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TRU-Net: Connecting Training and Research to Advance Research to Practice (r2p)

March 2015

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Introduction

Conducting safety and health research, identifying emerging hazards in need of research-based solutions, and translating research findings and outputs into information, tools, and procedures that can be implemented on construction sites cannot happen without ongoing communication between researchers and stakeholders. Safety and health trainers are critical members of this stakeholder community. Their regular interaction with workers in a training setting provides opportunities to share information about new and safer equipment and work practices, hear about existing and emerging hazards in the field, and involve trainees in new research initiatives.

While building trades safety and health trainers have long participated in research projects, in 2014, CPWR-The Center for Construction Research and Training (CPWR), with funding from the National Institute for Occupational Safety and Health (NIOSH) and the support of the National Institute of Environmental Health Sciences (NIEHS), embarked on a new initiative to formalize the link between its consortium of safety and health researchers and its extensive training network in order to give researchers, trainers, and trainees ready access to each other's experience and expertise. By creating a formal link, CPWR hopes to improve the quality and relevance of health and safety research and advance the use of effective research-based solutions in the field.

This paper introduces the new Trainers and Researchers United Network (TRU-Net) initiative, and describes its launch at CPWR's 2014 Trainer Enhancement Program, including an overview of the workshops conducted, the potential obstacles to trainer involvement, and trainers' initial reaction and interest.

Formalizing the Trainer-Researcher Connection

CPWR, as the coordinator of one of the largest construction safety and health training systems in the U.S., as well as its role as NIOSH's National Construction Center, is uniquely positioned to build a formal, sustainable relationship between safety and health researchers and trainers. Through the members of its research consortium and its "Small Studies" program, CPWR undertakes research on a wide variety of safety and health hazards, with an emphasis on research to practice (r2p): the translation and dissemination of research findings into practical solutions and information that can be used by workers and contractors on construction projects. CPWR also coordinates one of the largest occupational safety and health training systems in the U.S., including Occupational Safety and Health Administration (OSHA) Training and NIEHS environmental training programs that operate through the building and construction trades national training programs. Through these training initiatives, CPWR has the potential to reach more than 5,000 safety and health-trainers nationwide, and tens of thousands of apprentices, journey-level workers, foremen, and supervisors who participate in training programs each year.

This new r2p initiative, TRU-Net, has both an informal and formal component. The informal component is an online forum that was developed as a place where union trainers and CPWR researchers can talk with each other about what's going on in the industry, ask questions, suggest research ideas, and find out about new research initiatives and ways to become involved (www.cpwr.com/forum). This is a closed forum, accessible only by trainers and researchers in CPWR's networks and others invited by CPWR to participate. Potential participants must fill out a registration form and be approved before they can access the forum.

The formal component involves trainers and their trainees directly in new research studies. Trainers participating in formal research projects may be asked to review and provide feedback on a project's or survey's design, participate in and administer surveys, help interpret research findings, and/or assist in the evaluation of safer equipment, work practices, and materials.

The goals for TRU-Net include:

1. Raising awareness and encouraging the widespread use of safety and health research findings, solutions, and best practices by asking trainers to disseminate materials prepared by CPWR and NIOSH;
2. Expanding the role of trainers and trainees in shaping and contributing to the research process and outcomes; and
3. Encouraging trainers to help identify existing and emerging safety and health concerns that could benefit from research by reporting urgent unmet safety and health needs raised by trainees or through job-site observations.

TRU-Net's Launch at the Trainer Enhancement Program

The TRU-Net initiative was launched at CPWR's annual Trainer Enhancement Program. This venue was chosen because it brings together trainers from across the country, representing a broad cross-section of trades.

Support for TRU-Net

In a show of support, James Boland, President of the International Union of Bricklayers and Allied Craftworkers, and Kenneth Rigmaiden, President of the International Union of Painters and Allied Trades, described the positive contributions their unions' training staffs and CPWR's researchers have made to improving the safety and health of their members, as well as the construction industry as a whole. Their comments were echoed by Dr. Christine Branche, the Director of NIOSH's Office of Construction Safety and Health, and NIEHS' Sharon Beard, who spoke to the group about how their agencies support and interact with CPWR's training and research networks and the importance of creating a bridge between these critical functions.

Researcher and Trainer Panels

Panels of researchers and trainers provided perspectives on how these two groups can come together to improve worker safety and health. Panelists' remarks highlighted ways that TRU-Net's informal and formal components could facilitate trainer-researcher interactions, the sharing of information, and participation in new research projects.

Researcher Panel. Participants in the researchers' panel described specific studies at various stages in the research process. These studies ranged from a completed project that resulted in a new ergonomic and silica intervention to ones still in progress that could benefit from trainers' advice and expertise.

- ❖ David Rempel, MD, MPH, Professor of Medicine at the University of California, San Francisco and Professor of Bioengineering at the University of California, Berkeley, described a completed research project that involved trainers, workers, and contractors and led to the development of a new research-based solution. The resulting universal rig is used with large hammer drills to reduce ergonomic injuries and exposure to silica dust. He noted that future projects of this type could benefit from TRU-Net's formal and informal components, and asked attendees for feedback on whether the video shown of the rig was the type of product they wanted.
- ❖ John Rosecrance, PhD, PT, CPE, Associate Professor at Colorado State University, described the Leadership for Apprentice Development (LEAD) project. The research team, which worked with a training coordinator throughout the project, set out to develop, conduct, and evaluate a safety leadership training program for use with supervisors and other construction site leaders. He encouraged trainers to comment on a draft video's content, message, and potential for acceptance by the target audience when it is posted on the online forum. Trainers were also asked to send his research team trade-specific photos and footage to include in the final version of the video.
- ❖ Jack Dennerlein, PhD, Professor at Northeastern University, presented his project B-SAFE, which takes a new, more proactive approach to incentive programs, emphasizing hazard recognition and control, to improve safety. The amount of survey data collected through this project (over 1,100 individuals surveyed) enabled the research team to take into consideration the movement of individuals on and off worksites and the impact on safety, something previous researchers have been unable to quantify.
- ❖ Linda Goldenhar, PhD, CPWR's Director of Evaluation and Research, reviewed a new leadership training project aimed at improving workplace safety culture and climate. Referencing a survey conducted by CPWR and McGraw-Hill, she noted that regardless of size, a large percentage of companies require their supervisors to take the OSHA 30-hour course, but this course does not address leadership skills. For this reason, CPWR is undertaking a new project to develop a research-based leadership training module to be offered as an elective within the OSHA 30-hour training course. The project will involve trainers in developing the module, testing and refining the content, and ensuring that it is widely disseminated and used.

- ❖ Chris Pan, PhD, Research Safety Engineer, Division of Safety Research at NIOSH, discussed the status of a new project on construction hard hat safety that was prompted by a debilitating head injury. The research team's goal is to take on the status quo and create a hard hat design that reduces the severity of head injuries. In the discussion that followed, he raised several questions and received input from the trainers on how hard hats are currently designed and function. He noted that trainers will have an important role in encouraging the use of the research findings, particularly if design changes are a departure from how hard hats are currently worn.

Trainer Panel. Trainers described their training programs and facilities, how they have been or could be used in support of research studies.

- ❖ Dave Wysocki, the International Masonry Institute's North Central Regional Safety and Training Director and a member of the Masonry r2p Partnership, focused on the International Union of Bricklayers and Allied Craftworkers Illinois District Council's training facility, which offers training for a variety of crafts, as one example of the type of facility available for training, demonstrations and research. In addition, he described how they are able to reach other stakeholders including architects and engineers.
- ❖ Allan Los Banos, the Operative Plasterers' and Cement Masons' International Association's Training Director in Honolulu, Hawaii touched on current training challenges, such as meeting the demand for trained supervisors and tradespersons and responding to changing technology and codes. He described steps the Local's training program has taken to meet these demands and research efforts utilized to solicit information from trainees on hazards they encounter on job sites.
- ❖ James Young, the Training Coordinator for the United Association of Plumbers and Pipefitters Local 495's Training Center in Ohio, discussed their use of online training tools and how these tools could readily be used to distribute online training and surveys in support of safety and health research studies.
- ❖ Erik Shorcken, a Glazing Instructor for the International Union of Painters and Allied Trades, provided an overview of their training programs, approaches, facilities and classes, and described potential areas for collaboration with researchers.

TRU-Net Informal Component - Online Forum

Don Ellenberger, CPWR's Hazardous Waste Training Program Director, who is working collaboratively with CPWR's r2p team on this project, introduced and demonstrated the informal, online forum side of TRU-Net. Trainers and researchers were shown how information could be shared through the forum, participated in a baseline survey as a first step in CPWR's evaluation of TRU-Net, and were walked through how webinars may be used to solicit and facilitate trainer and researcher participation. Both

trainers and researchers in attendance signed up to participate in the forum. About half of the trainers expressed particular interest in working on future research projects.

TRU-Net Formal Component - Research Projects

The formal side of TRU-Net was the focus of workshops and discussions on the role of trainers in critical research projects to reduce injury and illness among construction workers.

Workshops

All trainers participated in half-day workshops conducted by the University of California, Berkeley’s Labor Occupational Health Program staff on “Understanding Research Strategies and the Potential Role of TRU-net Trainers.” Trainers brainstormed their potential roles, shared their knowledge of the research process, and discussed potential obstacles to trainer and trainee participation in research projects and potential solutions.

Specific topics covered included:

- ❖ The fundamentals of designing and conducting scientific research. (Appendix 1 -- Workshop Handout #1: “What is Research?”)
- ❖ Sources of data, research methods, and their strengths and limitations. (Appendix 2 -- Workshop Handout #2: “Research Methods”)
- ❖ Research ethics, including the importance of confidentiality, potential pressure on workers to participate, and researchers’ responsibilities, principles, and standards for research involving human participants. (Appendix 3 -- Workshop Handout #3: “Conducting Ethical Research with Human Subjects” and Appendix 4 -- Workshop Handout #4: “CPWR Statement of Principles Research Involving Human Subjects (Participants)”)

Potential Obstacles to Trainer Involvement

While the trainers in each workshop recognized the importance of research and the advantages of having apprentices, journey-level workers, and trainers involved, they raised a number of potential obstacles to participation and suggestions for addressing each one:

<u>Obstacle</u>	<u>Solution</u>
Skepticism about confidentiality	<ul style="list-style-type: none"> • Take time to explain protections in place through CPWR’s and the specific researcher’s university to ensure participant confidentiality
Lack of support and buy-in from labor-management	<ul style="list-style-type: none"> • With CPWR’s help, identify the key decision-makers within a union, training staff, and/or apprenticeship & training committee who have the authority and influence to ensure

apprenticeship and training committees or other trainers who did not participate in the Trainer Enhancement Program	<p>participation</p> <ul style="list-style-type: none"> • Provide an estimate of the amount of time and effort required of various parties • Schedule research according to construction season (aim for a time when more training is conducted)
Time constraints since training schedules are already tight	<ul style="list-style-type: none"> • At the study's conceptual stage, solicit trainers' input about the amount of time and effort they will be able commit to the overall study and during their training classes • Conduct outreach, surveys and other activities at times that are convenient for the trainers and trainees • Keep surveys short • Plan ahead and give advanced notice • Provide deadlines and structure • Offer multiple formats (print, online, i-clicker) for survey participation
Technological challenges	<ul style="list-style-type: none"> • In the study's planning stage, identify technology available and in use by potential participants
Lack of trainee buy-in	<ul style="list-style-type: none"> • In advance of requesting specific help, clearly explain (through articles, flyers, presentations, etc.) the study, its potential impact on the safety of the jobs they will work on, and the importance of their involvement • Provide incentives • Provide feedback and updates as the study progresses and publish the results in a format and source readily understandable and accessible • Frame the study and related surveys in a positive light
Survey fatigue	<ul style="list-style-type: none"> • Spread out research efforts so help is not being solicited from the same group of trainers and students each time • Use other methods of soliciting input from trainers and trainees • Share results

Trainers' research experience

The trainers' varied levels of experience with research, from extensive experience conducting their own research projects and/or working with researchers to more limited experience, contributed to a rich peer-to-peer exchange and helped to alleviate concerns about participating in a research study without prior experience.

Following the workshops, Don Ellenberger discussed ways the formal and informal components of TRU-Net and the lessons learned from the workshops could be put into practice to: 1) reach large numbers of construction workers nationwide; 2) raise awareness and use of research-based solutions; and 3) tap workers for potential research ideas. To demonstrate how these objectives might be achieved through TRU-Net, attendees participated in a mock-webinar and a hands-on survey activity. The survey activity walked attendees through how a survey could be administered in a training session, ways to address issues of confidentiality, and how the TRU-Net Forum could be used to facilitate reporting the survey results to the participants. A survey on lost-time injuries was administered to all trainees present, analyzed, and the results presented on the final day of the program.

Break-out Sessions: Suggestions for future r2p and p2r

The program closed with break-out sessions to gather participant input on ways to advance r2p and identify possible future research questions and opportunities (practice to research or p2r):

- ❖ ***r2p - What would help you get the word out regarding new safety and health interventions and developments in your trade? What else do you think CPWR could be doing to get the word out to key audiences?***

Participants suggested greater use of mass media and social media, conducting safety stand-downs, taking a top-down approach to education, incorporating interactive phone applications, using a learning management system, and publishing articles in newsletters and trade journals. For example, Dave Wysocki mentioned the Masonry r2p Partnership's use of flyers developed by CPWR that used QR Codes to easily connect workers with specific online resources on how to protect specific areas of the body (hands, back, etc.) from occupational hazards, and the use of tweets to remind workers of safe practices and the availability of online resources.

- ❖ ***p2r - What are some of the issues that need to be researched in your craft area? What are some of the key safety and health concerns expressed by your students?***

Key areas of concern included isocyanates, nanoparticles, ergonomics, safety culture, and concepts such as worker psychology and personality types that influence behavior and receptiveness to safety and health improvements.

- ❖ ***What role do you think TRU-Net can play?***

Trainers felt that TRU-Net could play a role in providing researchers with a mechanism to find out what concerns are surfacing among trainers and trainees, helping to get research findings and information about CPWR research out, and promoting the interaction between trainers and researchers. A suggestion was made to expand the reach by creating separate forums for workers, contractors, and other stakeholders.

Trainers’ initial reaction and interest

At the start of the Trainer Enhancement Program, trainers participated in a baseline survey as a first step in CPWR’s evaluation of TRU-Net. The results of this initial survey showed that trainers overwhelmingly feel they have a role to play in safety and health research and were generally enthusiastic about the idea of TRU-Net.

The following are highlights from the survey:

- ❖ Overall, trainers responded positively to questions related to the relevance of health and safety research to real life conditions in construction and to their own work.

Question	Strongly Agree /Agree	Strongly Disagree /Disagree
Health and safety research <u>doesn’t</u> have much to do with my work as a trainer.	7%	93%
Health and safety research <u>doesn’t</u> have much to do with the real world of construction work.	4%	96%
Health and safety research leads to safer conditions on the job for workers.	97%	3%

- ❖ Trainers generally felt very positive about their role and the role of workers in health and safety research and dissemination.

Question	Strongly Agree /Agree	Strongly Disagree /Disagree
Trainers have an important role to play in conducting health and safety research.	97%	3%
Workers have an important role to play in conducting health and safety research.	98%	2%

- ❖ Trainers generally felt confident about finding new health and safety research to incorporate in their training, but less confident about knowing where to go to get their own health and safety ideas tested or researched.

Question	Strongly Agree /Agree	Strongly Disagree /Disagree
When I need to update or improve my training, I know where to go to find new health and safety research.	87%	13%
When I have ideas about new health and safety solutions, I know where to go to get them tested or researched.	43%	56%

- ❖ Trainers had varying levels of previous training on conducting research: **8%** reported having extensive training, **45%** had received some training, **31%** had very little training, and **16%** reported having received no training at all. Fewer than half (**48%**) of respondents indicated that they had previous experience conducting research or working on a research project.

- ❖ When it comes to p2r, most trainers reported that both they and their students identify health and safety hazards and solutions that could be promising for further research or dissemination.

Question	Often /Sometimes	Rarely /Never
In the past, I have encountered construction safety hazards I thought needed to be researched.	91%	9%
In the past, my students have encountered construction safety hazards that needed to be researched.	86%	14%

- ❖ Trainers responded positively to questions related to the feasibility of incorporating health and safety research into class time and to perceived buy-in from training center leadership.

Question	Strongly Agree /Agree	Strongly Disagree /Disagree
Including 15 minutes of time during class to have students participate in a health and safety research survey would be easy for me to implement.	93%	7%
Training directors are likely to support trainers in taking some class time to do health and safety research, such as administering a survey with students.	87%	13%

- ❖ Most trainers expressed some level of interest in helping to conduct health and safety research, and felt that others at their training centers would also be interested, though potentially less enthusiastic.
- ❖ In order for researchers to take advantage of these training networks, trainers indicated that the best ways to communicate with them about opportunities to participate in a health and safety research efforts include email (**93%**), the online TRU-Net Forum (**51%**), and webinars (**32%**). Other communication ideas suggested include: online forums such as BlackBoard, conferences, phone calls, texts, and postal mail.

Next Steps

The launch of TRU-Net at the Trainer Enhancement Program was only the beginning. Based on the feedback received, CPWR is modifying the online forum structure, creating and posting research tools based on the workshops for researchers and trainers, and initiating a formal research project to both gather valuable information to reduce the risk of job-related noise-induced hearing loss and test TRU-Net's formal and informal components. Throughout, CPWR will be evaluating this effort to refine and improve the value to researchers, trainers, trainees, and the industry.

The idea of formalizing and enhancing the collaboration between trainers and researchers through this network will likely be adapted and improved along the way, but the positive reaction and interest demonstrated by researcher and trainer attendees reinforces the potentially positive impact this initiative can have on how safety and health research is conducted, research-based interventions are disseminated, and research needs identified.

Workshop Handout #1: What is Research?

Research consists of an investigation that:

- Seeks answers to a question
- Systematically uses a predefined set of procedures to answer the questions
- Collects evidence in order to answer a question
- Produces findings that were not determined in advance
- Produces findings that are applicable beyond the immediate boundaries of the study

“Not so Good” Research	“Good” Research
<p>“Not so good” research has inaccurate data and inaccurate conclusions. This may be due to the following reasons:</p> <ul style="list-style-type: none"> • The researcher is unwilling to consider evidence that contradicts his or her personal opinions. • The research uses inconsistent procedures with different participants or in different situations. • The researcher’s sampling does not ensure that different people are represented. • The researcher’s method of data collection leads to a particular type of answer. (A bias in the method.) • The researcher does not record and maintain the data properly. 	<p>“Good” research uses systematic procedures to collect and analyze data, which may include:</p> <ul style="list-style-type: none"> • The researcher is open to new and unexpected findings. • The researcher uses a predefined set of procedures. • The researcher uses sampling techniques that ensure different people are represented. • The researcher uses different methods of data collection to see if they give the same answers (this is called “triangulation of data”). • The researcher records the data and keeps it in a safe and secure place.
<p>“Not so good” research does not follow ethical guidelines.</p>	<p>“Good” research follows ethical guidelines.</p>

Adapted from: Shallwani S and Mohammed S. 2007. *Community-Based Participatory Research: A Training Manual for Community-Based Researchers*. p. 7. Accessed at: <http://individual.utoronto.ca/sadaf/resources/cbpr2007.pdf>

Workshop Handout #2: Research Methods

Method	Strengths	Limitations
Review of injury and illness data (Bureau of Labor Statistics/state agencies)	<ul style="list-style-type: none"> Provides records of reported injuries and illnesses by state, industry, etc. Can see patterns, trends, prevalence over time 	<ul style="list-style-type: none"> Underreporting problems Doesn't capture illnesses or injuries that don't result in lost work time Doesn't capture causation in meaningful way
Review of employer records (Log 300)	<ul style="list-style-type: none"> Shows official record of injuries at worksites May offer info about injury prevalence and changes over time (i.e. quantifiable) 	<ul style="list-style-type: none"> Underreporting problems Doesn't capture illnesses or injuries that don't result in lost work time Some employers may not keep records
Worksite visit/ observations/ exposure assessments	<ul style="list-style-type: none"> Can observe work conditions objectively Can see problems workers or managers don't recognize Can measure exposure to hazards (noise, chemicals) 	<ul style="list-style-type: none"> Not all hazards are observable (e.g. understaffing, lack of training, participation of workers in planning)
Surveys (phone, written, online, in-person)	<ul style="list-style-type: none"> Representative samples can provide info on prevalence Can reach a larger number of workers more easily than other methods (cost, time) Can provide quantitative info (info that can be presented numerically) 	<ul style="list-style-type: none"> Reliant on what workers recognize as hazards Reporting bias May not tell you about changes over time Doesn't provide depth of info, opportunities for clarification
Interviews	<ul style="list-style-type: none"> Provide more in-depth info about hazards and underlying causes Can capture worker stories Allows for more confidentiality than focus groups 	<ul style="list-style-type: none"> Reliant on what workers recognize as hazards Reporting bias Time consuming, resource intensive Requires skilled interviewer
Focus Groups	<ul style="list-style-type: none"> Provide more in-depth information about hazards and underlying causes Can capture worker stories Participants can come to shared understanding of problems and solutions 	<ul style="list-style-type: none"> Reliant on what workers recognize as hazards Reporting bias Misses divergent opinions if people don't speak up (not anonymous) May not tell you about prevalence or changes over time

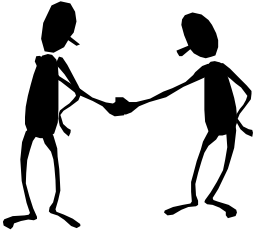


Adapted from Occupational Health Internship Program (OHIP) training handout, 2014.

Workshop Handout #3: Conducting Ethical Research with Human Subjects

When you do research work, you become part of a larger effort to understand the world and make it a better place.

Research on human beings comes with special responsibilities. In the United States, we have ethical standards for research on human beings. Ethical standards help us decide the right and moral ways to act. The history of ethical regulations in human subjects research began in the 1940s with the Nuremberg Code, in response to the human experimentation that was conducted by the Nazis.

In the U.S., institutions that receive federal funding must follow the Policy for the Protection of Human Subjects, established by the Department of Health and Human Services. The key principles for ethical research that underlie these policies are: respect for persons, beneficence, and justice.

Fundamental Principles of Research Ethics	
<p>Respect for persons</p> 	<p>Incorporates two basic ideas:</p> <ol style="list-style-type: none"> 1) Ensuring that a person is allowed to make an informed decision about whether or not to participate in a human subjects research project; 2) If a person has diminished capacity to make those decisions, extra protections must be provided. <p>This protects people from being exploited in order to achieve research objectives.</p>
<p>Beneficence</p> 	<p>Requires a commitment to minimizing the risks associated with research, including psychological and social risks, and maximizing the benefits that accrue to research participants.</p> <p>In other words:</p> <ol style="list-style-type: none"> 1) Do not harm and 2) Maximize possible benefits and minimize possible harms.
<p>Justice</p> 	<p>Requires a commitment to ensuring a fair distribution of the risks and benefits of research. Research participants should share in the benefits of the knowledge gained. Therefore, the research participants should be people who are expected to benefit from the knowledge gained through the study.</p>

What is an IRB?

This federal policy also lays out the basic foundation for Institutional Review Boards, also known as IRBs. An IRB is an independent committee comprised of at least five members from relevant academic disciplines and at least one non-affiliated member. The IRB functions as a type of “human subjects advocate” whose role is to protect subjects participating in research. The IRB committee reviews research projects submitted by researchers, and has the authority to approve, require changes, or disapprove proposed research projects.

Workshop Handout #4 – CPWR Statement of Principles Research Involving Human Subjects (Participants)

CPWR: The Center for Construction Research and Training (CPWR) has the mission of protecting and enhancing the welfare of the members of unions affiliated with the Building & Construction Trades Department, AFL-CIO, and all workers in the construction industry. CPWR shall seek to participate in research that will proximately benefit that membership while imposing no more than minimal risks upon participants. All persons who participate in research will be respected as active collaborators in the search for knowledge, not just as subjects of research. Participants may be sought from among active and retired members and from among other workers performing similar tasks, working under similar conditions, or providing a control population.

CPWR will make every effort to enroll only informed and willing participants in studies. No coercion or undue persuasion, either overt or covert, shall be used or permitted in the recruitment of participants into any study, nor to retain participants in studies that they have already joined. All participants will be fully informed of the purpose for which the research is being conducted; of any risks, physical, psychological, economic, or social, involved in participating in the research; of any compensation that they will receive for participating; and of any cost that they may be expected to incur. Deception shall not be used as a research strategy. Persons being recruited will be provided with the name and phone number of a person who can answer questions that they may have about research during hours convenient to the worker and available prior to enrolling as participants, during the course of the research, and after the research has been completed. In advance of any research effort, affected union representatives will be notified of planned research protocols and be provided with the name and phone number of a person who can answer questions that they may have about the research.

Unauthorized release or lack of control of private personal information can significantly harm an individual socially, psychologically, and economically. Personally identifiable information shall be properly secured and confidentiality rigorously maintained at all times. Personally identifiable information shall not be made available to employers, unions, or other parties except as specifically defined in a protocol approved by an Institutional Review Board (IRB) recognized by the DHHS Office of Human Research Protections (OHRP). Individuals shall have the opportunity to obtain their own test or evaluation results at no cost to themselves and appropriate means shall be used to inform all participants and union representatives of the overall research findings and significance.

It is the duty of the CPWR IRB to approve all protocols and regularly review performance of all proposed research involving human subjects for compliance with these principles and the requirements of 45 CFR 46, or to verify that appropriate review has been conducted by collaborating institutional review boards recognized by OHRP or DOE. It is the duty of any and all researchers, participants, union officers, agents, and members with knowledge of any known or suspected violation of these principles in CPWR-sponsored research to report such information to the Executive Director of CPWR or his/her agent by the most expeditious means available.

These principles shall govern CPWR in all research that it sponsors, funds, or participates in, regardless of source of research funding.