants.

Received support from WIC as a parent or child.

Grew up in a rural area or a Health Professional Shortage Area.