

Engaging Girls & Underrepresented Minority (URM) Groups in CSTEM across NM



Underrepresented Minorities & S & E

In 2008, URM comprised 45.2% of national K-12 public enrollment.

Table 3: <http://nces.ed.gov/programs/projections/projections2020/tables.asp>

“In 2009, just 2.7 percent of African-Americans, 3.3 percent of Native Americans and Alaska Natives, and 2.2 percent of Hispanics and Latinos who were 24 years old had earned a first university degree in the natural sciences or engineering.”

Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads
The National Academies Press, 2011



NGCP Vision

The National Girls Collaborative Project (NGCP) brings together organizations that are committed to informing and encouraging girls and URM to pursue careers in science, technology, engineering, and mathematics (STEM).

www.ngcproject.org



NGCP Project Impact

- **14,110,132** visits to the NGCP Web site in 5 years
- **2,587** programs are listed in the online NGCP Program Directory
- **19,710** participants served in **205** mini-grants completing activities
- **11,426** practitioners have been served through events and webinars
- **5,376,484** girls are served indirectly



Project Goals

1. **Maximize access to shared resources** within projects and with public and private sector organizations and institutions interested in **expanding girls' participation in STEM.**
2. **Strengthen capacity** of existing and evolving projects by sharing **exemplary practice research** and program models, outcomes and products.
3. Use the **leverage of a network** or collaboration of individual girl-serving STEM programs to create the **tipping point for gender equity** in STEM.



Project Focus 2011-2016

1. Strengthen the capacity of girl-serving STEM programs to effectively **reach and serve underrepresented girls & groups** in STEM.
2. Increase the effectiveness of Collaboratives by providing professional development focused on **sustainability, organizational effectiveness, and shared leadership**.
3. Maximize **K-12 school counselors'** access to and use of relevant, high-quality resources that increase awareness of barriers to girls' interest and engagement in STEM.



NGCP Components and Activities

- **NGCP Program Directory**
- **Content Rich Project Website**
- **Events: Conferences, Forums, and Webinars**
- **Incentives to Collaborate: Mini-Grant Funding**
- **E-Newsletter**

Supported By:

**National and Collaborative Leadership Teams
National and Collaborative Champions Boards**



Why Collaborate?

- There are uncoordinated services to girls and URM interested in STEM careers.
- Collaboration reduces isolation among professionals.
- Collaboration strengthens relationships among organizations. It also increases the potential for organizational and individual learning by sharing promising practices.

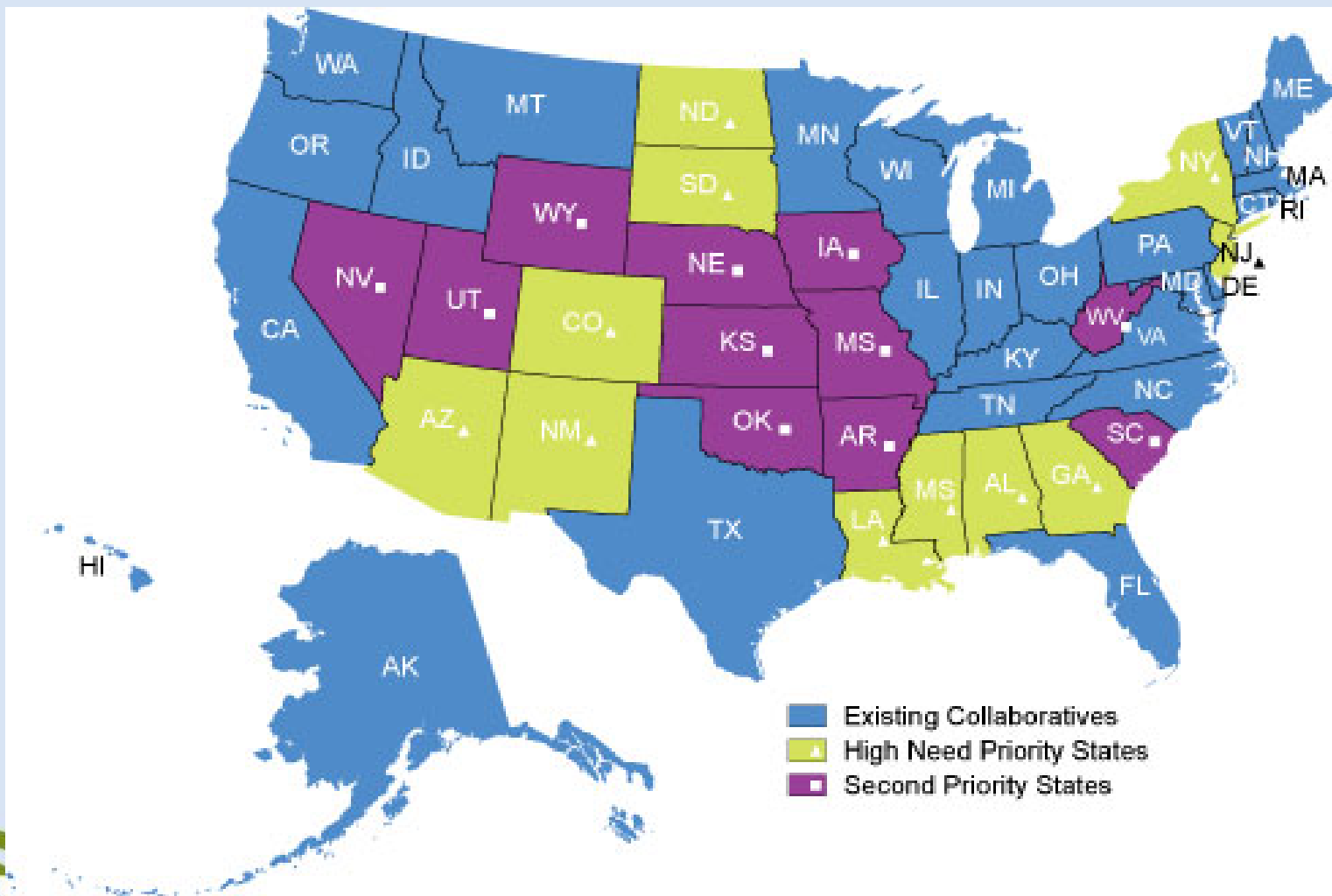


NGCP Strategies for Engaging URM & Girls

- Develop 11 new Regional Collaboratives (**NM!**)
- **Provide culturally competent and research-based strategies and resources for programs (NM!)**
- **Use the mini-grant system to target underrepresented girls (January 2013!)**
- Assess the impact of mini-grant projects targeting underrepresented girls



NGCP National Landscape





Speed Networking

Goal: Provide you with the opportunity to learn about other girl- and URM-serving or STEM-focused organizations and programs with the expectation that you may discover a program that could be a promising collaborator.





New Mexico Landscape

- NM has a long tradition of scientific excellence
 - NM has the highest number of doctoral degrees per capita in the U.S.
 - NM scores last or close to last in most rankings based on health, education, and poverty.
- New Mexico is a minority-as-majority state, ranking NM as #1 in the country with this demographic profile (U.S. Census Bureau, 2011)
 - 46.3% Hispanic, 40.5% Caucasian





New Mexico Landscape

- Minorities will comprise more than half (52%) of the resident college age (18-24 years old) population of the U.S. by 2050. NM has almost reached this benchmark in 2012. (2011 NSF report, *Women, Minorities, and Persons with Disabilities in Science and Engineering*)
- The intention of Hispanic students to earn a bachelors degree has been shown to be similar to national averages for all students, yet only 11 out of 100 Hispanic students who enter elementary school will attain a bachelors degree in any field.



Exemplary Practices



- **Student Recognition Events**
- **Field Trips**
- **Middle School Conferences & Workshops**
- **Assess topics parents want to learn more about**
- **Connect with parents to talk about your program and its benefits**
- **Bring up students' interests and strengths and bring these up with family members`**



Exemplary Practices



- **Have a culturally competent staff**
- **Inform URM and girls: “You can do this. You belong here.”**
- **Build trust and ask for input from families**
- **Demonstrate that participant feedback is key**
- **Be aware of challenges to parent participation and be open to making changes**



In math and science, a growth mindset benefits girls.

- Teach children that intellectual skills can be acquired and developed.
- Praise children for effort.
- Highlight the struggle. Embrace the challenges. Persist despite the obstacles.
- Gifted and talented programs should send the message that they value growth and learning.

Why So Few? Women in Science, Engineering, Technology and Mathematics. AAUW Report, 2010.

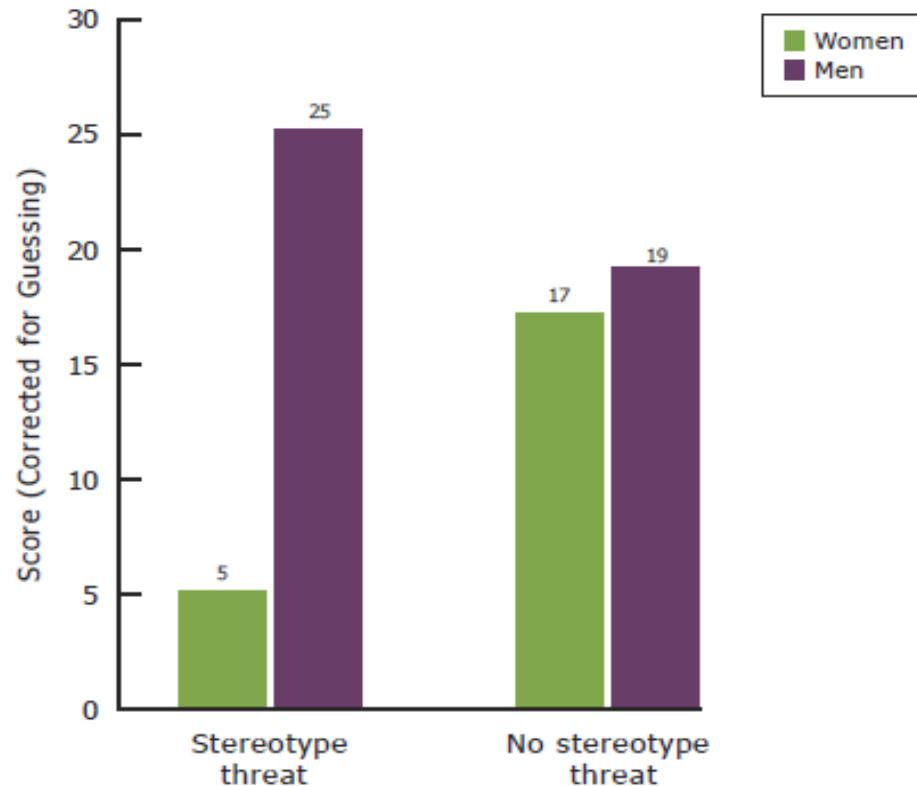
<http://www.aauw.org/learn/research/whysofew.cfm>



Breaking through Barriers
for Women and Girls

Negative stereotypes about girls' and women's abilities in math and science adversely affect their performance in these fields.

Performance on a Challenging Math Test,
by Stereotype Threat Condition and Gender



- Expose girls to successful female role models in math and science.

Teach students about stereotype threat.

Source: Spencer, S. J., Steele, C. M., & Quinn, D. M., 1999, "Stereotype threat and women's math performance," *Journal of Experimental Social Psychology*, 35(1), p. 13
Why So Few? Women in Science, Engineering, Technology and Mathematics.. AAUW Report, 2010. <http://www.aauw.org/learn/research/whysofew.cfm>

Stereotype Threat

Stereotype threat arises in situations where a person fears that their performance will be evaluated based on a negative stereotype.

For example, a female student taking a difficult math test might experience an extra cognitive and emotional burden of worry that if she performs poorly her performance will reinforce and confirm the stereotype that women are not good at math. This added burden of worry can adversely affect her performance.

Why So Few? Women in Science, Engineering, Technology and Mathematics. AAUW Report, 2010.

<http://www.aauw.org/learn/research/whysofew.cfm>



Resources for Professionals in Engaging URM & Girls

- Webinars
- Research-Based Exemplary Practices
- Model Programs Highlights
- Research on Diversity Highlights
- Network and Collaborative Partners





Breakout Session

New Mexico Landscape

3 minutes each person

1. What is the landscape in your area for girls & URM in STEM?

Economic, Educational, Access, History, Unique Needs, Barriers, etc.

10 minutes as a group

1. What is your greatest resource and/or success in engaging URM & girls in STEM?
2. What is “our” biggest challenge as a state?

Report Out





Action Planning

1. What small steps can you take now to invite URM and girls?
2. Who might be a willing partner?
3. How can you use the Collaborative?
4. How can you advance your own professional development?
5. Which of the exemplary practices could you implement?



Reference Information

www.ngcproject.org

www.edlabgroup.org

<http://www.aauw.org/learn/research/>

[whysofew.cfm](http://www.whysofew.cfm)

www.cscproject.org

www.ncwit.org



Contact Information



Rebecca Galves
(575) 646-4451, rgalves@cs.nmsu.edu

Cheri Burch
ctburch@unm.edu

NMGC Leadership Team

