

# SAFETY AND HEALTH INVESTMENT PROJECTS FINAL REPORT

## **Addressing Health and Safety Needs of Washington Women in the Trades: Phase II (Safety and Health Empowerment for Women in Trades)**

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# PART I

## *Narrative Report*

### **Abstract:**

#### **Background**

Women are severely under-represented in the construction trades and face many health and safety risks from a discriminatory culture and lack of industry support. Stress from high job demands, lack of control, and bullying are especially pronounced for women just starting out in apprenticeship programs. Mentorship is one strategy to increase women's retention in apprenticeships by supporting problem-solving skills and coping strategies as they learn to navigate the hostile work environment.

#### **Objective**

To develop, implement, and evaluate a pilot mentorship program to improve health and safety communication and compliance for women apprentices in western Washington by addressing and reducing their workplace psychosocial stressors.

#### **Methods**

We trained 15 journey-level women and men from five trades in the Seattle area to serve as mentors for 24 women apprentices. Mentors received training to help them better understand how the construction culture can negatively impact women's safety, and they learned skills to support mentees' proactive problem solving and leadership development. Mentors and mentees were voluntarily matched and monitored over a six-month period. The pilot program was evaluated to determine the impact of a structured mentorship program on women apprentices' self-confidence and safety outcomes.

#### **Results**

While six months was an insufficient amount of time to develop close, trusting relationships between mentors and mentees, we did witness positive improvements in mentees' self-confidence in their safety advocacy and leadership behaviors. We also learned a great deal about the challenges of a structured, non-jobsite based mentoring program for women construction workers, and strategies to improve the program.

### **Purpose of Project:**

Building off of our findings from the Phase I research grant (2014WH00281), and using input from community partners, we intended to develop, implement, and evaluate a pilot mentorship program aimed at empowering women apprentices in the Seattle area to recognize their on-the-job stressors and advocate for safer worksites.

Specifically, we planned to:

- Recruit and train journey-level women and men from the carpenters, electricians, ironworkers, laborers, and pipe trades to mentor women apprentices
- Match mentors with mentees
- Facilitate regular communication between pairs
- Evaluate the effectiveness of a structured mentorship model and its impact on mentees' self-confidence and safety advocacy skills

## **Statement and Evidence of the Results:**

### **Objective 1: Create a pilot for a formal mentorship program for women apprentices in western Washington**

For **Objective 1**, we met regularly during the fall and winter of 2016 with our advisory committee and trade partners in the carpenters, electricians, ironworker, laborers, and pipe trades to develop training materials and a structure for our mentorship program. Rather than reinvent the wheel, we reached out to groups with existing construction mentoring programs to learn about successful program designs and training materials. This included incorporating materials from Sisters in the Brotherhood, Sheet Metal Workers Local 66, the Washington State Labor Council's Trades Mentor Network (no longer active), and the Construction Sector Council of Canada's Mentor Handbook. We also relied heavily on the expertise of our grant subcontractors with the Labor Education and Research Centers in WA state and the University of OR: Kelly Coogan-Gehr and Sarah Laslett. An instructor from the Northwest Laborers-Employers Training Trust provided additional materials and real-life case scenario activities for our mentor training.

We wanted to focus on mentoring as a strategy to reduce women's risk for negative health and safety outcomes resulting from a hostile work environment. Worker retention is a priority for the industry, and it is directly connected to workers' perceptions of the safety and support of their workplace. Over one-third of women in our previous survey (grant 2014WH00281) had experienced high levels of isolation, bullying, harassment, and overcompensation from having to constantly prove their worth. Many were reluctant to speak up about safety concerns because of a fear of being fired or judged by their male coworkers. Many journey-level women in our study were particularly frustrated by a lack of mentorship when they were going through their apprenticeships, and saw the lack of social support and difficulty navigating the construction culture as significant contributors to women's attrition. We used a public health model of mentoring as prevention. Mentors help workers develop the skills to navigate the construction culture, ask for proper equipment, and proactively identify and address harassment. Mentor training that includes respect, open communication, and recognizing how gender dynamics affect workers also contributes to broader cultural change, while retaining women as apprentices and journey-level workers can help shift the gender imbalance and reduce unhealthy social norms. Mentors also provide resources and support to help workers in crisis stay in their programs.

We pilot tested our mentor training materials with six representatives from the partnering trades in January 2017. Pilot participants had a lot of very helpful feedback on improving the clarity of the training content, suggestions for new topics to discuss with mentors, and ways for mentors and mentees to connect. We incorporated their feedback into our finalized curriculum. All study and program procedures were reviewed and approved by the Washington State Institutional Review Board.

Starting in February 2017, our trade partners recruited women and men to be mentors. Based on the resources of the pilot grant, we planned on including 15 mentors: two women and one man from each of the five trades. Including men was important to the program. Because construction is so heavily male-dominated, most women apprentices will learn from journeymen on the job. In addition, we wanted to have a broader cultural

impact by training men on the hazards associated with construction work for women. All mentors had to be journey-level workers with an interest in supporting women apprentices. Ability to commit to the training and program schedule were also essential. We relied on our trade partners to recommend individuals they thought would be good fits for the program, rather than holding open recruitment. All potential mentors were interviewed by the UW research staff to ensure eligibility and commitment. We achieved our recruitment goal and ended up with mentors representing a diverse group of trades and experience levels (see Table 1).

Table 1. Mentor Demographics

	N
<b>Trade</b>	
Carpenter	3
Electrician/Lineworker	3
Ironworker	3
Laborer	3
Pipe Trades	3
<b>Gender</b>	
Women	10
Men	5
<b>Race/Ethnicity</b>	
White	10
Black or African American	1
Hispanic	2
American Indian/Alaskan Native	2
<b>Age</b>	
25-30	2
31-40	5
41-50	6
Older than 50	2
<b>Years in Trade</b>	
1-5	0
6-10	6
11-20	5
20+	4

Mentor training was held on March 11, 2017 at a convenient location in South Seattle. Fourteen of the mentors attended; one came down with the flu and received a condensed training with the research coordinator at a later date. Food was provided and participants were compensated for their time. The training started with introductions and a presentation on how gender expectations impact women workers. This module built off of the results of our previous research study and helped lay the groundwork for understanding mentoring as an intervention for tradeswomen's negative health and safety experiences. The training then moved into discussions on mentoring styles, relationship boundaries, communication techniques, and types of social support. With this program we really wanted mentors to focus on providing emotional, appraisal, and informational support to mentees, rather than the more directive form of technical

advice common to an apprentice/journeyman relationship. The rest of the training focused on developing mentors' active listening skills, cultural competency, and awareness of implicit bias and micro-aggressions that negatively impact under-represented workers. Mentors worked through a series of group activities to practice supporting their mentees through difficult conversations using proactive problem solving techniques. Finally, the program structures and expectations were explained, and mentors received copies of the SHEWT Mentor Manual (see Appendix A). The manual included all training handouts and additional resources to help mentors provide referrals to mentees. Appendix A also includes a sample mentor training agenda and overview of the SHEWT program.

We surveyed mentors before and after the training to assess their understanding of the materials and their self-confidence as mentors (pre- and post-training survey instruments are included in Appendix A). All participants reported increased self-confidence in their abilities to explain gender-specific health and safety risks, provide mentees with different types of support, and be effective mentors. They also provided recommendations for future training materials and set goals for themselves as mentors. A journeywoman from the pipe trades stated her goal was "To be a good mentor that women can come to with questions and be able to help them. Give good direction. Help them realize they are not alone and that they do have resources available to them."

From February through April 2017, trade partners and advisory committee members recruited women apprentices to be mentees in the program. We also advertised the program at a tradeswomen conference held in Tacoma, WA. Mentees had to identify as women, be at least 18 years old, and currently be in one of the pilot's five trade apprenticeship programs. The pipe trades, however, were a special case. Our partner at the Seattle Area Pipe Trades wanted to focus on women who were working as tradesmen/helpers and hoping to enter their apprenticeship program. We aligned our pilot with the current mentoring support offered through their Ladies in the Pipe Trades group and allowed them to match independently.

Recruiting mentees was a more difficult process than we originally anticipated due to workers' busy schedules and reluctance to identify as someone needing mentorship support. We learned that it is important to frame mentorship as "getting ahead" rather than "needing help" because of this process. Five potential mentees dropped out of the program before they were matched due to a variety of conflicts including lack of time and change of career path. Although our original goal was to have 45 apprentices, we ended up with 24 mentees who took the pre-program survey and elected to participate in the matching process (see Table 2).

Table 2. Mentee Demographics (at start of program)

	N
<b>Trade</b>	
Carpenter	5
Electrician/lineworker	5
Ironworker	5
Laborer	4
Pipe Trades	5
<b>Race/Ethnicity</b>	
White	17
Black or African American	2
Hispanic	1
Asian American	1
Multiracial	2
<b>Age</b>	
18-24	2
25-30	7
31-40	15
41-50	
<b>Apprenticeship Level*</b>	
1 <sup>st</sup> year	10
2 <sup>nd</sup> year	5
3 <sup>rd</sup> year	3
4 <sup>th</sup> year	1
<b>Marital Status</b>	
Married	6
Single	13
Domestic Partnership	1
Divorced	1

Totals may not equal 24 due to participants selecting "prefer not to answer"

\*All mentees from the pipe trades were tradesmen/helpers preparing to apply for the apprenticeship program

In order to match mentors with mentees we held an optional social event in April 2017, where participants could get to know each other and provide their matching preferences. Almost all of the mentors and one-third of the mentees attended this event. Mentees who did not attend were given a list with descriptions of each mentor. For all participants, we asked if they preferred to be matched with someone in their own trade and if there was anyone with whom they did not feel comfortable. While we had intended to match by trade, we ended up including several instructors from the ironworkers apprenticeship as mentors, which might have created discomfort for ironworker apprentices. Mentees also specified whether they preferred a woman or a man as their mentor. We used this information, along with workers' locations, to create matches. Each mentor was paired with one or two mentees.

Once matched, mentors and mentees had six months to communicate on a regular basis before the pilot ended. This timeline was based on the short nature of the grant and gave us time to evaluate the program and work on its sustainability. We requested that mentors check in with their mentees on a weekly basis during the first month, dropping down to biweekly in the second month and then monthly after that. In person and phone calls were the recommended method of communication, although we were mindful of workers' busy schedules and distance from each other, so email and texting were also acceptable.

### Program Results

Most mentors and mentees communicated by phone and text. Communication frequency varied widely with a range of less than monthly to many times a week. The UW research coordinator checked in with each mentor formally over the phone four times throughout the pilot. During these calls, we assessed how the relationship was going, identified communication styles and barriers, mentee health and safety concerns, mentor support, and any other thoughts or concerns about the program. See Objective 2 for a description of mentee concerns and mentor support. Check-ins were extremely helpful for strengthening the program and responding to participants' needs in real time. Based on participant feedback, we added a second social event for everyone to get to know each other better, more training for mentors, and a final closeout event. We also added a check-in call with mentees to hear more about their experience with the program.

### Challenges

One of the biggest challenges with the pilot program was communication between pairs. All participants were extremely busy with work throughout the summer months so they were not able to communicate as regularly as we had hoped. Even finding a time to check-in with the mentors was difficult. We also learned that mentors required more program support to initiate their relationships with the apprentices and to build trust. Several mentors limited their mentoring to an occasional "How's it going?" text and did not try to engage their mentees in deeper conversations about their experiences at work.

Mentee retention was another challenge. Several apprentices dropped out of the program before they were matched and many mentees were unavailable to their mentors during the six-month pilot. During the first two months of the pilot, we recruited two new apprentices to replace those who left. One apprentice lineworker left her apprenticeship program and our study within the first two weeks. Although she had originally expressed interest in having a mentor and being in the apprenticeship, she decided to pursue a different career path. Two other mentees, one ironworker and one laborer, were completely unresponsive to their mentors and our program staff so we dropped them from the program after three months. An additional two mentees (ironworker and laborer) remained in the program but had very limited communication with their mentors. Finally, we had one ironworker mentee who switched mentors half-way through the pilot, but then decided to leave the trades due to feeling unsafe on the job and having challenges with the work schedule and her commitments as a mother. We connected her to outside support.

## Objective 2: Increase program mentees' skill knowledge and application, safety practices on the jobsite, and decrease their perceived stress

For **Objective 2**, we evaluated data collected throughout the pilot from mentor check ins, and surveys taken by mentees before and after the program. The check-in calls between mentors and program staff painted a good picture of new apprentices' experience on the job and during training (Table 3).

Table 3. Mentee Common Concerns

Check-In One	Check-In Two	Check-In Three	Check-In Four
Balancing work and childcare	Family emergencies	Balancing work and personal time	Family emergencies
Lack of confidence	Lack of confidence	Outside injuries	Heavy workload
Fear of layoff	Job insecurity	Heavy workload	
Need to advocate for new skills	Relationship conflicts		
Unsure how to identify or report harassment	Fast pace of apprenticeship		
Laid off			

During the first check-in, we heard about a range of experiences, both positive and negative. Many mentees were excited to be starting their apprenticeships and were eager to prove themselves. While several were unsure how to communicate with their male coworkers, others had a good relationship with their crews. One tradeswoman from the pipe trades was pregnant at the start of the program, and described her work as being very accommodating. Other mentees struggled with finding childcare and balancing their demanding work schedules with their personal time. Common concerns raised during the first check-in were related to mentees' lack of confidence, fear of getting laid off, harassment, and stress from being new to the trades and having to advocate for themselves.

Mentor support depended on the needs and personalities of their mentees. One mentor talked about how his mentee, an apprentice from the carpenters, successfully pushed for more skilled work and won the respect of her supervisor. All of the pipe trades mentees were concerned about taking the hands-on test and interview to get into their apprenticeship program. The pipe trade mentors helped them prepare by holding mock interviews and providing advice. An electrician apprentice was feeling very discouraged by her apprenticeship after being laid off her first job and being slow to complete her tasks. Her mentor regularly checked in and provided emotional support, explaining the realities of the work and suggesting journaling. The mentee decided to remain in her program, largely thanks to her mentor's support. Another apprentice from the electricians was described as being very proactive; when a journeyman wasn't respecting her she raised the concern to her supervisor and it was immediately handled. She was also seen as a standout apprentice by her program. Her mentor checked in but the mentee did not feel the need for a lot of support.

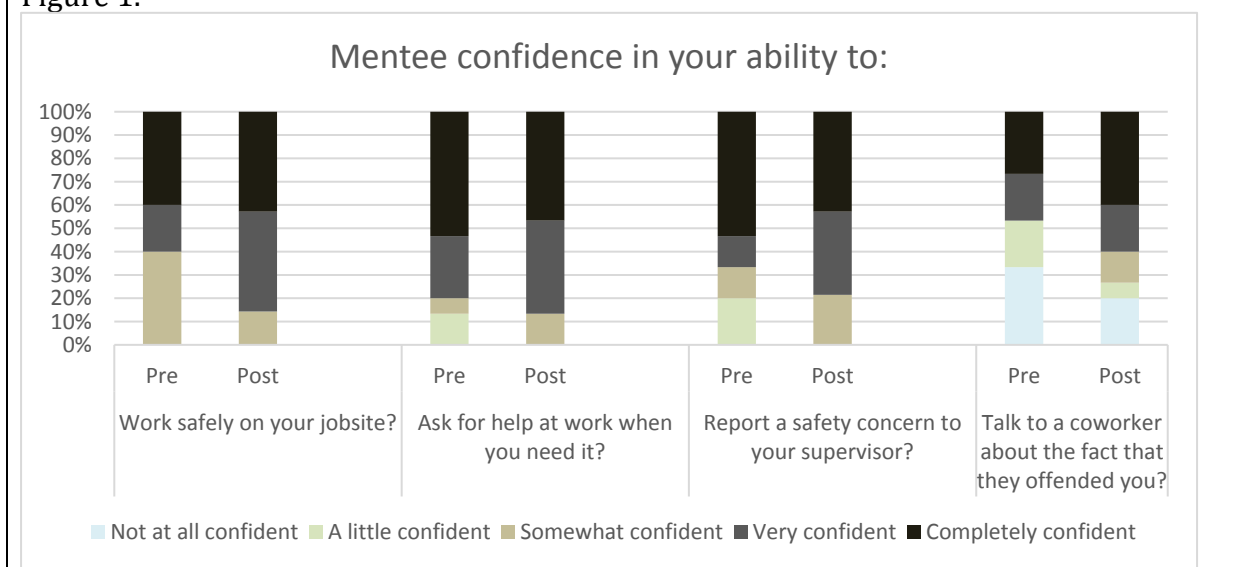


During the second and third mentor check-ins with program staff we learned that many apprentices were adjusting to their work. While some mentees were described as still lacking confidence in their abilities, others were advocating more strongly for themselves and for their applied skills on the job. Most mentees had positive relationships with their crews. Those who had been laid off were rehired and their mentors were helping them understand how layoffs are part of how the industry works. Other issues that arose during these check-in were related to housing instability, outside injuries, relationship counseling, and family emergencies. In all situations, mentors offered referrals and emotional support. During the middle of the pilot, three of the five tradesmen/helpers were accepted into the pipe trades apprenticeship program.

After the final check-in we learned that most mentees were feeling more confident in their skills and felt well liked by their crews, although more than half still felt isolated at work. Many of the apprentices were extremely busy with work, which they saw as positive, but also meant that they were not communicating regularly with their mentors. One mentor was unable to handle the many requests for assistance by her mentee so we connected the apprentice with outside support.

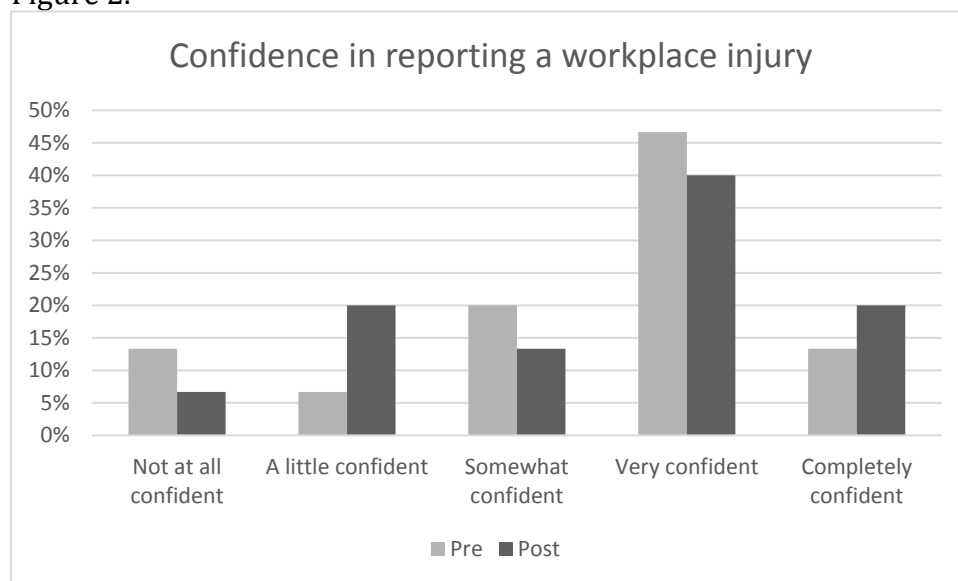
From pre- and post-program surveys (see Appendix B for instruments) we measured changes in mentees' experience with a range of physical and psychosocial exposures on the job. This included confidence in their safety advocacy abilities, exposure to harassment and discrimination, and stress. Some results were not assessing outcomes of the program and as such are not included in this report. For the full mentee evaluation results see Appendix C. It is important to note that only 15 mentees completed both the pre- and post-program surveys, so the results are not completely representative. As confidence is an important predictor of behavior change, it played a key role in our evaluation. We witnessed an increase in mentees' confidence in their abilities to advocate for their own safety (see Figure 1). Several mentees still lacked confidence confronting a coworker about an offensive remark or action, even after the program. This shows us the importance of increasing activities and training on confidence-building skills.

Figure 1.



Mentees also showed increased confidence in reporting future injuries on the job (Figure 2). In addition, all mentees stated that they knew who to report workplace injuries to after the pilot program, compared to 87% pre-program. As we learned from our phase I research study, many tradeswomen are reluctant to report an injury to their supervisors for fear of being laid off or called a complainer. That most of our apprentices felt more confident about reporting their injuries is a positive sign for their safety advocacy and perception of their workplace culture.

Figure 2.



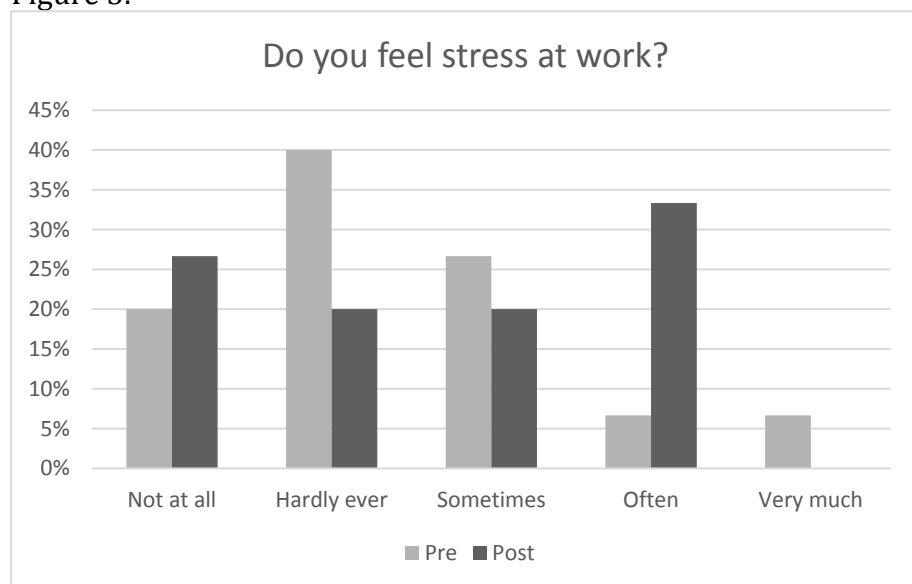
When asked about the program's effect on their safety knowledge, leadership, and problem-solving skills, mentees were mostly positive (Table 4). More than half believed that their communication and problem-solving skills had increased. Over two-thirds had a better understanding of how the construction culture's interaction with their identities could impact their work. Unfortunately, less than half of mentees felt better equipped to be safety leaders. This indicates that there is room for more leadership training for mentees, and training for mentors on how to encourage safety leadership behaviors. Encouragingly, over 70% of mentees surveyed felt more certain of their career path after having a mentor. This indicates that mentorship can play a key role in women's retention in their apprenticeships and in the industry.

Table 4. Impact of Program on Mentee Skills

After participating in this mentoring program:					
	I feel more certain of my career path	My communication skills have improved	My problem-solving skills have improved	I feel better equipped to be a leader for safety at work	I have a better understanding of how gender and other identities (race/ethnicity, sexual orientation, gender identity) impact my work experience
Agree	73%	53%	53%	40%	67%
Neutral	27%	27%	33%	47%	27%
Disagree	0%	20%	13%	13%	7%

One of our program aims was to decrease perceived stress for apprentices participating in our pilot. This was difficult to measure given all of the external factors influencing apprentices' experiences on the job. After the program, more mentees reported feeling stress at work "often" compared to "hardly ever" (Figure 3). While some stress may be due to their progression through their apprenticeship training and taking on of additional responsibilities, the results indicate a programmatic need to focus on mentorship strategies to cope with stress, as well as finding ways to avoid workplace stress for mentees. It is important to note that none of our results are statistically significant, due to the small number of responses. This creates challenges for interpreting the pre/post data. Mentee strategies for dealing with workplace stress included exercising, talking to friends and spending time with family, and distracting themselves.

Figure 3.



### **Objective 3: Help change the construction work culture to be more supportive of women workers**

For **Objective 3**, we were interested in information that would indicate how the program impacted participants' experiences and attitudes about their workplaces. As discussed in objective 2, mentee perceptions of the support and inclusion of their workplaces varied greatly from person to person, and evolved over the course of the pilot. Some apprentices felt supported by their crews, while others struggled to fit in and achieve the same respect as their male coworkers. Comparing pre-post mentee evaluation results (Appendix C), we see that mentees reported slightly lower experiences with sexual harassment and discrimination based on their gender, sexual orientation/gender identity, and race/ethnicity after the program. Again, with such small numbers and no control group we cannot say if these improvements are related to the mentoring program or are indicative of the workplace culture. Perhaps as apprentices progress through their training they are feeling more empowered and less vulnerable to negative treatment. It is heartening to hear that experiences of harassment and discrimination towards women apprentices are reducing and we hope that the industry continues to support this culture change.

Having someone to talk to who had shared the experience of being a new worker and gone through an apprenticeship was seen as a great value of the program. Mentees who were paired with women mentors appreciated that they could discuss challenges with physical limitations and harassment with someone who had gone through the same treatment. Women mentors were also able to pass along tips for how to work safely as women.

As mentioned, one of the aims of the mentor training was to influence the broader construction culture by training journeymen to better understand the safety experiences of women apprentices. Mentors, especially the men, appreciated the training on how the masculine culture affects women workers. "I like that the program is centered around bringing inherent issues that have been a part of construction culture into the spotlight," said a journeyman from the pipe trades. Journeymen feedback suggests that the messages of our program were having the intended impact. Hopefully the mentors will continue to have conversations with other men about women's under-representation and vulnerability to safety hazards.

Through this pilot program we learned a great deal about the challenges that women apprentices face on the job due to their treatment as women. We also expanded our awareness of the added vulnerabilities experienced by non-cis gendered women. One mentee identified as transgender and had faced numerous instances of discrimination in the industry. She was matched with her choice of mentors, a queer journeywoman who could relate to working in a hostile environment dominated by straight, cis-gendered men. The pair communicated in person on a regular basis during the beginning of the pilot, and on a less frequent basis towards the end. The mentor shared that they had bonded well and that her mentee was having positive interactions with her coworkers and was finding her voice. We hope that the program's emphasis on gender and racial equity will contribute to more positive change for all tradeswomen.

To further influence the construction safety culture and disseminate study findings, we integrated key research findings and mentor training elements into the Pacific Northwest OSHA Education Center's courses. We piloted our materials during several OSHA trainer courses in occupational safety and health standards for construction and general industry in Spring 2018, reaching approximately 200 students total. We presented on how the masculine trades culture negatively impacts women's health and safety outcomes, and how understanding implicit bias can help supervisors address these issues. The classes responded well to the materials overall, with some suggestions for ways to make the information more relevant to safety professionals. Several students approached us after our presentations stating they agree that the trades culture needs to change. As safety professionals they believe change is possible because they have witnessed change in other sectors such as the military. The director of the Continuing Education Center is working with the trainers to integrate the presentation into their regular courses.

Disseminating our program findings will also contribute to broader culture change within the industry. Gender and racial equity are in the public spotlight, both nationally and at the local trade level. There is growing recognition that the only way to increase worker retention and meet growing labor demands is by improving the trade culture and environment to be more supportive and welcoming to all workers. UW is playing a role in regional conversations around this need by sharing what we learned from our research and mentoring program. A more detailed description of our dissemination efforts, and partners reached, is below.

As a result of the SHEWT project, we see mentorship as playing an important role in retaining women workers and helping to change the overall construction culture. Health and safety can be a useful entry point for tackling issues of discrimination, harassment, and physical overcompensation. Therefore, we are continuing to pursue funding and partnerships to integrate our SHEWT mentorship model into existing programs. Numerous local unions, pre-apprenticeship and apprenticeship programs, public owners, and general contractors in Washington State are committed to increasing the representation of women and other under-represented workers among their workforces. Each organization uses a different approach, including support groups, leadership and mentoring training, and informal mentoring programs. We hope that the curriculum, program structure, and lessons learned through our pilot can enhance these approaches and bring further awareness to the importance of creating a supportive and inclusive work environment.

## **Measures to Judge Success:**

### Objective 1: Create a pilot for a formal mentorship program for women apprentices in western Washington.

Our pilot program was developed using evidence-based models that incorporated training materials and resources from existing mentorship programs. We also based the program on the research results from our previous SHIP grant, including focus group participant suggestions on mentorship program structure and training elements. In addition, we solicited the input of members of the trades community to develop and pilot test our program materials. An advisory committee of trade representatives oversaw the entire process and provided feedback to improve the program as it was implemented. We successfully implemented a six-month formal mentorship program for women apprentices in the five partner trades: carpenters, electricians, ironworkers, laborers, and pipe trades. Mentor training was facilitated by experienced labor educators and representatives from the trades. We recruited and retained our target number of mentors. Mentee recruitment was lower than anticipated and we did lose several apprentices to attrition. Throughout the six-month pilot, we collected data on the program's implementation to ensure fidelity to our original aims. We also adapted the program timeline and activities in response to participant needs, adding social events and changing the training formats to make them more accessible and effective.

### Objective 2: Increase program mentees' skill knowledge and application, safety practices on the jobsite, and decrease their perceived stress.

In order to measure the program's impact on mentees, we surveyed apprentices before and after the pilot. These surveys measured mentee's confidence in their safety communication, experience with stress, harassment, discrimination, and hazards at work, demographic characteristics, and perceptions of the program. In addition, we collected information about mentee health and safety concerns and problem-solving skill application from their mentors during the regular check-in calls. These qualitative data provided valuable insight into mentees' on-the-job experience, personal challenges, and support received. Experienced program evaluation research faculty at the University helped design and evaluate survey questions. All data were based on self report, which is a potential limitation. The small sample size of participants who completed surveys also limited our ability to detect differences.

### Objective 3: Help change the construction work culture to be more supportive of women workers.

Culture change is a long-term objective that is not easily measured in the span of one year. Anecdotal evidence from our mentees suggests that, for the most part, they are treated well by their male coworkers. We did not hear stories about overt sexual harassment or companies using women to fill quotas. However, some apprentices talked about being unsure if what they experienced on the job was harassment. Most of the concerns from mentees dealt with work/life balance challenges and having to advocate for their training. We have also heard stories from trade conferences that tradeswomen continue to face micro-aggressions and occasional assault, even while the industry pushes to adopt more inclusive and equitable training policies. The SHEWT research team has been a key player in local industry conversations around gender equity, helping to accumulate empirical evidence to support the need for a supportive workplace.

### **Relevant Processes and Lessons Learned:**

**Objective 1:** As this was community-engaged research, we relied heavily on our trade partners to recruit both mentors and mentees for this program. While we ended up with a fairly diverse group of participants, several mentors were in positions of leadership at their apprenticeship programs, which created a barrier for open communication with mentees. Having a clearer understanding of the ideal mentor characteristics before recruitment would have helped with this issue. There was also variation within the trades (e.g. lineman versus inside wireman, plumber versus HVAC) between mentors and mentees, which added a layer of complexity. Relying on the trades for recruitment also delayed our program implementation. We learned that it is not always easy to adhere to project timelines, given long recruitment processes, participants' busy work schedules, and retention challenges. Although many apprentices expressed initial interest in participating in the program, several ended up being too busy to communicate regularly with their mentors. We had to remove two mentees from the program due to non-responsiveness. We have also had trouble ensuring that our mentors adhered to their check-in schedules with both program staff and their mentees. While the pilot was only six-months—too short a time to build trusting relationships and fully evaluate the impact of mentoring on mentees' well-being—it was a long time for many workers to commit to.

Our trade partners also provided essential feedback for developing the structure and materials for the pilot. Having a strong relationship with the five trades from our previous research—and the UW's support of the tradeswomen community—made it easier to recruit participants and to align our program with existing supports within the apprenticeships.

A major takeaway from creating this program was needing to be flexible and responsive to participants' feedback. Continuously gathering input from our advisory committee, mentors, and mentees allowed us to improve the program as it was implemented. We also learned about changes needed for the future. From the mentors we learned that creating opportunities for them to meet as a group and discuss their mentoring strategies and experiences was incredibly beneficial. We recommend more frequent social events and trainings for future programs. Mentees wanted more direct contact with their mentors, which the program could facilitate. Although we had requested that mentors meet with their mentees face-to-face at the start of the relationship, several pairs never did meet in person. This created an additional hurdle for developing a close relationship. Mentees also requested more training on how to communicate with their mentors. Engaging on a deeper level was a challenge and we learned that a program should provide more structured opportunities to facilitate this communication. Incorporating mentee goal setting (both for their apprenticeship and their mentorship) should be a bigger focus of the program in the future. We also learned that more opportunities should be provided for mentees to connect with each other and share their experiences.

Aligning expectations between mentors and mentees, and between participants and program staff is also essential. In our program, mentors were not supposed to solve their mentees' problems or teach trade skills. Rather, the mentor's role was to provide resources and support so that the apprentice could advocate for her own needs. Many of our mentors had difficulty not feeling like crisis counselors since they were always asking about workplace concerns. It was also hard for tradesfolk to work on their soft skill development, and not provide technical support. Through our discussions with the participants, we learned that focusing on mentees' personal and professional goals, and the positive as well as the negative aspects of their work, allowed mentors to feel like they weren't searching for problems. We also discussed the importance of preventing problems before they reached a crisis point, through active engagement with mentees.

To measure the success of how our program was implemented, we collected data on the process: recruitment strategy; participant satisfaction with matching and training; content covered during trainings; number of pairs matched and maintained; frequency, preferred style, and content of pair communication; barriers to communication; and adherence to the program timeline. For program outcomes, we looked at participant satisfaction with the program, and mentee satisfaction with their mentor's communication and support. We also evaluated changes in mentee self confidence, safety advocacy, exposure to physical hazards and psychosocial stressors, and coping strategies. Because our program was concerned with how mentors provided informational, appraisal, and emotional support, we also tracked the types of support provided during the regular check-in calls.

**Objective 2:** The short timeframe of this pilot and the small sample size were insufficient to allow for measurement of many of the impacts we hoped to see from the program. While the six-month pilot was extremely valuable as a learning opportunity to test the program structure and gain feedback on improvements to strengthen the program, running a longer program is essential moving forward. Six months was also not enough time for mentors and mentees to develop the close, trusting relationships needed to create a successful mentorship. The challenges we faced in checking in with mentors and ensuring that pairs were communicating with each other made it difficult to evaluate mentees' concerns and how they were being addressed. We do not know the full extent of pair bonding and sharing of mentee concerns. Having more frequent direct contact between program staff and mentees would help with this issue. Lack of response to our surveys was also problematic for evaluating how the program affected all of the apprentices.

**Objective 3:** We learned that measuring the impact of mentoring on tradeswomen's retention in the industry and on broader cultural change requires a long timeline and more resources than we had available. While there is great interest in mentorship and increasing women's representation in the trades, there is a lot of variation between existing programs and a lack of research on their effectiveness. We recommend creating a centralized database of the various trade mentorship programs and implementing a thorough evaluation of their impact on women's retention and safety experiences. This is essential for understanding mentorship's role in changing the broader construction culture.



Another important lesson from this study was recognizing the limitations of one program to have a widespread effect. Many of the mentees' concerns related to structural challenges in the industry, that are not easily addressed through mentorship. This included the industry's habit of laying women off before men and not promoting women into leadership positions. Mentorship is one strategy but a multi-pronged approach is needed to create significant change.

### **Product Dissemination:**

During our monthly advisory committee meetings, research findings were shared with our partners and their input was solicited. We also shared the final Mentor Manual resources and a summary of our program evaluation findings (Appendix D) with trade leaders from our five partnering trades, and with all mentors and mentees.

Results from our previous research grant and preliminary findings on our pilot mentoring program were presented at a number of academic conferences, trade fairs, and other industry events (see Appendices E – I). These included:

- American Public Health Association conference in Denver, CO, 2016
- American Psychological Association's conference on Work, Stress, and Health in Minneapolis, MN, 2017
- EmPower Women's Leadership Conference hosted by the Construction Center of Excellence in Tacoma, WA, 2017
- Washington Women in Trades Career Fair in Seattle, WA, 2017 & 2018
- Cascadia Conference on Environmental, Occupational, and Population Health in British Columbia, 2018
- A presentation to students at the Wood Technology Center in Seattle, WA, 2018
- Washington State Department of Labor & Industries' DOSH quarterly advisory committee meeting, 2018
- A meeting of the Seattle Regional Public Owners, 2018

Information about the program was also shared through the research coordinator's participation in a [webinar](#) hosted by the West Region Transportation Workforce Center and the Department of Labor Women's Bureau and a [webinar](#) put on through ANEW. The issue of tradeswomen's health and safety was also addressed during an interview with the [Convergence Training blog](#). The [UW DEOHS newsletter](#) and Continuing Education have also promoted the SHEWT program through their social media sites.

As described earlier, we are in the process of integrating our research findings and some of the mentor training materials into OSHA education courses through the UW DEOHS Continuing Education department. Results of the project were shared with instructors and a packet of information will be provided at the next annual instructor meeting in December 2018.

**Feedback:**

We solicited feedback from participants about their experience with the pilot program and suggestions for ways to improve it in the future. The majority of mentors were very satisfied with the support they received from program staff and with the program overall. Mentors also enjoyed the opportunity to pass on their experience to new workers and serve as role models. As a journeywoman laborer noted, “It is important to let other women know that they are not alone on any jobsite. I want to be an ally and a resource for apprentices.” An important goal of the program was to help mentors develop skills to support mentees as the apprentices learned how to navigate the trades culture, and not just tell them how to do a technical task. For many journey workers this was a challenge, but one that helped them grow as mentors. “I am a compassionate caring person but I have a bad habit of trying to solve problems for people and this [program] helped me to be more of a resource and not the rescuer.”

While most mentors felt that the program matched their expectations, several wanted more direction and training on ways to connect with their mentees. Suggestions included more opportunities to meet together as a group and get to know each other, and training for mentees on how best to utilize their mentors. Finding the time to check-in with their mentees and knowing what to say to them was a challenge. As a journeywoman from the pipe trades notes, “The most challenging part was to not make it seemed like the mentor/mentee relationship didn't feel forced. It was hard to develop a relationship of trust with a stranger.”

The desire for a deeper connection was shared by many mentees. While some apprentices connected well with their mentors—“My mentor was very easy to talk to and was very caring, which made it easy to open up to him about any problems that I may have been having”—others had a harder time. “We didn’t have much in common,” said a carpenter apprentice. “It was hard to meet a complete stranger and pour your heart out.” For both mentors and mentees, this disconnect often came down to a mismatch in the pairing as well as communication barriers. Most mentees were only “somewhat satisfied” with the matching process and suggested that more time be devoted to ensuring a good fit (Table 5). However, the majority of mentees expressed satisfaction with the support provided by their mentors. Mentees also recommended more structured communication and group interactions with their mentors. One option for future programs would be to use social media and video conferencing to facilitate more frequent pair interactions. It’s likely that mentors had a more positive view of the program than mentees because the program was structured to primarily interact with the former. For future mentoring programs we recommend including training for both mentors and mentees.

Table 5. Mentee Satisfaction

	Matching process	Mentor's availability	Mentor's support
Completely satisfied	27%	43%	40%
Very satisfied	20%	21%	40%
Somewhat satisfied	40%	21%	13%
A little satisfied	13%	14%	0%
Not at all satisfied	0%	0%	7%

**Project's Promotion of Prevention:**

The primary aim of this project was to use mentorship as a form of prevention to reduce injuries and stress for women apprentices. While it is difficult to measure the long-term impact of our program on worker health, we know that social support is an important aspect of staying safe and happy on the job—from our previous research we learned that tradeswomen with low social support at work had more than four times higher risk of stress compared to women with high support. Mentors help women workers develop the skills to navigate the construction culture, ask for proper PPE, and identify and address harassment before it becomes a safety hazard. Mentor training that includes respect, open communication, and recognizing how gender dynamics affect workers contributes to broader cultural change, while retaining women as apprentices and journey-level workers can help shift the gender imbalance and reduce masculine social norms. This can have a widespread impact on the safety and well-being of women and other under-represented workers in the industry. Our pilot mentoring program aimed to help women apprentices develop self-confidence, seek out allies, and critical thinking and problem solving skills to help them cope when on-the-job stressors pushed them to work unsafely, accept bad behavior from others as “just the way it is,” or contemplate quitting. We witnessed a positive impact on participants’ self-confidence in their advocacy behaviors, which is an indication of injury prevention.

As the economic boom in Washington State continues to drive demand for skilled trades labor, the industry is looking for ways to promote diversity hiring and retention for the next generation of workers. There is a lot of discussion and acknowledgement in the construction industry that the dominant culture has created an environment that is antithetical to this goal. Mentorship and other strategies that support an inclusive and equitable workplace are essential to maintaining the economic growth and well-being of the workforce.

**Uses:**

We hope that our mentor training curriculum and program model (matching, facilitation of pair communication, and evaluation) will be used by trade unions, apprenticeship programs, public owners, and others in the construction community who are working to support tradeswomen. Numerous trade organizations in Washington State already have support groups, leadership and mentoring training, and informal mentoring programs. Our materials can easily be integrated into existing mentorship programs or they can supplement other efforts to train workers on communication and support techniques. Because we worked with five trades for the pilot, the materials are not specific to any one trade and can easily be adapted for different construction audiences.

The mentor training materials, resources, and program model could be applied to other industries that have similar male-dominated workforces and cultures that are not supportive of women. The model can also be adapted to create support for other under-represented worker populations. We will share the project materials with our partner and encourage them to disseminate to their contacts in other industries.

**Organization Profile:****University of Washington (Managing Partner)**

The University of Washington Department of Environmental and Occupational Health Sciences (DEOHS) has been conducting occupational health and safety research since the 1960s and provides health and safety training, consultations, laboratory testing, and clinical services to business and labor organizations. UW DEOHS aims to identify the hazards in the environment and the workplace that affect human health, to understand the mechanisms of action, to develop strategies for confronting their effects, and to share the knowledge obtained. The UW mission includes prevention of environmental and occupational illness and injury as foundational components.

**Washington Women in Trades (Primary Community Partner)**

Washington Women in Trades (WWIT) is a community-based non-profit organization that facilitates connections between working women, 'wanting-to-be-working' women, prospective employers, and government agencies in order to enhance the working lives of women in the trades. WWIT aims to improve women's economic equity and self-sufficiency through access and success in high-wage, high-skilled careers in the construction trades and other non-traditional employment.

**University of Oregon Labor Education and Research Center (Subcontractor)**

Since 1977, the Labor Education and Research Center (UO LERC) has been committed to ensuring that workers have a strong voice in shaping the programs and policies that affect their lives. UO LERC provides applied research, strategic planning, leadership development, and facilitation for labor unions and worker-oriented organizations.

**Washington State Labor Education and Research Center (Subcontractor)**

The Washington State Labor Education and Research Center (WA LERC) works with unions, community-based organizations and colleges to provide direct education and research services for workers and students in Washington State. WA LERC's mission is to use the best practices of adult education to design programs to help working women and men develop the skills, confidence, and knowledge to be leaders at work and in their communities.

## Additional Information

<b>Project Type</b> <input type="checkbox"/> Best Practice <input type="checkbox"/> Technical Innovation <input type="checkbox"/> Training and Education Development <input type="checkbox"/> Event <input checked="" type="checkbox"/> Intervention <input type="checkbox"/> Research <input type="checkbox"/> Return to Work <input type="checkbox"/> Other (Explain):	<b>Industry Classification</b> (check industry(s) this project reached directly ) <input type="checkbox"/> 11 Agriculture, Forestry, Fishing and Hunting <input type="checkbox"/> 21 Mining <input type="checkbox"/> 22 Utilities <input checked="" type="checkbox"/> 23 Construction <input type="checkbox"/> 31-33 Manufacturing <input type="checkbox"/> 42 Wholesale Trade <input type="checkbox"/> 44-45 Retail Trade <input type="checkbox"/> 48-49 Transportation and Warehousing <input type="checkbox"/> 51 Information <input type="checkbox"/> 52 Finance and Insurance <input type="checkbox"/> 53 Real Estate and Rental and Leasing <input type="checkbox"/> 54 Professional, Scientific, and Technical Services <input type="checkbox"/> 55 Management of Companies and Enterprises <input type="checkbox"/> 56 Administrative and Support and Waste Management and Remediation Services <input type="checkbox"/> 61 Educational Services <input type="checkbox"/> 62 Health Care and Social Assistance <input type="checkbox"/> 71 Arts, Entertainment, and Recreation <input type="checkbox"/> 72 Accommodation and Food Services <input type="checkbox"/> 81 Other Services (except Public Administration) <input type="checkbox"/> 92 Public Administration	
<b>Target Audience:</b> Women in construction apprenticeship programs (mentees) and journey-level women and men (mentors)		
<b>Languages:</b> English		
<b>Please provide the following information - -</b> <i>(information may not apply to all projects)</i>		
# classes/events:	3	<b>List, by number above, industries that project products could potentially be applied to.</b>
# hours trained	12	
# students under 18	0	
# workers	39	
# companies represented	N/A	
# reached (if awareness activities)	N/A	<b>Potential impact (in number of persons or companies) after life of project?</b> This program could be adopted by other construction trade unions and apprenticeship programs, with a potential reach of hundreds of mentors and mentees
<b>Total reached</b>	39	
<b>Have there been requests for project products from external sources? Yes</b> <i>If Yes, please indicate sources of requests:</i> Trade members of the Washington State Building and Construction Trades Council, other unions not affiliated with the pilot project		

## PART II

### *Financial Information Budget Summary*

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<b>Project Title:</b>	Addressing the Health and Safety Needs of Washington Women in the Trades: Phase II		
<b>Project #:</b>	2016XH00325	<b>Report Date:</b>	8/14/2018
<b>Contact Person:</b>	Julie Tran	<b>Contact #:</b>	206-543-9026
<b>Start Date:</b>	9/1/2016	<b>Completion Date:</b>	7/31/2018

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<b>1. Total original budget for the project</b>	<b>\$ <u>199,960.32</u></b>
<b>2. Total original SHIP Grant Award</b>	<b>\$ <u>199,960.32</u></b>
<b>3. Total of SHIP Funds Used</b>	<b>\$ <u>199,960.32</u></b>
<b>4. Budget Modifications (= or - if applicable)</b>	<b>\$ <u>0</u></b>
<b>5. Total In-kind contributions</b>	<b>\$ <u>0</u></b>
<b>6. Total Expenditures (lines 3+4+5)</b>	<b>\$ <u>199,960.32</u></b>

#### Instructions:

- Complete the Supplemental Schedule (Budget) form first (on the next page).
- The final report must include all expenditures from date of completion of interim report through termination date of grant.
- Indicate period covered by report by specifying the inclusive dates.
- Report and itemize all expenditures during specified reporting period per the attached supplemental schedule.
- Forms must be signed by authorized person (see last page).
- Forward one copy of the report to **Grant Manager Name, SHIP Grant Manager at PO Box 44612, Olympia, WA 98504-4612**

PART II *(Continued)*

*Financial Information*

*Supplemental Schedules (Budget)*

<b>Project Title:</b>	Addressing the Health and Safety Needs of Washington Women in the Trades: Phase II		
<b>Project #:</b>	2016XH00325	<b>Report Date:</b>	8/14/18
<b>Contact Person:</b>	Julie Tran	<b>Contact #:</b>	206-543-9026
<b>Total Awarded:</b>	\$199,960.32		

**ITEMIZED BUDGET:** How were SHIP award funds used to achieve the purpose of your project?

	Budgeted for Project	Amount Paid Out	Difference
<b>A. PERSONNEL</b>	149,032.11	149,938.41	(906.30)
Explanation for Difference and other relevant information: The payment to Bert Stover to complete the ongoing data analysis carried over from phase I of the project resulted in this difference.			

	Budgeted for Project	Amount Paid Out	Difference
<b>B. SUBCONTRACTOR</b>	18,000	18,000	0.00
Explanation for Difference and other relevant information:			

	Budgeted for Project	Amount Paid Out	Difference
<b>C. TRAVEL</b>	500	248.79	251.21
Explanation for Difference and other relevant information: Due to the majority of recruitment being done by email and phone, travel costs significantly reduced.			

	Budgeted for Project	Amount Paid Out	Difference
<b>D. SUPPLIES</b>	9,450	10,013.55	(563.55)
Explanation for Difference and other relevant information: The difference is due to hosting a final social event upon the request of the participants held 2/16/18.			

	Budgeted for Project	Amount Paid Out	Difference
<b>E. PUBLICATIONS</b>	1,800	581.36	1,218.64
Explanation for Difference and other relevant information: We were able to save on publication cost due to mentors' manuals and training curriculum being designed by partners and printed internally.			

	Budgeted for Project	Amount Paid Out	Difference
<b>F. OTHER</b>	3,000	3,000	0.00
Explanation for Difference and other relevant information:			


	Budgeted for Project	Amount Paid Out	Difference
<b>TOTAL DIRECT COSTS</b>	181,782.11	181,782.11	0.00
	Budgeted for Project	Amount Paid Out	Difference
	18,178.21	18,178.21	0.00

<b>TOTAL INDIRECT COSTS</b>			
	Budgeted for Project	Amount Paid Out	Difference
<b>TOTAL SHIP BUDGET</b>	199,960.32	199,960.32	0.00

	Budgeted for Project	Amount Paid Out	Difference
<b>G. IN-KIND</b>	0	0	0
Explanation for Difference and other relevant information:			

I hereby certify that the expenditures listed on this report were made with my approval:

8/14/18  
Date

  
Signature of Project Manager



### PART III

#### ***Attachments:***

Provide resources such as written material, training packages, or video/ audio tapes, curriculum information, etc. produced under the grant.

Also include copies of publications, news releases, curriculum, posters, brochures, etc.

**The above information should also be provided on a CD or DVD for inclusion in the file.**

- DVD: must be in an MP4 format  
Other video files must be provided in uncompressed source files.
- Publications:  
PDF of publication should be provided. SHIP also needs the original publishing documents (design documents), .eps, and .psd (if any illustrations/graphics are used)

**REMINDER!!!:** All products produced, whether by the grantee or a subcontractor to the grantee, as a result of a SHIP grant are in the public domain and can not be copyrighted, patented, claimed as trade secrets, or otherwise restricted in any way.