Inclusive Science: Strategies to Broaden Participation

Preparing for Academic Careers in the Geosciences Workshop 2013

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Why?

Inclusion

- Diverse viewpoints lead to better questions and solutions
- The problems the planet is facing requires broader participation
- Geoscience is lagging behind…
What about geosciences?

- In 2008: >85,000 URM received bachelors degrees in STEM fields
  
  **Geosciences:**
  - 192 Hispanic
  - 89 Black
  - 28 American Indian/Native American

- Between 2000-2008, URM earned 16-17% of STEM degrees
  
  **Geosciences:** 5-7%

Barriers to a building a diverse pool of geoscientists

- Recruitment
- Retention
- Preparation for the next phase

Adapted from Connecting to underserved communities; mentoring the next generation (STEM)
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Why is diversity hard to achieve in geosciences?

What about geoscience makes it hard to attract and advance students from historically underrepresented groups?
Attractors to current geoscience majors

- Positive undergraduate experience
- Love of the outdoors
- Family influences

Recommendations to attract URM

Positive undergraduate experience

• Extend yourself via teaching, undergraduate research experience, outreach
Positive undergraduate experience

- Introductory science courses that inspire and engage
  - A picture can speak volumes
  - Emphasize career paths
  - Show labs and indoor settings as well as outdoors
- Undergraduate research experience
  - Work study
  - Let students know about scholarships
  - Sponsor directed research projects
Outreach: Help fill the pipeline

- Partner with local schools or institutions serving underrepresented communities

This can be part of your Broader Impacts section of NSF proposals
Recommendations to attract URM: Go beyond the great outdoors

- Provide information about geoscience careers in your lectures, websites
- Show that geoscience offers a wide variety of opportunities
- Include images of the tools of geoscientists: labs, instruments, computers
Recommendations to attract URM: Family influences

- Understand the negative perception many have regarding geoscience
  - Can be considered low prestige compared to other STEM fields
  - Top students can be “tracked out” of geoscience
- Provide positive career information on websites and in class that students can share with family
- Share your enthusiasm for your field
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Retention: Beyond the pedagogy

Be sensitive and responsive to the needs of underrepresented students

- Never forget that you can have a major impact on a student’s future
- Inspire motivation
- Let students know it’s ok to stumble – and that you did too
- Recognize the “imposter syndrome”

The fact you chose this workshop is proof that you’re the kind of people that can make a positive difference!
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Help students move on to graduate school or a job

- Provide information about career tracks and what it takes to get there
- Encourage talented students – don’t assume they know they’re good enough
- Advise students about courses and research activities that will help them succeed in graduate school
- Don’t assume they know about available resources
- Be accessible
Be a mentor

"Keep away from people who try to belittle your ambitions. Small people always do that, but the really great make you feel that you, too, can become great."

-- Mark Twain