



Institutionalizing Innovations in Graduate and Undergraduate STEM Education:



Project AGER , Advancing Graduate Education at Rutgers

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<http://gsnb.rutgers.edu/projectager>

BROADENING PARTICIPATION OF UNDERGRADUATES IN STEM RESEARCH

WHAT WE DID:

Expanded the population of underrepresented students in Rutgers sponsored summer research programs

Trained teams of graduate students to help supervise and mentor the summer interns

Established communication links among NSF REU sites, including new collaboration on grad student mentoring skills in 2014.

New course, Intro to Research, to prepare Rutgers underrepresented students in NSF LSAMP for STEM research.

OUR PARTNERS

6 different NSF funded REU Sites
Rutgers RISE (Research in Science & Engineering)
Garden State NSF LSAMP for minority participation

EFFECTIVENESS

323 summer interns @Rutgers 2011-3:
52% women; 56% minority or 1st gen college students. 130 LSAMP students



Communication is key:

Web site

Blogs

E-portfolios

Face-to-face meetings with Rutgers faculty, graduate program directors, students and administration

Integration:

47 STEM doctoral programs; Rutgers partner organizations

Undergraduate research via REUsites; GS LSAMP; RISE



PREPARING GRADUATE STUDENTS FOR CAREERS IN STEM RESEARCH

WHAT WE DID:

Scientific Writing course : new approaches for students; training in teaching writing for faculty advisors

Mentorship Fellows Program: Theoretical approaches to mentoring

Guidance for grad students teaching on-line or hybrid courses for first time

Responsible and Ethical Research: skills for coping with contemporary dilemmas

Workshops: Choosing a career path; Communicating science to the public; Navigating through graduate school

New programs for orientation, networking, career preparation, and outreach, created by individual graduate programs

OUR PARTNERS

47 doctoral programs in STEM and NSF supported disciplines; 6 NSF IGERTs; Rutgers programs (Science Learning; Careers; PSM).

EFFECTIVENESS

Universally enthusiastic surveys
Over-subscribed classes and workshops
Emulation within individual grad programs
Plans for long-range sustainability