



National Institute of
Environmental Health Sciences
Worker Training Program

A Vision for 2025:

***NIEHS Worker Training Program
Looking to the Future***

Fall 2020 Workshop Report

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Executive Summary

On September 23-24, 2020 the NIEHS Worker Training Program (WTP) hosted a [virtual workshop](#) to discuss a [unified vision](#) and path forward for the next five years.

The workshop came just days after an [inaugural Olden Distinguished Lecture](#), where former NIEHS Director Kenneth Olden, Ph.D., established a lecture series to showcase outstanding environmental health scientists from underrepresented groups. Notably, many of Olden's points about economic inequality, environmental justice, and health disparities were topics of discussion during WTP's virtual workshop.

WTP Director Joseph "Chip" Hughes and others kicked off the workshop by celebrating the life of the late [Eula Bingham](#), whose relentless efforts created a blueprint and foundation for WTP. The workshop featured timely discussions among program staff, awardees, and partners. Participants discussed strategies to enhance and unify their efforts and shared short- and long-term goals for WTP that integrate current public health emergencies. These emergencies include the [COVID-19 pandemic](#), hurricanes, and wildfires. The goals will help inform the program's vision to provide model safety and health training and education to workers involved in the cleanup of hazardous materials and emergency response in the coming years.

Keynote speaker Linda Rae Murray, M.D., from the University of Illinois at Chicago, shared how important education and activation are in tackling current workplace issues. Other champions in the field of health and safety, such as Mark Catlin, Tim Fields, Patricia Aldridge, and Beverly Wright, Ph.D., shared lessons learned and voiced strategies needed to sustain the program's vision across

WTP's [training areas](#). The training areas include the core [Hazardous Waste Worker Training Program](#) (HWWTP), the [Environmental Career Worker Training Program](#) (ECWTP), the [NIEHS/U.S. Department of Energy \(DOE\) Nuclear Workers Training Program](#) (DOE Program), the [HAZMAT Disasters Preparedness Training Program](#) (HDPTP), the [Infectious Disease Response Training Program](#) (IDRTP), and the [SBIR E-Learning for HAZMAT Program](#).

During breakout sessions, participants discussed challenges specific to each training area and shared concerns regarding COVID-19 and disasters, diversity, mental health, and other cross-cutting topics. Communication, partnerships, mentorship, and other recurring themes emerged during breakout and workshop discussions (see Recurring Themes Across Training Areas, page 2). These themes are important as WTP considers how to move forward. Program staff will review these themes and work with the [National Clearinghouse for Worker Safety and Health Training](#) (National Clearinghouse) to formulate a list of concrete and aspirational goals for fiscal year 2021. Furthermore, these themes will help guide program staff in future discussions about updating the WTP [strategic plan](#) and [logic model](#).

To close the workshop, NIEHS and National Toxicology Program Director Rick Woychick, Ph.D. joined participants in celebrating and paying tribute to Hughes who has led WTP for more than 30 years. Hughes retired from NIEHS in January 2021, and is currently serving as the Deputy Assistant Secretary for Pandemic and Emergency Response with the Occupational Safety and Health Administration (OSHA).

Recurring Themes Across Training Areas

The following graphic displays recurring themes that emerged during breakout sessions and discussions about each WTP training area.



Introduction

Since its inception in 1986 under the [Superfund Amendments and Reauthorization Act](#), WTP has faced many political barriers, natural disasters, and public health emergencies. However, it has become clear that even during the [COVID-19 pandemic](#), the program is committed to creating and maintaining a national workforce that can protect themselves and their communities from environmental hazards.

“Regardless of the circumstances we face, the principles of industrial hygiene, exposure, and public health are not going to change,” said WTP Director Joseph “Chip” Hughes. “These are the principles we must hold onto as we consider a vision forward.”

The vision will continue with worker education, activation, and empowerment as the primary methods to create positive change in workers and their respective workplaces. Hughes welcomed participants and set the stage by emphasizing core elements of the program’s vision and outlining key objectives to ensure future success. These objectives include:

- Identifying organizational challenges and obstacles.
- Building the worker training community of practice.

- Seeking and creating partnerships among awardees and others.
- Implementing a robust evaluation process built on data and metrics of success.
- Maintaining training organizations that are prepared and resilient.

Hughes said that it is important to address challenges and lessons learned in order to execute the program’s vision successfully in the next five years. Hughes posed the following questions to workshop participants:

- How do we build model training programs to protect workers in high-risk occupations?
- How do we create effective consortia and organizational relationships to support training delivery?
- How do we develop our capacity for utilizing and sharing technology tools to support worker-centered learning?
- How do we share our model training programs through information dissemination, networking, and communications?



Warehouse workers in Southern California attend a class on forklift safety by the International Brotherhood of Teamsters. (Photo courtesy of International Brotherhood of Teamsters)

A Call for Education and Activation

WTP's origin can be traced back to the workers' and civil rights movements of the 1970s and 80s. Linda Rae Murray, M.D., the workshop keynote speaker, said these movements provided the tools to spark change through education and activation – two essential components to guide the program's next chapter. Education provides workers with the information they need, but activation empowers them to apply what they learned in the workplace.



Murray, a longtime advocate for worker health, is passionate about addressing disparities that persist in vulnerable communities.

“Education and activation are critical in preventing contamination and exposure,” Murray said. “But we have to go beyond the technical details. We have to expand what we teach to empower workers and give them the tools they need to become actively involved in changing their workplace.”

Murray explained that education is different from training. Education sparks creativity and innovative solutions are needed to solve present-day issues in the workplace.

She reflected on astounding statistics related to the COVID-19 pandemic and stated what is most concerning is that most COVID-19 related deaths were preventable. Essential workers, many of whom are from communities of color, including African Americans, Asians, Native Americans, and others face greater risk of death.

“What is not in the headlines is what is happening to ordinary people in our country,” Murray said.

“Unemployment rates are steadily approaching those witnessed in the Great Depression. We are losing small businesses by the thousands and people's mental health is decreasing. Resilience and recovery are very different now compared to what we have seen before.”

Murray also shared her concerns related to racial injustices witnessed in the nation. She shared a story about her granddaughter who is a freshman in college. Despite the safety concerns surrounding COVID-19, her granddaughter joined thousands of others in protests surrounding the murder of George Floyd.

Murray said when we talk about the next generation, we must be very careful about what we talk about and address. “Our next generation of health and safety activists will be fighting against things we thought we won hundreds of years ago,” she said.

She said regardless of what happens in the coming months or years, WTP's mission will always remain the same. Murray remains hopeful about what the program can and will accomplish despite the pressing challenges ahead.

“Education and activation are critical in preventing contamination and exposure,” Murray said. “But we have to go beyond the technical details.”

Sustaining the Vision for Training

Hazardous Waste Worker Training Program (HWWTP)

Timothy Fields, senior vice president of MDB, Inc. and retired assistant administrator for the Office of Land and Emergency Management at the U.S. Environmental Protection Agency (EPA), has witnessed how the NIEHS Superfund Research Program and WTP have grown together since 1987. The efforts of both programs have been critical for the successful cleanup and restoration of Brownfield sites.

Fields said looking to the future, there is a need to address the many challenges that have arisen. COVID-19 has changed the nature of on-site risk assessments and the way WTP interacts with stakeholders and awardees. Other mechanisms are needed to communicate effectively with various stakeholders, especially those who live near cleanup sites. He also mentioned the need to deal with the issue of turnover, which has come up in recent years. For example, in certain regions of the country, there have been increasing rates of turnover for cleanup workers, which calls for more training and mentorship. The increasing number of natural disasters witnessed across the country also calls for better preparedness for workers and communities near cleanup sites.

Mark Catlin, retired principal investigator, commented on how extensive Hazardous Waste Operations and Emergency Response (HAZWOPER) training is under the [HWWTP](#), as it covers various occupational safety and health topics. He also commented on the incredible cadre of worker trainers that has been built through WTP. This cadre is now available to help mediate worker health and safety issues, which gives him great hope for the future of the program.

Catlin emphasized the importance of new collaborations. Although they are not always easy to form, these partnerships are necessary to expand the program's reach.

"Think creatively and reach out to partners that you haven't worked with before," he said. "Some will fail, and some will succeed, but just be willing to try new things."

During breakout sessions, participants shared overarching issues and goals for the HWWTP. Some discussions were specific to COVID-19, while others were more broadly focused on training requirements, flexibility, and engagement.

■ **Communication.** Information exchange and staying up-to-date on hazards and health and safety incidents are key to the success of the HWWTP. Participants said there is a need to build communication capacity and expand the definition of worker training. They said greater emphasis is needed on the sharing of best practices and lessons learned among awardees. They also identified that it is important to stay informed about international incidents (e.g., the explosion in Beirut) to better implement prevention locally. Additionally, it is important to stay current with science on SARS-CoV-2, the virus that causes COVID-19. A challenge for communication is that science is a process so information can change. There is a need for strategies to relay updated information to those who have already been trained or to new trainees.

Participants recommended that WTP invest in other methods of getting information out more broadly to workers and communities through short and concise messaging (e.g., public service announcements). Awardees must be thoughtful and sensitive about how things are communicated to different audiences

(e.g., cultural sensitivity, language barriers, etc.). Accurate translation and interpretation of content is needed for effective education and training. The sharing of resources with workers and communities is equally as important, especially with regards to COVID-19. Awardees should help workers become aware of other agency resources on COVID-19, such as those from OSHA.

■ **Compliance and Training Standards.**

Participants expressed difficulties in maintaining compliance with HAZWOPER requirements as virtual training continues for the time being. Questions were asked about how to marry requirements and do skill performances for workers who need HAZWOPER certification. Some suggested exploring ways to ensure that this can be done virtually to make training more robust. Finally, participants shared that the [Minimum Health and Safety Training Criteria](#) (Minimum Criteria) should better capture the goals of virtual training at the awareness and operations levels.

■ **Curricula Updates.**

Participants suggested the development of new curricula that address topics like perfluorinated chemicals and other contaminants in water. For the new curricula, WTP should focus on linking to NIEHS research that has been done on these topics to help workers and communities understand the nature of the science and how they may be exposed. Some suggested that WTP expand courses to raise awareness of other topics like climate change, environmental justice, and anti-racism. Participants also shared that information about COVID-19 be integrated into all WTP curricula.

■ **Disaster Preparedness and Response.**

Community assessments and training are needed before a disaster happens. Community and target population assessments could help with preparedness to define needs upfront. Participants suggested recruitment of non-frontline workers, such as community members and union officials, who can help respond and are not a liability during hurricanes,

wildfires, and other disasters. There is a great need for support and training for populations dealing with COVID-19 and natural disasters. Improved coordination and collaboration between public health and emergency responders is also needed.

■ **Educate and Empower Workers.**

Participants mentioned the need to educate workers so they can better identify and control hazards. There is also the need to empower workers so they can understand and acknowledge that they are representatives of their communities. Educating workers through a systems' thinking approach on environmental justice, sustainability, and ecosystems could facilitate increased civic engagement.

Participants also shared other important factors related to worker education. For example, WTP awardees should ensure that essential and non-essential workers are aware of SARS-CoV-2 virus transmission, symptom recognition, and how to ensure their safety on the job. Awardees should focus on teaching workers how to correctly use personal protective equipment (PPE) continually to avoid complacency. Awardees should also emphasize community protective measures, such as wearing masks, washing hands, practicing social distancing, and frequent cleaning and disinfection.

Empowerment can also come from helping workers understand their rights, including the right to refuse. Empowerment could lead awardees and workers to encourage companies to go beyond the minimum requirements to promote best practices for reducing or eliminating workplace hazards in order to keep everyone healthy.

■ **Evaluation and Feedback.**

There is a need to demonstrate the impact of short-term training goals and a need to expand evaluation for longer periods of time (e.g., five years). WTP awardees could use case studies and stories to document the short- and long-term impacts of training. For evaluation related to COVID-19 training, awardees could explore long-term

impacts of online and distance learning on training populations to help inform decisions moving forward. Overall, WTP could explore long-term impacts of the COVID-19 pandemic on virtual and classroom training. Better evaluations will lead to better data, which translates to knowledge. This knowledge will lead to actions that result in workplace changes.

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- **Expand Partnerships.** Participants suggested that WTP awardees expand partnerships to include other local or public health agencies, community-based organizations, government, etc. They also suggested that WTP awardees be more intentional in exploring collaboration opportunities among one another.
 - **Increase Reach and Visibility.** To increase program reach and visibility, there is a need to ensure that workers and communities see WTP and awardees as a resource. Visibility can be generated by extending conversations about health and safety to the community and home. With virtual training, there are opportunities to expand and reach populations that WTP has not traditionally worked with or served in many states and regions.
 - **Trainer Development, Mentorship, and Succession.** Participants expressed challenges with getting some trainers that are accustomed to traditional, hands-on training to embrace new platforms and technologies. To this point, a greater focus on trainer development is crucial so they have the capacity to deliver training in-person and online. This development requires more experiences for trainers (especially next generation trainers) in the classroom and in distance learning environments.

Other comments were related to succession and mentorship. WTP should explore ways to address staff turnover through mentorship and by educating a new cadre of trainers with the capacity to reach new worker populations. Supervisors should be trained so that continuity of training takes place even during emergency shutdowns. WTP should address the

mental health needs of trainers and staff to ensure that they have all the tools to perform their jobs well.

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- **Trainee Engagement and Participation.** Due to the lack of classroom training, many have experienced challenges engaging with trainees. Some trainees do not have a computer, so it is difficult to ensure that they are getting the information they need. Participants shared concerns about leaving some vulnerable populations behind due to lack of access to technology. Some shared that they have noticed essential workers (e.g., health care) have limited time for training due to the pressing demands of their work environment during the pandemic.
 - **Training Modalities.** The COVID-19 pandemic has brought about many lessons related to training delivery and flexibility. In the future, WTP should make virtual training a priority during the development of curricula and should address awardees' capacity to implement and deliver distance learning. Virtual and online training needs to be made accessible to all populations, with increased focus given to figuring out how to incorporate content that is normally taught in a hands-on, classroom environment.

Several participants shared that there is a need to develop curricula that can be adapted and implemented quickly. Flexibility is needed to deliver training through different or hybrid modalities – synchronous, asynchronous, online, video, or other methods. Training flexibility can be accomplished using technologies offered by the SBIR E-Learning for HAZMAT Program. Partnership with the SBIR awardees is a key element for transforming the way WTP delivers training. There are also opportunities to make resources like HAZWOPER electronic and to use the electronic pocket guide from the National Institute for Occupational Safety and Health. The training environment should also be adapted to accommodate the training needs (language, time constraints, etc.) of essential workers and other specific populations. It was also stated that WTP should focus on maintaining

peer-to-peer training values while increasing focus on integrating technology in the future.

■ **Tools, Resources, and Funding.** Participants shared the need to address funding availability for training. There is also a need for federal agencies to share tools and resources with communities and to let them know what is available during a disaster. PPE awareness and accessibility are also concerns, especially for training during COVID-19.

■ **Justification for Support and Funding.** Some suggested a push for local legislation to require training. If others saw WTP as vital to the nation's security, this would help justify the need for increased support and funding.

■ **Other Concerns.** As vaccines for COVID-19 reach the distribution stage, incorporating vaccine acceptance into training or materials is another necessity and could be part of a strategy to safely get workers back to work. Other disasters and health threats will happen so exploring new chemicals and other emerging exposures to develop risk assessments is another concern for WTP.



Fire fighters in New Jersey taking a HAZMAT operations course during the COVID-19 pandemic. (Photo courtesy of International Association of Fire Fighters)

Environmental Career Worker Training Program (ECWTP)

Sharon Beard, WTP industrial hygienist, gave an overview of the [ECWTP](#) and its accomplishments to date. Since its origin in 1995, the program has trained more than 13,000 workers in more than 25 states with an average job placement of 70%. The program has also made strides in job placement in the last two years – the average in 2018 and 2019 were 74% and 77%, respectively.

The year 2020 marked the [25th anniversary](#) of the ECWTP. To commemorate this milestone, Beard worked with the National Clearinghouse to develop the [ECWTP 25th anniversary webpage](#). The webpage includes a feature story from Beard, a timeline of key events, and spotlight stories from awardees and program graduates.

The program's rich history is linked to the efforts of champions like Beverly Wright, Ph.D., co-principal investigator for the [Historically Black Colleges Universities Consortium](#) and founder of the [Deep South Center for Environmental Justice](#). Wright has been a part of the ECWTP since the beginning when it was known as the Minority Worker Training Program (MWTP) and she was among the first group of awardees funded by the program. She reflected on the program's early efforts to clean up Superfund and Brownfield sites. "Not only did we work to get sites identified as Superfund sites and cleaned up, but we provided jobs to communities and families that had no real source of income," she said. "For us, this was a win-win."

Wright, a native of New Orleans, said the connection between poverty and health is irrefutable. She has witnessed the disparities that underserved, predominantly African American communities face in the area. She explained that the ECWTP is one of many solutions to help vulnerable communities overcome the health, environmental, and economic injustices that they face.

"The Environmental Career Worker Training Program has been just in time, not just to save lives, but to ensure a

future for members of our community who have no way out,” Wright said. “This program is a gem.”

As the ECWTP gears up for the next five years, Beard looks forward to future accomplishments of the program. One of the many ways these accomplishments will be recognized is by continuing to market the success of program champions and graduates. “It is up to us to advocate for these programs and to share impacts,” Beard said. Sharing the success of ECWTP graduates, such as Sherri Bell and Martanaze Hancock, will strengthen the program’s future and push it to new heights.

Bell and Hancock shared how the program impacted their lives. Bell is a proud graduate of the [Western Region Universities Consortium](#) ECWTP. Since graduating, Bell has worked as a community organizer on numerous campaigns related to wage theft and workers’ rights with the [Los Angeles Black Worker Center](#). Bell explained that the program has not only helped prepare people for work in certain fields, but it has also promoted better working conditions for employees. Today she is an investigator with the state of California and continues to serve as a member of the Los Angeles Black Worker Center. She said the ECWTP was instrumental in helping her build relationships and gain valuable skills.

Hancock, a 1994 graduate of the former Alice Hamilton Occupational Health Center MWTP, came into the program with little knowledge about environmental hazards and cleanup. Today, he is a health and safety specialist for the Ukpeakviq Inupiat Corporation, where he manages the health and safety program for more than 3,000 employees on several contracts throughout the country.

Hear more about Hancock’s story in a recent NIEHS Environmental Health Chat [podcast](#).

Partnerships with employers and community-based organizations will remain a foundational piece of the ECWTP. In the coming years, new awardees and partnerships will enable greater reach to vulnerable communities in Alaska, Puerto Rico, and many other

locations. Additionally, partnerships often help awardees bring in additional funding, resources, and in-kind services for trainees. Michelle DePass, president and CEO of Meyer Memorial Trust, shared insights on expanding partnerships to philanthropic organizations, especially given the current pandemic and movement toward a health-driven economic recession.

Awardee connections and the sharing of best practices for the development of next generation ECWTP leaders are also pivotal. This sentiment has held true for many newcomers, like Yodit Semu, who has been the program coordinator for the Western Region Universities Consortium ECWTP for three years. Semu recalled her first WTP awardee meeting and the many questions she asked colleagues about how to find and maintain new partnerships. In doing so, she gained many ideas and recommendations for potential relationships with organizations in Los Angeles. Intentional conversations like these have also helped her better understand the connections between her background in law, civic engagement, and occupational health.

“I think one of the gifts of the program is creating an authentic space and meaningful connections,” said Semu. “Thanks to all of you who have been doing this work longer than I have and for setting the tone for an authentic space and energetic learning environment for beginners like me.”

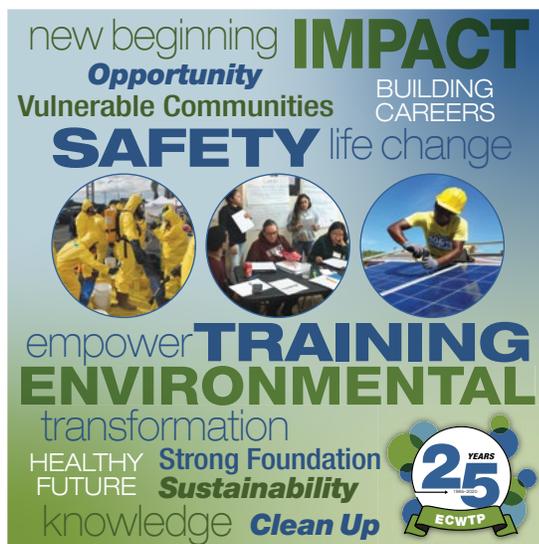
Although the program has gone through many challenges in its 25 years, several said they look forward to the future. “Our work continues, and I see no end in sight,” Wright said. “But I can’t think of a better group to work with as we forge ahead to meet new challenges.”

During breakout sessions, participants identified the following challenges and potential solutions within the scope of the ECWTP. Many discussions were focused on adapting to COVID-19, preparing for future outbreaks, and diversifying the people and fields served by the program.

■ **Communication.** Challenges in communication are largely in two areas: infrastructure and the message.

The intended audiences for which communication struggles exist are potential trainees and communities which the ECWTP serves. Participants identified WhatsApp and a federal environmental jobs program announcement as ways to share opportunities with more potential trainees. They also made the point that messaging about worker safety should be evidence-based rather than politicized.

To communicate accomplishments with communities served by the ECWTP, workshop participants identified leveraging more communication mediums, like video, to share reports (rather than or in addition to written reports) and as a way to perform evaluations. As an example, the [multimedia section](#) of the ECWTP 25th anniversary webpage includes links to informative podcasts and videos.



- **Digital Divide and Online Trainings.** One outcome of the COVID-19 pandemic is the transition to online training. Given the digital divide, this transition has been challenging for both ECWTP trainers and trainees. Workshop participants identified internet access (i.e., limited bandwidth depending on cost or number of users on a network given home schooling and working from home) and technology access (i.e., lack of reliable computers) as aspects of this digital divide. To bridge this divide, the ECWTP should be

flexible on how to offer virtual trainings by using multiple mediums in asynchronous and synchronous methods. Asynchronous training allows trainees with familial or other obligations to still participate. Suggested mediums include Zoom and YouTube, in acknowledgement that not everyone is familiar with Zoom or can be present for a live presentation. In addition to the software platform, the ECWTP can use best practices for designing trainings that work on mobile as many trainees may only have a mobile device for internet access.

In addition to meeting trainees where they are technologically, the ECWTP can also support trainers by providing guidance and individual or group training on how to optimize online classes. Train-the-trainer topics include how to use online platforms and how to structure courses for engagement and evaluation. Participants said it is difficult to assess trainees' knowledge without in-person exercises and that apprentices that are delaying training in hopes for the resumption of in-person training may be falling behind. The ECWTP also needs solutions for trainees who are at higher risk or essential workers to feel safe and included in the program.

- **Unique Challenges and COVID-19.** COVID-19 has had a historic impact on the economy and some trainees have experienced periods of joblessness and housing insecurity. These unique hardships complicate trainees' abilities to participate in trainings or recruitment efforts.
- **Diversity in Recruitment and Job Placement.** Participants recognized that there are difficulties recruiting from certain populations as well as into certain fields remotely. In striving for geographic, gender, age, and racial diversity across ECWTP fields, participants suggested dynamic solutions. One solution is to recruit younger people into hazardous waste and transport operations and to work with agencies to place trainees into asbestos abatement or demolition work. Another strategy already being implemented by [Make the Road New](#)

York, is training more Latina women to be community health workers for the COVID-19 response. Participants also suggested targeted social media advertisements (on Facebook and YouTube) and engaging alumni in the recruitment process. ECWTP could also strengthen the connections between the trainees and apprenticeship programs or use an advisory committee with members from community-based organizations to aid in trainees' job placements. Engaging with union locals could also facilitate placements.

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- **PPE Shortage.** COVID-19 has posed challenges for the PPE supply chain. PPE is needed for WTP overall, particularly respiratory protection, for trainings in the event of in-person trainings. Some participants identified Amazon Business as a potential source for PPE, as well as seeking donations. Participants also identified administrative controls like physical distancing to overcome PPE shortages.

Participants also shared more about goals and potential deliverables for the ECWTP, including:

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- **Supporting New Awardees.** Prior awardees can be a source of support for new awardees. To support Sustainable Workplace Alliance, Inc., the newest awardee, participants suggested offering train-the-trainer opportunities and underscored the importance of providing training guidance as soon as possible.
 - **Local Success.** The program has been successful in local communities which have used products and technologies developed by ECWTP. Local community churches, businesses, and homes have been empowered by the program and the program will continue to strengthen community engagement.
 - **Communicating Impacts.** ECWTP awardees should encourage trainees to tell their stories. Educating the public about the availability of training programs through local media channels is a valuable way to increase recruitment and participation of trainees and share success stories.

NIEHS-DOE Nuclear Worker Training Program (DOE Program)

Demia Wright, WTP public health educator, shared an overview of accomplishments for the [DOE Program](#). Since 1993, the program has trained workers across DOE sites helping to protect them from recurring and unknown hazards experienced in various job activities. Since 1994, the program has trained more than 670,000 workers. Because work is site-specific, awardees tailor training to what is needed by the respective DOE site. In the 2019 program year, awardees trained 29,705 workers in 1,992 courses at or around 31 different DOE sites.

According to Patricia “Pat” Aldridge, retired manager for conduct of training from the HAMMER facility in Washington State, worker trainers are by far one of the greatest aspects of the DOE Program.

Aldridge said the best training comes from individuals who have relevant experiences and knowledge. These trainers bring a multitude of experience to the table and help create a cadre of worker trainers. In turn, this creates a strong program with lots of involvement across contractors.

“Worker trainers are so important because they really bring credibility to training, they are respected in the field by management and their fellow workers,” Aldridge said. “They are ambassadors for safety and health. They can speak to the hazards. They know the safety processes, and they are out in the specific work locations and can really make that connection with their fellow workers.”

In recent years, there has been lots of success with building connections with contractors and establishing new partnerships with DOE sites, particularly at locations like Idaho and Los Alamos. Wright explained that many opportunities have come about by working closely with sites to identify their training gaps. In doing so, the program has been able to better understand how awardees can step in to fill those training gaps. Shayne

Eyre, training manager at the Idaho National Laboratory, encouraged even greater understanding to connect and match awardees' capabilities with DOE site needs.

The DOE Program has also witnessed successes in building the workforce with greater focus on efforts and partnerships with fenceline communities. For example, several awardees have worked with Native American tribes that reside in communities near DOE facilities.

The program has given greater focus to the reciprocity process, which allows the National Training Center to review and certify course content offered to workers by the program. This increases workers' chances of transitioning into work quickly and improves efficiency in relationships with DOE contractors.

The program has also seen greater emphasis on DOE safety culture. CPWR and the International Association of Fire Fighters have developed courses which are now available in the curricula catalog. This has helped increase connections with the National Training Center, as well.

Several challenges have come about with on-site staff and contractor turnover. Turnover calls for educating and re-educating people so that they are more aware of the program. Theodore "Ted" Giltz, WTP contractor and DOE liaison, shared his thoughts on educating others and raising awareness about the program. "We have people with a lot of experience, and we do good mentoring as we're bringing the instructors along to get them qualified," he said. "However, we're not doing as well with educating the contractor community and the DOE community locally on what our capabilities are. By the same token, we are not doing a good job communicating in the other direction about contractors' needs and the subject matter experts."

Other challenges have been related to the COVID-19 pandemic. COVID-19 has impacted some trainers' ability to conduct in-person trainings given travel restrictions. For other trainers, there have been hurdles to becoming adept at using technology for virtual training.

Although virtual training brings many challenges, it offers moments to spark creativity. Aldridge explained that worker

trainers at the HAMMER facility have been integral to incorporating social distancing into on-site training. Trainers have also worked with curriculum designers to adapt hands-on activities into the virtual learning environment for more scenario-based discussions. They are working hard to maintain principles of adult learning and best practices to engage trainees even on a digital format.

Eyre called for increased collaboration between awardees and the Energy Facility Contractors Group in course development and delivery in the future, which could increase worker engagement and involvement. He said, it can be challenging to partner with other sites due to the proprietary ownership in a contract-based culture. It is important to consider ways to reduce barriers to collaboration because all DOE trainers share a common goal – to provide quality health and safety training to DOE site workers, contractors, and communities.

During breakout sessions, participants identified the following challenges and potential solutions for the DOE Program. Some of the core goals for the DOE Program are reciprocity among contractors for trainings and resuming in-person training at some level given the need for hands-on training for hazardous situations.

Short-term goals mentioned for the DOE Program included the following:

■ **Training Structure and Content.** Participants suggested general and COVID-19 specific short-term goals regarding training. The general, short-term goals are accepting prior trainings so that trainings do not need to be repeated (DOE reciprocity among contractors), identifying which trainings are essential, and resolving staffing issues (e.g., lack of instructor availability and retirements).

Participants suggested addressing the ongoing contractor changes by meeting with contractors at the project level and having contractors meet with trainers on site. Building trust with contractors at various sites is essential for reducing turnover. Mentoring new staff

and trainers and assessing trainer and trainee health and safety needs are short-term goals that support project sustainability.

In addition to adapting the training structure, workshop participants identified updating training content to be agile as a short-term goal. The DOE Program recognizes the need for new training topics for timely interventions on emerging situations (e.g., wildfire training related to radionuclides) and the need for proactive training for known hazards. Including lessons learned from incidents and emphasizing safety awareness can also enrich the trainings. Exciting opportunities to collaborate with the ECWTP training are on the DOE Program's radar, too.

As the program becomes more experienced in responding to COVID-19, including content on opioids and mental health training as was intended prior to the outbreak is another short-term goal.

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- **Training and COVID-19 Preparedness.** Short-term goals specific to COVID-19 include implementing a 1-hour COVID-19 awareness module, which includes vaccine literacy training for trainers. Another goal is to develop trainings that are a hybrid of an in-person and virtual format as part of the program's plans for expanding a return to on-site training or for flexibility as the pandemic evolves.

Clear expectations and plans to prevent or reduce SARS-CoV-2 transmission are needed for hybrid and in-person classes. These include plans for administrative infection control like physically distancing classes (e.g., separate floors) and limiting the number of trainees per class. The limited number of trainees could be organized as pods to facilitate contact tracing and reduce exposures. Plans would also include surveillance (e.g., temperature checkpoints and symptom surveys), rapid testing (depends on capacity), and clear sick leave policies. Such hybrid courses also require contingencies for if trainees are exposed (e.g., class closure, contact

tracing, etc.) and need to be modified based on state variation in COVID-19 guidelines.

In addition to sharing the COVID-19 safety and contingency plans with trainers and trainees, participants mentioned communicating risk of exposure and accurate information about COVID-19 as a short-term goal, especially considering that exposures outside of work or the program may happen.

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- **Disaster Preparedness.** The COVID-19 pandemic is not the only phenomenon that can interrupt the program's operations. Participants identified disaster preparedness for weather-related events like hurricanes as a short-term goal.

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- **Recruitment Diversity.** Like other WTP training areas and programs, the DOE Program recognizes the importance of recruitment diversity. Participants stated that recruiting from communities around DOE sites that need training, particularly Native American populations, is a short-term goal. Adding more sub-awardees and collaborating with more facilities are other short-term goals.

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- **Employer Relations.** In addition to diversity among the trainees, establishing friendly relationships with employers and using union relationships to grow the program is another short-term goal for the DOE Program.

Long-term goals for the DOE Program included the following:

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- **Resume In-Person Training.** A long-term goal identified by workshop participants is resuming the delivery of 40-hour in-person training courses by the end of the current grant cycle. Moreover, the training may be made portable from site to site. Resuming in-person training is dependent on how the pandemic unfolds in the grant cycle and upcoming five years. However, it is a priority given the need for hands-on training to adequately prepare trainees for

the dangerous situations they may encounter. Once in-person trainings are offered, the program will align incentives to make sure trainees are willing to attend.

- **Update Evaluation.** In addition to adapting training content, format, and structure, workshop participants viewed revamping the DOE Program’s evaluation systems as an important long-term goal. A new evaluation plan would include impact analysis, commitment to data quality and control, and perhaps even tracking cohort outcomes. It would also include ways to assess skills acquired during online sessions.

Assessing trainings during the current pandemic and in future ones is a challenge that will need to be addressed as the evaluation plan is updated.

- **Contractor Relationships.** Building trusting, reciprocal relationships with contractors and communicating the value of the DOE Program were identified as long-term goals.

- **Trainer Support.** Master trainers, who are the majority of current DOE Program trainers, are older and nearing retirement; therefore, developing newer trainers is a goal for the next five years. The program is also aware that instructor fatigue, exacerbated by COVID-19, needs to be addressed with mental health and resiliency support.

- **COVID-19 and Disaster Preparedness.** Preparing for pandemics and weather-related disasters is both a short- and long-term goal since these events are likely to re-occur and have indefinite impacts. As part of pandemic and disaster preparedness, making sure that safety practices are in place to protect vulnerable trainers and trainees (those with existing health risks) will be part of the five-year plan.

HAZMAT Disaster Preparedness Training Program (HDPTP)

Jim Remington, registered nurse and WTP program analyst, kicked off the [HDPTP](#) discussion with an overview and summary of accomplishments. The HDPTP provides funding for organizations to deliver courses that will benefit workers whose job and tasks may put them in a hazardous environment with limited controls, disasters, or emergencies.

Initially, the HDPTP started with the Disaster Site Worker and other general courses; however, the program has since adopted topics that address a wide range of natural and manmade disasters. Courses now cover topics like weapons of mass destruction, homeland security, incident command, first aid/CPR, muck and gut, mold remediation, lead, and many others.

Remington said addressing the health and safety of workers is not just about protecting them from physical hazards, but it is also about preparing them for psychological exposures that if not addressed can lead to long-term problems and poor coping strategies. “This is why resiliency training is very important and deserves a mention in any disaster-related training,” he said. “This training provides the recognition of signs and symptoms of mental fatigue and suggested coping strategies.”

Many are experiencing stress in dealing with the COVID-19 pandemic. In many cases, it has led to poor coping strategies and increased use of opioids.

The HDPTP enables awardees to develop and prepare instructors who may be available to assist in disaster response. Remington said instructors who respond to disasters often exhibit characteristics of flexibility and resilience. They are great listeners, communicators, and innovative thinkers.

The National Clearinghouse creates training and educational resources in multiple languages that

awardees and the public can access and distribute to disaster response and recovery workers and their communities.

Awardees and trainers make up a national resource to respond to disasters under the Emergency Support Activation Plan (ESAP). The [Instructor Deployment Guide](#) is a useful resource for awardees and instructors in disaster preparedness efforts. Remington said the hope is that HDPTP awardees will be prepared and willing to assist the program in responding as needed nationally, but

also locally to their respective target populations. This is the reason for such great emphasis on partnerships with communities and state and local emergency response organizations. These relationships should be fostered prior to a disaster, as much of disaster response is based on assessment to identify the needs of the community. It is critical to have a local point of contact who can communicate the needs of the community to awardees and partners that have the capacity to respond.

Remington emphasized the following do's and don'ts for disaster preparedness and response:

Do	Don't
<input checked="" type="checkbox"/> Prepare your disaster response instructors.	<input checked="" type="checkbox"/> Put instructors in harm's way.
<input checked="" type="checkbox"/> Develop local partnerships (i.e., points of contact).	<input checked="" type="checkbox"/> Rush in without a plan (objectives and terms).
<input checked="" type="checkbox"/> Assess your training population and have instructors who have the skills (multilingual, cultural awareness) to effectively communicate and distribute health and safety information.	<input checked="" type="checkbox"/> Deploy instructors before preparing them mentally and physically.
<input checked="" type="checkbox"/> Always consider Maslow's Hierarchy of Needs (not to be confused with the Hierarchy of Controls).	<input checked="" type="checkbox"/> Deploy without a regular communications plan.
<input checked="" type="checkbox"/> Establish memoranda of understanding (MOU), contracts, or agreements with partners prior to disaster.	<input checked="" type="checkbox"/> Neglect or delay follow-up care for instructors returning from disaster response.
<input checked="" type="checkbox"/> Regularly update resource list (instructors, equipment, contacts, partners, etc.).	<input checked="" type="checkbox"/> Go into a disaster zone without a local contact or being invited (safety and security).
<input checked="" type="checkbox"/> Follow-up with instructors who responded or were impacted by disasters immediately following and later, as well.	<input checked="" type="checkbox"/> Expect that training will be conducted in an environmentally controlled classroom with attentive students.
<input checked="" type="checkbox"/> Keep training materials up-to-date and relevant to the population and hazards. Remember to train at the level of understanding in a language that meets the competence of your target audience.	<input checked="" type="checkbox"/> Assume that training populations understand what you are providing them, even if they indicate they are.
<input checked="" type="checkbox"/> Reach out for assistance if needed.	

John Scardella, program coordinator for the [United Steelworkers \(USW\) Tony Mazzocchi Center](#), shared the beginnings and successes to date of their Specialized Emergency Response Trainer (SERT) program. The SERT program started in 2010 with the goal of building a cadre of instructors who could quickly deploy and respond to disasters. Since then, SERTs have deployed and responded to the Deepwater Horizon Oil Spill, as well as Hurricanes Katrina, Sandy, Harvey, Maria, and others.

Program staff and SERTs are intentional about debriefing after deployments to share lessons, experiences, and feedback. These lessons have strengthened the SERT program over time. For example, the program incorporated feedback to bring in more bilingual trainers and establish local area coordinators in disaster-impacted areas. To meet the mental health and resiliency needs of SERTs, deployments were shortened to a two-week time frame. Program staff and SERTs use a database called Basecamp to help with communication and tracking. Basecamp stores information about contacts, daily situation reports, and other information relevant for deployment.

In Scardella's opinion, their greatest successes were responses to Hurricanes Harvey, Maria, and Irma in 2017. He said the response to multiple hurricanes with limited human resources forced them to evaluate how to better prepare for future disasters. A 2018 evaluation report documents SERTs' experiences and lessons learned in responding to these disasters.

"The stories that came out of trainings with people were heart-wrenching, but they were so grateful to be able to get the training," he said.

While disaster response is crucial, preparedness explores what can be done to help communities before a disaster. The USW Tony Mazzocchi Center is currently working on a preparedness guide, which they are hoping to release soon.

"This program is one of the reasons why I get up in the morning," Scardella said. "It is the reason why I want to come to work because it's something that I truly believe

in. I know that we are having a positive impact, even though it is hard to measure. And I know that we are doing the right thing."

Participants discussed short- and long-term issues and goals as it relates to training under the HDPTP. This included discussion about:

■ **Disaster Response and Deployment**

Activities. Most participants reported experience responding to both manmade and natural disasters, even if involvement has been limited. For example, they described their experiences responding to anthrax and bioterrorism; World Trade Center terrorist attacks; the space shuttle disaster; hurricanes and superstorms (Katrina, Sandy, Maria, Irma, Harvey, etc.); flooding; tornadoes; infectious disease (Ebola, COVID-19); and many others. Notably, even when the disasters affect their own organization or personal livelihood, some awardees have and continue to respond.

There are many challenges in figuring out the best means to respond or deploy given the impact of compounding disasters (e.g., COVID-19 and hurricanes or COVID-19 and wildfires).

■ **Training Disaster Response Instructors.**

Most participants reported that they have some type of formal training for disaster response instructors. For example, the USW Tony Mazzocchi Center's training for SERTs includes: OSHA courses, train-the-trainers, resiliency and mental health, incident command structure, and 40-hour HAZWOPER. The Alabama Fire College does mass casualty training and exercises with disaster response instructors. Trainings are offered through a variety of in-person and online methods and include train-the-trainers, teach-back moments, and observations in the classroom or field.

■ **Courses.** Grantees were asked about courses that they currently offer under their HDPTP, and if there are any courses that could be used and adapted for disaster response. This includes, but is not limited to:

- Basic medical
 - Biopreparedness and field support
 - Confined space
 - Construction
 - Disaster preparedness and response, disaster site worker, and disaster-specific training (e.g., mold remediation, electrical, fire, muck and gut, hurricane, flooding, storm cleanup, oil spill response, etc.)
 - DOT courses
 - Transportation and security
 - Emergency response awareness for specific hazards and chemicals (anhydrous ammonia, chlorine leak, etc.)
 - Emergency response planning (e.g., organizing volunteers in placement and planning, neighborhood emergency response planning)
 - FEMA courses
 - Incident command system
 - Community emergency response team (CERT)
 - First aid and CPR (e.g., Stop the Bleed)
 - Frontline safety
 - HAZWOPER
 - Health and safety peer support training
 - Infectious disease awareness (e.g., COVID-19, blood-borne pathogens)
 - Maritime basic and advanced, marine firefighting
 - Mass casualty incident and triage
 - Opioids awareness
 - OSHA courses
 - 10 and 30 construction courses (e.g., 29 CFR 1926, 146, 134, 29 CFR 1910.1200, 1030)
 - OSHA 500 and 502
 - OSHA authorized disaster response and site worker training
 - PPE
 - Resiliency and mental health
 - Work zone and equipment safety (e.g., forklift safety)

Grantees were also asked what courses should be added under HDPTP based on their own or trainee-related requests. They mentioned:

- Blue tarp (blue tarp roof training)
- Community-specific training (e.g., communication tools for communities, creating incident command systems for communities)
- Counseling and empathy
- Emergency action planning for facilities and staff (e.g., schools, daycares)
- Emergency response for industries (i.e., how extreme weather events could impact facilities)
- Hazard-specific (asbestos in older buildings, lead poisoning awareness, petrochemicals)
- Maintaining continuity of operations during disasters (IT, communication, continuity of operations planning)
- Placement and mobilization of volunteers
- Preparing for and responding to compounding disasters (e.g., COVID-19, hurricanes, and earthquakes, or wildfires and COVID-19)
- Terrorism preparedness and response
- Storm preparedness for public works departments
- Survivor stress (e.g., addressing stress from COVID-19 fatalities)
- Violence

■ **Partnerships.** Partnerships with other awardees and organizations are invaluable for disaster preparedness efforts. These relationships need to be maintained before, during, and after disasters happen. Awardees acknowledged that they leverage partnerships with other awardees, community groups, universities, community colleges, local government, faith-based organizations, VOADs, emergency response groups, local job corps, and community residents.

It is important to consider how the impact of disaster preparedness can be amplified through the awardee network. Even though some awardees do not have a formal HDPTP, they still possess access to populations who may be impacted by disasters. Some instructors

may need training that another awardee can provide. The WTP awardee network makes resources available and is a tool to communicate with one another.

■ **Outreach and Recruitment.** Vulnerable worker populations provide most of the labor during disaster recovery. Therefore, they have a great need for training and PPE. Awardees should keep in mind that more completed work means more money for these workers, so pausing work for trainings means less money in the short-term. Consider providing PPE with training as a benefit to workers if their employer will allow. It is also important to remember the value of trust, language, and literacy needs for vulnerable worker populations.

Outreach and recruitment are most successful when awardees leverage existing partnerships and networks. To reach vulnerable, and often multilingual populations, awardees need to have a relationship with a trusted community member and point of contact. Awardees said outreach is accomplished in collaboration with job, immigrant, and worker centers, Native American tribes and organizations, National Council for Occupational Safety and Health partners, day laborers, faith-based organizations, and community and environmental justice organizations, among others.

Another outreach tactic is to tag the disaster response training with other related job training.

■ **Training Participation and Interest.** Some participants stated that they have recently overcome barriers to participation. For example, awardees in Puerto Rico overcame recruiting hurdles and expanded their reach by changing pre-requisites. Other challenges to training participation and interest include:

- Interest based on perception of need and timing. Some individuals believe training is unnecessary because they think they will never use it. Other participants lose interest in disaster training because there are extended periods of time without disasters in their specific region. There is little demand for

preparedness training until an event, then there is greater demand. Overall, the further away from a disaster, the harder it is to keep people engaged.

- Interest based on location. Generally, in disaster-prone areas, people are more willing to participate in training before a disaster happens.
- Commitment based on trainings offered. Some reported that level of interest and commitment is dependent on the training offered and how it relates to participants' jobs or their lives overall. Others said it seems easier to get students to participate in train-the-trainers compared to other courses. One grantee mentioned that they have found it easier to engage union leaders with train-the-trainers compared to community leaders. Some also reported difficulty in getting management to engage and commit to disaster preparedness training.

■ **Technology and Training.** Technology is typically unreliable following a disaster, as there are often limitations due to power outages, space, etc. The ability to use resources on hand and your voice are sometimes the only way to convey some health and safety concepts. Remember that handouts, posters, and booklets that meet the cultural and literacy needs of the audience can always be used regardless of power availability. One resource is the [NIEHS-CPWR Disaster Preparedness mobile app](#), which is available for download to any mobile device. Once downloaded, the materials can be accessed without Internet connection.



Fire fighters control wildfires in California.

Infectious Disease Response Training Program (IDRTP)

Kevin Yeskey, M.D., former principal deputy assistant secretary to the Assistant Secretary for Preparedness and Response, and MDB's Senior Advisor for Emergency Public Health, outlined different principles that are important to keep in mind for infectious disease training.

While the COVID-19 pandemic has greatly affected health, it has also largely impacted other parts of society, including the economy, education, agriculture, transportation, and other sectors. Yeskey said it is important to be mindful of other emerging and re-emerging diseases that we have experienced over the last 20 years, like SARS, MERS, H1N1, the Ebola virus, and Zika. In many of these outbreaks, the science had to catch up with the spread of the disease. As a result, the protective guidance lagged because we learned more about the diseases as they spread.

We must rely on basic public health interventions (e.g., handwashing, face coverings, social distancing) to stop transmission of these types of diseases. "We've learned through COVID-19 and other diseases that these interventions work," Yeskey said. "They have little cost, but they require widespread compliance, so that you build that barrier to transmission. And they are also consistent across most outbreaks and can be implemented early when we don't have medical countermeasures or specific cures or vaccines available."

What Yeskey and others found in the [2015 Ebola needs assessment](#) was that just-in-time training was not largely available. This was primarily due to changing guidance. As guidance lost consistency over time, training became rapidly outdated. They also found that Ebola training was very dependent on funding and resources made available to take the training.

In partnership with the National Clearinghouse, WTP developed the Ebola and infectious disease training with

the intent to improve worker protections and create a culture of infectious disease safety in the workplace.

The best training offered is that which is supported by employers, supervisors, and engaged employees. When everyone is engaged, it helps ensure that the training is embedded into the workplace culture and safety practices.

Nina Jaitly M.D., with Novartis Pharmaceuticals and former WTP contractor, reiterated the point about engagement. She said having an engaged community and worker model in place makes all the difference. This type of model encourages outreach and communication and helps maintain connections with workers.

Yeskey also mentioned the importance of including conversations about stigma and mental health in the context of infectious disease training. "We need to address the behavioral health issues associated with infectious disease outbreaks and workers in that environment," he said. "We learned about the stigma of Ebola workers who had to sit by themselves in the cafeteria. Their colleagues would not associate with them because they were afraid of contracting the disease. They were experiencing fear of infecting their family, loved ones, and friends. This was a real issue." Yeskey said the same is true with COVID-19. The fear of becoming ill itself creates worker burnout and lost productivity. People often leave their jobs or they change jobs altogether because of the anxiety associated with working in the environment.

Shawn Gibbs, Ph.D., dean of the Texas A&M University School of Public Health, said apathy and complacency are huge issues he has witnessed among workers in many sectors, especially health care. It is important that infectious disease preparedness be made relevant for all sectors and any situation, so workers and communities can see that it is a part of their everyday lives. Gibbs is hopeful that there will be more conversations on how to integrate the basics of infectious disease control across all training programs. This will give people a knowledge base they can draw from when they run into certain crises, such as the COVID-19 pandemic.

Several of the goals for the [IDRTP](#) mirror goals identified by other programs, mainly providing actionable pandemic information and preparing for the balance between in-person and online training. Goals include the following:

- **Infectious Disease Curriculum.** The current pandemic highlights the need for comprehensive pandemic education to be included in training. Suggested topics fall in several broad categories including the science of pandemics, pandemics and the workplace, and pandemics and hazard training.
- **Science of Pandemics.** Participants identified a need for training on fundamental concepts surrounding a pandemic including science literacy, modes of transmission (aerosols, droplets, etc.), vaccine literacy, and recommendations for PPE. Regarding science literacy, participants acknowledged that some awardees and trainees are not sure where to receive accurate information about COVID-19, in part because guidelines have changed and at times seem contradictory. Trainings should also include a focus on vaccine literacy as there is a lot of misinformation about vaccines even prior to the current outbreak. Providing trainees with tools to evaluate sources and understand science is a process that can empower them to face future health emergencies.
- **Pandemics and Hazard Training.** For this pandemic, providing trainees with accurate and actionable information about how to choose and wear appropriate respiratory protection can help public facing workers maintain safety. There is a need for trainings that differentiate between respiratory protection for chemical hazards and for infectious disease hazards. Given the necessity for some hands-on training, one of the program's goals is to establish procedures for in-person and online training delivery.

- **Pandemics and the Workplace.** COVID-19 has meant that both trainer and trainee workplaces have needed to adapt to reduce the risk of transmission of SARS-CoV-2 between coworkers. Background on the hierarchy of controls and models for physical distancing (and other administrative controls) can be incorporated across the curriculum. IDRTP and WTP broadly will also explore whether procedures are COVID-19 specific or transmission specific (i.e. establish thresholds for infectious disease procedures).

- **Organizational Collaboration and Outreach.** Participants identified strategies to increase collaborations on infectious disease training between awardees and organizations outside of the WTP. A key strategy is to provide materials and training in other languages, like Spanish and Portuguese, in order to reach a wider audience of workers. Another strategy is to connect with the solid waste divisions of hospitals and community-based organizations, home health aides, and local health boards. Given COVID-19 restrictions, some of this outreach can occur online via social media platforms like Facebook Live.
- **Mental Health and Resiliency.** In addition to physical safety, IDRTP will include education about mental and behavioral health challenges like isolation, depression, and opioid misuse that can be made worse during the pandemic or other disasters like wildfires and hurricanes. The reality is that other outbreaks and disasters will occur, maybe simultaneously as they have in 2020. Trainers and trainees will need support to maintain resiliency.
- **Policy Change.** Workshop participants mentioned supporting permanent policy change that supports worker safety as long-term goal. These policies include paid sick leave, increased minimum wage, and hazard pay. Policy updates may also be at the level of contracts with employers and unions.

SBIR E-Learning for HAZMAT Program

Kathy Ahlmark, WTP program analyst, gave a brief overview of the [SBIR E-Learning for HAZMAT Program](#). The program's first RFA was written and released in 2001.

The program has come a long way since then. Since 2002, awards have been given to 40 different companies, representing a total of 53 phase one awards and 20 phase II awards. More than \$12.7 million in awards have been provided under this program.



Over the years, SBIR awardees have made tremendous accomplishments. Some have patented technologies and received reputable awards, like the Telly and Adobe Max awards.

SBIR awardees and technology experts shared lessons learned and perspectives regarding the best use and application of various technologies for training WTP's target populations. The following were key messages that emerged from the panel of SBIR awardees.

- **New and Promising Technologies.** Augmented and mixed reality are different, and they are very application specific technologies. However, there is not a great understanding about how they differ among WTP awardees and trainers. Both augmented and mixed reality technologies are great in field or classroom exercises, but perhaps not so much with online simulations in virtual training.

Virtual reality is a totally virtual environment. In other words, a participant is not seeing or hearing anything in the physical world around them. However, an augmented reality is one in which a participant exists primarily in their physical environment, but equipment (e.g., headset) or technologies (smartphones, tablets) are used for the augmented experience. This augmented experience can be visual or auditory.

With virtual reality, trainees need a space to move around because it is a defined simulation; however, with augmented reality, trainees can move around with the technologies.

Some participants explained that mixed reality is a fairly new term used to describe more complex systems, some of which the National Aeronautics and Space Administration is using for instructional delivery of content.

Augmented reality technology, in its best application, is intended to serve as an experiential learning modality. The scope of these technologies is narrower than those used for online or in classroom training.

■ **Using Technology in Blended Learning or to Restructure Curricula.** SBIR awardees suggested that trainers use what has worked best in the past. They also recommended exploring ways to adapt and augment certain elements of the training. Training does not have to be complicated or fancy to get the job done.

Other tips related to restructuring curricula include: Find ways to maximize the time with training participants; make learning objectives active and engage participants in learning; and find ways to use technology that complements instructor-led training, even if delivered virtually.

■ **Flexibility with Products.** Listen to training population and have flexibility to model product according to feedback even if it deviates from the original plan in the grant.

■ **Creative Revenue Strategies.** Some target populations do not have a big enough training budget for new products. It is critical to provide WTP's target audiences with innovative tools for training needs, so SBIR awardees should be creative about revenue strategies.

■ **Cultural Sensitivity (Language and Branding).** Remember that people have different backgrounds, so there is a need for cultural sensitivity for training.

Foreign language campaigns can become a bottleneck, especially in terms of branding. Sensitivity is needed when targeting a specific demographic where language and culture are sensitive issues. One participant recommended using images of familiar faces or local and respected leaders for branding.

■ **Technologies for Translations and Closed Captioning.** Some have experienced challenges with the conversion of spoken audio to electronic transcripts, like improper grammar or phrasing. There

are also some issues with closed captions not aligning with audio. For the speech to electronic text issue, a potential solution is to find a local person that has domain knowledge of language and phrases. Although there may be some budget constraints, costs have come down for third parties who do transcriptions and captions. One participant recommended [Rev.com](https://www.rev.com) as a good transcription service because of their price and turnaround time.

■ **Glossary of SBIR Terms Needed.** Participants requested that SBIR awardees compile a glossary with a list of definitions that can be shared with all WTP awardees. The glossary would include definitions for things like augmented and virtual reality and other terminologies used by SBIR awardees.



Attendees participate in a demonstration using virtual reality goggles during the 2018 WTP Trainers' Exchange. (Photo courtesy of the National Clearinghouse)

Addressing Cross-Cutting Themes

COVID-19, Wildfires, and Other Disasters

The issue of [COVID-19](#) and [wildfires](#) was especially pertinent for the year 2020 in which the U.S. has had [more than 50,000 wildfires](#). Participants mentioned challenges and solutions considering issues related to COVID-19, wildfires, and other disasters.



■ **Communication.** One of the challenges of the pandemic, which is also a challenge in other disasters, has been getting trainees and responders the information they need when they need it. Participants identified radio and Facebook, (i.e., traditional and new media), as mediums to communicate broadly information about housing and other resources needed post-wildfire.

Trainers sometimes have difficulty navigating guidance from the Centers for Disease Control and Prevention and regulations from OSHA for a community-based

audience unfamiliar with COVID-19 and wildfire risks. Needing to adjust for different audiences while trying to dispel multiple sources of misinformation can contribute to burnout. Providing trainers with strategies and resources to dispel COVID-19 misinformation can reduce the amount of time they spend trying to stay up-to-date with the latest information. Participants suggested a 1-hour module dedicated to COVID-19 to empower people with accurate knowledge. Another resource that awardees and trainers may find useful is the [Guidance to Protect Volunteers from COVID-19 During Natural Disaster Response and Recovery](#) released by NIEHS and the American Industrial Hygiene Association.

■ Collaborative Disaster Response.

Participants identified using existing networks and forming new networks as a tactic to expand disaster response capacity.

■ Digital Divide and Online Trainings.

Participants recognized that the combination of a wildfire, which may cause displacement, and COVID-19 can lead to or amplify a digital divide. One suggestion is to use Facebook Live, which allows for webinars to be left online so that people can access the webinar from different devices and at a time when they are able. These webinars should be designed to be engaging with strategies like limiting the length of webinars to be conscious of attention spans. Another suggestion is to bridge physical resources with online resources by placing QR codes on booklets distributed during in-person trainings. When participants are physically together, using physical distancing and limiting the number of trainees is preferred.

■ **Updated Evaluation.** Participants suggested giving surveys to cohorts and to consider confidentiality in evaluations. Tracking participants on virtual platforms can be a challenge, but there

are solutions to monitor registrations as part of grant requirements. In addition to monitoring attendance, new strategies to monitor how many booklets and PPE are distributed and to whom can help WTP show its value as part of community outreach metrics.

■ **Recruitment Diversity and Trainer Pipeline.** Some residents who return home and help with recovery and cleanup become skilled and transition to trainer roles. Developing pools of trainers from local people interested in disaster response and in collaboration with local unions can increase diversity.

Identifying and training new responders or trainers does not have to wait for disasters to happen. Renewing a Civilian Conservation Corps and advocating for the inclusion of worker safety in high school curricula can prepare the nation for emergencies, including wildfires and hurricanes, whose intensities are increasing.

Any inclusion of students and volunteers in training or response requires ethical considerations for their health and safety.

■ **Climate Change Response.** There is a need for the program to identify its position and focus on the role climate change has on the intensity of wildfires, hurricanes, and emerging infections. Even when the role of climate change in disasters is disputed, the program can still prepare participants for more severe events in the future. One potential resource to address these issues is the NIEHS WTP [2015 Climate Change Vulnerability Assessment report](#).

Justice, Diversity, and Equity

The history of worker safety is also a history of working toward justice. Workshop participants offered suggestions on how to improve integrating equity and justice in WTP's efforts with diverse trainers and trainees.

■ **Reach, Involvement, and Raising Awareness.** There is a goal to educate and inform those who do not understand or are unaware of the issues surrounding diversity, inclusion, and environmental justice. One suggestion is to involve spokespersons or representatives who can speak to these issues and help share this training and information. Organizations should be intentional and look for ways to involve minorities. There is a need for instructors who know the audience and can relate to them. Having representation is encouraging for trainees. WTP can leverage the moment that we are in as a nation to bring awareness to these issues.

■ **Establish Strong Advocates and Initiatives.** Establish and advocate for strong worker councils' initiatives for public health, diversity, inclusion, and civic engagement.

■ **Encourage Diversity and Environmental Justice Training as Essential and Marketable.** Some participants suggested that WTP make environmental justice training certifiable and marketable to incorporate it in job training programs. Another suggestion is to incorporate the topic of diversity in other trainings and make it mandatory. Some participants said their union organizations address issues with racism and sexism, and it is an important aspect of maintaining solidarity.

■ **Mentoring.** One participant said they are working on developing a mentoring program within their ECWTP consortium. This will ensure that once individuals are placed in jobs, they will have someone that can

help them with the transition and guide them through situations they may encounter in the future.

■ **Accessing Communities.** Obtain and maintain access to communities by working with local organizations. Access to communities is important so WTP is better able to assess gaps and needs, rather than just providing education and information.

■ **Empowering Communities.** Community members are interested in the topics of justice, diversity, and equity along with other training topics. They have a raw energy and WTP awardees should learn to tap into this. Educating community members and empowering them enables them to take the information forward.

■ **Creating a Safe Space.** Historically, minorities who have entered the trades were not afforded some of the same opportunities as their white or male counterparts. Some participants shared that they are beginning to see their respective organizations increase gender and racial diversity in new hires, especially in the construction industry. To maintain this, it is important to create a welcoming and safe environment. There is a need to incorporate content on what it means to have a safe, respectful workplace into the health and safety curricula. Some of this is accomplished through the life skills training that ECWTP awardees offer. Organizations can also include counseling services and training on ways to negotiate conflict resolution.

■ **Addressing Diversity as a Health and Safety Issue.** Participants suggested that WTP incorporate diversity, equity, and inclusion in health and safety training. For example, harassment, discrimination, and hazing on the job are all health and safety issues in the workplace.

Notably, the [Minimum Criteria](#) now has updated language in the Guiding Principles to include language justice and the need for organizations to have a code of conduct that ensures that both trainers and trainees are treated with dignity and respect. Specifically, the Minimum Criteria says that worker safety and health training must be provided in a language and at a literacy level participants can understand. It also specifies that training organizations' code of conduct should ensure there is no discrimination, belittling, or harassment, and that there is respect for multiple cultures and genders during training.

Diversity training helps change the culture of industries that we work in to be more accepting of people's differences. Although some organizations are a little late in addressing this topic, participants shared that they are beginning to see it addressed more frequently.

Diversity and inclusion need to be a goal for the whole organization, and not just one or two programs.



Trainees in Chicago learn how to install solar panels. (Photo courtesy of OAI, Inc.)

Opioids, Mental Health, and Stress

Across the country, many awardees have already incorporated training on opioids, mental health, and stress for refreshers, and for 30- and 40-hour OSHA classes. Some of these trainings feature materials developed by the National Clearinghouse, which are being used to train both instructors and workers. Alabama Fire College developed a module for a refresher course for state personnel and the Midwest Consortium has also developed materials. CPWR continues their efforts to train construction workers on the hazards and risks associated with opioids. Though many awardees offer training on these topics, there is still room for improvement.

- **Stigma.** One of the challenges for engaging participants in opioid and mental health education is the stigma associated with addiction and other mental and behavioral health issues. Stigma in the workplace and fears about job security may inhibit discussions between coworkers and supervisors. Programs need policies and trainings that encourage honesty and trust, while maintaining a safe work environment.
- **Peer-to-Peer Support.** The Civil Service Employees Association (CSEA) and USW have developed trainings for peer trainers and supporters. Peer-to-peer support can help overcome stigma and can provide ongoing support. Peer-to-peer support can be combined with wellness webinars on Zoom (or another platform) led by wellness counselors as part of a comprehensive plan to support trainers and trainees.
- **Wellness Resources.** In addition to support at work or from peers, WTP can develop resources or ways to connect workers to existing resources outside of the work site that can help people confront opioid misuse, mental health issues, and stressors caused by COVID-19. COVID-19 related stressors include job loss or taking care of sick family. Working with unions to create or find resources is one way to grow a pool of

wellness resources for housing, caretaking, food, etc. Funding or connecting trainees to grants could also reduce financial stress.

- **Accessibility.** Participants identified several accessibility barriers to opioid and mental health education and resources, including technology, language, time, and worker status. Regarding technology, many people served by the program only have mobile devices to access trainings. Trainings that are optimized for mobile and are asynchronous so trainees can access them at any time would be optimal. Synchronous online trainings are and will continue to be offered.

The second barrier to accessing training is language. More trainees would be served by online trainings and resources if they were available in Spanish or had Spanish subtitles and translation. The National Clearinghouse has several tools related to opioids and the workplace, which are available in both English and Spanish. CSEA has already provided stress education in Spanish and could be a source of support for other programs interested in expanding the languages they offer as languages may vary by region.

Another barrier is time, as these topics are being added to trainings that already are somewhat lengthy given their importance. Workshop participants suggested short, modular trainings on these topics that are 3 to 4 minutes long so that workers have time to digest the information. Continuous feedback from workers regarding content and time can help programs modify to their trainees' needs and decide which trainings should be offered as electives.

Finally, there is difficulty reaching non-union and temporary workers to provide this information. Making sure all workers feel supported and receive education on mental health will require innovation, flexibility, and collaboration.

Increasing Awardee Collaborations



Group of awardees pictured during 2018 Trainers' Exchange in Phoenix, Arizona.

■ **Sustain Program, Succession, and Next Generation.** Participants expressed that they want to solidify, sustain, and protect the program by preparing for transition and succession. The goals are to protect the resources and personnel that WTP has and pass along knowledge and opportunities to the next generation.

One question raised was about where the next generation of leaders will come from. One participant said it would greatly benefit the program if each organization connects and works closely with vulnerable communities and their representative groups to develop a talent pool. For example, working with immigrant worker centers in the New York and New Jersey area enabled one awardee organization to connect with incredibly talented young people, one of whom they were able to bring into their program. These emerging leaders can be mentored and can also offer mentorship to the more seasoned staff. The mentorship becomes a two-way street.

■ **Mentorship.** Consider ways to share the rich history of this program and its challenges with the next generation. In addition, consider opportunities for mentorship match making. Mentorship match making is a way that stories and lessons can be passed from one generation to the next.

■ **Recognize Moments and Opportunities for Collaboration.** Although COVID-19 and virtual training have created challenges, it also provides unique opportunities for awardees to collaborate. Technology broadens the bandwidth for mentoring opportunities; however, the younger generation might be more apt to use technology compared to the older generation. Those who are more familiar with the technologies can pair with others to provide guidance and mentorship.

■ **Reach Out and Share Resources.** Participants suggested that awardees share resources from other well-established organizations and awardees. Start with core materials to broaden reach to communities with various cultures and languages. Instructors at different awardee organizations should also explore how to better share resources with one another.

■ **Formal Collaboration Mechanisms.** Explore formal mechanisms for sharing materials across awardees. The National Clearinghouse is a given, but it might be helpful to come up with ways to expand that to make training materials more accessible. One suggestion was offered about exploring other platforms that WTP can build upon for the sharing of materials. An exciting idea is a private portal that has discussion and message boards where specific topics can be addressed. This is one way to enrich communication and enable greater sharing and reuse of resources across the WTP network.

Evaluation, Monitoring, and Communication

- **National Evaluation.** It is time to do an evaluation that looks at the effectiveness of the core HWWTP.
- **Progress Report.** WTP is looking to streamline and prioritize data, rather than increase the amount of data given feedback about difficulty in gleaning information from the progress reports. Another comment was made that awardees should continue to report their efforts with specific vulnerable communities in progress reports. Awardees should think through key points for congressional needs and the best system for reporting to align with these needs. This system could be piloted or tested with various types of awardees to get feedback. There was a suggestion to use the operational matrix as a starting point for major items to include in annual reports and change each year. WTP could potentially beta test this with various types of awardees.
- **Depth and Breadth in Qualitative Evaluation.** Many audiences are served through WTP, and general questions make it difficult to assess the impact of training affects the community and workplace. One size for evaluation does not fit all. For HAZWOPER training, WTP needs a way to get a comprehensive picture of the program. There was a suggestion to add a case study or focus group approach to better capture various types of workplaces and audiences that awardees serve. This will help show the breadth of the program. Once this is done, WTP can evaluate the information gained and then pick topics using a multistage approach.
- **Common Evaluation Questions.** Identifying commonalities and sharing examples of qualitative evaluation questions could help others. One participant said they have been using common qualitative questions across their academic consortium. The questions would likely vary between labor unions and

academia, but there are opportunities to explore where the questions could be similar.

One participant said their organization launched a long-timers participant survey. This survey looked at courses offered over a 10-year span and included more than five refreshers. They assessed the impact of programs and found that repeat attendance for refresher courses impacts workplace safety through behavior change and other factors. Another participant suggested that awardees could be given generic questions to assess strengths of worker trainers, then WTP could pull responses together to show the depth of the programs.

- **COVID-19 Evaluation Topics.** Some awardees are shifting back to the way evaluations were done earlier this year with the use of focus groups and surveys. One participant said they had done site-specific case studies with the United Autoworkers, but they have not tried it across different sites. A case study approach may be of interest for evaluation, especially if awardees are using the same COVID-19 training curriculum.

There is a need for congressional reporting to cast a wide net on what WTP has done so far with training through the use of COVID-19 courses, booklets, and other materials. Most organizations could write a story on how trainings helped change the workplace, and promotion of these stories could be helpful.

It would also help to tell the story of capacity building over time, going from the anthrax attacks, avian flu, Ebola virus disease, and more. How WTP uses previous knowledge to inform the future is a strength of the program.

In the midst of the COVID-19 pandemic, CPWR has been conducting evaluations to assess the effectiveness of distance learning. They will be using a follow-up survey after their 1-hour awareness course. Also, they are looking at the differences in evaluation results for the delivery of an Infection Control Risk

Assessment course prior to and during the pandemic, with the latter using distance learning. They have found these modalities to be effective for both the trainers and learners. The International Chemical Workers Union Council held an online focus group for COVID-19 instructors in March.

It would be helpful to evaluate how quickly awardees shifted training in the beginning of the pandemic to demonstrate the program's strength. Organizations not only had to pull new training and materials together, but they also had to be flexible to offer different types

of classes to provide workers with what they need during the pandemic. There are many awardees and organizations who had never done virtual training before, yet they were able to overcome and deliver much-needed training to their target populations.



Students taking a class at the LIUNA Training and Education Fund training center in Connecticut. (Photo courtesy of LIUNA Training and Education Fund)

Conclusion and Next Steps

“Awardees, you are indeed the beneficiary of one of the most robust, visionary worker training programs supported by the U.S. government,” said Darryl Alexander, a consultant with the American Federation of Teachers. “Old or new, you belong to a genuine community with great values and principles. You must continue to support one another.”

As WTP and awardees consider how to forge ahead for the next five years and beyond, Alexander said that collaboration is key. This includes collaborations among one another as well as labor unions, worker centers, and organizations that represent lower income, migrant communities, and other minorities. She said awardees need to be creative and willing to try joint training projects to explore opportunities for growth. These types of strategies must be intentional and deliberately incorporated into programs.

“Build other bridges between workers and your institutions, especially if you have technical expertise that workers desperately need,” she said. “Make it a two-way street and solicit information from workers so that you can design more effective and protective methods.”

Alexander also commented on the joint design of applications and resources for workers because they need more accessible information and data. This fact has become increasingly evident during prior disasters and emergencies, as well as the current COVID-19 pandemic.

“Sustain and promote equity and opportunities for workers across all the training areas,” she said. “Advance together for the continuation of the program. It is your responsibility to protect and continue the work.”



Fire fighters during socially-distanced training exercise. (Photo courtesy of the International Association of Fire Fighters)



Left: Hughes pictured with WTP partners in Puerto Rico following Hurricane Maria. (Photo courtesy of Chip Hughes)
Middle and Right: Hughes during his early years at NIEHS. (Photo courtesy of Steve McCaw)

Tribute to Hughes

After 30 years of serving as director of WTP, Hughes retired from NIEHS in January 2021. He went on to continue his important work with OSHA as the Deputy Assistant Secretary for Pandemic and Emergency Response.

Under his leadership WTP has funded innovative worker health and safety programs across the U.S. Hughes has guided the program through many challenges and led efforts in response to multiple disasters and public health emergencies, including the 2001 anthrax attacks, the 2001 World Trade Center attacks, the 2010 Deepwater Horizon Gulf Oil Spill, multiple hurricanes, wildfires, and infectious disease outbreaks. Additionally, he led response to new and emerging issues in occupational health related to opioids and mental health. He has worked closely with other federal agencies, non-profit organizations, unions, and communities to promote the health and safety of workers in both the public and private sectors.

Prior to joining NIEHS, Hughes served as research director for the Institute for Southern Studies. In the 1980s, he conducted research for the U.S. Department of Labor and the National Institute of Mental Health. He also carried out community and worker education projects for the Farmworkers Legal Services Corporation and the East Coast Farmworker Support Network.

For his demonstrated excellence in leadership, Hughes has received several awards. In 2011, he received the

Tony Mazzocchi Award for Lifetime Achievement from the National Council for Occupational Safety and Health. In October 2020, he was presented with the [Alice Hamilton Award](#) from the American Public Health Association.

The WTP wishes him well on his new endeavors.

Workshop participants shared resounding congratulatory wishes on Hughes retirement and remarks about his leadership:

- Bravo, well deserved Chip!
- Walking, talking, worker-hero, aka Chip Hughes!
- We all carry your heart and dedication within each of us, Chip! Thank you!
- Leader, mentor, and a great person. Thanks, and glad to have met you. Enjoy your retirement, Chip.
- Congrats, Chip! A great inspiration!

“Chip has brought a passion to increasing worker safety and health in his leadership role,” said Woychick. “He has guided the program through significant expansion and brought its influence to bear upon the health and safety needs of workers involved in response and recovery. The tangible accomplishments of this program are especially noteworthy, and it is really a tribute to his leadership.”

Celebrating Champions: In Memoria

In 2020, WTP lost Eula Bingham, Ph.D. and Sheila D. Pressley, Dr.PH. – two champions who dedicated their careers to improving environmental health and worker safety. Though they have passed, their legacies and impact on colleagues, workers, and their friends and families will not be forgotten.

Eula Bingham, Ph.D.

July 9, 1929 - June 13, 2020

Bingham received her doctorate at the University of Cincinnati in 1958, at which her research on occupational health related issues led to a career in worker safety. Following this time in academia, Bingham served on several commissions related to worker safety standards and had a storied career at several federal agencies, including the U.S. Food and Drug Administration and the U.S. Environmental Protection Agency. Bingham broke ground when she became the first woman to serve as the Assistant Secretary of Labor for the Occupational Safety and Health Administration (OSHA) under the President Jimmy Carter administration between 1977-1981.

Bingham led an OSHA initiative called “Shift to Common Sense Priorities” which prioritized combatting occupational illnesses and diseases. Under Bingham, standards on pesticides, arsenic, lead, airborne cotton dust fibers, and benzene were tightened. This initiative among many others led by Bingham created a blueprint and foundation for WTP.



Photo of Bingham in her early years. (Photo courtesy of U.S. Department of Labor)

Bingham continued contributing to occupational health with numerous studies on worker safety when she returned to the University of Cincinnati. She received many awards for her work and was the first recipient of the William Lloyd Award for Occupational Safety from the United Steel Workers in 1984.

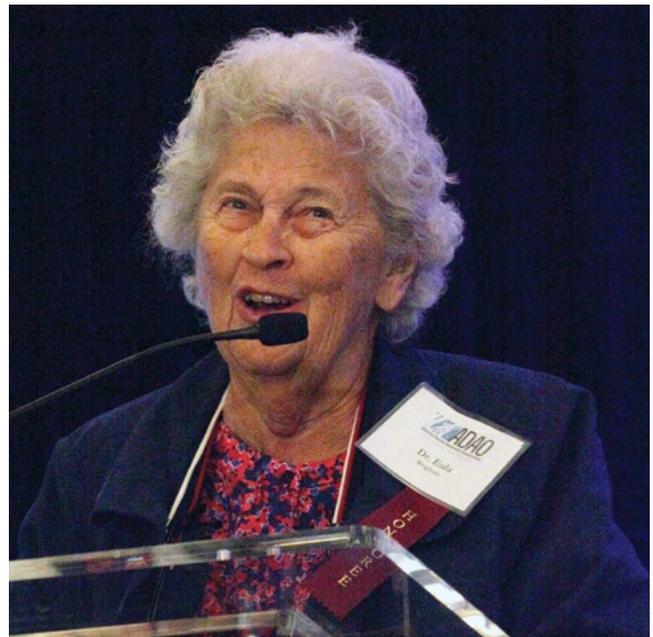


Photo of Bingham speaking during the 2019 Annual Asbestos Awareness and Prevention Conference in Washington, D.C. (Photo courtesy of Chip Hughes)

Of Dr. Bingham, President Carter said, “Eula deserves credit as one of the unsung heroes giving women an important voice and place in our nation’s history.”

Sheila D. Pressley, Dr.PH.

May 2, 1967 - January 24, 2020

Pressley [received her doctorate](#) at the University of Kentucky after completing the Tufts Environmental Science and Management Fellowship. Pressley went on to work on environmental health in the public, private, and academic spheres for more than 20 years. She was a member of the National Environmental Health Association and the American Academy of Sanitarians.



Photo of Pressley (Photo courtesy of Amanda Cain)

Pressley was a beloved employee of OAI, Inc., a WTP awardee based in Chicago, from 1998 to 2004. As associate director of environmental health and safety at OAI, Pressley prudently directed the daily operations of many programs, including the HWWTP and MWTP. In this capacity, it was evident that she possessed the educational background and personal commitment to successfully manage a diverse program to recruit and train underserved and disadvantaged individuals in multiple cities, including Baltimore, Maryland; Chicago, Illinois; Kansas City, Kansas; and Washington, D.C.

Her meticulous attention to grants management and promotion of technically proficient environmental training programs was impressive. For example, in collaboration with OAI's local partners in Kansas City, Pressley helped build successful partnerships to pilot environmental training for inmates of the Municipal Correction Institution in Kansas City, Missouri. The program addressed a critical need to develop training programs that effectively prepared inmates to re-enter the workforce with marketable skills. Even after leaving OAI, she continued to support the organization by serving as a committed

member of their advisory board. "She was a loyal advisor and thought leader to all of us at OAI for more than 20 years," said Mollie Dowling, executive director of OAI.

In 2004, Pressley joined the faculty at Eastern Kentucky University (EKU) and was the first African American to chair the EKU Faculty Senate. Pressley's contributions to students through mentorship are as magnanimous as her contributions to the field. For her effective mentoring, the University of Kentucky awarded her with the Lyman T. Johnson Torch of Excellence Award. EKU, in partnership with the Ohio Capital Corporation for Housing and Kentucky River Foothills Development Council, established a scholarship in her honor called the Dr. Sheila Pressley Opportunity Endowed Scholarship. The scholarship will benefit students pursuing a degree in the College of Health Sciences.

Students and colleagues paid [tribute](#) to Pressley during the 2020 Opportunity Bowl.



Photo of Pressley speaking during a commencement ceremony. (Photo courtesy of Eastern Kentucky University)

Of Dr. Pressley, former National Environmental Health Association president Brian Collins said, "Dr. Pressley's exuberance and commitment to environmental health created a nexus between theory and practice that transcended two generations. Her character, vision, leadership, and participation as a role model and mentor will influence generations to come."



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