

Three American workers lose their lives in a motor vehicle crash each day, making it the leading cause of workplace death and injury in the U.S. today. Studies conducted by the American Automobile Association, Nationwide Insurance, NETS and the National Institute of for Occupational Safety and Health, estimate that 40 percent of the workforce experiences time off the job due to motor vehicle crashes during any given year. Each incident results in an average of five to six hours of lost work time. In addition, most of the survey respondents reported a degradation in productivity while on the job due to paperwork, phone calls, arranging replacement transportation, inquisitive colleagues, pain, suffering, etc.

To prevent these incidents and mitigate the consequences when they do occur, NETS recommends that employers create a culture that values safe driving behavior. Among the specific actions recommended are the following:

1. Utilize pre-employment screening.
2. Conduct periodic motor vehicle records checks
3. Form a broadly representative safety committee.
4. Develop a comprehensive safety policy and an incident reporting system.
5. Send clear messages from leadership.
6. Form a safety committee.
7. Implement training, education and awareness programs.
8. Incentivize safe driving behavior.
9. Measure results.

NETS helps employers reduce the cost of doing business by providing training, technical assistance, a quarterly newsletter, a web site ([www.trafficsafety.org](http://www.trafficsafety.org)), networking, traffic safety education and awareness materials and special countermeasure campaign materials.

**Session: H2.0**

**Title: Training Intervention Effectiveness Research (TIER)**

Category: Special Session

Organized by Greg Loos, National Institute for Occupational Safety and Health

Moderator(s): Greg Loos

**H2.1 Overview of the TIER Model—Loos GP**

In an effort to identify the elements of training that are critical to increased effectiveness, the Training and Educational Systems Branch (TESB) of EID has developed a research approach that the branch will follow hereafter in its studies, the Training Intervention Effectiveness Research (TIER) Model. The TIER research model is designed to (1) take into account the intrinsic challenges of identifying specific factors that make the training-learning-action continuum successful, (2) logically match research efforts with the nature of the question(s) at hand, (3) minimize training and curriculum development risks, and (4) concentrate research resources.

The TIER Model is a multi-method approach to study the effectiveness of training that utilizes qualitative and quantitative data gathered systematically across four stages of investigation. Stages 1 and 2 are components of formative evaluation in which the objectives and processes of training are conceptualized, drafted, and refined. During these stages, researchers explore instructional alternatives to determine which are most appropriate for study. Stages 3 and 4 are components of summative evaluation—a systematic attempt to determine if the fully developed training intervention is meeting its objectives as planned or desired. As proffered, the TIER Model is applicable to training intervention research across topical domains.

**H2.2 Relationship of TIER to Injury Control—Loos GP**

Two-in-five of all workplace injuries occur among workers the first year on the job. In FY 99 EID initiated several new worker interventions to help reduce this statistic, these include: (1) incorporating OSH criteria as part of the National Skill Standards Board (NSSB); (2) developing model OSH curricula for secondary vocational education programs; (3) funding three cooperative agreements (in New England and two locations in California) to establish community-based model interventions to increase awareness of OSH-issues related to young workers. Working with NIOSH personnel from across the Institute, EID contributed to the NSSB effort by helping formulate the “Standard for Standards” document; the definition of a “High-Performance Workplace;” and the identification of six Manufacturing Skill Standard Concentrations, Critical Work Functions, Key Activities and their respective Performance Indicators. The NIOSH Electrical Safety Curriculum is being tested for effectiveness in a controlled study at 52 secondary schools nationwide. Receipt of OMB-clearance for a research study of training intervention effectiveness for this project was a first for EID. The study should be completed in FY00.

**H2.3 Electrical Safety Training—Fowler T**

EID/NIOSH, with extensive input from classroom teachers and the professional community, developed a model curriculum on electrical safety for secondary school vocational education students. In FY 2000, 49 teachers in 7 states agreed to participate in the study and received curriculum materials at the start of the Fall semester. Instruction of the test curriculum was completed by 43 teachers (and approximately 700 students). Pre-, Intermediate, and Post-training data has been collected on student knowledge gain, attitude change, and behavioral intent. In addition, classroom observational, and student focus group, data was collected at 20 sites. A final data set measuring student retention of knowledge, attitude and behavioral intent is scheduled for collection in September 2000. This study will evaluate what components of the curriculum, and order of presentation, produced the best learning outcomes.



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## ABSTRACTS

**National Occupational  
Injury Research Symposium**

**CDC**  
CENTERS FOR DISEASE CONTROL  
AND PREVENTION

*National Institute for  
Occupational Safety and Health*  
**NIOSH**