National Girls Collaborative Project

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

www.ngcproject.org
## Current Collaborative Sites

### Regional Collaboratives
- **California:**
  - [www.ngcproject.org/california](http://www.ngcproject.org/california)
- **Florida:**
  - [www.ngcproject.org/florida](http://www.ngcproject.org/florida)
- **North Carolina:**
  - [www.ngcproject.org/northcarolina](http://www.ngcproject.org/northcarolina)
- **Northwest:**
  - [www.ngcproject.org/northwest](http://www.ngcproject.org/northwest)

### Coming in 2008 to:
- Connecticut
- Great Lakes (IL, IN, MI, OH, WI)
- Kentucky
- Maine
- Tennessee
- Texas
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 promising 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.
Strengthening Capacity

The NGCP will disseminate Research Based Strategies to strengthen the capacity of girl-serving organizations to provide high-quality informal learning environments for girls in STEM and to effectively evaluate and assess their efforts.

Our partners
- Education Development Center (EDC)
- Assessing Women and Men in Engineering (AWE)

Our methods
- Webcasts
- Collaborative events
- Resource collection on NGCP website
Today’s Agenda

• Learn more about the issues of equity within STEM
• Learn how you can use promising practices for effectively involving underrepresented groups in STEM
• Learn more specific strategies for recruiting and retaining underrepresented girls in STEM
K-12 STEM Indicators

- K – 12 students from disadvantaged backgrounds lag behind in math and science achievement, with these disparities starting as early as kindergarten, persisting across grades, and in some cases, widening over time.

  - National Science Board (2006)

- Educational aspirations and self-determination were key motivators in STEM success.

  - Commission Study on the Status of Underrepresented Groups in STEM in New England
More K-12 Stem Indicators

- Racial/ethnic differences exist in both mathematics and science course taking.
  - Asians/Pacific Islanders generally more likely than students from other racial/ethnic groups to complete advanced mathematics and science courses
  - Whites were more likely than blacks and Hispanics to complete some courses.

-National Science Board (2006)
Table 21. Percent of public high school graduates who took various mathematics and science courses in high school, by sex and year of graduation: Various years, 1982 to 2000

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¹ Included in the totals but not shown separately are graduates whose sex was not reported.

Higher Ed Indicators

- Underrepresented minorities (blacks, Hispanics, and American Indians/Alaska Natives) do not enroll in or complete college at the same rate as whites.
More Higher Ed Indicators

• Among those who do earn bachelor's degrees, similar percentages of underrepresented minorities and whites earn their degrees in STEM fields.

• About one-third of all bachelor's degrees earned by every racial/ethnic group, except Asians/Pacific Islanders, are in STEM.
Bachelor's degrees awarded to racial/ethnic groups in STEM fields: 2004

Workplace Indicators

- The representation of blacks in STEM occupations increased from 2.6% in 1980 to 6.9% in 2000.
- The representation of Hispanics in STEM occupations increased from 2.0% to 3.2%. However, for Hispanics, this is proportionally less than their increase in the population.

National Science Board (2006)

- Women constitute 45% of the workforce in the U.S., but hold just 12% of science and engineering jobs in business and industry.

Workplace Indicators

- According to the Department of Labor, by 2008 women will increase their share of the labor force from 46% to 48%. Although the fastest labor force increase will be among Latinas and Asian American women, 49% and 46%, respectively, African American women will increase their participation by 21% and white women by 13%.

U.S. Department of Labor, Women’s Bureau (2000)
References

- Milgram, D. Gender differences in learning style specific to science, technology, engineering and math (STEM). Tech Equity Project of California State University, Channel Islands.
Reaching Out to Underserved Populations

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Who’s Who?

Compare participant and service provider demographic data to population demographic data

- Ethnicity
- Geographic Location
- Economic Level
Expand your Vision

- Utilize key informants
- Expand contact base - formal and informal
- Reach out to underrepresented communities
- Involve underrepresented groups in planning
- Use culturally acceptable communication methods
- Publicize efforts to include underrepresented groups
- Evaluate design for cultural conflicts
Serve the Whole Population

- Issues of Prior Experience
  - Educational Experience
  - Institutional History
  - Jobs/Careers
  - Expectations/Stereotypes
Serve the Whole Population

- **Cultural Issues**
  - Persons in Poverty
  - Different Ethnicities
  - Persons with Disabilities
Cultural Issues

- Examine your own cultural orientation
- Learn about cultures in your population
- Develop an understanding of culture
- Learn about cross-cultural understanding
- Modify your program to increase diversity
- Evaluate
Cultural Orientation

- What is your cultural background?
- What traditions does your family observe?
- What interactional styles are most comfortable to you?
- What do you perceive as “normal” that might actually be cultural?
- How could these experiences cloud your vision and affect interactions with others?
Cultural Groups

- What are the major cultural groups?
- What are their traditions?
- What are their interactional styles?
- What is their educational experience?
- What are their expectations for their children?
- Where do you get information?
- Check information source for bias
Understanding Culture

- All groups have culture
- Everyone has a cultural identity
- Cultures are not mutually exclusive
- We demonstrate different pieces of cultural identity at different times
- Expressions of cultural identity can vary
- Culture ≠ Race
Cross-Cultural Understanding

- People are more alike than different
- Individual variance is the largest variable
- Within any group there is more diversity than between groups
- Cultural identity filters our perceptions
Cross-Cultural Understanding

- Avoid judgmental descriptions
- Use precise language; avoid miscommunication
- Recognize faulty historical “truths”
- Recognize the parallels between sexism and the other isms
Modify your Program

- Recognize and utilize multi-racial, multi-cultural life experiences
- Have a diversity of persons on staff and in positions of power
- Modify interactional styles as needed
- Do not impose absolutes in terms of dress codes, vocational goals, life styles
Modify your Program

- Recognize diverse individuals in a variety of careers
- Consider financial implications
- Establish, publicize, and practice a commitment to nondiscrimination
- Consider diverse holidays
- Consider financial implications
- Verify accessibility
Modify your Program

- Publicize and practice commitment to nondiscrimination
- Rotate meeting locations
- Rotate chairpersons & facilitators
- Translate to avoid language barriers
- Check readability of written materials
- Assure diversity in meeting location
Evaluate your Progress

- Compare pre-effort demographic data to post-effort demographic data
- Do a post-event evaluation
- Be sure all groups are represented in evaluation
Increasing Girls’ Interest in STEM through TechREACH

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TechREACH Overview

- Mission: Increase middle school students’ interest in science, technology, engineering, and math (STEM) through hands-on high-quality curriculum, mentoring and teacher professional development.

- Funding from Bill & Melinda Gates Foundation, and The Seattle Foundation, National Science Foundation and WSU Center to Bridge the Digital Divide
Program Components

- Clubs meet 1.5-2 hours, 1-2 times per week
- Club leader professional development
- Project-based, hands-on curriculum
- E-Mentoring
- Field trips, guest speakers
- Evaluation
- College preparatory support
- Parent workshops
- Summer workshops
Students Served 2007

- 96 students Eastern Washington, 75% Latino
- 160 Western Washington girls
- 15 schools with a high FRL%
Recruitment

- Initial parent/student information meeting
- Community outreach: churches, community service centers, radio
- Teachers recruit
- Student invitations
- Counselor referrals
- Application form for screening
Retention

• Parent workshops and events
• Clear attendance guidelines and expectations
• Incentives
• Negotiation with other teachers and sports
Engaging girls in STEM

- Hands-on learning
- Choices of subject matter to study
- Community-building activity
- Teacher as facilitator
- Learning that has relevance
- Role models
- Field trips
- Fun
- Snacks
Research on Engagement

- Many studies have found consistent correlations between engagement and student achievement. (Marks, 2000; Finn, Pannozzo and Voelkl 1995; Connell, Spencer & Aber, 1994).

- **Ensure flexibility** in program activities and be able to respond to the changing needs of program participants. (Beckett et al., 2001; Brown et al., 2003).

- “**Opportunities for voice, choice and contribution**” was found to be key to keeping youth interested and involved in after-school programs. (Hall et al., 2003).
Community-Building Activity

• Develop group norms and offer collaborative community-building activities to ensure the physical and/or psychological safety of participants.

• Programs should “foster a sense of safety and security among children” (Beckett et al., 2001, p. 26) and be an inviting and caring place for students to spend time (FYI, 2003).

• Programs should decrease conflict among peer groups and ensure positive peer interactions (Eccles & Gootman, 2001).
Contact Information

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Time for Questions

Please use the Chat section of your screen and type any questions you have for the presenters. Our moderators will pose questions to our presenters at this time. We will answer as many as time allows.

In case we can’t get to all of your questions, presenter contact information will be available in the archived webcast materials that will be available at:

http://www.ngcproject.org/events/webcast_archive.html
More NGCP Information

Program Directory
www.ngcproject.org/directory

Mini-Grant Application
www.ngcproject.org/mini-grant

Join the NGCP listserv
www.ngcproject.org/resources/newsletter.html

Upcoming Webcast
Wednesday, April 9, 2008, 11:00-12:00 PST
“Using the Data: How to Plan, Develop and Use Program Evaluation to Build a Better Program”
www.ngcproject.org/events/webcast.cfm