



Women Who Weld

Samantha Farr

2016 Co-Learning Plan Series



Michigan State University
EDA University Center for
Regional Economic Innovation

MICHIGAN STATE Center for Community and
UNIVERSITY Economic Development
University Center for Regional Economic Innovation



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Women Who Weld is a 501(c)(3) nonprofit organization located in Detroit that offers free welding training to unemployed and underemployed women and helps them find new employment opportunities.

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INTRODUCTION

Women Who Weld is a 501(c)(3) nonprofit organization located in Detroit that offers free welding training to unemployed and underemployed women and helps them find new employment opportunities. Women Who Weld was created by Samantha Farr in 2013 while she was a Master of Urban Planning candidate at the Taubman School of Architecture and Urban Planning at the University of Michigan. While in graduate school, Samantha learned how to weld through an independent study course she designed and created the Women Who Weld program at that time. In 2014, she received a Student-Led, Faculty-Guided grant from the MSU EDA University Center for Regional Economic Innovation (REI) to teach welding to two women who were living in temporary housing and looking to make a career change. They were taught practical trade skills such as welding and woodworking by creating a bus bench over a weeklong intensive workshop. Samantha designed the structure of the training program, the framework for making a replicable bus bench, and coordinated with local businesses and organizations as well as faculty from the University of Michigan and College for Creative Studies to secure a workspace, materials, and resources. The bus bench is now in use on Fenkell Avenue in the Brightmoor neighborhood of Detroit. In addition to teaching welding, Samantha helped the women create resumes and seek out employment opportunities; one of the women received a full-time job at an organization that makes jewelry. Samantha completed her Master in Urban Planning from the University of Michigan and currently operates Farr Side, a planning and economic development firm in Detroit.

In February 2016, Samantha was awarded a Co-Learning Plan grant from REI to host another workshop with the intent of finding the graduates of the program a full-time welding job. Samantha hired Ralph Taylor, who taught welding at Detroit Public School's Breithaupt Technical High School for 15 years and has been a welder for over 50 years to co-instruct the program. In March and April 2016, over the course of 4 weeks, Samantha and Ralph taught 7 women how to weld using oxy-acetylene and metal inert gas (MIG) welding.

The Co-Learning Plan research has been focused on the viability of a free welding training program that teaches women how to weld and assists them in finding welding-related employment. The key questions that the Co-Learning Plan attempts to answer are: If conducted properly, can the program be successful and what are the measures of success? What goes into keeping costs low, stretching resources, seeking donations, performing media outreach, and creating strategic partnerships with welding organizations and businesses? Can this program be replicated in other cities?

WHY WELDING?

Detroit's unemployment rate is 9.8% (Bureau of Labor Statistics, 2016), which is among the highest in the nation. Yet, there is a high demand for welders in Michigan and the average age of workers in skilled-trades is 60, which means that many of them will retire soon, creating further demand for workers in this capacity. Currently, 15% of the welder workforce in the State of Michigan is 55 or older and only 4% of welders in Michigan are women (AWS). There are currently 36,000 welding jobs in the State of Michigan and there will be openings for 9,100 welders in the State of Michigan over the next 10 years (AWS). Industries that employ the highest number of welders in the State of Michigan are Motor Vehicle Body Manufacturing, Machine Shops, Motor Vehicle Metal Stamping, and Sheet Metal Work Manufacturing (AWS).

According to Projections Central, by 2020, jobs for welders, cutters, solderers, and brazers in Michigan is expected to grow by 10.3%, and for welding, soldering and brazing machine setters, operators, and tenders, jobs are expected to grow by 32%. Welding is a growing field and offers living wages; according to MITalent, "in Michigan welders start at \$13 an hour and can earn as much as \$26 an hour." The median hourly earnings for a welder in the State of Michigan is \$21.46 (AWS).

9.8% DETROIT'S UNEMPLOYMENT RATE

4% WOMEN IN WELDING

15% WELDING WORKFORCE OVER 55 YEARS OLD

36,000 NUMBER OF WELDING JOBS

9,100 JOB OPENINGS IN WELDING OVER NEXT 10 YEARS

\$13-\$26 HOURLY PAY RANGE FOR WELDERS

\$21.46 MEDIAN HOURLY PAY FOR WELDERS

**All stats are specific to Michigan and provided by Bureau of Labor Statistics and AWS*

Access to free or low-cost programs that teach people skills needed for jobs that offer sustainable wages is critical for both human and economic development in Detroit. There are several welding schools in Detroit, but most are only available to high school or middle school students and none are aimed at training welding to women exclusively. Women Who Weld provides free training in welding, career development, and communication skills to keep Detroit and Michigan a competitive manufacturing hub.

THE WOMEN WHO WELD PROGRAM

The Women Who Weld program, held from March 22, 2016 – April 14, 2016, had seven participants; four were from the Coalition on Temporary Shelter (COTS), one was from the Detroit Rescue Mission, one was a former COTS and Women Who Weld participant, and the other was referred from another welding organization. Initially, there were ten participants, but two had to be removed from the program because of behavioral issues and another participant moved from COTS into her own housing and was unable to find reliable transportation to the workshop.

Prior to the workshops, two information meetings were held at COTS to discuss the program and gauge interest. Meetings were also held with the following welding organizations: Welding Artisan Center, American Welding Society, and the Roy Smith Corporation to discuss possible partnership opportunities and seek donations for equipment, safety materials, supplies, etc.

The participants who live in the housing shelters, COTS and Detroit Rescue Mission, do not have access to a kitchen and therefore cannot bring brown bag lunches, so it was necessary to provide lunch to the participants. Local restaurants were contacted for lunch donations and, as a result, most of the workshop lunches were donated. Hobart Institute of Welding donated workbooks for each participant and Carhartt donated several pieces of flame-resistant clothing.

Samantha toured a few welding spaces for rent, but to save funds, classroom instruction was held at Ralph's studio, and a welding workshop, Addison Iron Fabricators, in Detroit allowed us to teach welding at their shop free of charge.

To promote and showcase Women Who Weld, Samantha designed and built a website (www.womenwhoweld.org), created a logo, made business cards, and created Facebook (www.facebook.com/womenwhoweld) and Instagram pages (www.instagram.com/women.who.weld/) to document the program. Samantha also reached out to local news outlets to cover the program and the Detroit Free Press interviewed the participants, Ralph, and Samantha. The story ran on the front page of the Detroit Free Press's Sunday business section on April 3, 2016: on.freep.com/1UBoRZd.

In the first week of the program the participants got to know one another, learned about the program, created individual goals for the future, and reviewed safety precautions while in the workspace and while welding. In the second week of the program, Samantha and Ralph taught the participants about different welding machines and their components, how to use a combination square and basic measurement techniques, how to measure, punch, and drill holes into metal squares, and everyone lit and shut down an oxy-acetylene torch.

The third week of the program was focused on putting the pieces of the metal squares together to make the base of a lamp using oxy-acetylene welding. In oxy-acetylene welding, a welding torch is used to create a pool of molten metal that acts as a bond between the metals. Each participant also learned MIG (metal inert gas) welding, a process where an electric arc forms between a wire electrode and the metals, which heats the metals, and causes them to melt and join.

The fourth and last week of the program was focused on finishing the lamps the participants had created. The participants were taught how to use a hand-held grinder to smooth the welds and wire their lamps. Additionally, Chris Kiesling, the COO of Detroit Bikes, a company fabricating bikes in Detroit, visited

the workshop to talk about the bikes they are building using TIG (tungsten inert gas) welding. The following day, the Plant Manager of Big 3 Precision, a company located in Dearborn that is hiring welders to weld automobile racks, spoke to the class about Big 3 Precision's demand for welders – at the time, they were hiring 2 welders per week and having difficulty filling welding positions due to a lack of skilled welders. Wesley Doneth, the American Welding Society Detroit Section Chairman, also visited and discussed his experience in welding, offered advice, and asked questions. After Wesley's visit, he wrote about Women Who Weld in the May 2016 American Welding Society monthly journal. On the last day of the course, each graduate was awarded a certificate of completion.

After the completing the Women Who Weld program, all of the women found jobs and moved out of temporary shelter. Most of the jobs were not in the welding industry, but one graduate is pursuing a degree in welding from Washtenaw Community College and began classes in early September 2016.

SPRING 2016 GRADUATES



TIFFANY



MARIA



SANDY



BRITTANY



DANIELA



JAZMOND

**Not pictured: Dedria*

CHALLENGES ENCOUNTERED

While the Women Who Weld program was largely a success, there were some challenges encountered. The challenges included transportation issues for the participants due to the lack of a reliable regional transit system, not having a dedicated welding studio space, and removing participants due to behavioral issues.

An unreliable regional transit system created mobility challenges. Only two of the seven women in the program had access to a car and one of those cars had mechanical problems which did not allow for driving on the expressway. This participant came from a city 50 miles away and because she had to take side roads, the commute was over an hour each way. Some women transitioned to their own homes from COTS during the Women Who Weld workshop, but found it difficult getting to the workshop due to limited public transit options. Finding a permanent location in a central part of the city, providing bus cards free of charge, or hiring a driver with a van to pick up and drop off participants at the central bus station and/or COTS could ease transit issues for participants of Women Who Weld.

Addison Iron Fabricators allowed us to use their equipment and hold our welding lessons in their space. For one workshop, this arrangement was ideal, but it would be impractical to continue borrowing space and equipment at no charge. It is inefficient to train 10 people on one welding machine. We should have at least 5 welding stations for this many people. Women Who Weld needs dedicated welding space and equipment to continue its operations and to remain an efficient, sustainable program. With dedicated space, Women Who Weld could operate year-round, accept more students and even potentially offer daytime and evening classes.

Two women were removed from the program because of behavioral issues. To avoid such situations, in future programs, there would be an application and interview process before accepting participants into the program.

CURRENT STATUS OF WOMEN WHO WELD PROGRAM

The Women Who Weld welding training program will continue to operate if funding is secured. Women Who Weld was recently granted 501(c)(3) status from the Internal Revenue Service. This status allows Women Who Weld to qualify for more grants and raise money from individuals and corporations that can use their donation as a tax write-off. The money that is raised through grants, and individual and corporate contributions will allow Women Who Weld to continue the welding program.

A Board of Directors has been formed to oversee Women Who Weld. The Board Members are Delphia Simmons, the Passport to Self-Sufficiency Director at the Coalition on Temporary Shelter, and Roberta Urbani, an advisor and volunteer at The Greening of Detroit and a retiree of DTE Energy. Wesley Doneth, the Detroit Section Chairman of the American Welding Society, serves as an advisor to Women Who Weld. Additionally, REI worked with Women Who Weld to create a 4-minute video on the program. A business plan, 3-year budget, bylaws, bank account, and grant database have also been created.

In late August, Women Who Weld applied for the U.S. Department of Labor's America's Promise Grant in the amount of \$2M and received letters of support from SEMCOG (Southeast Michigan Council of Governments), the Wayne County Office of Economic Development, Michigan Laborers' Training and Apprenticeship Institute, Detroit Training Center, COTS, and The Greening of Detroit. Women Who Weld

is also a Knight Art's Challenge Finalist for a \$75,000 matching grant to create a sculpture park in the Islandview neighborhood of Detroit.

Women Who Weld has met with various groups and organizations in the region that could potentially lead to a working partnership. The Greening of Detroit is interested in integrating a welding program into their workforce development program. The Wayne County Office of Economic Development is interested in training young women who are exiting the juvenile justice system. The Detroit Training Center is also interested in integrating a welding program into their safety and license training, equipment training, and workforce development programs.

Women Who Weld is actively seeking other strategic partnerships. One of those partnerships may be with The Greening of Detroit, a nonprofit that has been serving Detroit for 25 years by creating productive green spaces while involving Detroiters in the process through community engagement, education, and job training. The Greening of Detroit has a workforce-training program, in partnership with Focus: HOPE and Neighborhood Service Organization, called The Detroit Conservation Corps (DCC). Over the next 5 years, DCC will train more than 5,000 Detroiters in the skilled trades of landscape technicians, tree artisans, floral décor, urban agriculture, landscape construction, and urban forestry. The Greening of Detroit is also interested in training welders, but they do not have a welding training program, and so Women Who Weld was asked to assist in the training. The Greening is also working to help get the Women Who Weld welding training accredited through the State of Michigan.

Women Who Weld applied for legal assistance with Michigan Community Resources (MCR). MCR matched Women Who Weld with an attorney who specializes in intellectual property for pro bono assistance on filing paperwork to secure a word mark for the Women Who Weld name and logo. Additionally, the American Welding Society Detroit Chapter has helped in various ways by donating safety equipment and offering support for future workshops.

FUTURE OF WOMEN WHO WELD PROGRAM

Once Women Who Weld raises funding through grants and donations, a dedicated welding studio in Detroit will be established. Women Who Weld has tentatively secured a welding studio space at Commonwealth Detroit, a shared affordable workspace in Southwest Detroit. The building is currently undergoing renovation and should be ready for move-in by early 2017. In the event the space at Commonwealth Detroit does not work out or if construction is delayed, Women Who Weld is actively seeking alternative welding spaces within Detroit.

The ideal Women Who Weld welding studio space would accommodate at least 5 welding stations, separated by a welding screen, and contain an MIG welding machine, table, 2 stools, and a fume output ventilation system. Each welding station would comfortably hold 1 to 3 participants; with 5 welding stations, anywhere from 5 to 15 people could be trained at once.

When Women Who Weld has a permanent space, equipment and supplies will be needed; hopefully many of these items will be donated to conserve funding. With an equipped welding studio and funding to operate, the Women Who Weld program could run up to 8 six-week programs per year and graduate anywhere from 30 to 90 women annually. Graduates would be trained in the basics of MIG welding and prepared to take the AWS Certified Welding exam. To supplement the free welding training program, there may also be a paid training program and paid classes.

Since transportation is an ongoing issue, Women Who Weld may explore hiring a driver and renting or purchasing a bus or van to pick up participants. Additionally, a program associate will be hired to assist with fund raising, workforce development, and marketing. Women Who Weld will also continue to build strategic partnerships and grow the Board of Directors and Advisors to the Board.

The response to the program has been great. After the Detroit Free Press article ran in April (and was syndicated by other local newspapers), welders around the country and women interested in starting similar programs in their cities and towns emailed and called looking for more information on Women Who Weld. Women make up less than 5% of the welding industry in the United States (AWS), but Women Who Weld wants to close the gender gap and promote diversity in the welding industry. To help close the gender gap, Women Who Weld networks of female welders can be formed nationwide or even internationally. This Women Who Weld network can offer support and advice for women in the welding industry or those looking to break into it.



CONCLUSION

Welding is a career path that can provide well-paying and sustainable jobs for Detroit residents. Many welders are nearing retirement in the coming years and as industries grow in Metro Detroit, welders will be needed to fill these positions.

The Women Who Weld pilot programs have been successful in training women how to weld. With more funding and dedicated space, future programs will continue to improve and scale. If Women Who Weld can raise enough money to operate year-round and train and graduate anywhere from 30 to 90 women per year, many impending open welding positions could be filled while lifting families out of homelessness and habitual unemployment.

Women Who Weld kept costs low by stretching resources through seeking donations. The creation of a website, Facebook page, Instagram account, and capturing the attention of the media helped to spread the word about the Women Who Weld program at little or no cost. Strategic partnerships with welding organizations and businesses have come through networking and outreach and will continue to build as Women Who Weld grows.

The Women Who Weld program can be replicated in other cities and with other types of skilled trades if a similar model is followed. The following steps can be followed to create a program similar to Women Who Weld: 1. Develop a clear proposal, 2. Create curriculum, 3. Form strategic partnerships with groups that align with your goals, 4. Network with local organizations and businesses in community and region, 5. Connect with target audience, 6. Ask for support through grants and donations, and 7. Pilot the program, demonstrate the concept works and then 8. Scale it.

The Women Who Weld program is not just about welding, but rather about preparing people for part- or full-time work, instilling a strong work ethic, and emphasizing the importance of commitment, punctuality, and maintaining a rewarding routine.

THANKS TO SPONSORS & SUPPORTERS!

Addison Iron Fabricators, American Welding Society, Carhartt, The Coalition on Temporary Shelter (COTS), Delphia Simmons, Detroit Training Center, DTE, The Greening of Detroit, Jennifer Bruen, Jeremy Bisdorff, Michigan Community Resources, Michigan Laborers' Training and Apprenticeship Institute (MLTAI), MSU REI University Center, Nicole Carbonari, Patrick Hyatt, Rachel Posler, Ralph Taylor, Roberta Urbani, Roy Smith Co, SEMCOG, Tyler Debrabander, Wayne County Office of Economic Development, and Wesley Doneth

Lunch sponsors: Avalon International Breads, Belle Isle Pizza, Brooklyn Street Local, Dangerously Delicious Pies, Go! Sy Thai, Honey Bee Market, Motor City Brewing Works, Sister Pie, Stache International, Supino Pizzeria, and 7 Greens Salad Co.

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About REI

The MSU EDA University Center for Regional Economic Innovation (REI) seeks to identify and develop new economic development tools, models, policies and practices to support innovative economic development high-growth enterprises and job creation in distressed regions across the state. REI has established a new economic development ecosystem to cope with the ever-changing global and regional dynamic(s). Through this ecosystem, we engage innovative and creative minds which result in new economic development practices.

The REI University Center was established in 2011 with support from the U.S Department of Commerce, Economic Development Administration, and in collaboration with the following Michigan State University offices:

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