

## Partnership for Environmental Technology Education Snapshot:

<b>DOE TRAINING:</b>
<b>Principal Investigator:</b>
<ul style="list-style-type: none"> <li>• Douglas Feil</li> </ul>
<b>Evaluator(s):</b>
<ul style="list-style-type: none"> <li>• Steve Fenton, external evaluator</li> </ul>
<b>Grant Number:</b>
<ul style="list-style-type: none"> <li>• U45ES019338</li> </ul>
<b>Goal(s) of Evaluation:</b>
<ul style="list-style-type: none"> <li>• Measure the effectiveness of the overall project</li> <li>• Measure student performance</li> <li>• Measure student perception of course effectiveness</li> <li>• Measure student perception of trainers</li> <li>• Track and follow up with students and employers</li> </ul>
<b>Evaluation tools:</b>
<ul style="list-style-type: none"> <li>• Hands-on and electronic testing of students.</li> <li>• Electronic course evaluations completed by students.</li> <li>• For evaluation of online courses students were asked to respond to a series of positive statements covering six broad categories. Those categories included: Distance Learning Environment, Trainer, Method Presentation, Overall Impressions, and a general Category. They were asked to respond to each of those statements on a scale of 1 – 5 with a 5 being strongly agree and a 1 being strongly disagree.</li> <li>• Evaluation of in classroom trainings, included ten questions to be rated by students on a scale of 1 – 5 with 5 being “extremely well satisfied” and 1 being “extremely dissatisfied.”</li> <li>• Student tracking and follow-up to determine the extent that workers are using their training. <ul style="list-style-type: none"> <li>○ Follow up questions asked for students include: <ul style="list-style-type: none"> <li>▪ To what extent did the HAZWOPER training help you in the workplace?</li> <li>▪ To what extent did the class help you reduce hazards?</li> <li>▪ Instances when you used information from the HAZWOPER course in your job.</li> </ul> </li> <li>○ Follow up questions asked for employers include: <ul style="list-style-type: none"> <li>▪ To what extent did your employees’ HAZWOPER training benefit workers?</li> <li>▪ To what extent did your employees HAZWOPER training benefit the employee?</li> <li>▪ To what extent did your employees’ HAZWOPER training benefit the overall workplace?</li> </ul> </li> </ul> </li> <li>• Employer follow-up to verify that the skills and knowledge acquired through training are being applied on the job.</li> <li>• PETE staff members conduct site visits to consortia sites and, when possible, attend classes, and review curriculum, equipment, facilities, site safety plans, and first aid certifications.</li> </ul>
<b>Population Served:</b>
<ul style="list-style-type: none"> <li>• DOE contractors, subcontractors and public officials serving DOE facilities</li> </ul>
<b>Types of Courses/ Training Curricula Offered:</b>
<ul style="list-style-type: none"> <li>• Various courses, including Confined Space Awareness and Entry, Emergency Response to</li> </ul>

Chemical Spills, Emergency Response Incident Command, Disaster Site Worker, Mold Awareness and Inspection, Operations Level Emergency Response, etc.
<b>Trainers:</b>
<ul style="list-style-type: none"> <li>• Train-the-Trainer and Refresher Training courses for instructors</li> <li>• To become a member of CCCHST, consortium instructors must successfully complete a two-week Great Environmental Safety Trainers' (GreatEST) Train-the-Trainer Institute, and participate in training evaluation and data collection.</li> </ul>
<b>Proof of effectiveness/value?</b>
<ul style="list-style-type: none"> <li>• The majority of students in the 8-hour online course either disagreed or strongly disagreed with the following statement: "I would have learned more in a classroom." This is a strong indication that students felt the online training received was of high quality and met their needs.</li> <li>• The results of evaluation at the Savannah River site show that trainees strongly agree that the course content was presented in a logical and organized manner, and that learning objectives were clearly stated and guided the course presentation. The quality of instructors was rated highly as well, as was relevance of training to job and effectiveness of training.</li> </ul>
<b>Most beneficial aspects/well received methods:</b>
<ul style="list-style-type: none"> <li>• A Spanish translation of the 40-hour HAZWOPER book and online course has been developed, but is seldom used.</li> <li>• PETE's training focused on environmental and energy technology with training and curriculum development projects involving pollution abatement for automotive, printing, electroplating, and industrial pretreatment, small business audits for energy star, energy services and technology, renewable energy and workforce energy efficiency, lead safety handling and abatement, climate change, water quality, and wastewater treatment technology.</li> <li>• In 1991, HMTRI recognized the need to provide distance-learning opportunities for students who were unable to attend structured classes. Ever since, HMTRI has been committed to providing opportunities for long-distance learners.</li> <li>• Because the majority of students in 1910.120 courses are adults, PETE ensures that traditional and electronic courses accommodate the adult learner.</li> </ul>

<b>HWWT TRAINING:</b>
<b>Principal Investigator:</b>
<ul style="list-style-type: none"> <li>• Douglas Feil</li> </ul>
<b>Evaluator(s):</b>
<ul style="list-style-type: none"> <li>• Steve Power, external evaluator</li> </ul>
<b>Grant Number:</b>
<ul style="list-style-type: none"> <li>• U45ES019337</li> </ul>
<b>Goal(s) of Evaluation:</b>
<ul style="list-style-type: none"> <li>• Program evaluation focuses on the effectiveness of instructor training</li> </ul>
<b>Evaluation tools:</b>
<ul style="list-style-type: none"> <li>• At Refresher Programs, instructors were asked to respond to an evaluator consisting of various statements regarding their program, rating them using the follow scale: <i>Strongly Agree, Agree, Neither Agree or Disagree, Strongly Disagree, NA</i>. Participants were also asked for further input on the class, topics, comments, and use of the material.</li> </ul>

- When students attend Refresher training, they are asked to complete a survey indicating their place of employment and effects of previous training upon workplace health and safety. This data is kept with student evaluations at the local CCCHST organization and reviewed during site visits conducted by PETE staff.

**Population Served:**

- Students, workers, and supervisors are trained to protect themselves and their communities from exposure to hazardous materials encountered during hazardous waste site cleanup, Brownfields redevelopment, transportation of hazardous materials, and response to spills and releases of hazardous materials.
- Training primarily provided for hazardous waste workers and emergency response personnel.

**Types of Courses/ Training Curricula Offered:**

- Various courses including Emergency Response to Chemical Spills, Incident command, Mold Awareness and Inspection, Respiratory Protection, Trenching and Excavation Operations, Emergency Response Incident Command, etc

**Trainers:**

- Use of a Train-the-Trainer model program
- To date in FY '12, PETE instructors received 20 technical assistance phone calls and 300 e-mails from CCCHST trainers.

**Proof of effectiveness/value?**

- At PETE/HMTRI Refresher Program held in Little Rock, Arkansas, instructor feedback from evaluations shows that 73% Strongly Agree that the instructor was clear and to the point, 77% Strongly Agree that the facilities and classroom were adequate, and 64% Strongly Agree that they accomplished what they came for in this class.
- When asked how they were able to positively impact the safety attitudes or actions of their students based on the knowledge they gained in one of their courses, instructors responded:
  - *Job placement in hazmat and hazmat related fields*
  - *Medical monitoring-improve before/after*
  - *Use of situation awareness*
  - *Students observed they were better trained than their contemporaries*

**Most beneficial aspects/well received methods:**

- Refresher participants enjoyed Round Robin networking where they shared “ah-hah” moments, close calls and/or best training techniques in small groups. Instructors shared advanced training technologies with one another including “clicker” response systems and 3D simulation software.
- Community college instructors are often isolated because of budgetary restraints and local program focus. CCCHST affords them the opportunity to network and share their varied experiences and knowledge.
- Many CCCHST members and instructors conduct community outreach programs that augment the delivery of high quality training. Both PETE and HMTRI at EICC have grants from EPA and NSF to help American Indian tribes improve STEM (science, technology, engineering, and math) training and grants management capability, helping them support greater numbers of underserved students and workers.