



NSF Directorate for Engineering Funding Opportunities

I/UCRC Annual Meeting-January 10, 2013

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Presenters



★ Mary Poats

- Program Manager, Division of Engineering Education and Centers (EEC), Directorate for Engineering (ENG)



★ Kevin Simmons

- Senior Policy Analyst, Division of Industrial Innovation & Partnerships (IIP)
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Presenters



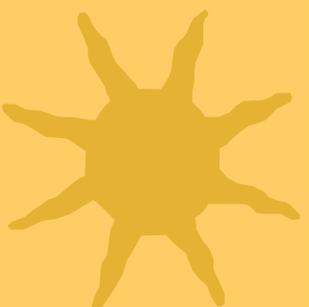
★ Carmiña Londoño

- Program Director, Division of Engineering Education and Centers (EEC), Directorate for Engineering (ENG)



★ DeAndra Beck

- Program Director, Office of International Science and Engineering (OISE)





ENG Workforce Development

★ Research Experiences for Undergraduates (REU)
NSF 12-569

- Supports the involvement of undergraduates in ongoing research
- Supplements and Sites
- \$10M/year available for engineering; deadline for site proposals in August each year
- **Esther Bolding, Program Manager,**
ebolding@nsf.gov



SPECIAL OPPORTUNITIES

★ Partnership with the Department of Energy's Geothermal Technologies Program

The goal of this collaboration between DoE's GTP and NSF's REU program is to introduce more undergraduate students to renewable energy research and the many opportunities in science and engineering related to geothermal energy. GTP is interested in proposals aimed at a range of geothermal technologies, including geothermal heat pumps, binary cycle electricity generation systems, direct use, conventional hydrothermal, and Enhanced Geothermal Systems (EGS).





SPECIAL OPPORTUNITIES

- ★ **Partnership with the Department of Defense (DoD)**
NSF engages in a partnership with the DoD to expand undergraduate research opportunities in DoD-relevant areas through the REU Sites program.

The DoD activity is called (Awards to Stimulate and Support Undergraduate Research Experiences (ASSURE; Corby Hovis-Program Director,

<http://www.wpafb.af.mil/library/factsheets/factsheet.asp?id=9333>).

Proposals selected for the DoD funding may come from any of the NSF directorates or offices that handle REU Site proposals.





ENG Workforce Development



- ★ Research Experiences for Teachers (RET) in Engineering and Computer Science (NSF 11-509)
- ★ Supplements and Sites
- ★ Supports active involvement of K-12 STEM teachers and community college faculty in engineering/computer science research to bring knowledge of engineering and technological innovation into classrooms
- ★ \$5.5M/year available; site proposals due Oct. 7, 2013
- ★ **Mary Poats, Program Manager**, mpoats@nsf.gov



Research Initiation Grants in Engineering Education (RIGEE)-NSF 11-507



- ★ Enables engineering faculty renowned for teaching, mentoring, or leading education reform efforts to initiate collaborations with colleagues in the learning and cognitive sciences to address difficult, boundary–spanning problems in engineering education
- ★ ~\$3M for 20 awards
- ★ Proposals due March 28, 2013



Broadening Participation in Engineering (BPE)



- ★ **BRIGE**-Broadening Participation Research Initiation Grants in Engineering
 - **New Solicitation in January 2013: Significant revisions from 2012**
 - Enable early career faculty to integrate effective diversity strategies in their engineering research, education and innovation activities





Broadening Participation in Engineering (BPE)



- ★ **Mentoring and Networking**-For early career engineering faculty with an emphasis on underrepresented groups
- ★ **Broadening Participation Research**- Create new models and innovations related to graduate education, postdoctoral training, and academic careers
- ★ **ENG Contact: Richard Smith, Program Director, rnsmith@nsf.gov**



Research in Engineering Education (REE)-(PD 10-1340)

★ Seeks to enable a system of engineering education, equally open to all members of society, that dynamically and rapidly adapts to meet changing needs. Research areas include:

- Increasing our understanding of how engineering students learn and the capacity that supports such discovery
- Understanding how to increase the diffusion and impact of engineering education research
- Understanding engineering education in broader frameworks such as sustainability
- Diversifying pathways to and through engineering degree programs
- **Full proposals due:** January 24, 2013 and Sept. 19, 2013



Faculty Early Career Development (CAREER) Program-(NSF 11-690)

- ★ Supports junior faculty who exemplify the role of teacher-scholars through:
 - Outstanding research
 - Excellent education
 - Integration of education and research
- ★ Encourages women, members of under-represented minority groups, and persons with disabilities to apply
- ★ ~\$220M NSF investment for 600 awards
- ★ ENG awards are ~\$400K for 5 years
- ★ Deadlines vary by directorate; ENG proposals due July 23, 2013
- ★ ENG contacts: Theresa Maldonado-EEC, Rose Wesson-CBET, Dominique Dagenais-ECCS, Mary Toney- CMMI



Nanotechnology Undergraduate Education (NUE) in Engineering Program



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- ★ **Integrate nanoscale science and engineering into curricula with emphasis on:**
 - Nanoscale engineering education with relevance to nanodevices and systems and societal dimensions of nanotechnology
 - New approaches to undergraduate engineering education through interdisciplinary collaborations

 - ★ **Awards in 3 areas:**
 - Curriculum/Course Development
 - Laboratories/Modules Development
 - Ethical/Societal/Economic/Environmental Implications of Nanotechnology



Nanotechnology Undergraduate Education (NUE) in Engineering



- ★ NSF 12-534 (in revision)
- ★ April 2013 (est.)-full proposal
- ★ Up to 10 awards
- ★ Up to \$200,000/2 years
- ★ Contact: Mary Poats, Program Manager
mpoats@nsf.gov

