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High-Skill, High-Wage Careers: Strategies for Expanding Student Career Options

Utah Department of Education
Comprehensive Counseling and Guidance Conference
Wasatch High School
Thursday, June 13, 2013

Counselors Make a Difference

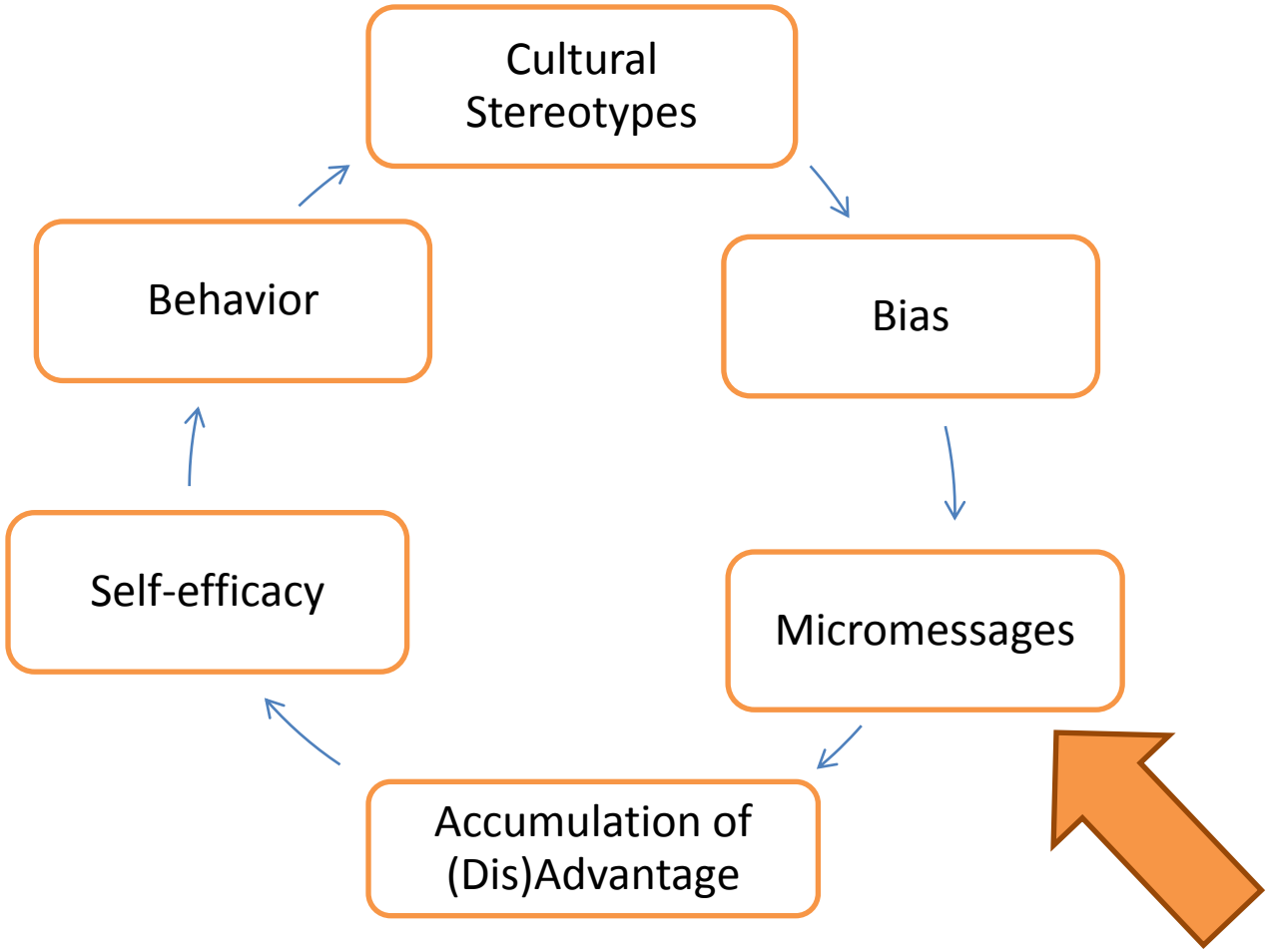
- Counselors are second to parents in influencing student career choice
  - Ferris State University Study 2009

- Women who attended and graduated from college were more likely to have had a high school counselor who was a “strong” or “very strong” influence
  - Utah Women and Education Study 2011

Six Quick Tips for Encouraging Nontraditional Career Exploration

- Make it Personal – invite them
- Beware of Interest Inventories – use them to identify gaps in career experience
- Use role models – I can be what I can see
- Get beyond the brochure – images are not enough
- Build self-efficacy with early exposure in low risk environments
- Engage and educate parents

Micromessages: The Culture Wheel



Unconscious (or Implicit) Bias

Take the Implicit Association Test

www.implicit.harvard.edu

Student Bias as a Barrier

"Cosmetology is for Girls"

"Auto Technology is for Boys"

Startling Statements

- Ask three people separately what they think the number is for your assigned statement.
- Average the three responses
- Be prepared to report out your range (highest and lowest response) and average of the three responses

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Make it Personal

Strategy

- Folsom Cordova Unified School District
  - Personal invitation sent home to every girl eligible for the pre-engineering program
  - Letter brought to the Freshman course enrollment night PLTW booth entered into a drawing for a tech prize
  - Women engineers doing hands-on activities with students visiting the booth

Result

- Typical Freshman Gateway to Technology Course enrollment – 30 students, 1 female

After implementing the strategy

- 87 students enrolled in Gateway to Technology for Fall 2013 – 15 females

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Two Social Learning Theories to Consider

Growth vs Fixed Mindset

Attribution Theory

Growth Mindset Benefits

Fixed Mindset	Growth Mindset
Intelligence is static.	**Intelligence can be developed.**
Leads to a desire to *look smart* and therefore a tendency to	Leads to a desire to *learn* and therefore a tendency to
• **avoid challenges**	• **embrace challenges**
• **give up easily due to obstacles**	• **persist despite obstacles**
• **see effort as fruitless**	• **see effort as path to mastery**
• **ignore useful feedback**	• **learn from criticism**
• **be threatened by others' success**	• **be inspired by others' success**

- Teach students that intellectual skills can be acquired.
- Praise students for effort.
- Highlight the struggle.
- Gifted and talented programs should send the message that they value growth and learning.

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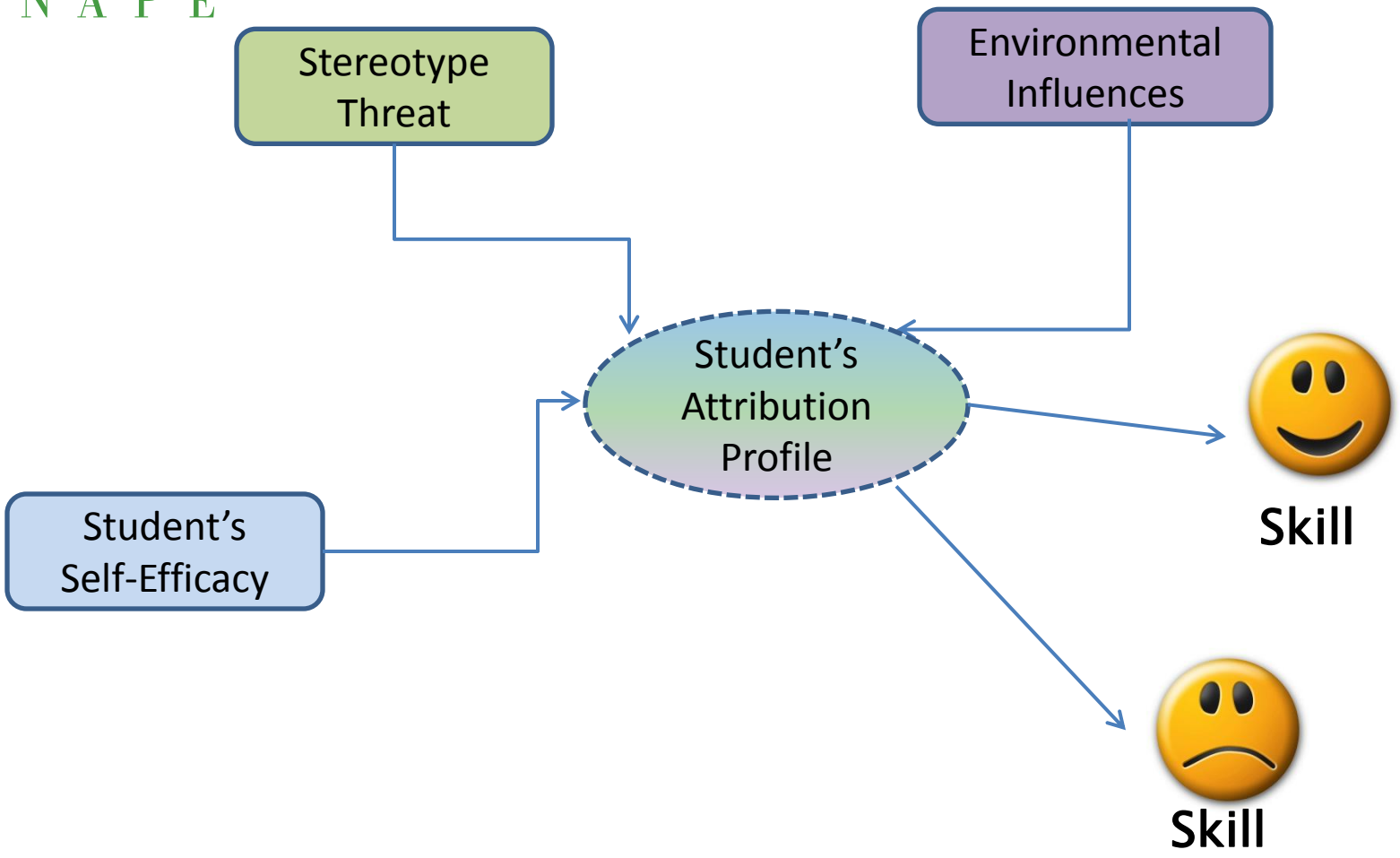
Strategies

- Consistently emphasize to students that, with the right frame of mind, they can learn nearly anything. Dweck explains, “With the right mindset and the right teaching, people are capable of a lot more than we think.”
- Be conscious about how you praise students’ accomplishments. Compliment students’ abilities using a growth mindset strategy; acknowledge how hard they worked at something until they got it right, not how smart they are for getting it right.
- Support students pursuing nontraditional career fields and encourage their persistence
- Teach students that failure, when treated as a temporary setback, leads to greater productivity if they treat failure as an opportunity to improve upon their skills.

The Big Picture



Gendered Attribution Trends (Female)

Luck or chance played a role.

I'm not smart enough or I'm not good enough.

Failure is taken personally.

Both fear of failure AND fear of success.

Internalization detrimental to self-confidence.

Decreased in risk-taking behavior.

Success =
Externally Attributed

Failure =
Internally Attributed

Gendered Attribution Trends (Male)

I'm inherently smart and therefore successful.

This was out of my control.

I had bad luck.

Others were jealous of me.

That teacher grades really hard.

Success =
Internally Attributed

Failure =
Externally Attributed

Strategies

- Assess and retrain attribution style.
- Encourage students toward internal / stable Attribution Profile.
- Provide feedback that is most useful to each student.
- Remind students to believe they are as good as their peers in fields nontraditional for their gender.

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Counselors Toolkit

STEM Equity Pipeline

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Napequity.org/counselors

Building the Toolkit

Counselors make a difference

STEM professionals are in demand

Women are underrepresented in most STEM disciplines

STEM professionals make a world of difference and help shape our future

Focused intervention efforts targeting women make a difference

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Unpacking the Toolkit

Explore STEM Careers Booklet

Lesson Plans & Activities

- Engineering Our World
- STEM Career Scavenger Hunt
- Health, Happiness, and Safety
- Work Values & STEM Careers

Special Tools

- Kudos Cards
- Parent Engagement

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create a list of all the items you have used today that have been ***engineered***

Engineering Our World

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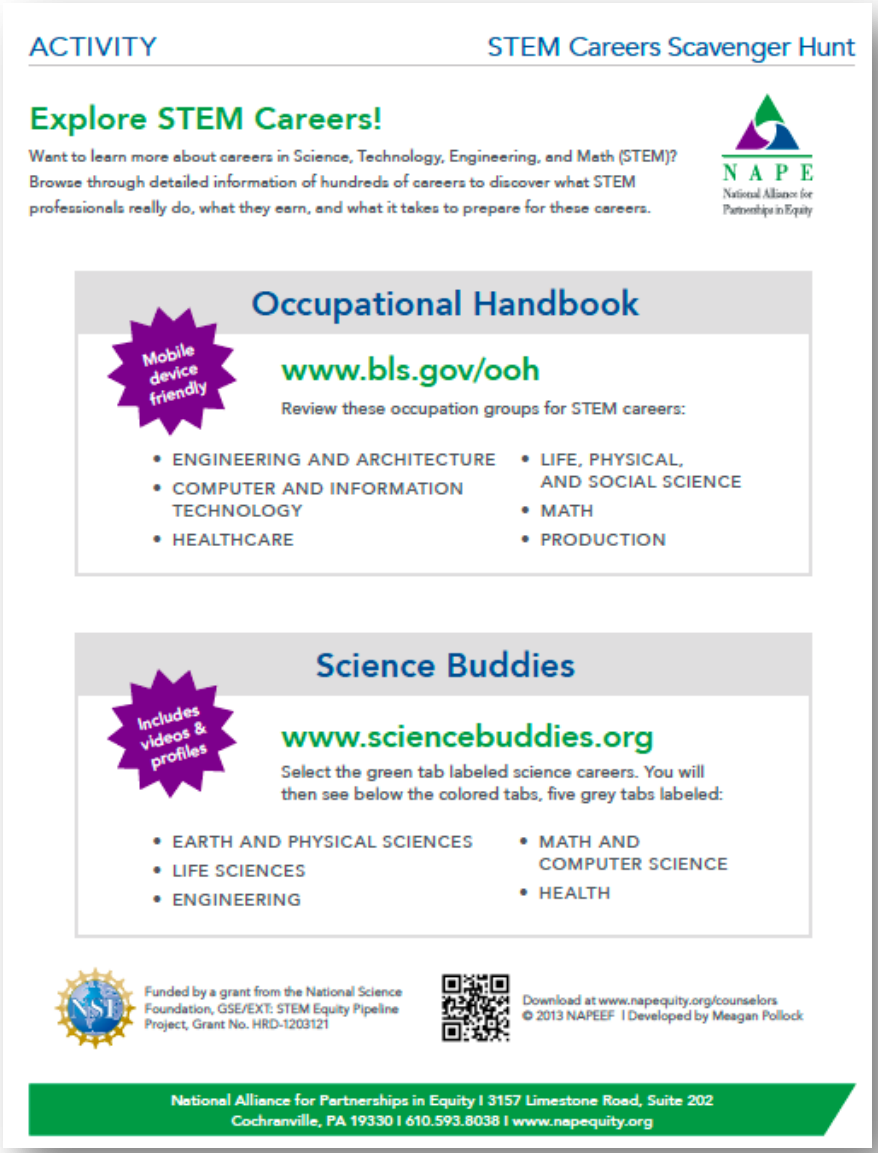
STEM Career Exploration Resources

Objective: Through this activity, participants will increase their **awareness of opportunities and pathways to STEM careers**.

Use your smart phone or device to connect to one of the following websites.

STEM Career Scavenger Hunt



ACTIVITY STEM Careers Scavenger Hunt

Explore STEM Careers!

Want to learn more about careers in Science, Technology, Engineering, and Math (STEM)? Browse through detailed information of hundreds of careers to discover what STEM professionals really do, what they earn, and what it takes to prepare for these careers.

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Occupational Handbook

Mobile device friendly

www.bls.gov/ooh

Review these occupation groups for STEM careers:

- ENGINEERING AND ARCHITECTURE
- COMPUTER AND INFORMATION TECHNOLOGY
- HEALTHCARE
- LIFE, PHYSICAL, AND SOCIAL SCIENCE
- MATH
- PRODUCTION

Science Buddies

Includes videos & profiles

www.sciencebuddies.org

Select the green tab labeled science careers. You will then see below the colored tabs, five grey tabs labeled:

- EARTH AND PHYSICAL SCIENCES
- LIFE SCIENCES
- ENGINEERING
- MATH AND COMPUTER SCIENCE
- HEALTH

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-1203121

Download at www.napequity.org/counselors

National Alliance for Partnerships in Equity I 3157 Limestone Road, Suite 202
Cochranville, PA 19330 I 610.593.8038 I www.napequity.org

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STEM Career Matrix (Activity Part 1)

1. **Work in alone or in pairs.**
2. **Complete the following table by selecting STEM Careers that are new & interesting to you.**
3. **Discuss with those around you what you**

ACTIVITY — STEM Careers Scavenger Hunt

STEM Career Search Matrix

Instructions: Complete the following table by selecting Science, Technology, Engineering, and Math (STEM) careers or occupations from ScienceBuddies.org or BLS.gov/OOH that are new and interesting to you. Each row suggests a different education level: Associate's degree (may also include a learned trade or certificate), bachelor's degree, or graduate degree (master's or doctoral). An example is provided.

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	Which **STEM occupation or career** is new and interesting to me?	How much could I **earn** in this job and what is the **outlook**?	How can I **summarize the job** that I might do in this occupation or career?	What would I need to do if I wanted to pursue this occupation or career? What would I **study** in college? How could I **prepare now**?
EXAMPLE	*Environmental Engineer*	*$78,740 / year 22% growth*	*Environmental engineers use the principles of engineering, soil science, biology, and chemistry to develop solutions to environmental problems. They are important for protecting our environment!*	*Must have a **bachelor's degree** in environmental engineering or related field, such as civil, chemical, or mechanical engineering. Employers value practical experience, so I should seek an **internship**. In high school, I should take related sciences. Environmental engineers should be **creative**, inquisitive, **analytical**, and detail oriented. They should **work well as part of a team** and **communicate well**. I can start developing those skills now.*
ASSOCIATE'S (learned trade or certificate)				
BACHELOR'S				

7 out of 10 of the fastest growing occupations (requiring at least a 2 year degree) are in STEM

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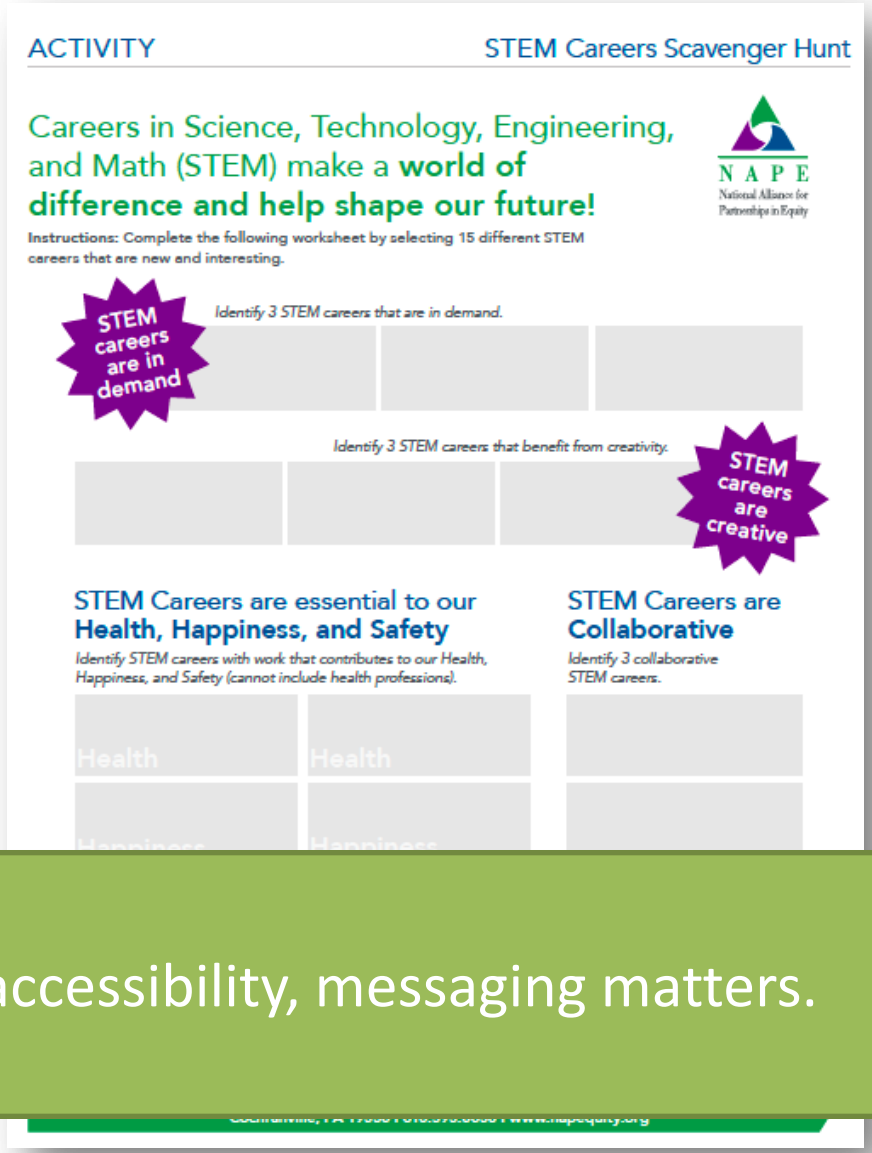
STEM Career Scavenger Hunt (Activity Part 2)

1. Work in small groups.
2. Complete the following worksheet by selecting **15 different** STEM Careers that are **new** & **interesting.**
3. *Write your findings on the wall posters.*
4. Discussion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STEM Careers Scavenger Hunt

Careers in Science, Technology, Engineering, and Math (STEM) make a **world of difference and help shape our future!**

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Instructions: Complete the following worksheet by selecting 15 different STEM careers that are new and interesting.

STEM careers are in demand

Identify 3 STEM careers that are in demand.

Identify 3 STEM careers that benefit from creativity.

STEM careers are creative

STEM Careers are essential to our **Health, Happiness, and Safety**

Identify STEM careers with work that contributes to our Health, Happiness, and Safety (cannot include health professions).

Health

Health

STEM Careers are **Collaborative**

Identify 3 collaborative STEM careers.

To improve equity and accessibility, messaging matters.


You are super creative.
Here's how I know...
Did You Know?
Careers in Science, Technology, Engineering, and Math (STEM) require creative problem solving and innovative design. You can collaborate to turn ideas into reality by choosing a career in STEM!
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Learn more about careers in Science, Technology, Engineering, and Math at www.napequity.org/STEMcareers
Funded by a grant from the
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Kudos Cards
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Get Beyond the Brochure

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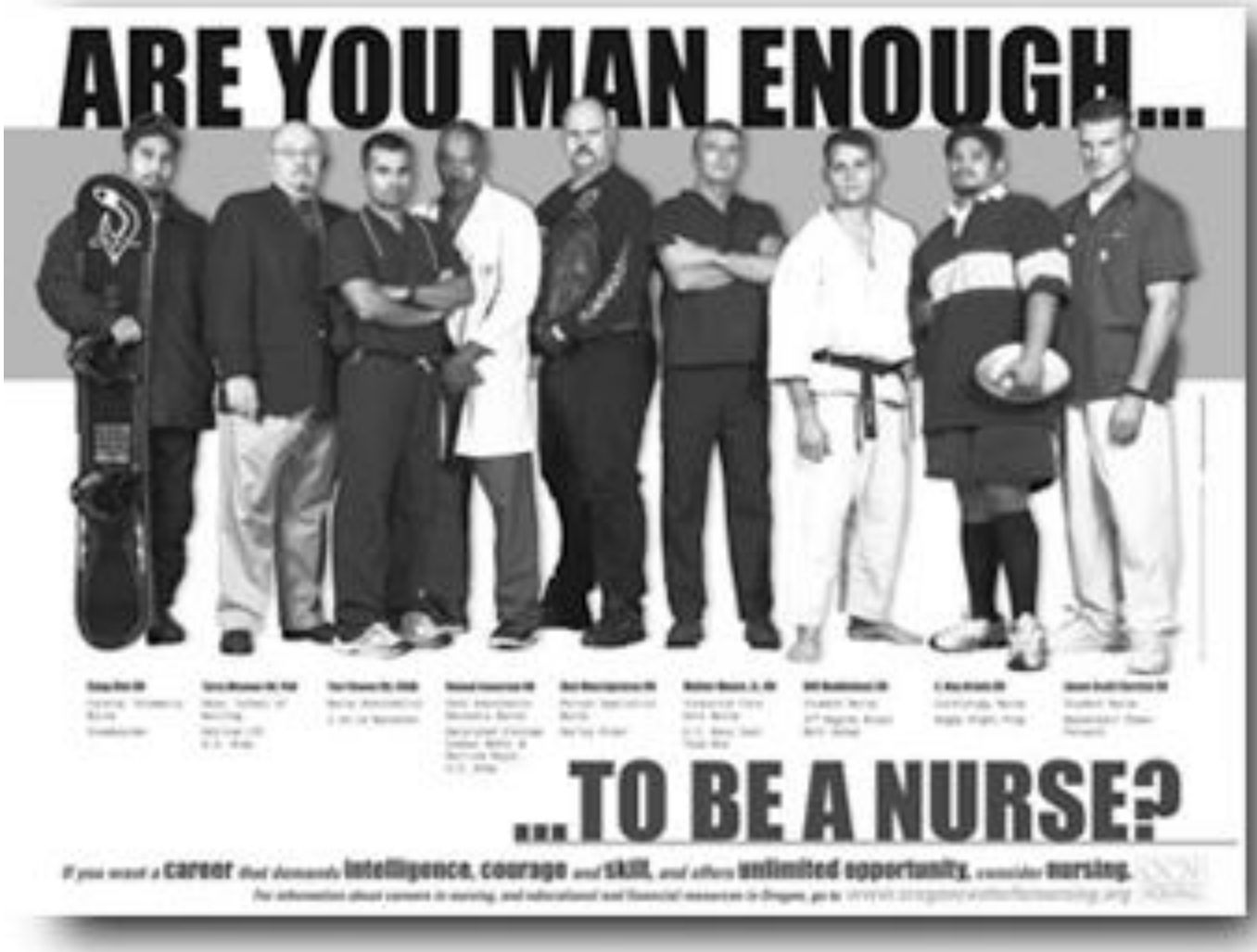
ARE YOU MAN ENOUGH...
...TO BE A NURSE?
If you want a career that demands intelligence, courage and skill, and offers unlimited opportunity, consider nursing.

Use Role Models

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Chester County Intermediate Unit

Careers Have No Gender

Nontraditional Student Panel Presentation to Sending School Counselors

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I am an Engineer

Women@NASA

Using Media to Bring Role Models into the Classroom

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Early Exposure

- Summer Camps
- Middle school rotational experiences
- After school clubs
- Collaborate with community organizations
- High school students in nontraditional programs present at elementary school using hands on activities
- Brown bag lunches with hands on activities

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Engage and Educate Parents

Parents are the #1 influencer of student major and career choice

Engage and Educate Parents

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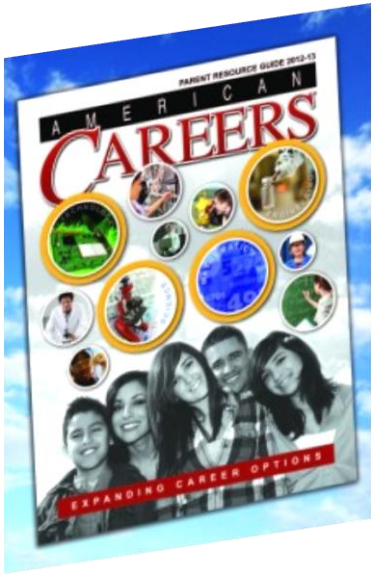
Focus Your Future Toolkit



American Careers Magazine

Parent Edition

Expanding Career Options

http://www.napequity.org/

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The Equity Professionals

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NAPE Issues Position Paper on Perkins

On February 26, NAPE issued a position paper on the reauthorization of Perkins.

http://www.napequity.org/

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« June 2013 »

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Questions?

Mimi Lufkin
Chief Executive Officer
National Alliance for Partnerships in Equity

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