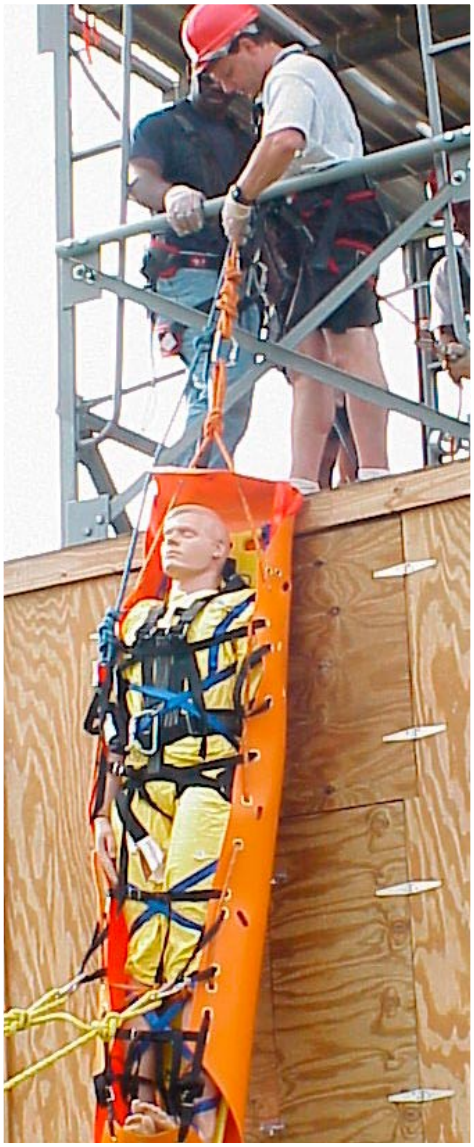
National Institute of Environmental Health Sciences

Hazardous Waste Worker Training Program

A NETWORK RESPONDS:
Worker Safety and Health Training Annual Report



2005 ACCOMPLISHMENTS AND HIGHLIGHTS:
(SEPTEMBER 1, 2004 – AUGUST 31, 2005)

Department of Health and Human Services | National Institutes of Health
National Institute of Environmental Health Sciences | Worker Education and Training Branch

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1. INTRODUCTION: A NETWORK RESPONDS

On August 29, 2005, Hurricane Katrina devastated Louisiana and Mississippi. Within hours, an experienced national network of worker safety and health experts, trainers, and support staff began mobilizing to assist in the recovery of the Gulf coast. This network gained much of its experience during the response to the World Trade Center, Oklahoma City, and anthrax terrorist attacks. During the ens uing years, through the evaluation of the lessons they had learned, this little known network had developed mechanisms for getting needed safety and health resources into the field: teams of trainers and subject matter experts, printed training materials, on-line electronic learning tools, personal protective equipment and other training supplies, and even useful 'extras' such as safety awareness "podcasts" - audio training tips available through easy download to trainers in the field.

This network is the National Institute of Environmental Health Sciences Worker Education and Training Program and its 18 awardee organizations. This report is about their accomplishments in training the thousands of men and women who handle hazardous materials or respond to emergencies involving hazardous materials.

The NIEHS WETP funds training through competitively awarded cooperative agreements. The recipients are non-profit organizations with demonstrated access to appropriate worker populations and experience in implementing and operating worker health and safety education training programs. The training awards are divided into a number of program areas including:

- **Hazardous Waste Worker Training Program (HWWTP**) –provides model occupational safety and health training for workers who are or may be engaged in activities related to hazardous waste removal or containment or chemical emergency response.
- **Hazmat Disaster Preparedness Training Program (HDPTP) -** This new program will enhance the safety and health training of current hazardous materials workers and chemical responders, to train skilled response personnel, to create materials and deliver training to weapons of mass destruction response workers and to augment prevention and preparedness efforts in a wide variety of high risk settings.
- **Minority Worker Training Program (MWTP)** –focuses on delivering comprehensive training to disadvantaged urban youth in order to prepare them for employment in the construction and environmental cleanup fields.
- **Brownfields Minority Worker Training Program (BMWTP)** - broadens the MWT Program to provide comprehensive training to disadvantaged residents and to foster economic and environmental restoration to communities impacted by brownfields.

These programs are reported on in Sections 2.1, 2.2, and 2.3.

Funded by the WETP, the **National Clearinghouse for Worker Safety and Health Training** is the primary communications channel through which the WETP distributes technical reports, news updates, and training information to its awardees, interested members of the hazardous waste worker-training community, and the public. An update of these activities is provided in Section 2.4.

In section 2.5, there is an executive summary of the conference **"Keeping Quality Current: An Update of the NIEHS Minimum Criteria for Worker Health and Safety Training for Hazardous Waste Operations and Emergency Response**

In section 2.6, there is a short program update for the current funding period - September 1, 2005 through August 31, 2006.

In Section 2.7, activities of the WETP staff are documented.

1.1 The Role of NIEHS WETP in the National Response Plan

The National Response Plan (NRP) is an all-discipline, all-hazards plan that establishes a single, comprehensive framework for the management of domestic incidents. It provides the structure and mechanisms for the coordination of Federal support to State, local, and tribal incident managers and for exercising direct Federal authorities and responsibilities. The NRP assists in the important homeland security mission of preventing terrorist attacks within the United States; reducing the vulnerability to all natural and man-made hazards; and minimizing the damage and assisting in the recovery from any type of incident that occurs.

The plan incorporates best practices and procedures from incident management disciplines—homeland security, emergency management, law enforcement, firefighting, public works, public health, responder and recovery worker health and safety, emergency medical services, and the private sector—and integrates them into a unified structure.

The Department of Health and Human Services, which includes the National Institutes of Health and the NIEHS is a signatory to the NRP. Upon the activation of the National Response Plan (NRP) NIEHS may be activated by the Occupational Safety and Health Administration (OSHA) under the NRP's Worker Safety Health Annex to provide:

- Training technical assistance such as instructional staff, curriculum development experts, subject-matter experts, and professional staff.
- Safety training to worker target populations with respect to the nature and location of the incident and the particular hazards.
- Assistance and support in the development and delivery of site-specific health and safety training through appropriately qualified WETP awardee instructional staff.
- Assistance such as respirator fit-testing and distribution of PPE.

2. 2004- 2005 PROGRAM HIGHLIGHTS

The WETP has established an effective national framework to develop and provide comprehensive training that is needed to address the complex needs of Superfund cleanups, chemical emergency response, RCRA corrective actions, and urban communities surrounding brownfields sites.

In completing the 18th year of the Superfund WETP (FY 1987-2005), the NIEHS has successfully supported twenty primary awardees. These represent over one hundred non-profit institutions that have trained more than 1.4 million workers across the country and presented nearly 77,000 classroom and hands-on training courses, which have accounted for more than 19 million contact hours of actual training (See Appendix 1).

Approximately twenty-seven million dollars of the September 1, 2004 to August 31, 2005 funds were allocated to continue support of the NIEHS Awardees. Of the $27 million, $21,544,623 supported the HWWTP to train hazardous waste workers and emergency responders. One supplemental action was made, which included $1,030,998 for Weapons of Mass Destruction (WMD) Training Response. Over three million dollars of the funds were allocated to continue support for the MWTP. The WETP allocated $750,000 to support the Small Business Innovation Research (SBIR) Program. As a result of the funding, NIEHS awarded (See Appendix 2):

- 17 HWWTP awardees received awards totaling $21,544,623
- 5 MWTP awardees received awards totaling $3,300,000
- 6 SBIR awardees received awards totaling $750,000
- 7 WMD awardees received awards totaling $1,030,998

During the past year, health and safety training occurred in all regions of the country to relevant target populations with the prime focus on 29 CFR 1910.120. The seventeen primary worker-training awardees, in conjunction with over eighty collaborating institutions, have delivered 7,663 courses, reaching 130,837 workers, which account for 1,211,824 contact hours of health and safety training. This training ranges from 4-hour refresher programs through more complex train-the-trainer courses lasting up to 120 hours in duration (See Appendix 3). Between September 1, 2004 and August 31, 2005, 36% of the training focused on delivering CERCLA cleanup worker training. This comprises 47,639 workers who received 80 hour training, basic 40 hour training, or 4-8 hour refresher courses out of the annual total of workers reached by the program (See Appendix 4).

2.1 Hazardous Waste Worker Training Program Update

Introduction: For the 17 WETP prime awardees, August 31, 2005 marked the completion of the fifth year of the five-year cooperative agreements to support worker-training activities.

The prime awardees generally consist of consortia that are collectively made up of over eighty member institutions including universities, community colleges, public health groups, labor-management trust funds, labor organizations, and state and local government units.

Participating programs have developed model curricula and training programs. The core curriculum includes: hazard recognition and control; air, soil, and water sampling aspects; selection, care and use of respirators and other personal protective equipment; engineering controls and their use; safe work practices; proper decontamination procedures; medical surveillance requirements; confined space entry; spill containment and other emergency procedures; community health protection, legal rights and responsibilities; on-site record keeping requirements; and other elements required by the OSHA and EPA regulations.

Training programs have implemented qualitative and quantitative systems to monitor the training. The program has worked closely with EPA, OSHA, NIOSH, DOE, DOT, FEMA and other federal agencies to maintain technical accuracy of training materials and to assure training of the highest quality. The NIEHS refers to this as "gold standard" training. The high quality curricula and other training-related materials developed by the program are available to the public through a NIEHS-sponsored National Clearinghouse for Hazardous Waste Worker Training and its Internet home page at (*http://www.wetp.org*).

Who are these consortia? Who benefits from their services? How many benefit? Are there specific examples or anecdotes from their programs that provide useful insights into the nature of health and safety training in this country? To answer these fundamental questions, each of the current NIEHS awardees will be briefly considered.

The New Jersey/ New York Consortium (NJ/NY Consortium)

Who they are: The NJ/NY Consortium consists of the University of Medicine and Dentistry of New Jersey (UMDNJ); Hunter College, City University of New York; New Jersey State Police; New York Committee for Occupational Safety and Health; New York District Council of Carpenters Labor Technical College Health and Safety Department; University at Buffalo; and Universidad Metropolitan, Puerto Rico. The NJ/NY Consortium also receives funding under the Minority Worker Training Program and the Brownfields Minority Worker Training Program reported on separately.

Who benefits: Private sector and city, state, and federal employees in New York, New Jersey, and Puerto Rico. These include police officers, environmental investigators, OSHA compliance inspectors, carpenters and carpenter apprentices, subway workers, radiation workers, emergency medical responders, and hazardous materials remediation workers.

How many: The Consortium has provided training to 20,431 workers in 1,184 courses, totaling 152,914 contact hours.

Focus on Puerto Rico: The Universidad Metropolitana provides comprehensive training in Spanish, including the 40-hour initial, 8-hour refresher and DOT Awareness, for public and private sector workers in Puerto Rico. Over the last year, UMET has trained workers from six state agencies, among them the PR Department of Health, the Emergency Management Agency, the Police Department, the Environmental Quality Board and the Corporation of the Fund for the State Insurance Plan; two federal agencies: USDA and the National Guard; six municipalities: Aguadilla, Bayamón, Cabo Rojo, Caguas, Carolina, and Juncos; four universities: Sagrado Corazón, Technical Institute, Universidad del Este and Universidad Metropiolitana; and many private industries, among them: Best Foods, BristolMyersSquibb, Cadillac Uniforms, Fluor Daniels, El Nuevo Día, Empire Gas, Goya of PR, Merck-Sharp and Dohme, Timberline, Hewlett Packard and Unilever.

UMET also provides disaster preparedness training. The HDPT program has provided outreach to the emergency services personnel in San Juan and across the island. Among the agencies participating in this program are those that comprise the Emergency Management Agency Task Force, the Department of Transportation, and first responders from various municipalities, such as Cabo Rojo, Carolina and Juncos.

Photograph: UMDNJ students Level A demonstration

National Puerto Rican Forum (NPRF) / OAI Consortium

Who they are: NPRF, located in New York City, New York heads up a consortium that includes OAI, Inc., Chicago, Illinois; Maine Labor Group on Health (MLGH), Augusta, Maine; Latin American Youth Center (LAYC), Washington, DC; and Era Environmental, Independence, Missouri.

Who benefits: First responders in Kentucky, Maine, Puerto Rico and the Midwest, as well as hazardous materials workers in Maine, Kentucky, Louisiana, Georgia, Nebraska, Illinois, Indiana, and New Mexico.

How many: The Consortium served 3,522 students by delivering 222 courses that generated 66,688 instructional contact hours.

Program Highlights: Noteworthy accomplishments for the HWWTP include the addition of new collaborating training partners— Puerto Rico Emergency Management Authority (PREMA), the Kentucky Hospital Association, and the Lake County, Indiana Fire Chiefs Association. The consortium also expanded existing collaborations with the Chicago Firefighters, Kentucky Emergency Management, and the Illinois EPA. All of these organizations have requested continued training by OAI trainers.

OAI conducted two *Methamphetamine Awareness* trainings for 35 first responders in June, 2005 for the Lake County Fire Chiefs Association, Indiana. Both classes target audiences included fire fighters, disaster/emergency management personnel and law enforcement officers. The courses incorporated a visual display of clandestine lab chemicals and equipment, which had been used to manufacture methamphetamine in Kentucky. Indiana has one of the country's fastest growing methamphetamine problems and many attendees noted the timeliness of this course that addresses the burgeoning need for worker safety training.

Photograph: Final cleanup stages of a clandestine methamphetamine lab, determined to be under the IDLH level, after Technicians have stabilized the area. Kentucky 2005.

The New England Consortium (TNEC)

Who they are: The New England Consortium (TNEC) is headed by the University of Massachusetts, Lowell and includes the Massachusetts Coalition for Occupational Safety and Health (MASSCOSH), Connecticut Committee for Occupational Safety and Health (ConnectiCOSH), Rhode Island Committee for Occupational Safety and Health (RICOSH), Western Massachusetts Coalition for Occupational Safety and Health, and the New Hampshire Coalition for Occupational Safety and Health.

Who benefits: TNEC has been working since 1987 to provide top quality participatory hands-on health and safety training to workers throughout the region including. In addition to labor unions and community organizations, examples of organizations whose members received TNEC training include the New England Native American Tribes, OSHA Inspectors Region 1, Boston Environmental Strike Team, U.S. Geological Service, Public Service of New Hampshire, Narragansett Bay Authority, Boston Public Health Department, Covanta Energy, OSHA Region 1 Compliance Officers, Region 6 HAZMAT Team, JFY Networks (formerly Jobs for Youth), and the Essex Agricultural Technical High School (MA).

How many: TNEC conducted 63 courses for 831 workers involving 12,056 hours of instruction.

Training Energy Workers: "The most important thing I learned today is a better understanding of the importance of knowing the dangers that we deal with at our facility on an everyday basis. Specifically, we reviewed the Station Emergency Action Plan; and, we found areas that need to be addressed."

The New England Consortium has been providing 24-hour Emergency Response training and annual ER Refreshers for workers at an electric generating facility in New Hampshire over the past several years. The plant uses large quantities of anhydrous ammonia which are shipped by rail car.

Photograph: A mock drill at the facility.

International Union, United Auto Workers (UAW)

Who they are: The International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (UAW) is one of the largest and most diverse unions in North America, with members in virtually every sector of the economy.

Who benefits: Their primary target sector is 3,000 smaller establishments with about 375,000 members, emphasizing the automobile, metalworking, and transportation industry. In addition UAW represents public sector employees with wastewater treatment and transportation assignments and works with minority and underserved community residents who work in or live near hazardous waste sites or industrial facilities.

How many: The UAW conducted 155 programs and delivered training to 3,098 participants with 11,567 contact hours. This included four 24-hour Operations Level Industrial Emergency Response (IER) courses for 64 trainees, totaling 1,536 contact hours. This also included one 40-hour Technician Level Industrial Emergency Response course for 12 trainees, totaling 480 contact hours.

Exceptional Bravery: 12 UAW members were part of the 38 person "ride out" team that protected and saved the important National Aeronautics and Space Administration (NASA) Michoud Assembly Facility during Hurricane Katrina. NASA administrator Michael Griffin presented the workers with Exceptional Bravery medals. The award, among the highest honors given by NASA, recognizes "exemplary and courageous" acts in the face of danger while preventing the loss of life or government property. These workers had risked their lives to keep the generators and pumps running -protecting the facility and sensitive equipment from flooding, and wind and rain damage.

According to UAW local president Dennis Fauver, the 300 UAW members working at Michoud lost everything as a result of Katrina. The Local Union hall was destroyed, and Fauver ran the hall out of his house for over 4 months. The people who stayed at the facility on the ride out team "saved the space program" according to both Fauver and Adminstrator Griffin.

Photograph Courtesy NASA: Hurricane Wind Damage at the NASA Michoud Facility.

University of Alabama at Birmingham (UAB)

Who they are: The University of Alabama at Birmingham (UAB) Center for Labor Education and Research (CLEAR)

Who benefits: Communications Workers of America (CWA), Native American tribal members and employees, and Fire and Rescue Service members, emergency medical service personnel, law enforcement officers, environmental regulatory personnel, public health officials, and other public sector emergency responders

How many: During the grant year, UAB conducted 186 courses for 3,644 individuals for a total of 19,010 contact hours of training.

And when the storms came: The Poarch Band of Creek Indians in south Alabama has received extensive NIEHS grant-funded training from UAB in recent years. During the 2005 grant year, the Poarch Creek Reservation received direct hits from Hurricanes Ivan and Dennis and a near miss with Hurricane Katrina. The Poarch Creeks found Incident Management Systems training provided by UAB to be invaluable in responding to all three events. April Sells, the tribe's Emergency Preparedness Coordinator, states, "We established the Incident Command System immediately after Ivan struck and it was invaluable. Things ran so smoothly it was scary. Anyone who says ICS doesn't work has never used it. Based on what we learned in responding to Ivan, we activated the ICS 24 hours in advance of Dennis, which was a big help in preparing for it. The system allowed us to maintain a smooth flow of water, food, and ice throughout the reservation after the storms. We used the ICS to assign daily duties to our staff and to maintain accountability, which allowed us to monitor their safety. As a result of the incident management skills we gained from UAB's training, we have received recognition at the local and state levels for our expertise and we received an award from the Indian Health Service. As a result of the recognition, we have received additional equipment and funding from the State of Alabama, and we are in the process of establishing an emergency operations center in a 'safe room' at our fire department, which will be the only EOC in our county. Hurricane Katrina barely missed us, but devastated the region to the west of us, and the expertise we gained from UAB training has allowed us to assist others located there."

Photograph: UAB training excercise

Service Employees International Union, AFL-CIO (SEIU)

Who they are: SEIU represents approximately 285,000 workers in acute care hospitals, 10,000 workers in highway maintenance and 7,500 workers in wastewater treatment.

Who benefits: Health care and public sector workers primarily in Maine, New Hampshire, New York, Nevada and California. This includes registered nurses and other health care workers, home care workers, employees of a state department of transportation and other state workers.

How many: From September 1, 2004 through August 31, 2005 the SEIU HazMat Training Project has trained a total of 2,221 participants in 121 classes, for a total of 21,208 hours of training.

Learning How To Protect Yourself: In 2005, a new continuing education requirement for Nevada nurses went into effect, the first in the nation. To renew their license, every nurse must complete an approved bioterrorism awareness class. The SEIU HazMat Project trained more than 250 nurses, both union and non-union, in Reno and Las Vegas to meet this new requirement. The Project developed a one day class, using previously developed Small Group Method activities on Emerging Health threats to meet this new requirement.

Photograph: Buffalo, New York Decontamination class participants practice donning PAPRs.

George Meany Center for Labor Studies-National Labor College (GMCLS)

Who they are: The National Labor College (NLC) on the George Meany Campus serves the continuing and higher education needs of workingmen and women and their union representatives.

Who benefits: Rail workers from seven rail unions involved in the transportation of hazardous materials. This includes carmen and track workers, engineers, building and bridge department workers, conductors, laborers, signalmen, yardmasters, foremen, and Native American and Spanish-speaking production gang workers.

How many: During the current budget period, September 1, 2004 through August 31, 2005, a total of 1,546 rail workers from 36 states and the District of Columbia participated in 185 training courses in classrooms, online and a blended training delivery, and a total of 13,694 contact hours.

Training Native American and Hispanic Railroad Workers: Awareness level training has been provided to Native American and Hispanic railroad production gang workers by peer trainer Darryl Begaye, from the Navajo Nation. Mr. Begaye continues to use a blended form of training, in which he combines online training developed by the Rail Program with more traditional classroom work. Because internet connections are not always available, he takes the online course with him on CD and provides lap top computers for student use which provides valuable training experience for this population of trainees. He also uses existing classroom modules and has hands-on activities with the *NIOSH Pocket Guide* and the Department of Transportation's *Emergency Response Guidebook*. During the November 2004 APHA annual meeting, Mr. Begaye presented his work, *"Hazardous Materials Training for Native American Rail Workers"*, which highlighted several different training experiences for this underserved population of rail workers.

Photograph: Railroad workers in "don and doff" training exercise

Laborers/Associated General Contractors Education and Training Fund (L-AGC)

Who They Are: This grant consortium is administered by the Laborers-AGC Education and Training Fund (Laborers-AGC) and includes the International Brotherhood of Teamsters (IBT). The Laborers-AGC Education and Training Fund, is a joint labor-management training trust fund formed by a partnership of the Laborers' International Union of North America (LIUNA) and the Associated General Contractors of America (AGC), who provides comprehensive education and training programs to individuals and organizations within the LIUNA marketplace. The International Brotherhood of Teamsters is one of the largest and most diverse labor unions in the world.

Who Benefits: The consortium targets skilled Construction Craft Laborers, Teamsters, and other construction craft workers engaged in environmental remediation. Laborers-AGC conducted their training at 18 regional centers and three mobile units. These centers are located in New York, Indiana, West Virginia, Missouri, New Jersey, Pennsylvania, Michigan, Connecticut, Kentucky, Louisiana, Washington, Illinois and Hawaii. The mobile units are based in Southern California, West Virginia and Iowa. The IBT conducted their training at centers in California, Rhode Island, Nevada, Illinois and New York.

How Many: The Laborers-AGC and the IBT combined programs conducted **512** courses for **6,469** trainees. This accounts for 149,410 contact hours of training.

Job Performance and Safety: At the conclusion of each Laborers-AGC Hazardous Waste Refresher course, trainees are asked how environmental training has affected performance and safety on the job. More than 60% of those responding reported that they used the specific content of the course at work. They also indicated that the training had enabled them to master new skills that they used frequently on the job. Respondents not only indicated an increased awareness, but also indicated that they were using the knowledge. Typical worker responses included comments such as, "Has helped me to be more observant and open minded as far as recognizing hazards or potential hazards. And I look at safety plans." and "Has brought to my attention the hazards of everyday life and how to make them safer."

Photograph: Sampling practice

They also reported increased awareness of their surroundings and the hazards associated with working on environmental remediation sites. Typical worker responses included comments such as, "I try to anticipate problems and take steps to solve them." and "Ask to see MSDS paperwork on materials and chemicals I am not familiar with." Many workers reported changes in individual behavior, especially those associated with using proper personal protective equipment (PPE) and identifying and pointing out specific hazards to other workers and their supervisors. Typical comments include, "Recognize many hazards conditions, and choose proper PPE to protect myself." and "I use my training almost daily. It has helped me become well-trained worker. I am aware of hazards and know how to handle them, I know how to protect myself and the workers around me." Several participants noted that they have acted to change job site situations or activities including inadequacies in site safety plans, PPE problems, and working conditions. Moreover, many workers acted to fix the problems themselves or were sought out by supervisors, site safety officers and other workers to help address specific work site problems. Several noted that their expanded skills base made them more employable and resulted in "more work opportunities" and "expanded hours." Other workers realized benefits to their self-esteem and perceived value as a skilled worker taking pride in their ability to be of service to other workers and their employers. As one worker commented, "It has empowered me to make good decisions, for myself and my coworkers."

International Union of Operating Engineers (IUOE)

Who they are: The International Union of Operating Engineers (IUOE) represents 360,000 workers including operating engineers (heavy equipment operators, mechanics, and surveyors), stationary engineers who maintain buildings and industrial complexes, nurses and other health workers, and a variety of public employees.

Who benefits: From Alaska to Florida, Maine to Hawaii, IUOE conducts training for its members, its contractors, government agencies, and other organizations in every region of the country. . IUOE has provided training for the NY Transport Workers Union, U.S. Department of Justice, Bureau of Prisons, West Virginia state agencies, and workers nationwide in critical infrastructures such as ports and waterways, pipelines, hospitals, hotels, refineries, petrochemical plants, stadiums and arenas, and power-generating facilities

How many: Since September 1, 2004 through August 31, 2005, the IUOE has provided training to 16,325 workers under NIEHS Homeland Security' HWWT (Hazardous Waste Worker Training) Program, which exceeds the proposed 12,925 workers to be trained during this time period by 3,400 workers. Through the 40-Hour Basic Site Worker Course 1,893 members were trained (1,600 proposed), and 9,811 members refreshed (10,000 proposed) their basic site worker training through the 8-hour Site Worker Refresher Course.

During the last fiscal year, 2,925 individuals received certification in the OSHA General Construction Course (800 proposed), and an additional 112 were trained under OSHA's General Industry program (25 proposed).

Targeting a Population at High Risk: The target populations for the IUOE's HWWTP training are hoisting and portable (H&P) engineers—heavy equipment operators—and stationary engineers who operate and maintain the heating, ventilation, and air conditioning (HVAC) and other systems in commercial, industrial, and institutional buildings. Demand for training from H&P and stationary engineers has grown markedly since 2001 in the wake of the attacks on the WTC and Pentagon, the anthrax attacks through the postal system, and a new understanding of the vulnerability of many structures subject to terrorist attacks.

The Union's 260,000 heavy equipment operators in the United States represent a critical population on all phases of hazardous waste cleanup. Skilled H&P engineers operate 86 percent of the types of equipment most commonly used at hazardous waste sites (EPA, 1991). IUOE local unions have referral halls from which contractors request trained and skilled heavy equipment operators for assignments. The local unions have training programs that train apprentices for careers as heavy equipment operators and provide skills for upgrading and updating courses to experienced Operating Engineers.

International Chemical Workers Union (ICWU)

Who they are: This consortium is based at the Center for Worker Health & Safety Education which is operated by the International Chemical Workers Union (ICWU) in cooperation with the United Steelworkers of America (USWA), the International Association of Machinists and Aerospace Workers (IAM), the American Flint Glass Workers (AFG), the Rubber Plastics Industry Conference of the USWA (R/PIC), the Aluminum, Brick and Glass Workers Division of the USWA (ABGWD), the Coalition of Black Trade Unionists (CBTU), the United Food and Commercial Workers Union (UFCW) and the American Federation of Teachers (AFT). The consortium also includes the University of Cincinnati and the Greater Cincinnati Occupational Health Center.

Who benefits: With training held both in Cincinnati and in various regional centers, workers throughout the country receive training.

How many: Between September 1, 2004 and August 31, 2005, this consortium delivered 37,083 person hours of training in 249 classes to 3,333 workers in a wide range of hazardous materials training and rank and file trainer development (34,971 contact-hours in 240 classes to 3,272 trainees in the HWWT program; 2,112 contact-hours in 9 classes to 61 trainees in the WMD program).

Workplace Changes: Questions on attempts and successes at making workplace safety and health changes following training are the measures that most closely reflect the empowerment and participatory training philosophy of the ICWU training program. As part of their evaluation study, ICWU documented a significantly higher percentage of participants attempting to make changes in safety and health procedures. Improving co-workers awareness was the focus of these attempts with 90% of all participants discussing chemical awareness with their fellow workers for example. Second, in general, the participants' were very successful in making changes - with 90% of the responders reporting success in basic health & safety areas. Third, the overall impact of the increased activism and high worker-to-worker success rate led to a substantial increase in the overall percentage of all participants who successfully change each targeted workplace area. The ICWU training successfully improved participants' ability to stay motivated after returning to the workplace and successfully implement changes.

Paper, Allied-Industrial, Chemical and Energy Workers (PACE)

Who they are: The Paper, Allied-Industrial, Chemical and Energy Workers International Union (PACE) represents more than 320,000 workers who manufacture paper, refine oil, and make chemicals, nuclear materials, pharmaceuticals, automobile parts, appliances, small engines, and many other products.

Who benefits: Workers at industrial sites across the country owned by corporations such as 3-M, Chevron-Phillips, Criterion, Georgia Pacific, Mallinckrodt Baker, Molycopr, SCA Tissue, and Sun Oil.

How many: PACE conducted 309 regional and site-hosted classes reaching 5,534 workers, for a total of 40,132 contact hours.

Integrated Training Sites (ITS). Triangle of Prevention (TOP) Program. This past year the PACE developed a strategic alliance with Shell Oil Products; Motiva Enterprises and Shell Chemicals to integrate the Triangle of Prevention Program (TOP) into all of their facilities. The trainings in this program include initial 8-hour training for the entire workforce at each site, 4 hour refresher training, an additional 16-hour advanced training for incident investigators with an 8-hour refresher in each subsequent year, and at least four hours of Lessons Learned Training for the entire workforce at each site. There are now 120 separate Lessons Learned Training Activities available in downloadable form from the USW Health and Safety Department web site. At each of the current sites, the company provides paid release-time so that its employees can attend the workshops.

Midwest Consortium for Hazardous Waste Worker Training (Midwest Consortium)

Who they are: Headed by the University of Cincinnati, the consortium includes Southeast Michigan Coalition on Occupational Safety and Health, Greater Cincinnati Occupational Health Center, University of Illinois, University of Kentucky, Michigan State University, Indiana University, University of Tennessee, University of Minnesota, University of Louisville, Lakeshore Technical College, Detroiters Working for Environmental Justice, Citizens for Environmental Justice, Ohio Environmental Council, Fisk University - Environmental Justice Program, and the Three Affiliated Tribes.

Who benefits: Workers in Illinois, Indiana, Kentucky, Michigan, Minnesota, Ohio, Tennessee and Wisconsin.

How many: The Midwest Consortium for Hazardous Waste Worker Training delivered 982 programs to 21,159 persons between September 1, 2004 and August 31, 2005.

Comments from Participants: "This year I can honestly say that the training paid off. We had not had an ammonia release in our facility for many years, but we had one right after this training was completed. Because of the skills my team members had, we were able to isolate and abate the ammonia leak efficiently and were able to keep anyone from getting hurt ."

"Training was helpful in siting and setting up a decon line for a spill of chlorosilanes caused by equipment failure. A portion of the hazardous material formed hydrochloric acid fumes when it mixed with moisture in the air. Even though it was a very hazardous situation, only one person received minor injuries and was treated and released."

"The Tuesday after class ended, I was in the field using a PID. I have written up two Health and Safety Plans (drafts) and next month I'll be in New Orleans. It seems there hasn't been a moment yet that I haven't applied my 40-hour training. "

"Our last project in Peoria, IL was to open and evaluate 1600+ manholes. Because of your training, we anticipated confined space entry permits. We now have all the safety equipment that we should have had for years. "

Photograph: Practicing on a decontamination line.

International Association of Firefighters (IAFF)

Who they are: The International Association of Fire Fighters (IAFF) has more than 2,700 affiliates, representing 263,000 fire fighters and paramedics in more than 3,500 communities in the U.S. and Canada.

Who benefits: IAFF continues to address the hazardous materials training needs of emergency responders in those geographical areas with the greatest densities of Superfund sites. The IAFF local affiliates help to determine training needs, allow access to students (i.e., emergency responders) and establish opportunities for repeat courses in their communities. Also during this period the IAFF continued to help in rebuilding the hazardous materials response capabilities of the Fire Department of New York (FDNY) and mutual aid fire departments that represent the greater New Jersey / New York metropolitan area.

How many: A total of 763 students were trained under the IAFF/HWWT project as of August 31, 2005. These students were trained during 47,248 contact-hours in 35 separate classes.

A Few Facts About the Program: The HWWT project takes the training to the trainees. Twenty-eight percent of HWWT student populations work in fire departments with fewer than 100 personnel. Only 10% work in departments with more than 1,000 employees. The largest percentage (33%) of students worked in fire departments numbering between 101 and 999 employees.

Sixty-six percent of IAFF trainees are fire fighters. The next largest group trained was HazMat team members at 13%, followed by Paramedics at 7%. The remaining 14% worked in a variety of capacities that included Lieutenant, Captain, District Chief and Fire Chief.

The IAFF target audience for all training is the fire service; 86% of the current trainees were employed by the fire service, while law enforcement and public safety collectively accounted for 8% of the student population. Employers for the remaining 6% of the student population were industrial fire brigades, private industry and private EMS.

Finally, IAFF trainees were part of some of the most active response organizations in the country. Half of the trainees responded to more than 40 emergency calls per month and 35% responded to between one and 29 calls per month. The final 18% responded to between 30 and 39 calls per month.

Photo: IAFF trainees going through decon.

Center to Protect Workers' Rights (CPWR)

Who they are: The Center to Protect Workers' Rights (CPWR) and its Construction Consortium for Hazardous Waste Worker Training includes the following international-

national construction unions: Insulators & Asbestos Workers, Iron Workers, Boilermakers, Painters, Bricklayers, Plasterers & Cement Masons, Carpenters, Plumbers & Pipe Fitters, Electrical Workers, Sheet Metal Workers. These unions represent over 2,000,000 workers. CPWR also receives funding under the Minority Worker Training Program and the Brownfields Minority Worker Training Program reported on separately.

Who benefits: Thousands of CPWR trained workers are found at Superfund sites throughout the country.

How many: CPWR's consortium has conducted 285 classes and trained 4,438 workers, technicians and support staff in 74,192 training contact hours

Instructor Development/Trainer Enhancement: In order to ensure the delivery of high quality health and safety training to thousands of construction workers every year, CPWR devotes a great deal of effort and creativity in conducting annual instructor development programs for Building Trades health and safety instructors. New this year was a Bilingual Train the Trainer that provided 23 bilingual instructors the opportunity to take the OSHA 500 course, and then immediately turn around and practice teach the Building Trades SmartMark Spanish language OSHA 10 course to their colleagues. One graduate wrote 2 months after the course to say he had been delivering back to back Spanish language OSHA 10 courses in Las Vegas on Saturdays and Sundays.

Also new this year at their annual Trainer Enhancement was a focus on immigrant workers in the U.S. construction industry, and an in depth analysis of the environmental, legal and cultural aspects of Mexico, with a look at what is prompting so many Mexicans to risk so much to enter the U.S. hoping to work in construction. Eighty veteran Building Trades health and safety instructors came to San Diego in August, 2005, with a day trip to Tijuana, to hear from Mexican government, academic, and community organization representatives. Building Trades instructors were able to ask questions about Mexican environmental laws, construction safety enforcement, the movement of hazardous waste across the border, and the current conditions of Mexican construction and other workers. As Garrett Brown, Compliance Officer for CalOSHA told us, "We are in the same boat with these workers, no matter what language, what culture, what country. This is our future."

Photo: Hands-on practice.

California-Arizona Consortium (CAC)

Who they are: The California-Arizona Consortium is led by the UCLA Labor Occupational Safety and Health (LOSH) Program and includes the University Extension, UC Davis (UCDE); UC Berkeley's Labor Occupational Health Program (LOHP); Arizona State University (ASU), and the University of Washington (UW).

Who benefits: Public and private sector workers and supervisors throughout California and Arizona in addition to Alaskan Natives; workers in the Pacific Trust Territories and Hawaii, Spanish-speaking day laborers and janitors, and a significant cohort of Navajo workers through the Bureau of Indian Affairs. These workers are engaged in hazardous waste handling and treatment, air monitoring, hazmat transport and manifesting, site assessment/investigation and supervision, facility inspection, regulatory compliance, firefighting, emergency response, Superfund and military base cleanup, and a number of other related tasks.

How many: The California-Arizona Consortium trained 2,805 workers in 191 courses for a total of 33,068 contact hours.

Training Leading to Action: "This training has improved our awareness and our ability to respond to a hazardous materials incident. A few years ago my crew and I responded to a CL2 gas leak where a regulator failed leading CL2 gas into the room. Because of our prior response training we responded safely and mitigated the problem quickly."

"I am able to change how I do things at work because of what I learned in class--especially with utilizing the harness and following confined entry protocols."

"This training applies to all workplace environments. It helped me identify an unsafe situation (chemical hazard) in a workplace that did not involve haz waste operations, i.e. routine shipping by the public at a 'UPS Store.'"

"One of my road crews found a bucket of unknown substance we couldn't identify, it resembled gunpowder. It was later found to be sand blasting material, but the crew knew [because of the class] not to approach it until it had been identified."

Photo: CAC Instructor leads small group activity on Saipan Island, Commonwealth of the Northern Mariana Islands

American Federation of State, County, and Municipal Employees (AFSCME)

Who they are: The American Federation of State, County, and Municipal Employees (AFSCME) represent over 1.4 million public service and health care workers.

Who benefits: Road, bridge, water sewer, wastewater treatment, sanitation, other public works, public safety and security, health care workers, social services, schools and higher education employees, administrative staff.

How many: AFSCME delivered 95 courses to 1,583 trainees for 11,420 total contact hours.

Training Tailored to Students' Needs: In June, 2005 ATEI staff conducted a 40-hour Haz Mat Technician-level course for the Town of Hempstead's Bay Constable Division at the request of the Town and the union, NY Civil Service Employees' Association. The Constable Division is responsible for responding to chemical spills on Hempstead Bay which is part of Long Island Sound, as well as releases on lands and waterways adjacent to the Bay. The Bay Constables work closely with the U.S. Coast Guard in spill response activities. They were very involved in the overall response to the terrorist attacks of 9/11/2001. The Tech program built toward a simulated spill exercise by the end of the week in which an unidentified green liquid was released into an outfall and was flowing into Hempstead Bay. The response team was required to conduct an assessment, and deploy responders to stop the leak and confine spilled materials. Prior to entry students were asked to develop a plan for the exercise, make staff assignments, develop the SOP's to be used in the response, and develop a list of all equipment inlcuding PPE needed to complete the mission. The site simulation was conducted entirely on the water with entry and back-up teams dressed to Level B protection. The entry team installed a sewer plug in the outfall, successfully inflated it and stopped the flow of product into the bay. They then deployed booms in two concentric rings to catch any spilled material. This water response presented many special challenges when contrasted with a response to a land spill. Watercraft safety became an integral part of the program in addition to the technical aspects of the response. Students found working in Level B ensembles from the bow of a boat very challenging. The Town's emergency response plan was found to need some major revisions, including preparation for watercraft decontamination. This program demonstrates one of the strengths of the ATEI program which is the ability to tailor training to make the course relevant to the specific needs of the trainees. The program was well received by the trainees, the employer, and the local union. Plans for the annual refresher for these trainees include responding to a spill from a barge anchored in the Bay -- a work platform on one of several bridge/causeway projects underway.

Hazardous Materials Training and Research Institute (HMTRI)

Who they are: This consortium is lead by Kirkwood Community College's Hazardous Materials Training and Research Institute (HMTRI) and includes the Community College Consortium for Health and Safety Training (CCCHST). There are 77 colleges and universities, seven community-based organizations, nine governmental units, 24 independent trainers and private companies, and one union in CCCHST, representing 34 states and one territory.

Who benefits: Workers, technicians, and supervisors exposed to hazardous materials encountered during hazardous waste site clean-up, Brownfields redevelopment, transportation of hazardous materials, and in response to spills and releases of hazardous materials.

How many: CCCHST institutions delivered courses to 33,135 students, producing 207,857 contact hours of instruction. This includes five instructor development courses for 115 instructors, producing 3,854 contact hours of instruction.

Corn Belt Safety: Cedar Rapids, Iowa is a major wet corn milling location with three major mills operated by ADM, Cargill, and Penford Products. Corn is processed using a wet milling procedure to produce several important products. The most abundant of these is starch, which is further processed to generate sweeteners used mostly in soft drinks and ethanol products used mostly as fuel. In addition, oil is also separated from the corn in this process. Throughout the process many hazardous chemicals are used including Hydrochloric Acid; Sulfuric Acid; Sulfur Dioxide; Ethylene Oxide; Hexane; Butadiene; Chlorine and Sodium Hydroxide.

HMTRI has trained industrial hazmat teams from all of the corn processing operations in the region and provided training assistance to many of the municipal teams that respond in support of the industrial responders. Recently there have been potentially dangerous chemical releases at several of the plants. Each has been successfully and safely contained by HMTRI trained response teams. The following is a summary of one of the incidents.

On a warm August night just pass midnight, employees at one of the processing facility noticed a leak in a railcar sitting on the company siding. An alarm was sounded at the plant, alerting the others in the area, summoning their onsite spill response team and making notification to the local municipal Hazmat Response Team.

The onsite personnel had been trained to the operation level and quickly isolated the area, identified the material by the labels, placards, and type or shape of the railcar and setup an Incident Command System.

Site control was setup and managed by their onsite team members. The railcar contained 20,000 gallons of 35% Hydrochloric Acid and was estimated to be leaking about 5 gallons per minute into the rock/gravel below the railcar and was pooling on ground.

As the municipal HAZMAT team arrived at the facility, a unified command system was implemented and an Incident Action Plan (IAP) was developed.

The recon team, suited in Level A, determined that an air bag patch was needed to stop the release before the railcar could be moved.

A two person entry team was assigned the task of placing the airbag patch on over the hole on the railcar to stop the leak. Additional team members were deployed to assist in this difficult operation. Several adjustments were made by the team before the airbag stopped the leak.

All entry team members were sent through decon and a medical check after the completion of the task.

The remediation of the HCL on the ground and the off load of railcar was handled by industrial site team.

2.2 Minority Worker Training Program Update

he Minority Worker Training Program (MWTP) has successfully trained thousands of young minority adults over the past ten years through programs at the Center to Protect Workers' Rights, Xavier University, National Puerto Rican Forum, Laborers-AGC Education and Training Fund, and the University of Medicine and Dentistry of New Jersey. The main goal of this program is to increase the number of under represented minorities in the environmental remediation and construction fields by providing them with a vigorous training program that eventually leads to productive employment. Trainees prior to entering this program were all un-employed or chronically under employed (See Appendix 5). After ten years, 3,166 participants have been successfully trained in worker health and safety for construction and environmental cleanup work. The overall job placement rate increased to 67% up from 66% last year for a total of 2,110 trainees employed (See Appendix 6).

For this period, 277 participants were trained in 9 cities: Chicago, IL; Houston, TX; New Orleans and Baton Rouge, LA; two locations in New York -Manhattan and the Bronx; Oakland, Los Angeles, and San Francisco, CA; and two locations in Washington, DC. Of those trained, 205 are gainfully employed, primarily in the construction and environmental fields which represents a 74% job placement rate. A total of 67 workers are employed in environmental jobs and 138 are in construction or other jobs. Courses taken by the students ranged from Life Skills to tiered Environmental Technician training for a total of 175 courses representing 93,452 contact hours of training (See Appendices 7 and 8). Each program developed specialized training programs specific to the workforce needs in their geographic area; however, hazardous materials and waste training remained the primary core curriculum. New or modified training added this year include mold remediation training.

The collaborative nature of this program, with experienced health and safety training programs partnering with local community based organizations, has contributed to a marked increase in the caliber to trainees enrolled in the program. Coupled with a vigorous life skills training, participants are successfully navigating through this segment, therefore the retention and job placement rates are increasing. The Life Skills training is a supportive service tailored to the individual's needs. The services might include remedial mathematics tutoring, budget counseling and cash management, life situational counseling, and job readiness skills. These life skills help prepare the students to take apprenticeship and employment examinations, as well as pass the environmental examinations leading to certifications in lead abatement, asbestos abatement, and hazardous waste operations. A summary of the accomplishments and highlights of each of the training programs is listed below.

The Center to Protect Workers' Rights (CPWR) Consortium

The CPWR Consortium provided training in the Baltimore, MD; New Orleans, LA; and Oakland, CA. An intensive training program of 30,388 contact hours of training was provided for 64 students with 61 students graduating and 44 of them finding gainful employment for a 69% job placement rate. Overall, in Baltimore, all 13 students are employed. In New Orleans 17 of the 20 students trained are employed and in Oakland, of the 31 students trained, 14 are employed.

Program highlights:

- Average wages earned increased 5% over those earned by graduates in previous year.
- In New Orleans, 17 program graduates received job coaching and mentoring through a new mentoring program that contributed to a 100% apprenticeship retention rate.
- In Baltimore, 3 students entered the Bricklayers' 12-week Residential Training Program and obtained jobs earning $15.40/hour.
- Baltimore's First Source Hiring Initiative was established with all of Johns Hopkins' construction sites and with the East Baltimore Development Initiative (EBDI) bio-tech redevelopment project. Baltimore staff was instrumental in negotiating these agreements.
- The Oakland program successfully obtained a continuation of the CalTrans grant for 3 years to supplement job training funding for the Cypress Mandela WIST Center until 2007.

The period ending August 31, 2005 marked the final year of the five-year NIEHS grant for the MWTP. During that five year period the CPWR Consortium enrolled and trained a total of 369 students and placed 246 students as detailed below in Table 1.

Five- Year Program Summary: Over the past 5 years, (2000-2005) the CPWR Consortium proposed to train 325 trainees and find employment for 75% trainees that graduated. A total of 369 trainees entered the program and 250 were employed. The programs attained a 114% training rate and 68% placement rate and offered a total of 186,404 contact hours of training. In Oakland and New Orleans graduates obtained jobs mostly in construction and in Denver and Baltimore, environmental jobs were more prevalent.

The programs were evaluated according to performance, impact on students, employment in environmental work and construction, and the impact on communities. Further, the programs assessed if they attained the five NIEHS review criteria for worker training programs. Other areas assessed included use and adoption of best practices e.g. emphasis on work ethic and the provision of "real world" learning experiences, use of community advisory committees, and implementing recommendations to improve the program. Specifically, across program years, the evaluation results demonstrated the trend that programs continued to meet or exceed their goals for recruiting, selecting, training, retaining, placing and tracking students. Programs continued to use lessons learned to lay a solid foundation for the programs having a positive impact on students and communities. Also best practices and areas flagged for improvement allowed for application across programs. This past program year, 100% of the graduates were tracked by the Information Specialist. All graduates were still working.

Photograph: CPWR trainees.

Laborers-AGC Education & Training Fund (Laborers-AGC)

During this period, Laborers-AGC focused its training efforts on three urban areas: San Francisco, California; Houston, Texas; and Washington, D.C. During that period a total of 81 participants started training and 76 trainees completed training, with 31 trainees in the San Francisco, 22 trainees in the Houston and 23 trainees in the D.C. Currently out of the 76 trainees who completed training, 62 or 82% are employed with an overall job placement rate of 77%. Salaries range from $11,520 in Houston to $46,571 in San Francisco. Historically, the Laborers MWTP job placement has always been greater than 75% during the program year. The Laborers-AGC training fund has been able to utilize the MWTP as a "pre-apprenticeship" program to help them evaluate prospective apprenticeship program applicants more effectively and help prepare them for the two-year apprenticeship program. As always, a major benchmark of success for Laborers-AGC is the increasing number of trainees who are indentured into the Construction Craft Laborers' (CCL) Apprenticeship Program. A total of 13 trainees have become CCL apprentices in the D.C this program year. Traditionally, female participation in the program is limited. However, this year the number of female trainees is strong with 12 female trainees or 15% of the total. It is Laborers-AGC's hope that this increase in female participation will continue in the future.

The San Francisco program, working out of the Young Community Developers (YDC), has continued to show exceptional results in recruitment, retention and job placement over the last 5 year cycle. Out of this program, there are many trainees who have overcome challenges, maneuvered life's obstacles and used this program as a stepping-stone toward their success. Raynell Johnson had this to say about the program, "before beginning job training at YCD, I was unemployed for six months. The outlook for finding a job that would pay decent wages was bleak. However, upon graduating from YCD I have been working a job that I enjoy that allows me to have financial stability with plenty of opportunity for growth. The Life Skills workshops especially help[ed] me to understand the value of being on time and productive for work."

Phenomenal graduates of the San Francisco YDC and the work habits that they exhibit have given us the reputation necessary to accomplish the things that we have, as well as maintain a 92% job placement ratio over the past 5 years. There are approximately 30 graduates currently employed at the Hunters Point Shipyard, and involved in the remediation activities that are taking place. There are another 7 that are employed on the construction that is taking place on the Mission Bay Redevelopment effort near the San Francisco Giants' Stadium (SBC Ballpark). Five are performing work in Palo Alto with New World Technology, and others are spread throughout the Bay Area performing a variety of tasks within the construction and environmental industry.

Five- Year Program Summary: The 2000-2005-grant period has been very successful in providing environmental and construction based training to disadvantaged students in the cities of New Haven, CT; Houston, TX; Washington, D.C; San Francisco, CA and Exton, PA. During the 2000-2005-grant period, a total 484 individuals have been trained. Of the 484 individuals trained 72% or 346 participants have been employed after completing the MWTP. The program was based on building creative collaborations and partnerships to accomplish program goals and objectives. The partnerships of this great effort have been: New England Laborers Training Academy and the Greater Dwight Development Corporation (GDDC); South Central Laborers Training Fund and Make Ready Inc; the Francis L. Greenfield Laborers Joint Training Fund of Washington D.C. and Vicinity; Young Community Developers (YCD), and the Iowa Laborers Education and Training Fund and the Laborers District Council of Philadelphia and Vicinity Education and Training Apprenticeship Fund.

Another indicator of program effectiveness is the data received from assessments of outside evaluators. After a careful review of data collected, EduWorks, Inc., an outside evaluator of the programs, reported that assessment results indicated that the MWTP has met the goals and objectives that were stated in the original pro-

posal that was submitted to NIEHS by Laborers-AGC, and in most cases they have exceeded the minimum benchmarks listed in the original training plans.

Along with tracking program outcomes, EduWorks, Inc. evaluations assessed the processes and procedures that were in place in the MWTP. These processes produced a list of best practices displayed overall programmatically, which contributed to the successful outcomes of the programs. Best practices in program administration and individual program management, as well as the outcomes of program procedures all accomplish the goals and objectives developed by Laborers-AGC and address the NIEHS criteria areas of outreach and recruitment; life skills and job skills training; partnership building; job development and job placement and retention.

The University of Medicine and Dentistry of New Jersey (NJ/NY Consortium)

The New Jersey/New York Consortium through their primary training provider, New York City Carpenter's Union, has continued to house and administer the MWT program. Recruitment for this cycle was markedly improved over the previous year because the continuity in partnerships with community based organizations (CBOs) allowed them to successfully continue outreach to their targeted communities to recruit trainees. Out of the 105 qualified candidates, 79 individuals participated in a three-day try-out phase with multiple activities and interviews, staffed by program administration, Carpenter's instructors, and CBO representatives. Student selection was done as a collaborative process among all program partners. After the try-out phrase, 29 were enrolled and began the pre-apprentice training.

The overall level of student achievement, preparation in academic skills, additional tutoring for those needing it, and quality of instruction from veteran health and safety department staff led to a 100% passing rate on the New York State and New York City asbestos handler licensing exam, as well as the 6-month provisional New York State lead abatement worker exam. Further, all students passed other worker health and safety courses: first aid, CPR, 40-Hour HAZWOPER, and OSHA-10.

The NJ/NY Consortium has maintained its strong relationship with Habitat for Humanity, New York City. During this program cycle, the program was able to send its students for nine days of hands-on carpentry in the service of the community by working on two units in Jamaica, Queens slated for home ownership for two low-income families. Students worked under the supervision of veteran shop teachers to enhance trade-specific skills for employment in a construction environment. The NJ/NY Consortium MWT program was recognized by Habitat as an integral and reliable volunteer force.

Over the course of the 17-week Program, 23 graduated and all are employed. This Program year, most students have been placed in the organized trades. Eighteen students were placed with the Carpenters. Four students are working with other trades working in construction such as the Painters and Steamfitters. One is working in a unionized position at Kennedy International Airport. The first-year apprentice wage in the Carpenters Union is $16.10 per hour, as well as approximately $18 per hour in fringe benefits. Using data collected over the course of last year, of the 2004 graduates, 89 percent still gainfully employed.

Lessons Learned: The Program's partnerships with community-based organizations afford staff with the time and resources to work directly with individual students who may be having difficulties that could prevent them from completing the program. CBOs are vested in their students because they come from their communities. Not only are they the most efficient link to support services, such as housing assistance, food programs, and crisis intervention, but they are also very often intimately connected with their students' families and friends. It is believed that transitioning the students from an environment of low expectations and few options into work-ready, career track citizens requires a network of supports in order to ensure longevity in the workforce.

Five Year Summary of Training: For the period of 200-2005, the consortium trained 159 students with 117 of them obtaining employment. The majority of employment was with the Carpenters at 78 students, other construction and building trades at 25 students and other jobs at 14 students. In each year, recruitment goals were met and the program took steps early on in the initiative to improve program completion rates. The program's completion rates have remained over 80% with job placement at 74%. This is due to a variety of factors, such as the competitive entry process that is maintained by the NJ/NY Program. The program has raised the bar on who can be helped through MWT. All applicants must score a minimum of 8.0 on the TABE (Test of Adult Basic Education), which is the equivalent of an eighth grade proficiency. Additionally, the Program now requires a High School diploma or GED for acceptance. This fulfills two purposes: firstly, almost all the apprenticeship programs require a GED for acceptance, and secondly, completion of a GED is a preliminary indicator that the applicant is ready to make substantive change toward improving her/his life.

Xavier University Consortium

Xavier University's (XU) Deep South Center for Environmental Justice (DSCEJ) in collaboration with Southern University in Baton Rouge (SUBR), the Laborer's-AGC, and the North Baton Rouge Environmental Association implemented year five of the East Baton Rouge Parish Minority Worker Training Program. The program targeted twenty-five (25) eighteen to twenty-five year old African American men and women from communities within East Baton Rouge Parish in the area encompassing Baker, Alsen, Scotlandville and the Prescott neighborhood of Baton Rouge, all of which are situated at the northern end of the Mississippi River Chemical Corridor. The program was implemented in two four-week cycles of Basic Skills Training on the campus of SUBR that included Study Skills, Applied Mathematics, Introduction to Hazardous Materials, Introduction to Computer Basics, Physical Fitness, Life Skills, Job Readiness, Individual and Group Counseling, and Environmental Justice. The Laborers-AGC provided 80 hours of Specialized Construction (general construction with concrete technology) at its facility in Livonia, LA. Technical training also included a 40-hour Hazardous Waste Removal course provided by Delgado Community College, a 24-hour Lead Abatement course and a 32-hour Asbestos Abatement course provided by KDC Environmental Services. Each segment of technical training included hands-on work simulation with an emphasis on safety and OSHA regulations.

There were two cycles of Basic Skills Training with 18 in the first cycle and 14 in the second. During the first cycle, eighteen (18) trainees were certified in construction; fifteen (15) trainees were certified in Hazardous Waste Worker; and sixteen (16) trainees were certified in Lead and Asbestos Abatement. During the second cycle, twelve (12) trainees were certified in construction; fourteen (14) trainees were certified in Hazardous Waste Worker; and twelve (12) trainees were certified in Lead and Asbestos Abatement.

Active job placement efforts were coordinated with the job developer in New Orleans, with some trainees being referred to national contractors for out-of-town opportunities in asbestos abatement. As of July 2005, twenty-nine (29) of the trainees had been placed in jobs, for a placement rate of 90%. In the environmental field nineteen (19) of the 32 trainees were placed and in construction/other field there were ten (10) trainees placed. The jobs ranged from laborers to asbestos workers, with salaries ranging from $6.50 to $16.50 per hour.

Success Stories: In this year's program, Christopher Williams is a good example of a young man whose improvement was significant. Christopher was one of the youngest program participants. At eighteen years of age, he graduated from the program and gained employment initially at $14.03/hour, moved up to a different job at $16.50/hour, and is now working as an asbestos abatement technician with Turner Industries, earning $17.50/hour.

In this year's program as well was Theressa Williams, a proud graduate of the program and a proud certified asbestos worker. She was able to secure employment with SBS Environmental as an asbestos abatement worker earning a salary of $13.00/hour. She spoke at graduation about the supportive nature of the program and staff during her training.

Past Graduates: Follow-up on year 4 program graduates was conducted on an on-going basis in order to assure that they would be successful in keeping jobs on a long-term basis. Of the twenty-eight (28) that were graduated in year four, the July 26th job placement report indicated that ninety-seven percent (97%) of them are currently working. One student, Reginald Allen, has now enrolled in Job Corps for further training. Nineteen (68%) of the program graduates have worked in jobs utilizing their certifications in the past year. Those jobs range from laborer at $6.00/hour to asbestos abatement worker at $13.00/hour. Other trainees have moved away from environmental jobs into related areas, some of which jobs are permanent.

Five-Year Summary of Training: The Xavier Consortium has continued to successful find employment for trainees over the past 5 years. In total, the consortium has reached 136 individuals with 117 of them obtaining jobs for a 86% job placement rate. This high employment rate is due to the strong leadership of the consortium members, close connection with the communities they serve, and the sustained outreach and relationship with construction and environmental employers throughout the south.

The National Puerto Rican Forum (NPRF/OAI Consortium)

The Consortium's MWT Program works to increase the number of underrepresented ethnic minority students who are 18 – 25 years of age and who have an interest in the environmental, construction industries, or related/transferable fields. The program was offered in Chicago, Illinois and Washington, DC, with a pilot program in New York City funded through carryover dollars. For this year, the NPRF/OAI Consortium trained a total of 71 students through the delivery of 38 courses generating 8,956 instructional hours. These numbers include 7 students who were trained in 12 courses using carry-over funds. Of all the trainees, 27 students are currently employed in the construction and/or environmental industries and 16 are employed in other industries that may come in contact with hazardous materials, and 4 are enrolled in continuing education programs for a total of 47 employed. Sixty-six percent (66%) of those completing the MWT program are now employed or enrolled in programs for further education.

In Chicago, two cycles of students were recruited, 31 students in the first cycle were trained through a collaborative program with the OAI Youthbuild program, and 11 students were trained in the second program which targeted disadvantaged individuals from the environmentally distressed neighborhood of Austin in Chicago. Through the collaborative program with Youthbuild, students received sixteen days of hands-on tool and safety training. OAI staff and Wallace Brown of BMC Construction instructed this course. Hands-on training included: framing, window installation, tile laying, copper water pipe and valve installation, and electrical conduit and power box installation. The majority of students also completed technical training, including on-the-job training experience with BMC Construction. Students hung dry wall, painted, laid tile and completed demolition work at two separate sites. BMC Construction is a minority owned private contractor who has worked with OAI for the past two years of MWT-Chicago.

Photograph: Construction skill class

For the second cycle in Austin, OAI collaborated with the Westside Health Authority; a highly acclaimed local public health focused community-based organization. The program began with a widespread outreach and recruitment plan. The Westside Health Authority, Bethel New Life, Safer Foundation, North Lawndale Employment Network, and various community and faith-based organizations provided referrals. The technical and hands-on training by OAI was offered at the Austin Wellness Center, a branch of the Westside Health Authority. The training schedule consisted of the following technical courses: 40 hr. Hazardous Waste Operations and Emergency Response, 10 hr OSHA General Industry, Lead Abatement Worker, Asbestos Abatement Worker, and Mold Awareness. Instrumental Enrichment (IE) was offered each day of the six-week training program for approximately 1.5 hours. IE is an innovative critical thinking and problem-solving methodology.

OAI and NPRF also partnered with the Latin-American Youth Center (LAYC) for a second year to provide two cycles of MWT in Washington, DC. 75 students were recruited for its MWT Program in Washington, DC. Of those 75 students, 39 were enrolled and 38 of them completed training. LAYC provided community outreach and recruitment, screening, job readiness training, life-skills and case-management support, while Monica Barnett of Peak Safety Systems, Inc. provided students with First Aid/CPR, OSHA 10-hour General Site Worker, Lead Abatement Worker, Asbestos Abatement Worker, and 40-hour HAZWOPER courses. A total of 13 courses were offered in DC representing 3,828 contact hours of training. Some students were employed in demolition, mechanics, maintenance, and by the DC Department of Employment; all are earning between $8-12 per hour. One student is enrolled in a GED preparation program; all will continue to work closely with both LAYC and Peak Safety Systems for placement in the environmental remediation industry. Others were selected into the Laborers' Training and Apprenticeship Institute of Washington DC and Vicinity. The Training Fund partners with union contractors in the Washington, DC metropolitan area to develop innovative courses that match training to industry, market, and project needs. Students of the Laborers CCL Apprenticeship program will be provided an additional 296 hours of classroom and hands-on training. Apprentices are paid between $10.38-$17.30 per hour depending on the number of completed apprenticeship hours

In the New York program, NPRF began outreach to various agencies for their pilot training program and enrolled and completed training for seven participants. Students received 12 courses for a total of 1238 contact hours. Courses included: Physical Fitness, Industry Related Math, Mechanical Drawing, Asbestos Abatement Worker, OSHA 10-Hour General Construction Safety, Instrumental Enrichment, 40-Hour Basic Superfund Site Worker, Computer Literacy, Lead Abatement Worker, Basic First Aid, Adult CPR, and Career Guidance. Five students were accepted into the Asbestos, Lead and hazardous Waste Laborers Apprenticeship Program with Union Local #78. Each graduate is earning $19.00/hr as first year apprentices. One student is currently employed as a Porter but has applied to Painters Union Local #9. Additionally, a graduate of last years MWT NPRF pilot program completed the Asbestos Abatement course with this cycle and is currently working as a first year apprentice.

Five-Year Summary of Training: Over the past five years of providing MWT programs, the OAI/NPRF Consortium has expanded its training capacity and focus by creating solid partnerships, offering innovative training, and reaching out to environmentally distressed communities in Chicago; Washington, DC; New York City; and East St. Louis, IL. Tipawan Reed, the Principal Investigator, has continued to lead the Consortium from its beginnings under the direction of DePaul University to its current prime agency, the National Puerto Rican Forum. From 2000-2005 the NPRF/OAI Consortium trained a total of 376 individuals. The Consortium has provided training under the HWWT and BMWT programs in addition to MWT during the past five year period. Over the five-years, the Consortium has offered 167 MWT courses generating 58,812 contact hours.

2.3 The Brownfields Minority Worker Training Program Update

The NIEHS Brownfields Minority Worker Training Program (BMWTP), which began in 1998, broadens the MWT program to provide comprehensive training to disadvantaged residents and to foster economic and environmental restoration to communities impacted by brownfields. The funding for this program is provided by interagency agreement with the US EPA. This amounted to $2,200,000 for this period. The BMWTP has reached approximately 2,448 trainees since it began with a 68% job placement rate and continues outreach to other communities to provide this much needed training opportunity. Trainees prior to entering this program were all un-employed or chronically under employed. Now these individuals are employed and giving back to their communities in taxes and community service.

During this period, the five BMWTP awardees provided in depth life skills and environmental training to 308 local residents in 14 Brownfields communities.

For this period 213 participants are now employed, approximately 69% employment rate. As these programs continue, the impact of these training programs to the individual and their communities are evident. Consider these not uncommon examples:

- Eleven students from the CPWR program were placed at Brownfields sites, 4 at Ravenswood Site and 1 at University Bay site in East Palo Alto and 2 at Phalen Corridor in St. Paul, 4 in Alameda Corridor in Los Angeles
- The environmental technical program of CPWR/JFY NetWorks in Boston was featured in December 2004 edition of Brownfields News, as an example of effective Brownfields job training
- For Xavier, graduates who avail themselves of refresher courses at the center and keep their licensure current, have been able to work year-round with several local contractors, such as Boh Brother and Gill Industries, who have received major contracts within the city of New Orleans.
- For the NJ/NY Consortium the Brownfields Program was very fortunate this year to expand its training in the greater Newark area with a new summer module (June 2005 through September 2005). In collaboration with the UMDNJ Foundation, the program staff successfully negotiated a $100,000 lead grant from the Prudential Foundation, which was matched with an additional $100,000 from the City of Newark's Mayor's Office of Employment and Training (MOET). This program enrolled an additional 28 students. Students were recruited mainly from the local Workforce Investment Board.

The five BMWTP awardees are the Center to Protect Workers' Rights, Laborers-AGC Education and Training Fund, National Puerto Rican Forum, University of Medicine and Dentistry of New Jersey, and Xavier University. (Note: a separate report on the BMWTP program will be issued in the near future. It will be posted on the NIEHS WETP website at *http://www.niehs.nih.gov/wetp* and the NIEHS National Clearinghouse for Worker Safety and Health website at: *http://www.wetp.org*.

Protecting Our Workers – Involving Our Communities: NIEHS Participates in Seven Sessions at Brownfields 2005: Reaching New Heights in Redevelopment

For the past ten years, the Brownfields National Conference has been a premier venue for local governments and communities to address brownfields cleanup, redevelopment, and reuse. Attracting over 5,000 participants, the 2005 Conference continued this momentum and fostered an enthusiastic atmosphere for participants to listen, learn, and share. Much attention was placed the importance of efficiently and effectively responding to the areas and people affected by Hurricane Katrina. The National Institute of Environmental Health Sciences (NIEHS) played a critical role in this year's conference by participating in seven sessions dedicated to worker safety and health training at brownfields sites. The NIEHS Worker and Education Training Program (WETP) and its awardees addressed topics including collaborations between labor-based and community organizations; techniques used for funding, maintaining, and sustaining a job training and job development organization; public health issues at brownfield sites, and post-disaster recovery from Hurricanes Katrina and Rita. NIEHS also participated in two evening caucus sessions on environmental justice and the reconstruction of New Orleans and the Gulf Coast. Through its sessions, the NIEHS provided a needed voice and outlet to draw attention to the importance of safety and health training. As stated by the NIEHS Director, David A. Schwartz, M.D., "There is no better way to protect the health and safety of workers who are involved in our nation's emergency response and hazardous waste clean-up efforts than to provide them with the proper training and education."

This report summarizes the some of the sessions that NIEHS participated in during Brownfields 2005. The highlights from the Environmental Justice Caucus can be found by visiting the following website: *http://www.cpeo.org/pubs/CaucusReport.doc*.

On the evening of November 1st, NIEHS held a working dinner at Le Central restaurant for the NIEHS Worker Training Awardees. The dinner fostered an atmosphere of learning opportunities, including networking with colleagues. Sharon Beard guided group discussions on NIEHS and EPA updates, new and current awardee program accomplishments, NIEHS Katrina response issues, and future NIEHS and workshops.

Photo: Dillard Consortium Staff prepares for Panel

There were extensive discussions regarding the role of the Brownfields and Minority Worker programs in the Gulf Coast Areas training Katrina cleanup workers. Issues such as how to target and effectively train immigrant and non-English speaking workers, interfacing with Katrina contractors and government agencies, and developing site-specific training courses and approaches to re-train Katrina displaced residents to safely engage in cleaning up their communities.

The first NIEHS session, *The Strength of Labor and Communities: Working and Training Together*, addressed unique collaborations between community and labor-based organizations. Moderated by Sharon Beard with the NIEHS, three panelists discussed how their organizations utilized the NIEHS Brownfields and Minority Worker Training Programs to successfully create these collaborations.

The panelist were: Ebony Turner, with Dillard University, Deep South Center for Environmental Justice; Kizetta Vaughn, Center to Protect Workers' Rights (CPWR); and Harry Melander, St. Paul Building and Trades, CPWR.

Another session, *Hard Hats to HAZWOPER: Protecting Worker Health and Safety*, reviewed the relationship between the OSHA hazardous waste operations and emergency response (HAZWOPER) standards and Brownfields and covered worker training requirements and available training programs and grants. Sven Rundman III, with OSHA, moderated the session. Ron Snyder, with Kirkwood Community College, commented that this session is about being safe, keeping workers safe, and understanding that ultimately, the worker must always be responsible for protecting himself at all times on the job. Mr. Rundman from OSHA discussed, "Revitalization Projects and OSHA Health and Safety Requirements", and covered topics including when HAZWOPER is required, how to apply HAZWOPER when it is only contractually required, and how to approach Brownfields health and safety effectively. The third speaker, Christina Jones, with OSHA, spoke about an OSHA Brownfield site visit at the Waste Water Treatment Facility Expansion in Brooklyn, New York. Chip Hughes, with NIEHS, provided a background on the Worker Education and Training Program and several of its accomplishments and partnerships. Since Hurricane Katrina occurred, WETP training locations have been set up in New Orleans, Baton Rouge, and Biloxi. Recently, the WETP received $800,000 from the EPA in Hurricane Katrina supplements to train residents for environmental and construction jobs in the Gulf Coast area. WETP also has an established partnership with OSHA to conduct training in the Gulf Coast, as well.

The final NIEHS session, titled *Post-Disaster Recovery: Environmental Cleanup and Public Health in the Aftermath of Hurricanes Katrina and Rita*, reviewed solutions for mitigating environmental risks, removing debris and contaminants, public health preservation and more. This session was a crowd favorite as all the seats were filled. The panel began with a tag-team presentation by Mark Johnson, Senior Environmental Health Scientist Agency for Toxic Substances and Disease Registry (ATSDR) Division of Regional Operations-Region 5 and Gary D. Perlman, Lt Commander, US Public Health Service, ATSDR, on the public health response to hurricanes Katrina and Rita. The public heath concerns they identified during the response phase included the loss of basic sanitation, availability of safe drinking water, shelter locations and conditions, infectious disease, worker safety, and the vaccination of residents and workers.

The second presenter was Paul Peronard, EPA Region VIII, and On Scene Coordinator in New Orleans. He described the EPA mission and how they addressed the issues of search and rescue, flood water hazards, oil spills, fixed facility recon, orphaned hazmat, debris, household hazardous waste, air and sediment issues, and reoccupation.

Sharon Beard and Ted Outwater, representing NIEHS, spoke about the agency's efforts dedicated towards worker safety and health training during the Hurricane Katrina recovery. Ms. Beard acknowledged Chip Hughes and Bruce Lippy's dedication to developing and revising the Protecting Yourself While Helping

Others booklet, an orientation briefing for responders. Mr. Outwater described ongoing training activities in three areas: general awareness, work zone and traffic safety, and Quality Assurance Inspector training. More information on the booklet can be found by visiting the NIEHS Hurricane Katrina dedicated website:

http://www.wetp.org/wetp/index.cfm?Current=391. NIEHS has been working with the Red Cross, OSHA, FEMA, and contractors to maintain a consistent message and emphasize the importance of this general awareness training.

The final speaker was Mr. John Gibbons, Principal, John Gibbons and Associates, who shared information about open burning and the pro's and cons of the use prolysis (a closed system of combustible burning of debris that creates a reduction of over 95% of the debris by weight (3-5% ash) with significant electric power generation resulting) as a alternative to open burning to dispose of the millions of tons of Katrina debris.

The session concluded with a question and answer period. Participants passionately inquired about the health and safety of individuals re-entering homes, enforcement of health and safety regulations, whether or not there will be a commitment to long-term public health monitoring, how post traumatic stress would be handled, and debris management. The panelists also emphasized they are committed to protecting human health and the environment during this cleanup process and that the public should collectively continue to push for answers about environmental health concerns if they feel there is a concern.

For a full summary of all sessions, go to *http://www.wetp.org/wetp/public/hasl_get_blob.cfm?ID=2365&searchTerm=Brownfields 2005*

2.4 NIEHS National Clearinghouse for Worker Safety and Health Training Update

The NIEHS National Clearinghouse for Worker Safety and Health Training (Clearinghouse), operated by MDB, Inc., is a national resource for members of the worker education and training community. It targets workers and trainers who are involved in the handling of hazardous waste or in responding to emergency releases of hazardous materials and terrorist actions.

Funded by the NIEHS WETP, the National Clearinghouse is the primary communications channel through which the WETP distributes technical reports, news updates, and training information to its awardees, interested members of the hazardous waste worker-training community, and the public.

During this past year, the Clearinghouse activities have been expansive and targeted, especially efforts resulting from Hurricane Katrina. The Clearinghouse produced several Hurricane Katrina training materials utilized by various federal agencies and training programs. These materials include the Katrina briefing PowerPoint and accompanying booklet in English and Spanish. The Clearinghouse also created a dedicated web page for worker safety and health issues related to Hurricane Katrina. This web page and the aforementioned documents can be found by visiting *http://www.wetp.org/wetp/index.cfm?Current=391*.

The Clearinghouse also worked on several documents during FY05 that highlighted WETP meetings and important issues for the worker safety and health community. In addition to the Spring 2005 Awardee Meeting and Technical Workshop summary report, the annual compendium, and the end of the five-year contract report, the Clearinghouse also dedicated much time to finalizing the Minimum Criteria Document, a Guidance for Hazardous Waste Operations and Emergency Response, HAZWOPER-Supporting and All-Hazards Disaster Prevention, Preparedness, and Response, the Hazardous Waste Worker Labor Market update, and the Guidelines for the Protection and Training of Workers Engaged in Maintenance and Remediation Work Associated with Mold.

More so, the Clearinghouse achieved a major success this year in the continuing effort to provide support to the NIEHS Worker Education and Training Program in its preparedness to respond when activated under the National Response Plan (NRP). During FY 2005, the Clearinghouse helped WETP develop an Emergency Support Activation Plan that is integrated into OSHA's Safety and Health Annex to the NRP. To respond effectively, the Clearinghouse surveyed all eighteen awardees and catalogued the resources available, particularly master instructors, subject matter experts, training facilities and sampling equipment. WETP worked with the American Red Cross during the TOPOFF III to test activation plans. Now, when the NRP is activated, WETP can support the response fully.

Throughout the year, the Clearinghouse continued to build upon its communication and outreach to the awardee community and other partner organizations. First, the *www.wetp.org* website was improved via various enhancements to the search engine, the Health and Safety Library, and the curricula catalog upload process. Second, the Clearinghouse encouraged the awardee community to submit articles to the eNewsbrief and other external publications. This effort resulted in an array of submissions to news sources including Health Promotion Practice, Occupational Health and Safety, Wiley InterScience, and others. Finally, the Clearinghouse played an active role in inter-agency efforts including DHS TRADE, EPA Labor Task Force (ESF-10), National Response Team Training, and the Nanoscale EHS. The Clearinghouse also gave a presentation on the Graniteville, South Carolina chlorine spill incident at the USW/PACE Orlando conference.

FY 2005 represented a year of consistently strong and stable support by MDB, Inc. The Director of the Clearinghouse, Dr. Bruce Lippy, with over two year's experience managing the contract, was able to ensure much more consistent project management, client communications, and deliverable provisions. The Clearinghouse ended FY05, and it's five-year contract period, with a new director, Deborah Weinstock, a new contract, and a renewed commitment to protecting workers.

2.5 NIEHS Technical Meeting: Keeping Quality Current: An Update of the NIEHS Minimum Criteria for Worker Health and Safety Training for Hazardous Waste Operations and Emergency Response

On March 30-April 1, 2005 in Los Angeles, CA. NIEHS WETP conducted a national technical meeting to update the NIEHS Minimum Criteria for Worker Health and Safety Training for Hazardous Waste Operations and Emergency Response. It was the third such training quality workshop conducted by the program since its creation in 1987; the initial workshop, conducted in 1990, produced the "Minimum Criteria for Worker Health and Safety Training for Hazardous Waste Operations and Emergency Response" followed by the "Interpretive Guidance" to the Minimum Criteria conducted in 1994. The initial "Minimum Criteria" served as the basis for the non-mandatory Appendix E to the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard at 29 CFR 1910.120.

A revision of the Criteria was needed because there have been significant advances in the development and application of advanced training technologies and substantial recent attention to all-hazards preparedness training for the emergency response community since 9/11 and the creation of the Department of Homeland Security.

The workshop was attended by over 110 participants from the WETP, the WETP grantees, and others invited from the public and private sectors. The workshop process included an opening plenary session with two expert panels, six breakout sessions on topical areas from the preliminary draft straw man document, and a closing plenary of reports and discussions of findings and recommendations from each breakout session. A draft workshop report was prepared following the workshop and sent to all participants for review and comment. After consideration of the comments received, final criteria were prepared and issued. These are available on line at *http://www.wetp.org/wetp*.

The guidance document recognizes advances in adult education in the hazardous waste operations and emergency response sector, particularly advanced training technologies application and integration, requirements for additional training programs to support HAZWOPER work, and post-9/11 all-hazards preparedness training including that for skilled support personnel.

The guidance emphasizes the principles of adult education, establishes minimum criteria for designing training programs, establishes quality control requirements for training programs, and provides generic guidelines for training curriculum . The latter addresses the three primary sectors established in the HAZWOPER standard: hazardous waste operations [29 CFR 1910.120 (b)-(o)], RCRA Treatment, Storage, and Disposal (TSD) operations [29 CFR 1910.120(p)], and emergency response operations [29 CFR 1910.120(q)].

In addition, training grant program awardees are required to annually conduct quality control audits and certify that their programs comply with this guidance.

The following are broad, overarching principles that were used to frame the more detailed guidance of the document.

1. 29 CFR 1910.120 provides the needed framework for protecting hazardous waste workers and emergency responders. It is the most proactive OSHA standard for protecting workers who respond to disasters, both natural and manmade. In the latter category, OSHA has indicated that terrorist acts involving chemical, biological, radiological, and nuclear weapons would be covered by the standard. Acts involving explosive agents may also be covered, depending on the types of exposures generated by the acts.

2. The guidance is primarily intended for organizations that provide hazardous waste worker and emergency response training under grants from NIEHS, but may likewise prove valuable to any organization that provides similar occupational health and safety training.
3. The document draws upon and references other guidance materials that provide excellent recommendations for training the intended target populations. Of particular note are the National Fire Protection Association guidelines and the FEMA "Guidelines for Haz Mat/WMD Response, Planning and Prevention Training: Guidance for Hazardous Materials Emergency Preparedness (HMEP) April 2003 Edition. The FEMA guidance has been fully adopted by reference in this document.
4. Whenever there was doubt about the appropriate category of training, the document advises that the more comprehensive and protective should be applied.
5. Peer-to-peer training with hands-on activities is recognized as the most effective model for worker training. The guidance recommends that hands-on training should fill at least one-third of the training program hours.
6. The Criteria recognize that computer-based training methods can greatly augment the effectiveness and reduce the cost of hazardous waste worker training, but should not be the sole form of training when workers' health and safety are at risk especially with respect to skills training.
7. Proven adult-learning techniques should be the core of all worker training under the Criteria.
8. Worker safety and health training must be preceded by a needs analysis to ensure the appropriate knowledge, skills and attitudes are being transmitted. The training must be followed by a proper evaluation to document the knowledge, skills or attitudes were acceptably transmitted and that the worker possesses the necessary abilities to perform the tasks.
9. Post-disaster training must be tailored to the specific hazards presented by each disaster and should be revised as often as significant new hazard information becomes available or the stage of the disaster changes.
10. The original 1991 Minimum Criteria guidance was the basis of the OSHA non-mandatory appendix on training in the 1910.120 standard (Appendix E, Training Curriculum Guidelines). This update of the Minimum Criteria maintains most of the original recommendations; changes are intended to make the original material more clear, relevant, or protective of workers.

2.6 Program Update for September 1, 2005 – JULY 31, 2006

On September 1, 2005, the first year of a new five-year funding cycle began. For this first year, the cycle runs 11 months. For future years, a 12 month cycle will be utilized.

Approximately twenty-seven million dollars of the September 1, 2005 to July 31, 2006 funds were allocated to continue support to the NIEHS Awardees. Of the $27 million, $20,441,376 supported the HWWTP to train hazardous waste workers and emergency responders. The WETP allocated $2,498,205 to develop a Hazmat Disaster Preparedness Training Program (HDPT) in response to the experiences and lessons learned in recent national disasters including terrorist attacks. Over three million dollars of the funds were allocated to continue support for the MWTP. The WETP allocated $796,263 to support the Small Business Innovation Research (SBIR) E-Learning Program. As a result of the funding, NIEHS awarded:

- 17 HWWTP awardees received awards totaling $20,441,376
- 9 HDPT awardees received awards totaling $2,498,205
- 4 MWTP awardees received awards totaling $3,500,000
- 6 SBIR awardees received awards totaling $796,263

See Appendix 9 for awardee breakout of funds for the budget period of September 1, 2005 to July 31, 2006. Budget adjustments in the proposed funding plan are based on the training needs of high-risk populations, national geographic coverage in training availability and the published program priorities for training support. Consideration has also been given to previous funding patterns, awardees' efforts to generate program income for independently continuing their programs, and the carryover of unexpended funds from prior years.

2.7 WETP Staff Activities

The WETP staff is very active in exploring new areas of workplace safety and health training related to the mission of the program. The staff has been involved in a number of activities to stimulate interest in, and knowledge about, the NIEHS and the WETP. The staff has continued to make presentations at various conferences and meetings on the success of the program and have participated in outreach activities with EPA regional offices and other federal agencies. For a complete list of activities please see Appendix 10.

Appendix 1: Eighteen-Year Summary

Hazardous Waste Worker Training Program Eighteen-Year Training Summary For Budget Period 09/01/1987- 08/31/2005			
Year	Total Courses	Total Workers	Total Contact Hours
1988	623	12,319	261,542
1989	1,353	29,827	551,832
1990	5,175	123,358	2,120,390
1991	2,794	58,637	878,673
1992	3,173	65,000	1,100,381
1993	2,751	56,000	789,226
1994	4,083	65,716	1,102,234
1995	4,682	81,245	1,391,440
1996	4,778	73,724	1,087,919
1997	4,231	79,976	1,041,792
1998	4,840	84,261	1,091,932
1999	3,981	74,013	956,251
2000	4,124	75,155	984,350
2001	4,806	79,710	1,031,394
2002	5,298	93,996	1,098,503
2003	5,586	95,265	1,132,682
2004	7,054	124,127	1,222,333
2005	7,663	130,837	1,211,824
TOTAL	**76,995**	**1,403,166**	**19,054,698**

Appendix 2: 2004 – 2005 Funding

NIEHS Worker Education and Training Awards
For Budget Period 09/01/2004-08/31/2005

Awardee	HWWTP 9/04 Award	WMD 9/04 Award	SBIR 9/04 Award	MWTP 9/04 Award	9/04 Totals
University of Alabama Birmingham	527,995			527,995	
International Chemical Workers Union Council	1,968,263				1,968,263
International Association of Fire Fighters	728,060				728,060
George Meany Center for Labor Studies	624,197				624,197
University of Massachusetts, Lowell	1,009,006				1,009,006
University of California at Los Angeles	1,109,679				1,109,679
Laborers-AGC Education and Training Fund	4,484,817			843,175	5,327,992
Paper, Allied-Industrial, Chemical and Energy Worker International Union	1,284,258	90,000			1,374,258
HMTRI Kirkwood Community College	659,856	200,000			859,856
Service Employees International Union	597,531	90,000			687,531
University of Medicine & Dentistry of New Jersey	1,125,285	160,000		602,624	1,887,909
International Union, United Auto Workers	799,195				799,195
International Union of Operating Engineers	1,506,275	215,998			1,722,273
University of Cincinnati	1,753,916				1,753,916
Center to Protect Workers' Rights	1,782,843	200,000		694,023	2,676,866
Xavier University				631,799	631,799
AFSCME Training and Education Institute	624,820				624,820
National Puerto Rican Forum	958,627	75,000		528,379	1,562,006
Y-Stress, Inc.			200,000		200,000
FOF Communications, Inc			75,703		75,703
Metamedia			99,297		99,297
Cognitech Corporation			175,000		175,000
Northwest Education Training and Assessment			100,000		100,000
DCM Associate			100,000		100,000
TOTAL	**21,544,623**	**1,030,998**	**750,000**	**3,300,000**	**26,625,621**

Appendix 3: Total Training by NIEHS Awardee

NIEHS Worker Education and Training Awards
TOTAL TRAINING For Budget Period 09/01/2004-08/31/2005

Awardee	Courses Completed	Workers Trained	Contact Hours
University of California at Los Angeles	191	2,805	33,068
International Association of Fire Fighters	35	763	47,248
University of Medicine & Dentistry of New Jersey	1,184	20,431	152,914
International Union of Operating Engineers	844	16,325	204,721
Paper, Allied-Industrial, Chemical and Energy Worker International Union	309	5,534	40,132
University of Massachusetts, Lowell	63	831	12,056
International Chemical Workers Union Council	249	3,333	37,083
University of Cincinnati	982	21,159	109,556
University of Alabama Birmingham	186	3,644	19,010
Laborers-AGC Education and Training Fund	512	6,469	149,410
George Meany Center for Labor Studies	185	1,546	13,694
Service Employees International	121	2,221	21,208
International Union, United Auto Workers	155	3,098	11,567
Center to Protect Workers' Rights	285	4,438	74,192
HMTRI Kirkwood Community College	2,045	33,135	207,857
National Puerto Rican Forum	222	3,522	66,688
AFSCME Training and Education Institute	95	1,583	11,420
TOTAL	**7,663**	**130,837**	**1,211,824**

Appendix 4: Target Populations

HWWTP Target Populations For Budget Period 09/01/2004-08/31/2005						
Target Populations	# Courses Completed	% Courses Completed	#Workers Trained	% Workers Trained	# Contact Hours	% Contact Hours
CERCLA Cleanup[1]	2,501	33%	47,639	36%	521,304	43%
Emergency Response	2,313	30%	39,151	30%	366,557	30%
Other Safety and Health	2,059	27%	32,763	25%	215,993	18%
Hazmat Transport	287	4%	2,524	2%	21,199	2%
RCRA/Industrial	388	5%	6,497	5%	60,406	5%
Asbestos Abatement	71	1%	1,137	1%	18,160	1%
Radiation	34	0%	933	1%	2,773	0%
Lead Abatement	10	0%	193	0%	5,432	0%
TOTALS	**7,663**	**100%**	**130,837**	**100%**	**1,211,824**	**100%**

[1]The overall majority of training remains in the CERCLA Cleanup training.

NIEHS Minority Worker Training Program: Demographics
For Budget Period 09/01/2004-08/31/2005

Students	277				
Age	*18–25*				
	227				
Ethnicity	*Black*	*Hispanic*	*Asian*	*American Indian*	*Pac. Islander*
	230 (83%)	41 (15%)	1 (0%)	0 (0%)	5 (2%)
Gender	*Male*	*Female*			
	241 (87%)	36 (13%)			
Education	*HS Diploma*	*GED*	*No GED*		
	133 (48%)	48 (17%)	96 (35%)		
Un Or Under Employed[1]	*Un*	*Under*			
	230 (83%)	47 (17%)			

Appendix 6: Ten-Year Summary of Training

NIEHS Minority Worker Training Program Ten-year Summary of Training For Budget Period 09/01/1996-08/31/2005			
Year	Students Trained	Placed In Jobs	Percentage Of Students Placed In Jobs
1996	368	246	67%
1997	310	193	62%
1998	240	154	64%
1999	360	233	65%
2000	364	244	67%
2001	342	204	60%
2002	334	222	66%
2003	310	190	61%
2004	261	219	84%
2005	277	205	74%
TOTAL	**3,166**	**2,110**	**67%**

Appendix 7: Total Training by MWTP Awardee

NIEHS MWTP Worker Education and Training Awards Total Training
For Budget Period 09/01/2004-08/31/2005

Awardee	Courses Completed	Students Trained	Contact Hours
University of Medicine & Dentistry of New Jersey	16	29	13,681
Laborers-AGC Education and Training Fund	49	81	32,105
Center to Protect Workers' Rights	47	64	30,388
National Puerto Rican Forum	38	71	8,956
Xavier University	25	32	8,322
TOTAL	**175**	**277**	**93,452**

Appendix 8: MWTP Summary of Type and Number of Courses

NIEHS MWTP Summary of Type and Number of Courses
For Budget Period 09/01/2004-08/31/2005r Bet Period 09/01/2002-08/31/2003

Course Name	Number of Courses
Adult CPR	4
Asbestos Abatement Worker Basic	13
Basic Construction Skills	14
Basic First Aid	4
Basic Math Skills	13
Basic Reading/Writing Skills	6
Basic Science Skills	1
Basic Superfund Site Worker	17
Computer Skills	4
Concrete Practices and Procedures (Concrete Technology)	4
Confined Space	5
Environmental Justice	3
Environmental Preparation	2
Environmental Sampling	1
Environmental Technician	1
General Industry Safety	6
General Construction Safety	10
Lead Abatement Worker Basic	16
Life Skills	18
Lockout/Tagout	1
Mason Tending	2
Mentoring/Career Guidance	12
Microbial Remediation: Mold and Mildew	3
Physical Fitness	10
Radiation Worker II Training	2
Scaffold	3
TOTAL	**175**

Appendix 9: 2005 – 2006 Funding

NIEHS Worker Education and Training Awards
For Budget Period 09/01/2005-07/31/2006

AWARDEE	HWWTP 9/05 AWARD	HDPT 9/05 AWARD	SBIR 9/05 AWARD	MWTP 9/05 AWARD	9/05 TOTALS
University of Alabama Birmingham	535,380				535,380
International Chemical Workers Union Council	2,027,311	130,278			
International Association of Fire Fighters	728,437	280,812			
International Brotherhood of Teamsters	1,617,780	250,747			
University of Massachusetts, Lowell	1,079,551				1,079,551
University of California at Los Angeles	1,187,357	217,103			
Laborers-AGC Education and Training Fund	3,462,210	362,445			
United Steelworkers of America	1,374,156	459,515			
HMTRI Kirkwood Community College	612,745				612,745
Service Employees International Union	507,901				507,901
University of Medicine & Dentistry of New Jersey	994,934	191,412		560,000	
International Union, United Auto Workers	735,258				735,258
International Union of Operating Engineers	1,083,662	171,540			
University of Cincinnati	1,645,806				1,645,806
Center to Protect Workers' Rights	1,549,962	434,353		759,435	
Dillard University				1,240,000	1,240,000
AFSCME Training and Education Institute	624,820				624,820
OAI, Inc.	674,106			940,565	
Y-Stress, Inc.			200,000		200,000
CHI System			99,953		99,592
Metamedia			99,592		199,990
Advanced Technologies & Laboratories International			199,990		96,728
Cyntelix, Inc.			96,728		100,000
Amethyst Research			100,000		99,592
TOTAL	**20,441,376**	**2,498,205**	**796,263**	**3,500,000**	**27,235,844**

Joseph Hughes

- *Mr. Hughes, WETB,* attended the Pubic Health Risks of Disasters: Building Capacity to Respond Meeting on June 22, 2004 in Washington, DC. He participated in a roundtable discussion, which focused on Environmental Health in Disasters.
- *Mr. Hughes, WETB,* participated in a joint meeting of the EPA Emergency Support Function #10 and OSWER Labor Union Health and Safety Task Force in Washington, DC on July 20, 2004.
- *Mr. Hughes, WETB*, presented at the 132nd American Public Health Association Annual Meeting – Public Health and the Environment in Washington, DC on November 6, 2004. He chaired a panel of the Worker Education and Training Program grantees on public health and disaster preparedness.
- *Mr. Hughes, WETB,* presented at the NIOSH Educational Resource Centers Annual Meeting in San Francisco, California on February 8, 2005 on the Disaster Response Initiative and the Minimum Criteria Training Update process.
- *Mr. Hughes, WETB*, presented at the U.S. Department of Energy's Annual Chemical Management Workshop in Washington, DC on March 9, 2005 on chemical emergency preparedness training and integrated safety management.
- *Mr. Hughes, WETB*, presented to the National Response Team (FEMA) on hazmat training requirements in health care in Frederick, MD on April 12, 2005.
- *Mr. Hughes, WETB*, was an invited speaker at the Heritage Foundation meeting "State and Local Homeland Security Series: When Disaster Strikes! Public Support for State and Local Government Response" in Washington, DC on April 29, 2005. He presented on Homeland Security preparedness.

Sharon Beard

- *Ms. Beard, WETB*, attended a Brownfields Network Summit on June 2-3, 2004 in Washington, DC. She participated in a roundtable discussion, which focused on Community Involvement, Environmental Justice, and Long-Neglected Neighborhoods.
- *Ms. Beard, WETB*, attended and presented at **Brownfields 2004: Growing a Greener America** Conference in St. Louis, MO on September 20-22, 2004. During this meeting, Ms. Beard conducted a meeting of the Brownfields Minority Worker Training Program.
- *Ms. Beard, WETB*, participated as a resource person for the Workshop: Hazardous Materials at the Ports, on Roads and on Rails: Health and Safety Concerns that was held at the Town Meeting entitled Growing Pains: Health and Community Impacts of Goods Movement and the Ports on February 25 and 26, 2005. This meeting was sponsored by the NIEHS Southern California Environmental Health Sciences Center which is a collaboration between the UCLA and USC. In this workshop, the participants discussed worker and community experiences and concerns with the transport of hazardous materials throughout the Southern California Region. Representatives from the NIEHS Hazardous Materials Worker Education and Training Program (WETP) also discussed their resources available to both workers and the community including innovative training programs to prevent hazmat incidents. A report was also developed that shared lessons learned from hazmat incidents and recommended regional strategies to prevent incidents in Southern California.
- *Ms. Beard, WETB*, participated as a reviewer in the U.S. EPA Brownfields Job Training Program 2004 Application Review Meeting on March 2-3, 2005 in San Francisco, CA. As a part of this review,

participants conduced site visits to 2 local Brownfields Job Training Sites at the Young Community Developers, Inc. in San Francisco, CA and the Cypress Mandela WIST Center in Oakland, CA.

- *Ms. Beard, WETB*, participated in the educational program development meeting on May 9 in Washington, DC for the upcoming Brownfields 2005 Conference: Reaching New Heights in Redevelopment to be held in Denver, CO on November 2-4, 2005. The purpose of the meeting was to take the various ideas that have been submitted through the call for presentations and turn them into a preliminary framework for the Brownfields 2005 educational program.

Ted Outwater

- *Mr. Outwater, WETB*, participated in the NIH SBIR Conference on June 22-24, 2004 in Washington, DC, by answering questions from potential applicants about the NIEHS SBIR program.
- *Mr. Outwater, WETB*, along with Mr. Patrick Mastin, COSPB, participated in the NIEHS co-sponsored national conference entitled "Mold-Related Health Effects: Clinical, Remediation Worker Protection, and Biomedical Research Issues on June 24-25, 2004 in Manhattan, NY. The purpose of the cross-disciplinary meeting was to bring together experts in clinical science, worker protection and education, and basic research to further efforts to prevent, diagnose, and treat conditions related to exposure to indoor mold.
- *Mr. Outwater, WETB*, attended and presented at **Brownfields 2004: Growing a Greener America** Conference in St. Louis, MO on September 20-22, 2004. During this meeting, Mr. Outwater conducted a meeting of the Brownfields Minority Worker Training Program.
- *Mr. Outwater, WETB*, presented at the 132nd American Public Health Association Annual Meeting – Public Health and the Environment in Washington, DC on November 6, 2004. He described the minimum training guidelines for mold remediation and maintenance workers being developed by the WETP.
- *Mr. Outwater, WETB*, presented a session on the NIEHS Guidelines for the protection and training of mold remediation workers on April 26, 2005 at the Chesapeake Region Safety, Health and Environment Conference in Baltimore, MD.
- *Mr. Outwater, WETB*, presented at the American Industrial Hygiene Conference & Expo 2004 (AIHCE 2005) in Anaheim, CA on May 22 – 26, 2005. His presentation was on the NIEHS Guidelines for the protection and training of mold remediation workers.

All Staff

- The NIEHS Worker Education and Training Branch hosted an Applicant Information Meeting in Research Triangle Park, NC on September 2, 2004 Mr. Hughes, WETB, and staff explained the purpose of the Worker Education and Training Program, provided instructions about the application process, and answered questions. Staff attending and participating in the meeting included *Ms. Beard, Mr. Outwater, Ms. Thompson, WETB, Ms. Mason, GMB*, and Dr. Eckert-Tilotta, *SRB*.
- *Mr. Hughes, WETB*, and staff hosted the NIEHS Worker Education and Training Program semi-annual WETP Awardee Meeting in Research Triangle Park, NC on December 6-8, 2004. The meeting covered a range of topics including the new policy on fair use of materials created with NIH funds, improvements to the WETP curricula catalog, advances in training technologies for worker safety and health, and the results of a Clearinghouse study of market trends in labor needs on hazardous waste sites. Staff attending and participating in the meeting in various activities included *Ms. Beard, Mr. Outwater, Ms. Thompson, WETB, Ms. Mason and Ms. Evans, GMB*.
- *Mr. Hughes, WETB,* and staff sponsored a Technical Workshop on NIEHS Interpretive Guidance to the

1994 Minimum Criteria Training Document, held in Manhattan Beach, CA on March 31 - April 1, 2005. The technical workshop updated the Minimum Criteria Training Document. It captured changes associated with the emergence of the Department of Homeland Security, e-learning approaches, newly developed toxicology data, the new National Response Plan, and many other factors over the past ten years as the program has evolved. The meeting preceded on March 30, 2005 by the semi-annual WETP Awardee Meeting. Staff attending and participating in the meeting in various activities included *Ms. Beard, Mr. Outwater, Ms. Thompson, WETB, Ms. Mason and Ms. Evans, GMB*.