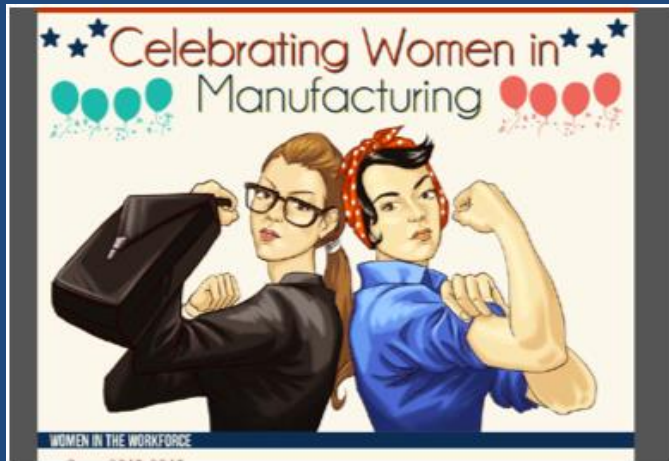


# Advanced Technology Careers – for Women!



Education ➡ Skills ➡ Jobs



# NSF ATE Project 2013-17

Dual Enrollment Technician Pathways and  
Careers in Electronics Engineering and  
Computer Integrated Machining

DUE 1303996 (Haywood Community College)  
DUE 1532907 (Johnston Community College)

PI – Deborah Porto, Ed.D.



# Goals

1. Design and implement dual-enrollment Electronics Engineering Technology program
2. Create awareness among high school & college counselors, teachers & faculty, parents and students on careers
3. Activities to increase female participation
4. Increase male and female students in dual-enrollment programs



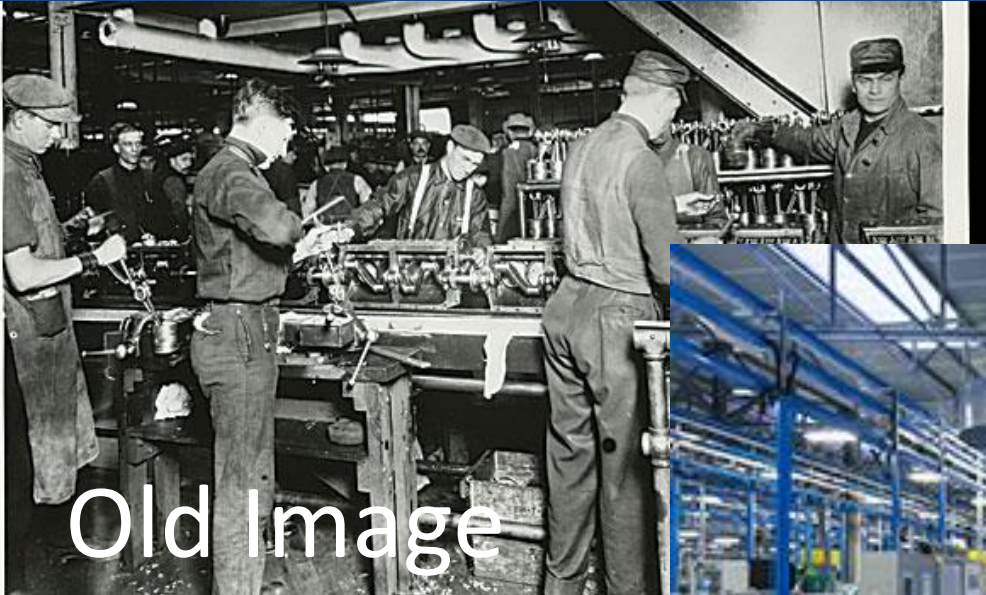
# Counselors and Teachers

Your understanding and attitude about manufacturing and technology matters!





# Advanced Technology Careers



Old Image

Do you know what a manufacturing plant really looks like, what kind of jobs are there and what it is like to work there?



New Reality

# What Are Careers in Advanced Technology?

Some examples are:

- Biotechnician
- Machinists
- CNC Programmers and Operators
- Drafters – Computer Aided Design & Drafting
- Manufacturing Technicians
- Welders

Problem – Manufacturers need a pipeline of highly skilled employees, beginning their interest in middle school and skills training in high school.



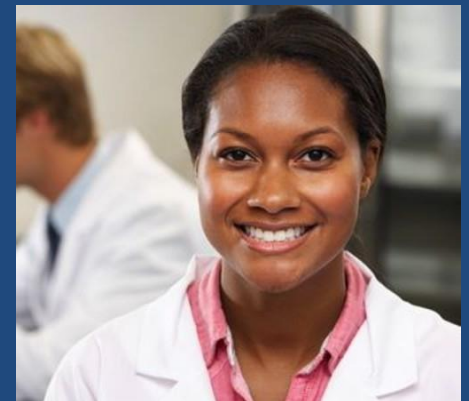
High School  
Dual Enrollment

Community  
College Degree  
and Workforce  
credentials

Advanced  
Technology  
Employment



Problem – Women are underrepresented in the Advanced Technology pipeline and careers.





# Recruiting girls for STEM programs: FILLING THE GAPS

[Recruiting and Retaining Girls in STEM](#)



**Dr. Marilyn Barger**

Executive Director/PI

FLATE - Florida Advanced Technological Education Center

[Women In Manufacturing](#)

# FACTS

- Gender barriers persist. About half of all girls feel that **STEM isn't a typical career path for girls.**
- *57% of girls say they would have to work harder than a man just to be taken seriously.*
- Girls want a career that they love and want to help people and make a difference in the world.
- *81% of STEM girls are interested in pursuing a STEM career, but only 13% say it is their first choice.*

# Young Women Are Influenced About Advanced Technology Careers By:



# Counselors and Teachers

Your attitude about the gender appropriateness of women in manufacturing and technology matters!





# What Expectations Do You Pass Onto Your Students?



## LEAN IN

WOMEN, WORK, AND  
THE WILL TO LEAD

SHERYL SANDBERG



# How Can Technology Be Presented?


## Battling Robots



## Robots Helping People



# How Can Technology Be Presented ?



Learn building Simple Circuits, 3D Modeling, and LEGO Mindstorms Robots

Come talk with Industry representatives

Show your spirit to do the CHALLENGE!

Science, Technology, Engineering and Mathematics (STEM)

**HAYWOOD ROBOTICS SUMMER CAMP**

CAMP 1: JUNE 23-27, 2014  
CAMP 2: JULY 14-18, 2014

**HAYWOOD**  
COMMUNITY COLLEGE  
www.haywood.edu

REGIONAL HIGH TECHNOLOGY CENTER  
112 Industrial Park Drive  
Waynesville, NC 28786  
Contact: hightech@haywood.edu  
828-627-4631

- 3D Modeling
- Build Circuits
- NXT LEGO Mindstorm Robots
- Speak with Industry Reps

**HCC**  
HAYWOOD COMMUNITY COLLEGE

**ROBOT CAMP**

**JULY 20-24**  
Regional High Technology Center  
112 Industrial Park Drive Waynesville, NC  
**STEM**  
3 WAYS TO REGISTER  
to your school counselor  
828.627.4631  
hightech@haywood.edu

TALK  
CALL  
E-MAIL

- 3D Modeling
- Build Circuits
- NXT LEGO Mindstorm Robots
- Speak with Industry Reps

**HCC**  
HAYWOOD COMMUNITY COLLEGE

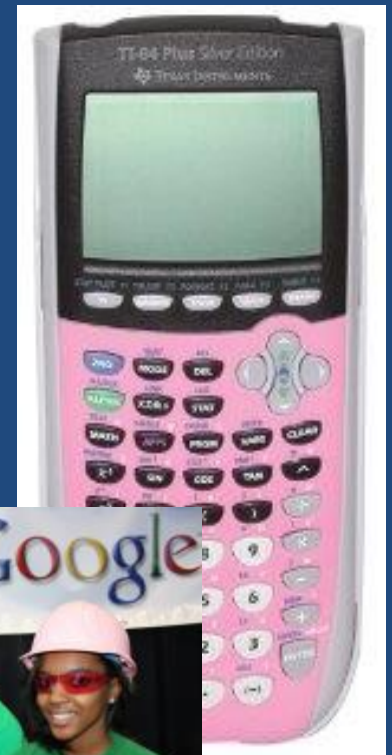
**ROBOT CAMP**

**JULY 20-24**  
Regional High Technology Center  
112 Industrial Park Drive Waynesville, NC  
**STEM**  
3 WAYS TO REGISTER  
to your school counselor  
828.627.4631  
hightech@haywood.edu

TALK  
CALL  
E-MAIL



# How Do Women Look At Technology?



“We heard Apple might call the tablet the iPad. But we dismissed it immediately, because really, no way Apple would go that route. Why? Ask any female.”





# Is This How You Think of Engineering?

[Goldie Lox Engineering](#)



# Technology Focus For Girls Only



# Technology Tours





# Celebrate Women in Technology

## Notable Graduates

**Gail Fitzgerald**

*"It's never too late to Educate!"*

**EDUCATION:** Associate of Applied Science in Electrical Systems Technology from Asheville-Buncombe Technical Community College in 2012; Associate of Arts from Brevard Community College, Melbourne, Florida in 1977

**OCCUPATION:** Tester III for Medium Voltage Drives Product Line for Eaton Corporation in Asheville, North Carolina

**From A-B Tech**





# Promote Women Instructors



# Train Instructors on Unconscious Bias

- “Girls don’t like these kind of things”
- How to handle and the need to respond when male students minimize female student work
- Discuss workplace situation women may face and how to handle it
- Varied project selection



# What Can Educators Do To Increase Women in Technology and Manufacturing Careers?

- Work on changing the assumption that only men should pursue technology and science-based careers.
- Instill the notion that women can acquire technology and manufacturing skills.

From "You Belong: Women in Manufacturing"

<http://www.nextgenmfg.org/women-in-manufacturing/>





# What Can Educators Do To Increase Women In Technology And Manufacturing Careers? (con't)

- Help students understand how technology creates a better life and the environment around them.
- Inform students of the wide variety of manufacturing jobs going unfilled today.
- Provide information about technology jobs.



From "You Belong: Women in Manufacturing"

<http://www.nextgenmfg.org/women-in-manufacturing/>



# Project Conclusions

- Industry engagement in pre-apprenticeship was a driver for dual-enrollment.
- Public schools and community colleges have different targets, goals and funding incentives.
- Some public school & college counselors lack knowledge of advanced technology careers (but are eager to learn). Hands-on learning activity very popular method.

# Project Conclusions (con't)

- Few dual-enrolled students enrolled in the community college after high school graduation.
- Technical Early College had greatest potential for dual-enrolled students to complete AAS.
- NSF ATE program is a great way to train and engage community college staff to improve programs.

For more information contact

Deborah Porto Ed.D.  
[portod@bellsouth.net](mailto:portod@bellsouth.net)

