

OPENING DOORS FOR NONTRADITIONAL STUDENTS

Arkansas Department of Career Education

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Opening Doors for Nontraditional Students

✓ Why does it matter?

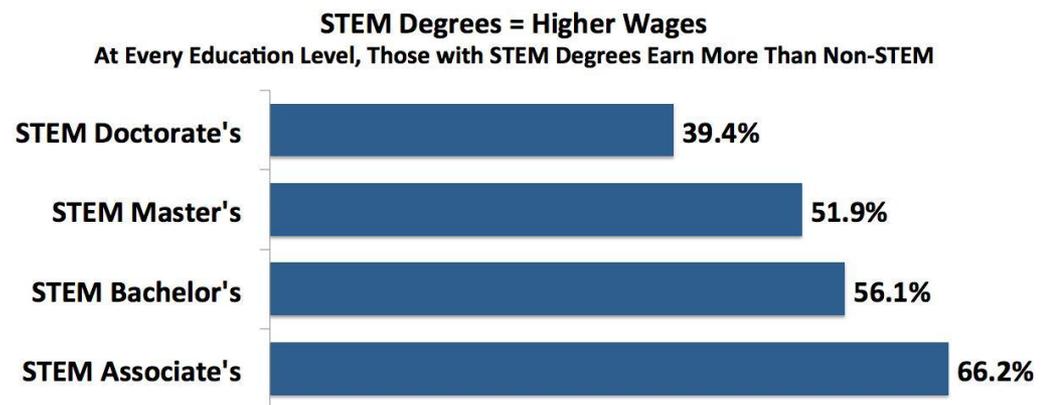
- ✓ # 1: Image is everything.
- ✓ # 2: Create critical mass.
- ✓ # 3: Keep it real.
- ✓ # 4: Role models.
- ✓ # 5: Level the playing field
- ✓ # 6: Change school culture.
- ✓ # 7: Engage the community.



Why Does Nontraditional Matter?

1. Helps students be aware of all options when selecting high school courses that prepare for college and ultimate career choices.
2. Helps more women find economic security for their families since many NT occupations offer higher wages than traditional female jobs, particularly STEM and skilled trades.
3. Having both male and female perspectives in occupations can result in a more competitive workforce and increased organizational performance.
4. Address the skills shortage than many employers say exist.
5. Support for female nontrad students usually results in increased performance for male and minority students.

- ✓ Technology jobs are the highest paying, fastest growing and most stable in the nation.
- ✓ Women hold a disproportionately low share of STEM undergraduate degrees, particularly in engineering.
- ✓ Skilled trades offer great opportunity.



Percent of STEM Degree Holders Earning Higher Than Average Wage for Same Education Level

Source: Georgetown Center on Education and the Workforce

What is the message on the door?



Strategy #1

Image is Everything

✓ Feature females

- on the job
- in the lab
- in the field
- in context



- Pictures should include half NT
- Females should be shown working; not just watching
- Females should be shown with males

Women in.....

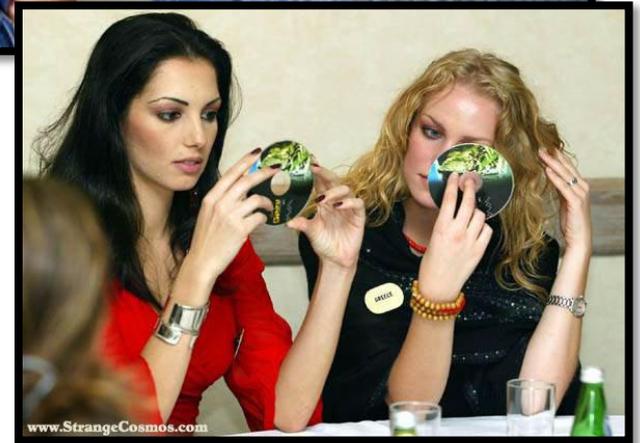
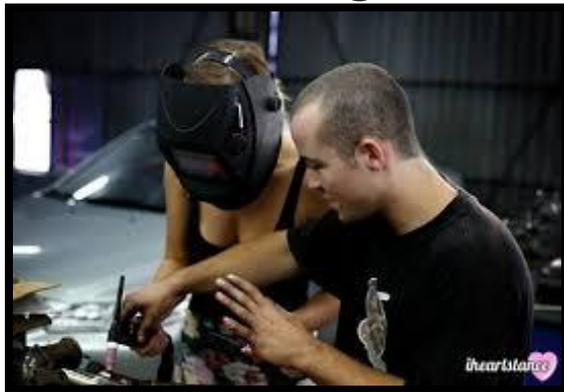
automotive



Information technology



welding



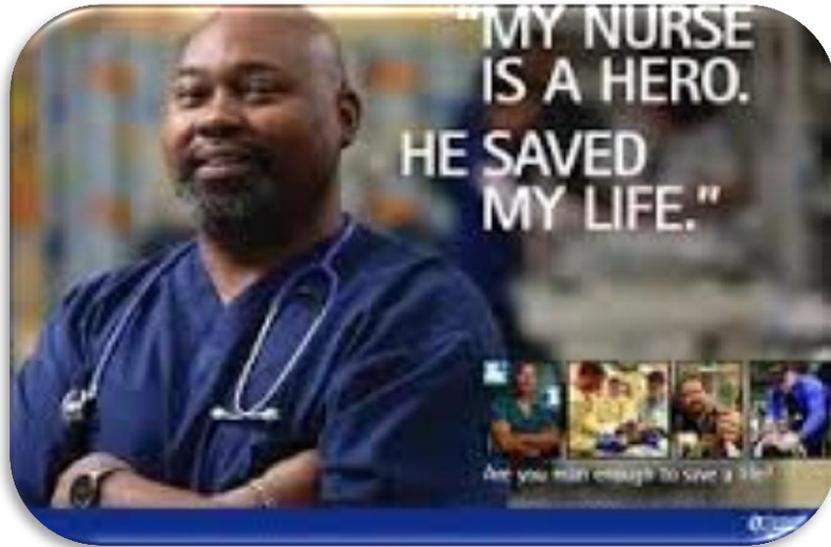
Women in.....

construction



Men in....

nursing



education



Strategy #2

Create Critical Mass

It Takes a Village

- ✓ One person can cause a change but it takes a team to reorient school culture.
- ✓ Start with creating awareness
- ✓ Need a catalyst and someone to advocate
 - Who will this be at your school?
 - Who will help you?
 - What leverage can you provide?
 - What will you do?



Rosie the Riveter

- ✓ Campaign was extensive and ongoing.
- ✓ Posters, word of mouth, peer support, news stories, magazine cover, movie reels, employer involvement.
- ✓ What if a company had just stuck up a bunch of posters of this woman with a rivet gun?



Rosie the Riveter, 1943

Strategy #3

Keep it Real

Video Outreach Materials

Career videos/YouTube showing “a day in the life” on the job

- ✓ See real world setting
- ✓ See a typical day
- ✓ What it’s like to be a female in a male-dominated field
- ✓ See women in NT balancing work with family, fun and career
- ✓ Hear women talk about how people are helped by them doing their job; this is important to females and should be a key recruiting topic.
- ✓ For high school, add in what will be expected in college



The image shows a screenshot of the Her Own Words website. On the left is the logo for Her Own Words, which includes a square graphic with a sketch of a person and the text "Her Own Words®". Below the logo is a "Home" button. In the center is a graphic for "Women in Nontraditional Careers" featuring a silhouette of a woman and the text "Women in Nontraditional Careers". On the right, text reads "Seventeen DVDs Celebrate Women in Nontraditional Careers". At the bottom right is the website URL: <http://www.herownwords.com/>

Recruitment Strategies



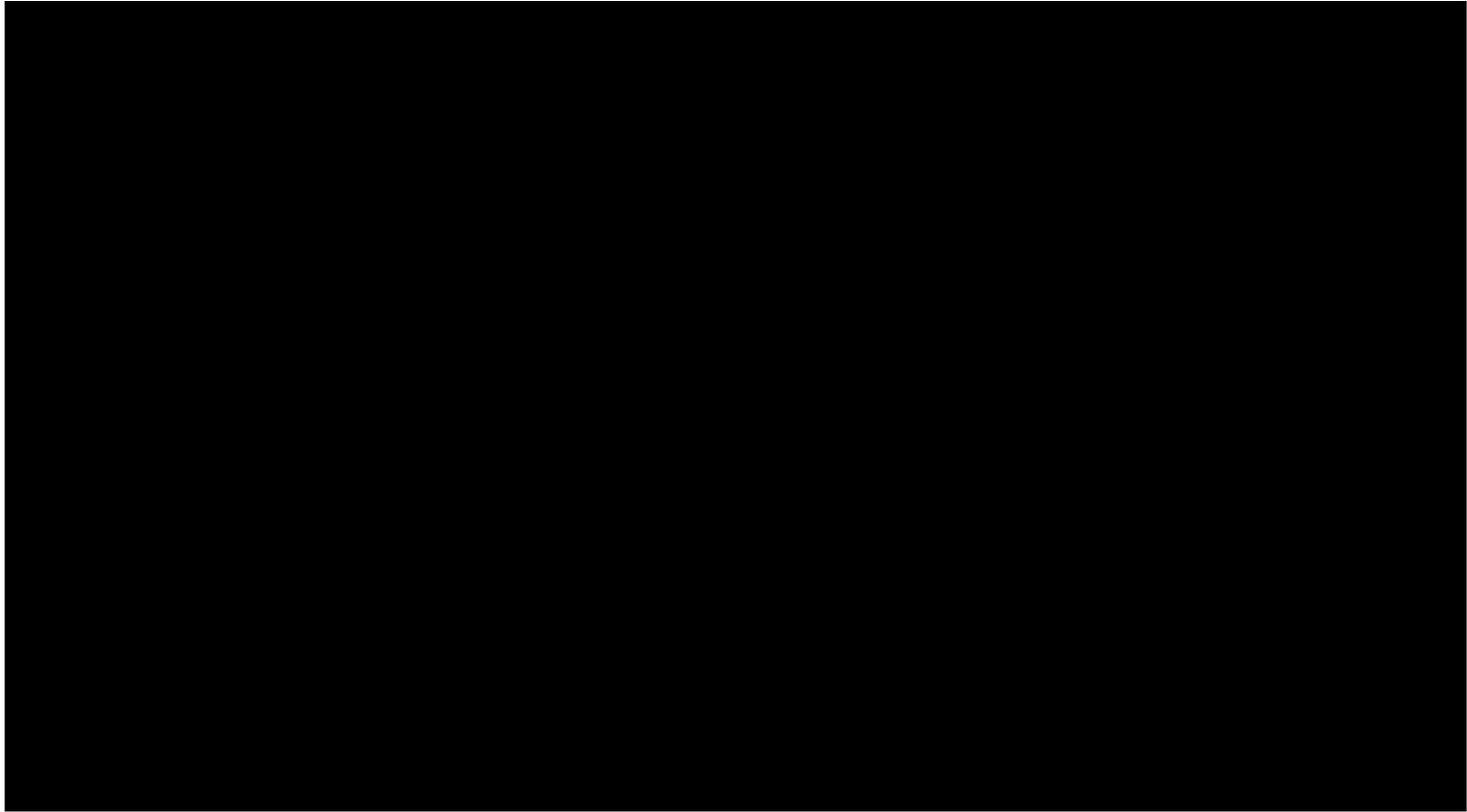
Girls Rock STEM

Recruitment Strategies



Proving a Mathematical Equation: $\text{Girls} = \text{Evil}$

Recruitment Strategies



**RECRUITMENT MATERIALS
DO MORE THAN RECRUIT
GENDER. A MESSAGE IS
IMPRINTED ON MINDS.**

Girls=I can do it.

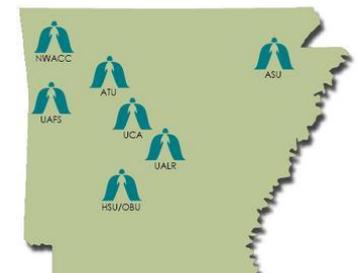
Boys=Girls can do it.

Strategy #4

Role Models

Finding Role Models: Most important strategy

- ✓ Alumni are the best first choice
- ✓ Students already working in the field is second best choice
- ✓ Work with advisory boards and professional associations
- ✓ Self-employed and women retired from NT field
- ✓ Catalog your community
- ✓ College students in NT programs
- ✓ In-class presentations, special events, mentorships



Girls of Promise
WOMEN'S FOUNDATION OF ARKANSAS

<http://www.womensfoundationarkansas.org/>

Role Models Help Define Perception

When Lee Rambo became a sheet metal worker in 1988, he imagined that he'd one day run the apprenticeship program for Local 38 of the Sheet Metal Air and Rail Transportation Union.



Role Models Help Define Perception

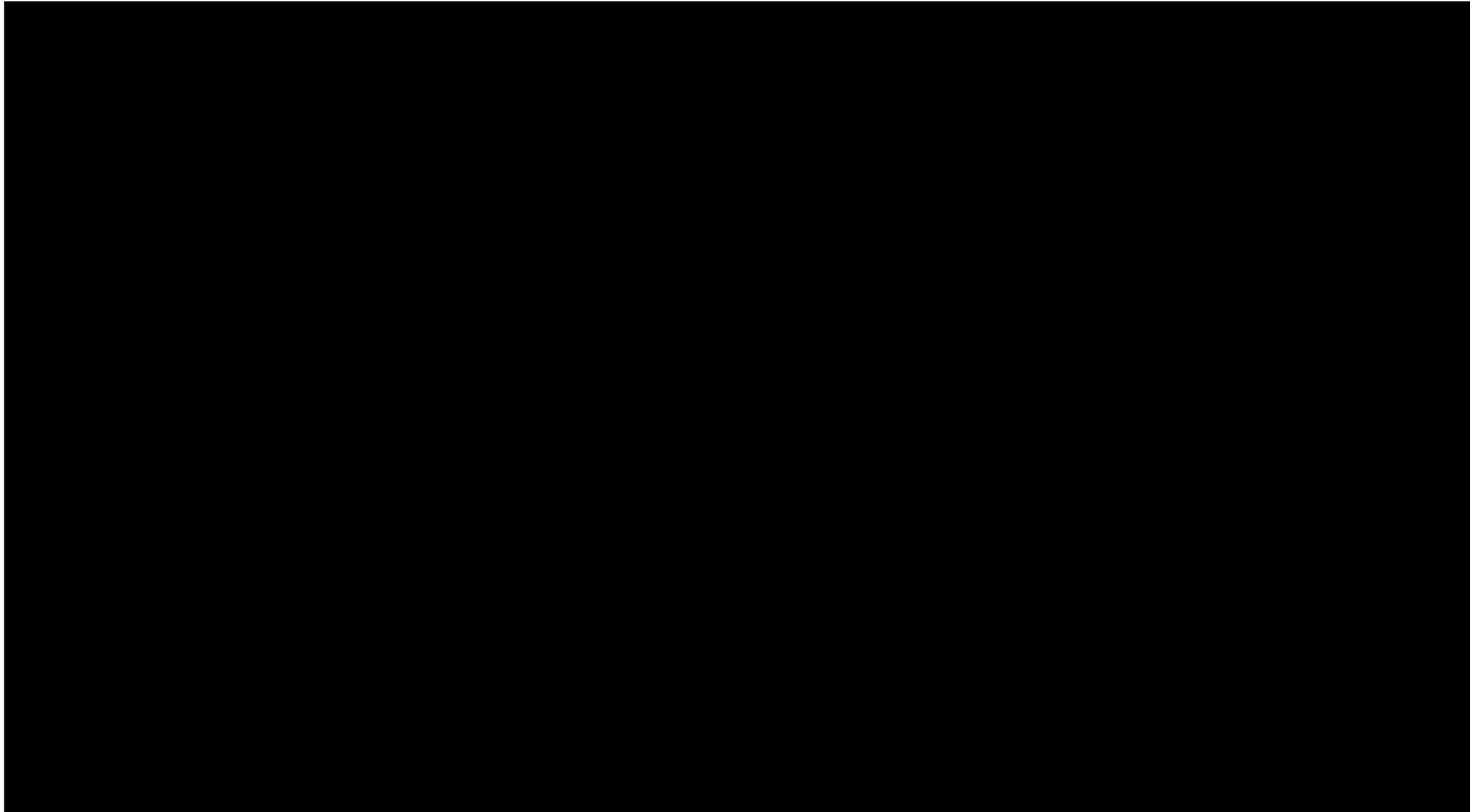
- When Leah Rambo became a sheet metal worker in 1988, she never imagined that she'd one day run the apprenticeship program for Local 38 of the Sheet Metal Air and Rail Transportation Union.
- But a little more than a year ago, she became one of the highest-ranking women in the US labor movement, taking the helm of a hands-on, 4 1/2-year training program for sheet metal workers in New York City.



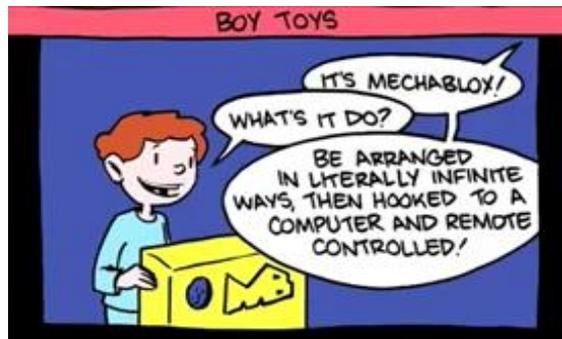
Strategy #5

Level the Playing Field for ALL Students

- ✓ Importance of informal STEM experience in class room and how it differs for male and female students
- ✓ <https://www.kickstarter.com/projects/16029337/goldieblox-the-engineering-toy-for-girls>



Toy	Who typically plays with them?	Childhood 101	What do they learn from Childhood 101 skills?	Which skills are needed in STEM classroom?
Legos	Boys	Boys Childhood <ul style="list-style-type: none"> • Legos • Construction sets • Science kits • Car repair 	<ul style="list-style-type: none"> • Building • Spatial relationships • Problem solving • Tools and sue • Technology schema 	Skills from playing with Legos
Barbie	Girls	Girls Childhood <ul style="list-style-type: none"> • Barbie/dolls • Playing house • Jewelry making • Cooking 	<ul style="list-style-type: none"> • Relationships • Cooking and measurement • Artistic and creative 	Because fewer girls play with Legos or other typically male toys, they do not have the informal building skills needed; they are not as prepared as male counterparts in classroom.



GoldiBlox

- SuperBowl Ad



Level the Playing Field

1. Close the experience gap by providing students with building block or bridge skills
2. Teach students an explicit problem-solving process
 - Tinkering/problem solving
 - Hands-on experience
 - Design exercises that reward guessing and intuition
 - Encourage females to problem solve rather than giving them the answer
 - Model: Failure → Persistence → Success
3. Include critical spatial reasoning skills in instruction so that female students are less likely to drop out; present appropriately.

Level the Playing Field

4. Teach tool identification/use and occupation language
5. Teach needed math in context and in a way that students can understand.
6. Venus vs. Mars

Females	Males
Want to understand the whole picture.	Want to finish first.
Read the manual.	Don't look at documentation.
Anxious about making a mistake.	Mistakes are ok if it works.
Prefer collaborative group learning and creativity.	Enjoys heavy competition.
Computer/car/electronics is an acquired taste.	Computer/car/electronics is a toy.
Values technology for how it helps others (engineering handicapped playground).	Values how the technology works (engineering rocket design).
Likes robots to perform/help others.	Likes to destroy robots.
Views robots as animals.	Views robots as monsters.

Level the Playing Field

7. Create a female friendly and respectful environment.
 - Don't single out females; don't make it obvious that they are uncommon. Make them feel welcome but use an indirect and low key approach.
 - Don't use the word "nontraditional"
 - Don't lecture on the importance of diversity or tell the guys how to treat the girls.
 - Don't wait until class to figure out how to handle only one locker room.
 - Don't wait for females to request proper-fitting equipment.
 - Don't assume that all is going well and wait for females to seek assistance.

Females don't drop out because of grades. Study of 8,000 female students in 20 colleges shows that women who leave engineering have higher grades than males who leave. --*Women in Engineering ProActive Network*

Strategy #6

Change School Culture

- ✓ Start early. Find opportunity points at various grade levels where careers are discussed.
- ✓ School staff. Raise awareness of benefits of NT opportunities and reduce barriers. Guidance, public information officers (district and site level), secondary career centers, faculty.
- ✓ Classroom. Create speakers bureau of NT professionals and promote among teachers. Make it easy for them to access these speakers. Use doesn't have to be "career" related; just having role models is very important.

Strategy #6

Change School Culture

- ✓ Clubs. Support NT participation in existing clubs that are career related or create new ones to fill gaps.
- ✓ Existing materials. Review WWW, printed materials for NT appropriateness. Market to what is important to each gender; especially important for females.
- ✓ Personal encouragement. This is the strongest strategy for increasing NT enrollment and success. Encouragement includes family members, school staff and female role models.
- ✓ Reduce gender bias (intentional or unintentional).
- ✓ Change perceptions. Proactively encourage girls to explore ALL (nontraditional) career options.

Top 3 Recruitment Strategies

Cal Tech Women in Technology Survey of 8 colleges

- ✓ 46% Heard about the program from an instructor
- ✓ 40% Role model posters
- ✓ 29% Heard about the program from a counselor or advisor

Strategy #7

Engage the Community

- ✓ Establish relationships with business and industry. Relationships become resources for special events such as career fairs, orientations, internships, job shadowing, apprenticeships.
- ✓ Collaborate with companies who want to advance women currently in lower pay/skill positions to higher positions
- ✓ Advisory councils. Expand conversations to include NT. Assure that council make-up has NT representation.
- ✓ Community organizations. Girl Scouts, Big Brothers/Big Sisters, Boys and Girls Clubs, trade organizations. Look for after-school opportunities.
- ✓ Connect with or start an afterschool program for girls related to NT employment
- ✓ Colleges. High schools and colleges must work collaboratively to increase the NT pipeline from junior high to employment.



www.NonTraditionalCareers.com

PRINT
A
FLYER

NTO
ORDER FORM

W-9
FORM

Nontraditional Careers

Awards & Testimonials

Update!

Posters

FAQs

Resource Guides

DVDs and Posters Highlight Women in Nontraditional Careers

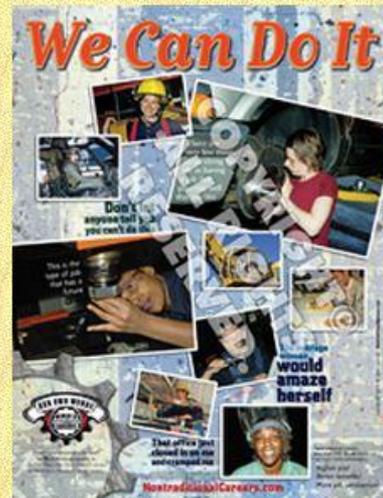
www.NonTraditionalCareers.com

NTO: nontraditional occupations

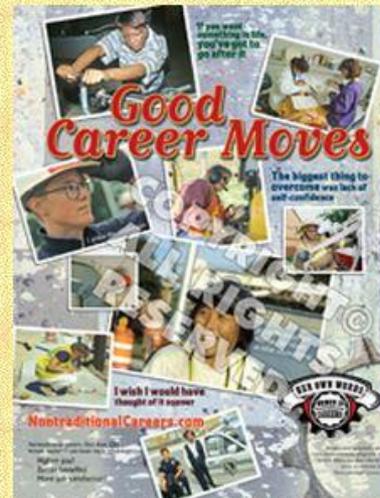
Nontraditional careers (sometimes also called nontraditional occupations or NTOs) are those in which women make up less than 25 percent of the workforce. The pay, benefits and job satisfaction can be much higher than in traditionally female occupations.

The "Copyright ©" watermarks do not appear on the actual posters.

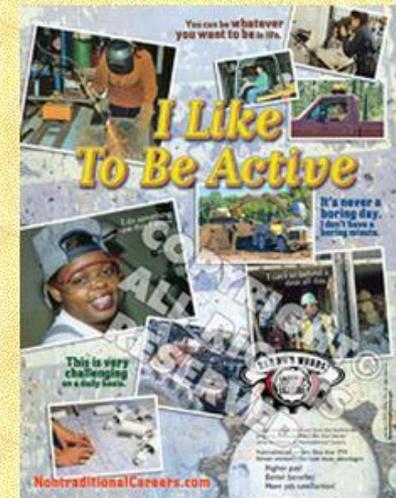
Poster 38005



Poster 39005



Poster 40005



www.iwitts.org

National Institute for Women in Trades, Technology and Science

Helping educators close the gender gap for women in technology

Home | Professional Development | Store | Proven Practices | Projects | About | Free

Need more women in your technology classes?



You can do it! IWITTS can help.

Free Report

The Secret to Successful Recruiting

Need more women in your technology and trades classes? Get a **FREE** special report by Executive Director Donna Milgram highlighting proven practices that will help fill your classes with women.

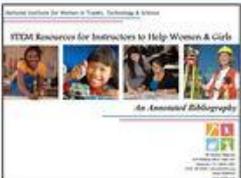


Email:

Get Your Free Report

You will also be subscribed to our WomenTech Educators Newsletter featuring recruitment and retention strategies. We respect your [privacy](#).

Deal of the Month



[STEM Resources Bibliography](#)

Save now until Feb 14, 2014

Get instant access to off-the-shelf materials to excite and engage women and girls in STEM.

[Read More >](#)

WomenTech Educators ONLINE Training



[Online Training: starts February 17](#)

Learn proven recruitment and retention strategies so you can increase the number of female students in your STEM classes.

Sign up now. Hurry, limited spots available!

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NAPE Is Accepting Nominations for Its 2014 Awards

Nominations for the seven awards are due February 14, 2014!

Email:

Password:

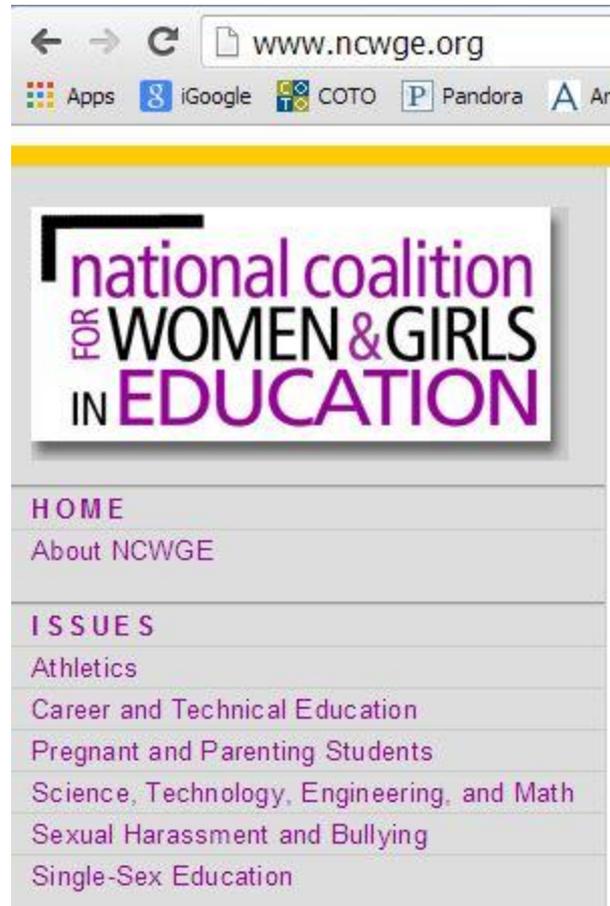
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« February 2014 »

M	T	W	T	F	S	S
					1	2
3	4	5	6	7	8	9

www.ncwge.org



<http://www.cewd.org/toolkits/cewdhhwtoolkit.pdf>



**A Toolkit for Recruiting and Retaining Women in
Non-Traditional Positions**

Resources/Reading

<http://scholar.lib.vt.edu/ejournals/JVTE/v13n1/sheng.html>

Research on CTE attitudes among high school staff

http://www.jsedimensions.org/wordpress/content/women-and-nontraditional-fields-a-comprehensive-review_2013_02/

Women in NT Fields: A Comprehensive Review

www.acteonline.org

http://www.nxtbook.com/ygsreprints/ACTE/g33254_acte_techniques_may2013/#/24

Breaking Gender Barriers report

<http://www.dotdiva.org/index.html>

Women in computing

<http://www.catalyst.org/knowledge/bottom-line-corporate-performance-and-womens-representation-boards>

The Bottom Line: Corporate Performance and Women's Representation on Boards

<http://www.cewd.org/toolkits/cewdhhwtoolkit.pdf>

Toolkit for Recruiting and Retaining Women in Non-Traditional Positions (Center for Energy Workforce Development)

<http://www.aauw.org/files/2013/02/position-on-career-and-tech-ed-112.pdf>

American Association of University Women policy position on female nontraditional efforts

<http://www.herownwords.com/>

Her Own Words: videos from multiple career fields

<http://www.pbs.org/parents/scigirls/>

SciGirls 7 programs on PBS; targets younger girls but concepts can be applied to high school or college

<http://talentegg.ca/incubator/2012/03/12/women-working-skilled-trades/>

Why Are There So Few Women Working in Skilled Trades

Why Does Nontraditional Matter?

1. Informed career choices.
2. Economic security for families.
3. Competitive workforce.
4. Reduce skills shortages.
5. Improved performance for all students.
6. Fair and equitable opportunity.



Thank you!

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