



# Leveraging INBRE funds: RISE-UP (Research Internships in Science of the Environment - University Program) a Undergraduate Research Mentoring Program at Arkansas State University

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### Division of Biological Infrastructure

## Undergraduate Research and Mentoring in the Biological Sciences (URM)

The goal of the **Undergraduate Research and Mentoring in the Biological Sciences (URM)** program is to increase the number and diversity of individuals pursuing graduate studies in all areas of biological research supported by the NSF Directorate for Biological Sciences. Support will be provided to academic institutions to establish innovative programs to engage undergraduates in a year-round research and mentoring activity. Particular emphasis will be placed on broadening participation of members of groups historically underrepresented in science and engineering: African Americans, Alaska Natives, American Indians, Hispanic Americans, Native Pacific Islanders, and persons with disabilities.

The goal of the URM program at Arkansas State University (Research Internships in Science of the Environment- University Program, RISE-UP, is to produce highly competent undergraduate students who successfully enroll and complete graduate degrees in the biological sciences. Program is focused on younger students (1<sup>st</sup> and 2<sup>nd</sup> year). 3<sup>rd</sup> and 4<sup>th</sup> year students enter our Ronald E McNair Program.

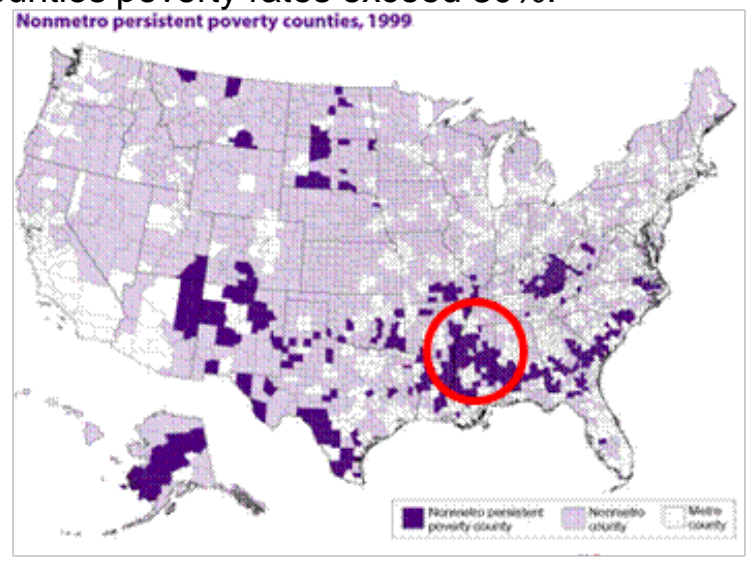
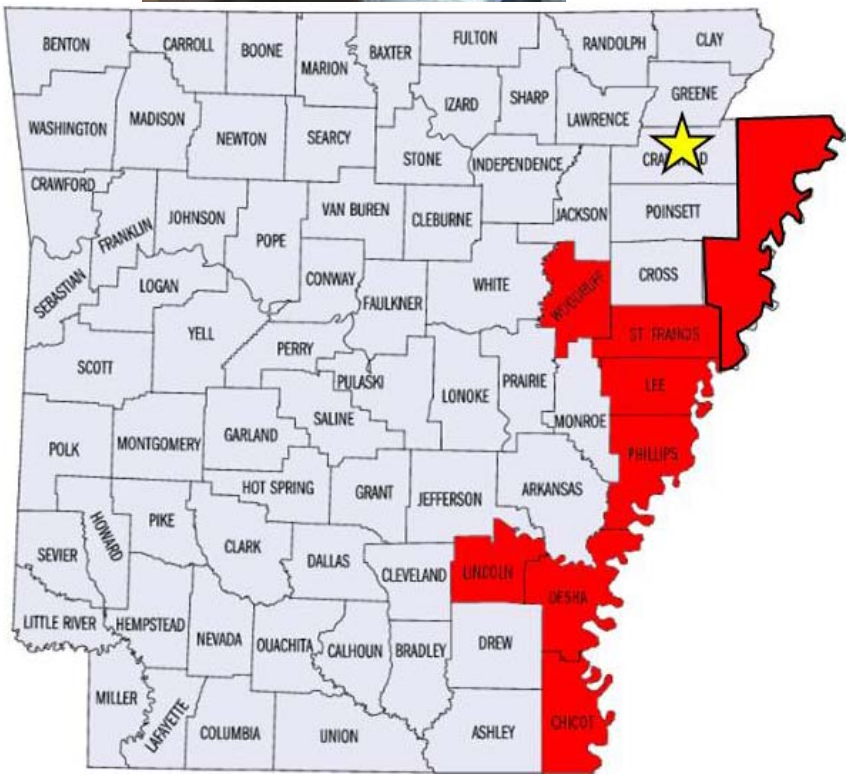


## (Research Internships in Science of the Environment - University Program) a Undergraduate Research Mentoring Program at Arkansas State University



By now there are a number of URM programs at institutions around the country. Some are HBCUs and tribal colleges and universities. Others include University of Wisconsin-Madison, SUNY, Miami University (FL), UC-Irvine, Mississippi State University, Cornell, Tulane, Rochester Institute of Technology, and Arkansas State University.

ASU is a UGI that serves a largely rural population. Most of our students are from Northeastern Arkansas and southeastern Missouri. Some of the most economically disadvantaged counties in the US are within a hour drive of our main campus. In some of these nearby counties poverty rates exceed 30%.



### How Do We Recruit Students?

- High school teachers** We try to recruit some of our students BEFORE they leave high school.
- Peer group** Students identify other students. They **FaceBook stalk**.
- Mentors** You recruit 'em, we'll pay 'em.
- Parents**

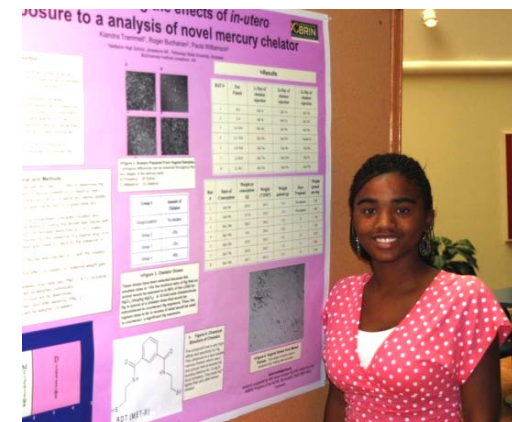


### The ASU URM

- ❑ **The emphasis is on the science. This is all about the research.**
- ❑ Students are **fully involved in all aspects of research** from experimental design through presentation of results. They are **not** glorified dishwashers
- ❑ Students are expected to **present research results** at appropriate meetings.
- ❑ Students are to be involved in **data collection AND analysis.**
- ❑ **Peer Mentoring.** Students are to work directly with their mentor AND with other students.
- ❑ **Student community.** This program is integrated with other NSF-Funded projects including a REU and Louis Stokes Alliance for Minority Participation. They also interact with students supported by a Ronald E McNair achievement program (DOE) and the Southern Regional Education Board.
- ❑ Program **assessed** by the ASU testing and assessment research group.
- ❑ Students attend **seminars**, are taught to search databases (PubMed and Google Scholar). They are expected read and talk about articles.
- ❑ **Geeks like us.**

### What do students receive?

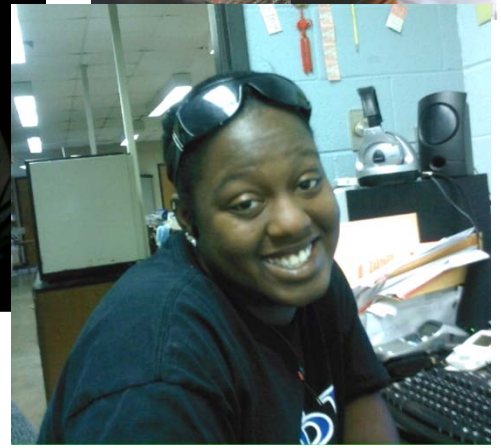
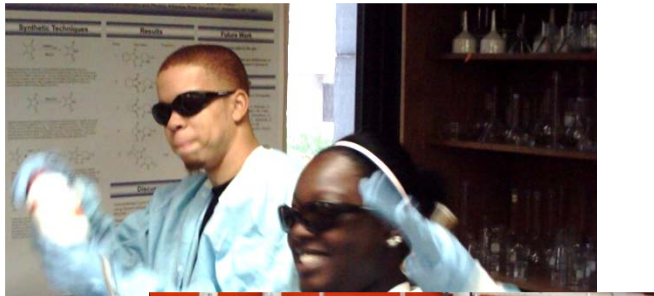
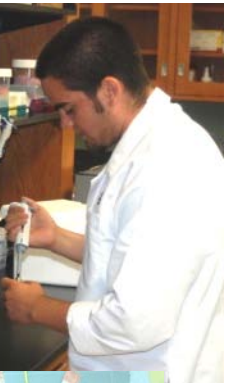
1. Hourly pay for 2 years
2. Scholarship (annual) awarded after completion of first research term.
3. Travel Funds
4. Small amount of funds for supplies
5. Housing—if needed—in the summer.
6. High school students are funded through a supplement.



### What do our URM students do?

We stress **cross-disciplinary** projects. Students work in Biology, Molecular Biology, Ecotoxicology, Synthetic Chemistry, Biochemistry, Mathematics and Genomics.

Some have been fortunate enough to work at the COBRE-funded Center for Translational Neuroscience at the University of Arkansas for Medical Sciences.



### Does it work?

**They are already involved in training the “next generation”**

**Assessment data show that participants have a much greater increase in their understanding and appreciation of science than in a matched group of nonparticipants.**

**Assessment also shows that participants’ grades are slightly higher.**

