Women in Welding

Investigating Recruitment and Training Practices for Women

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Data Category B

Today's Presentation

- Overview of Women Representation in Manufacturing
- Project Goals
- Project Approach
  - Plans Pre-COVID
  - Plans Today
- What We've Accomplished
- Next Steps
- Conclusion
- Questions

National Labor Force Participation Based on Education Level

Labor force participation rates by educational attainment and gender, 25 years and over, 2016 annual averages		
Educational attainment	Men	Women
Less than a high school diploma	58.1%	33.3%
High school graduates, no college	67.6	47.5
Some college, no degree	70.8	57.8
Associate degree	76.5	65.6

Individuals with less education are at a lower rate of participation in the labor force in 2016

Bureau of Labor Statistics: https://www.bls.gov/spotlight/2017/educational-attainment-of-the-labor-force/home.htm

Current State of Women in Manufacturing Nationwide*

Industry	Total employed**	Percent of total women employed
Total, 16 years and over	157,538	**47.0**
Manufacturing	15,741	**29.4**
Durable goods manufacturing	9,970	25.1
Primary metals and fabricated metal products manufacturing	1,796	16.6
Aircraft and parts manufacturing	813	25.4
Aerospace product and parts manufacturing	54	29.6
Ship and boat building	170	**18.0**

Women make up the smallest percentage of the Manufacturing Industry Population

*2019 data used
**Numbers in thousands

Bureau of Labor Statistics, https://www.bls.gov/cps/cpsaat18.htm

Women and Manufacturing Needs

Over the next decade an estimated 3 ½ million manufacturing jobs will need to be filled

The skills gap is expected to result in 2 million of those jobs being unfilled

84% of manufacturers agree there is a talent shortage in U.S. manufacturing

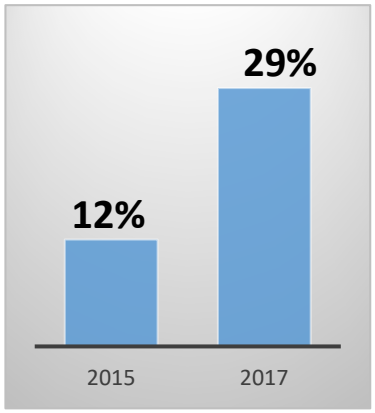
Companies with high percentages of women officers had a 35% higher return on equity

Those familiar with manufacturing are 2× as likely to encourage a child to pursue manufacturing

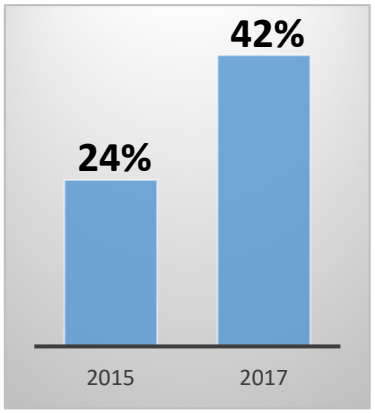
Women represent 47% of the total U.S. labor force, but only 29% of the manufacturing workforce

Manufacturing Institute STEP Ahead LEAD Toolkit: http://www.themanufacturinginstitute.org/~/media/90750E79CC8549BCB2CE7C7BA08AF852.ashx

Women and Manufacturing Needs



The school system is **encouraging** female students to participate in manufacturing



Women who say they will **encourage** their female family member to pursue a career in manufacturing

58%

of women surveyed have noted positive change in their industry's attitude towards female professionals over the last 5 years

Manufacturing Institute and Deloitte Research: https://www2.deloitte.com/us/en/pages/manufacturing/articles/women-in-manufacturing-industrial-products-and-services.html

Overview of Women Representation in Manufacturing

- Women **without college experience** are less likely to participate in the labor force than men

- Women are severely underrepresented in **manufacturing** careers
  - Especially in shipbuilding and metalworking careers.

- There is a **significant skills gap** in the future labor market that can be filled by women.

- Women are more likely to **enter manufacturing** now than ever

- Now is the time to figure out how to **attract and retain women** in the welding workforce!

Project Goals

- Evaluate current recruiting practices for welding
  - Determine how to tailor those practices to improve recruitment for women.
- Evaluate recruiting programs that are adapted for recruiting women
  - Incorporate those techniques in recruiting women.
- Assess existing training programs for welding
  - Determine how to modify those programs to improve training rates for women.
- Assess industry training that is specific to women
  - Integrate that training to improve training for women

Project Approach – Pre-COVID

- Team had planned two events
  - Women in Welding hiring event at NNS
  - AWS National Welding Month Event at a local school
- Women in Welding Hiring Event
  - Panel of three women welders hour long discussion
  - Question and Answer session after Panel Discussion
  - Welding equipment and simulators set up for people to review
  - Interviews for pre-selected attendees
  - End of March
- AWS Event
  - AWS, Miller, and NNS were setting up trailers at a local school
  - 2 day celebration of welding with women the focus of day 2
  - Expected ~1000 attendees
  - End of April
- Surveys were to be collected during each event

Project Approach – Today

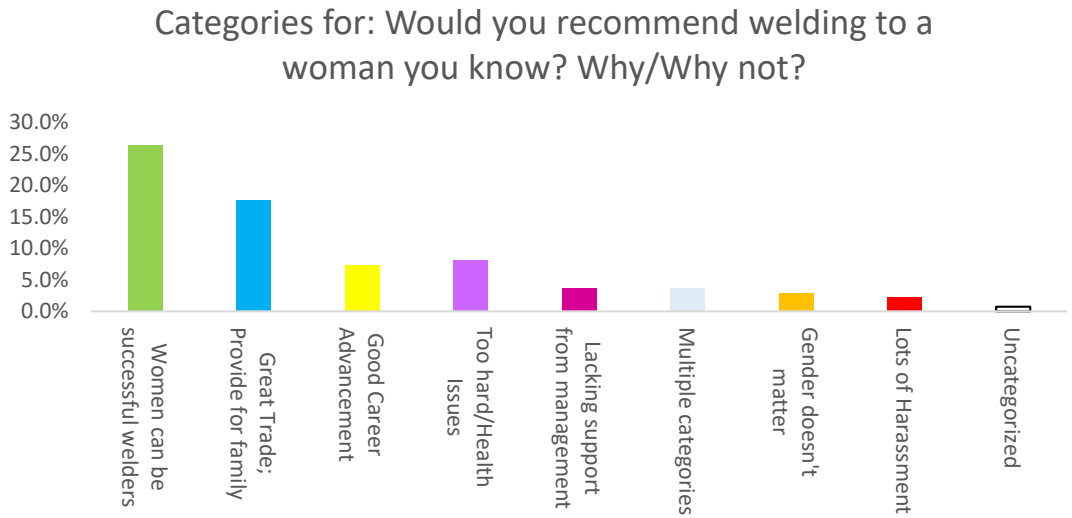
- Deploy Online Surveys
  - Three surveys have been deployed
  - One survey will seek responses from internal NNS population (including salaried and hourly workers)
  - One survey will seek responses from companies that hire/perform welding as their core business
  - One survey was conducted by the American Welding Society to focus on expert analysis of industry
- Survey's seek to understand perception of shipbuilding population of welding and challenges that women face with welding
- Using survey results, plan to create focus group questions
- Virtual focus groups will be held for in-depth discussion of responses
- Additional research effort will be placed on training and recruitment practices

What we've accomplished

- Deployed the three surveys
  - 136 responses from first survey – results compiled in the next slides
  - 27 responses from employer survey – results yet to be compiled
  - AWS survey still in progress

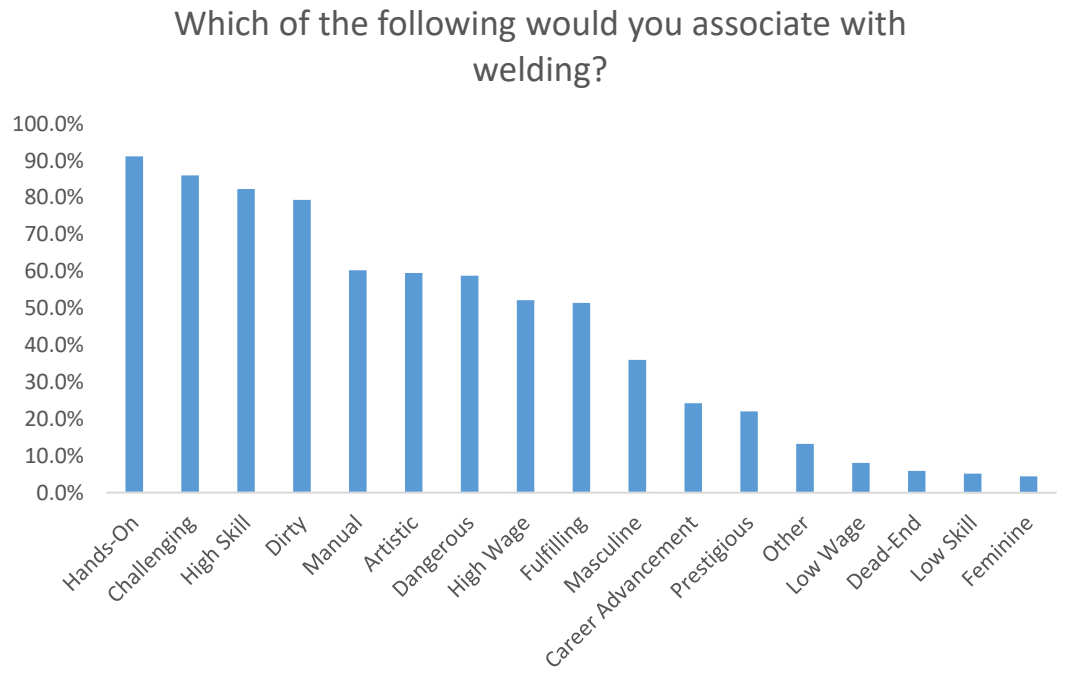
Shipbuilder Survey

- 81% of responses said they would recommend welding to a women they know.
- The written responses were categorized by the project team; these categories are shown by the chart below.



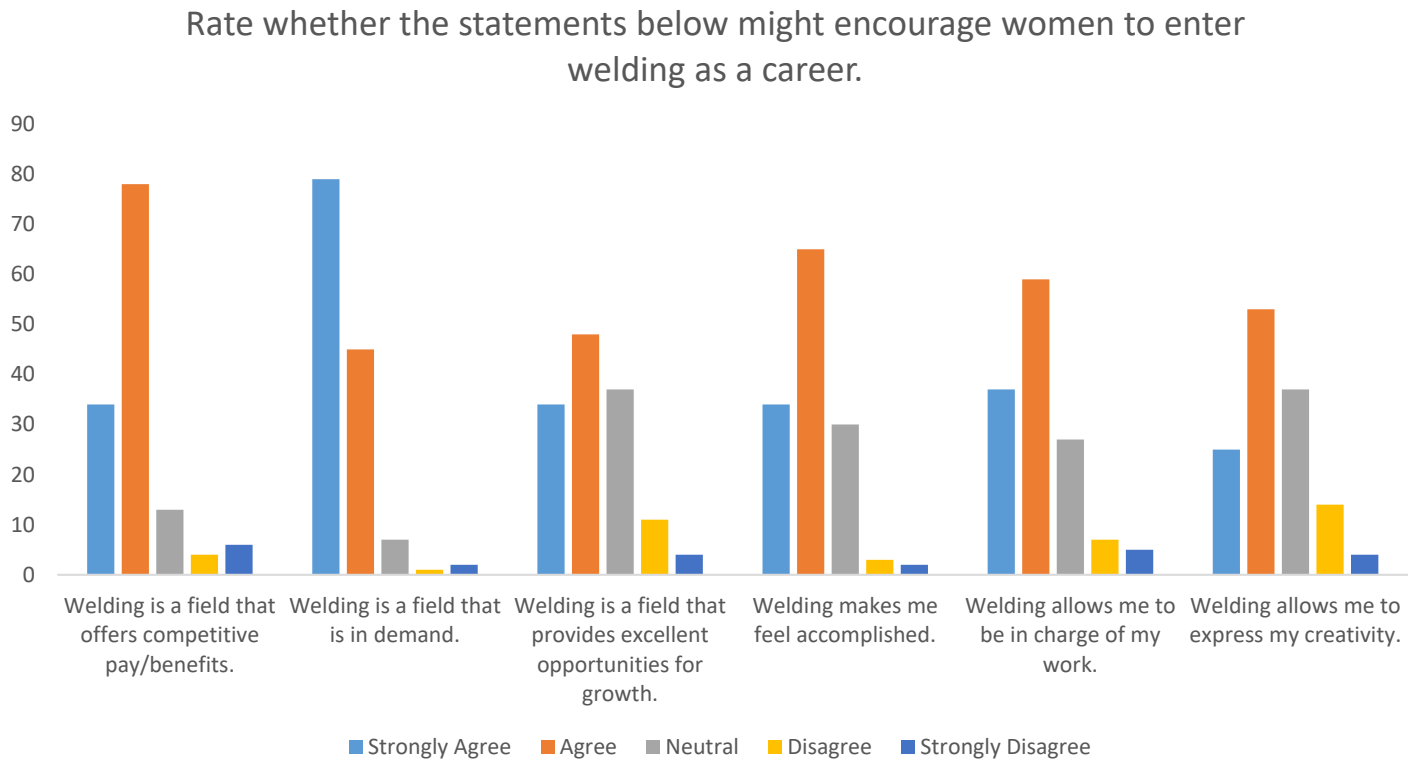
Shipbuilder Survey

- The following chart shows the results of a word association question.



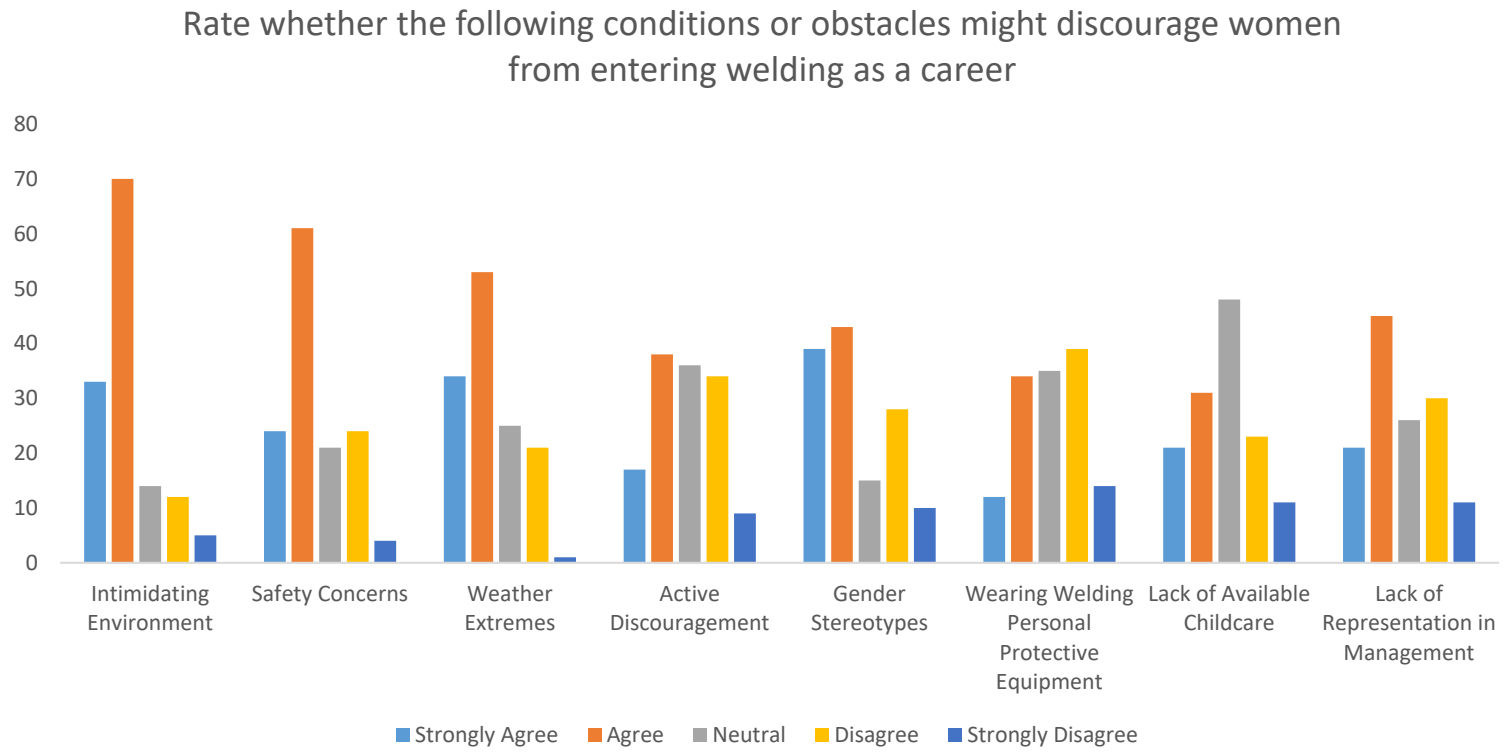
Shipbuilder Survey

- The following chart is a Likert scale question on what might encourage women to enter welding as a career



What we've accomplished

- The following chart is a Likert scale question on what might discourage women to enter welding as a career



Next Steps

- Will create focus group questions based on survey results
- Virtual focus groups/Live Surveys
- Analyze training practices (i.e. Women Who Weld on next slide)
- Analyze data to create recommendations for recruiting and training
- Potential Pilot Programs

Women Who Weld Detroit

- 6 week course, 10 participants, learn GMAW
- Subsidized training for unemployed and underemployed women from 18-40 years old to establish a career in welding free of charge
- Majority are single moms in 20s, some from shelters, some former incarcerated
- Offered once a year. Funded through donations/grants
- Participants undergo a two part interview
- Learn safety, various positions, terminology, resume/interview workshops, meet hiring employers
- In some cases food, transportation, and child care are provided

Fabtech: https://www.fabtechexpo.com/blog/2018/07/10/women-who-weld-lighting-the-way-out-of-poverty

Women in Welding Pilot Program

A 3 week program at Tidewater Community College during the summer from 8am-4pm

6 participants

A 4 week course held at New Horizons evenings 5pm-9pm

10 participants

A 4 week course held at Thomas Nelson Community College evenings 5pm-9pm

10 participants

Due to COVID, pilot programs can't be run in the short term, however, with a no-cost extension, pilot programs can be run after COVID is resolved.

Conclusion

- There is a skills gap coming for manufacturing careers in the next ten years
- With women being severely underrepresented in manufacturing, they can potentially take up those positions
- Our goal is to evaluate existing recruitment and training practices to offer suggestions that will improve recruitment and retention of women in welding
- Our original project approach had to adapt to COVID to perform all tasks online
- The project has deployed three surveys, with results from one shown earlier
  - Some analysis of recruitment and marketing has been performed
- Next steps will be to perform virtual focus groups and live surveys
  - More analysis of recruitment and training will also be performed
- Project may request no-cost extension to run pilot programs for women in welding

Resources

- Bureau of Labor Statistics: https://www.bls.gov/
- Manufacturing Institute STEP Ahead LEAD Toolkit: http://www.themanufacturinginstitute.org/~/media/90750E79CC8549BCB2CE7C7BA08AF852.ashx
- Manufacturing Institute and Deloitte Research: https://www2.deloitte.com/us/en/pages/manufacturing/articles/women-in-manufacturing-industrial-products-and-services.html
- FABTECH: https://www.fabtechexpo.com/blog/2018/07/10/women-who-weld-lighting-the-way-out-of-poverty