



THE CENTER FOR CONSTRUCTION
RESEARCH AND TRAINING

What can Epidemiology Teach us about Union-led Occupational Safety Training?

Ashley Schoenfisch, Hester Lipscomb and Clayton Sinyai

UALE 2016, Washington DC

Do You Know Your Manual Rate?

(Do you know what a manual rate is????)

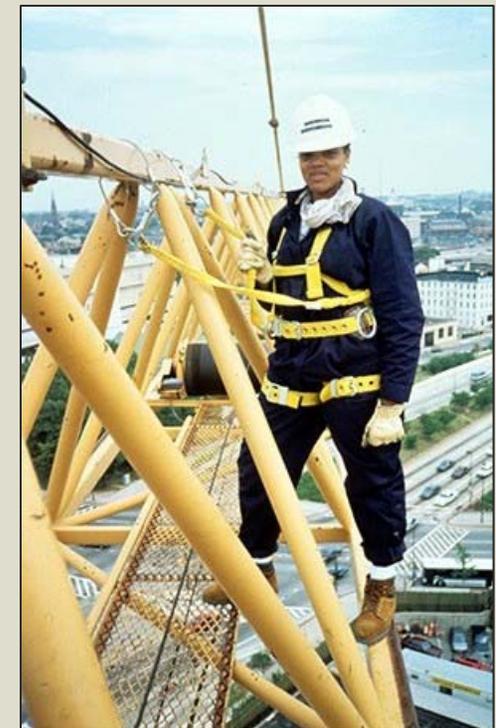


Close... but no

Do You Know Your Manual Rate?

(Do you know what a manual rate is????)

Occupation	Manual Rate
University professor (8868)	\$0.59/\$100 payroll
Architect (8601)	\$0.60/\$100 payroll
Union Organizer (8755)	\$0.75/\$100 payroll
Grocery store cashier (8006)	\$2.03/\$100 payroll
Autoworker (3808)	\$4.60/\$100 payroll
Carpenter (5403)	\$13.96/\$100 payroll
Ironworker (5040)	\$28.99/\$100 payroll

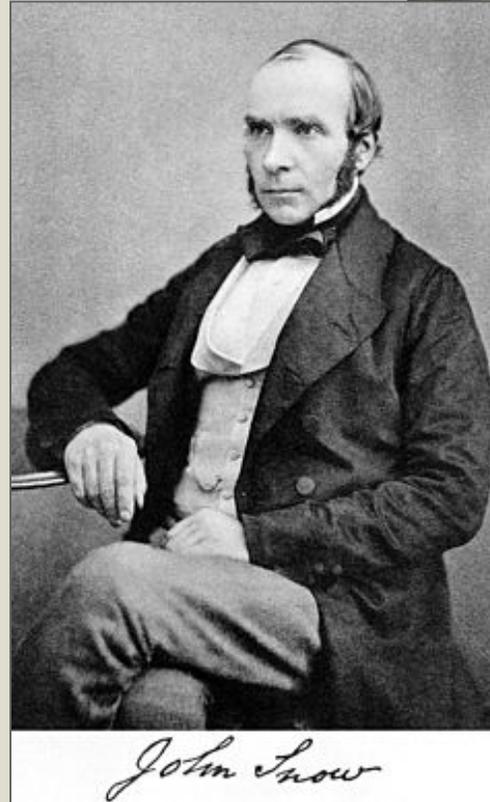


What is Epidemiology?



Courtesy of Randy Stewart, Seattle, WA

Mr. Nate Silver (1978-?)



Dr. John Snow (1813-1858)



courtesy of Justin Comack

A History of Evaluation...

Askari E and Mehring J [1992]

SEIU-run peer training program on HIV, Hep B and needlestick injury hazards demonstrates knowledge gains for participants.

Kurtz J, Romins T, and Schork M [1997]

UAW-run peer training occupational safety and health training program demonstrates gains in knowledge and self-efficacy for participants.

Lippin T, Eckman A, Calkin K, and McQuiston T [2000]

OCAW, PACE and SEIU members report that they took action to make their workplace safer after training.

Sokas R, Jorgensen E, Nickels L, et al. [2009]

Union pipefitters and roofers demonstrate improved safety knowledge and priorities after OSHA-10 training and in later follow-up report taking action to make their workplace safer.

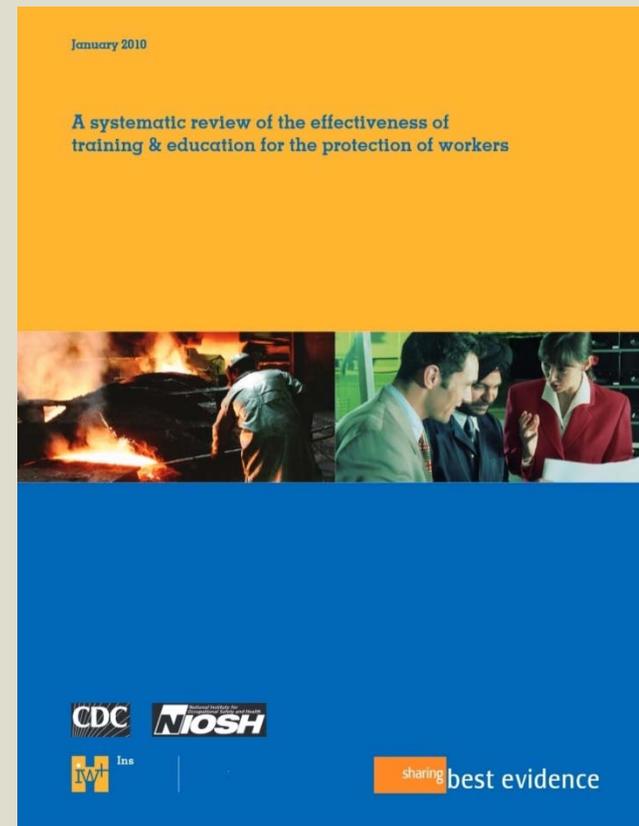


“Findings here were near unanimous in showing how training can achieve objectives such as increased hazard awareness among the workers at risk, knowledge of and adoption of safe work practices, and other actions that improve workplace safety and health protection.”

Assessing Occupational Safety and Health Training: A Literature Review.
Alexander Cohen and Michael Colligan (NIOSH, 1998)

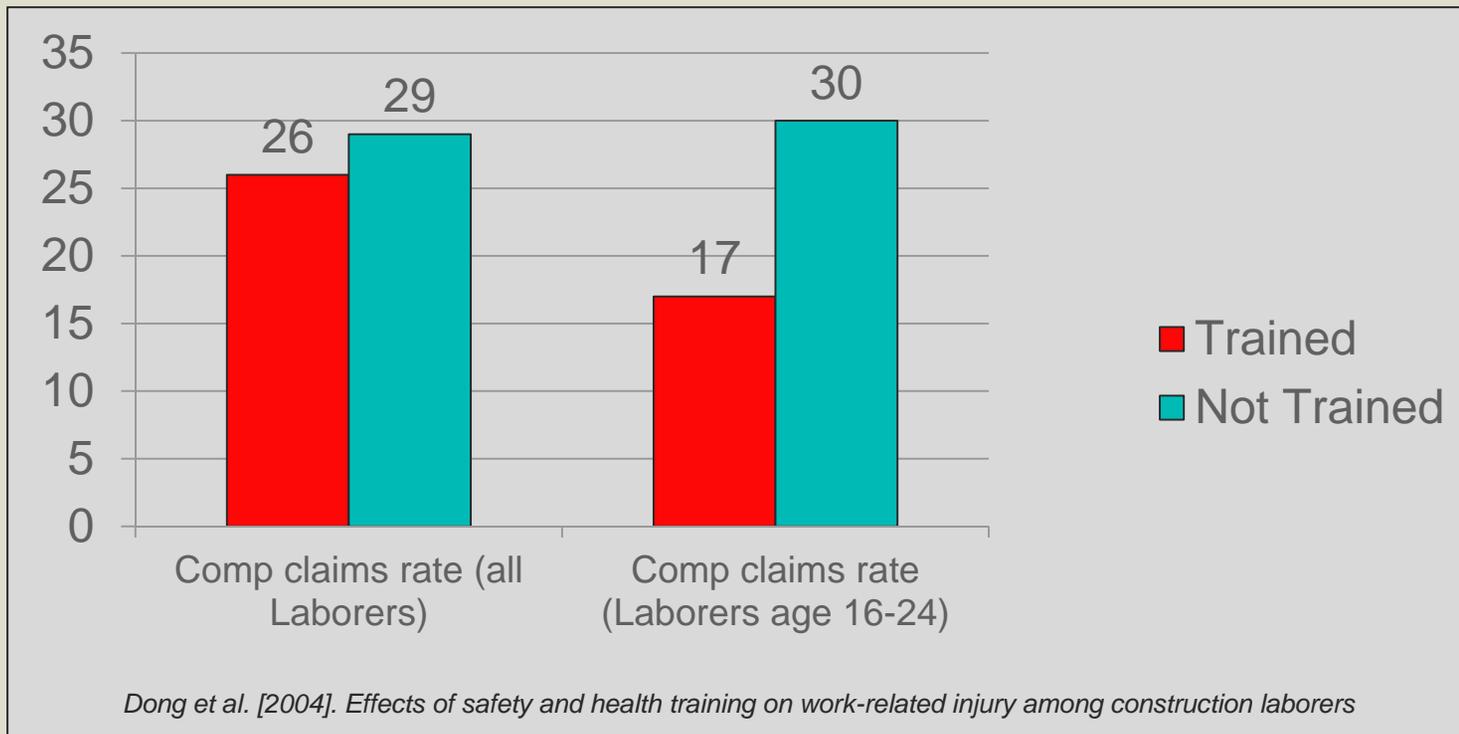
But Skepticism about Outcomes

“While the ultimate goal of OHS training is the prevention or reduction of injury, disease and death... the degree of correlation between these outcomes and typical measures of training effects, such as knowledge gain and behavior change, is unclear at best.”



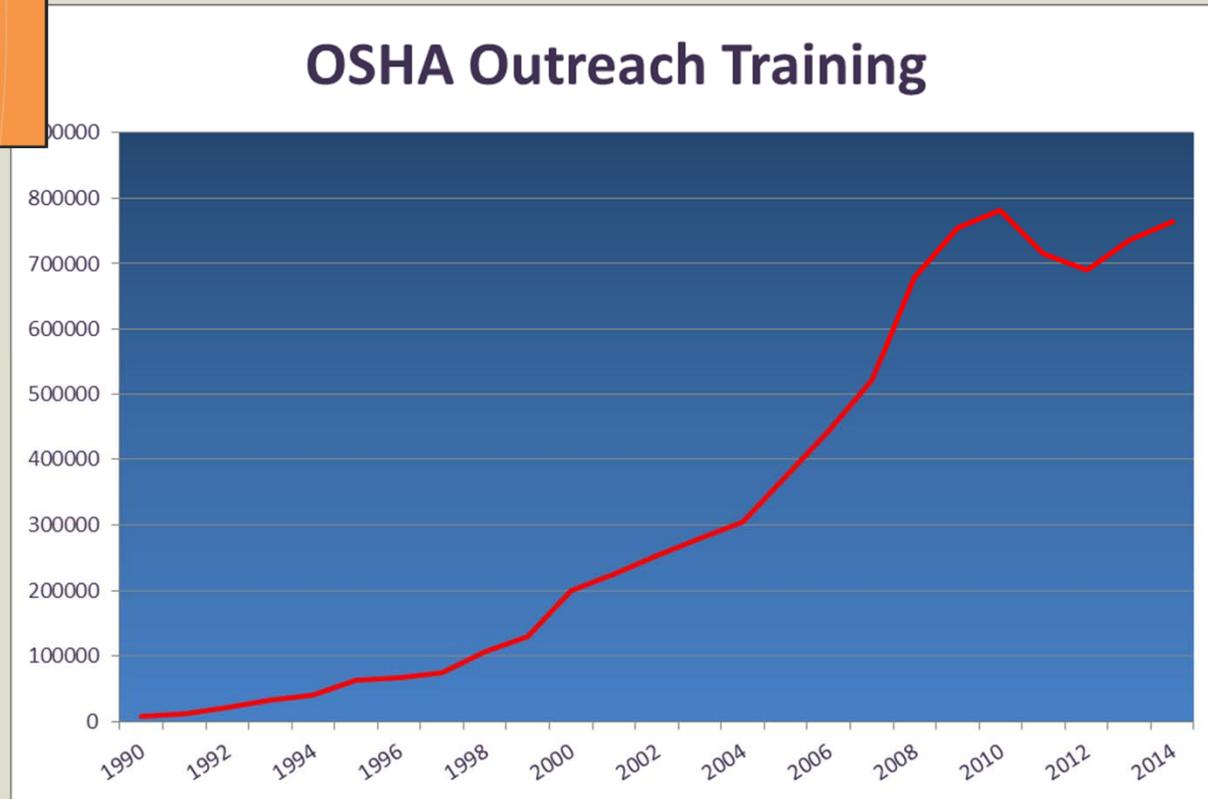
A Systematic Review of the Effectiveness of Training and Education for the Protection of Workers
CDC/NIOSH [2010].

Using epidemiology to evaluate OSH training



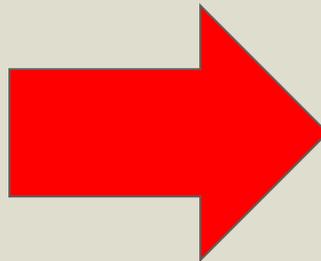
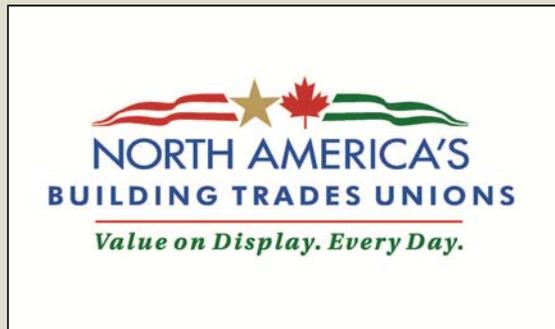
A study of more than 8000 construction laborers in Washington state in the early 1990s showed reduced workers comp claims for those with safety training, but there were ambiguities

OSHA Outreach Training Institute: OSHA-10 and OSHA-30



Source: OSHA

Building Trades Design Customized OSHA Outreach Training for Union Construction Workers

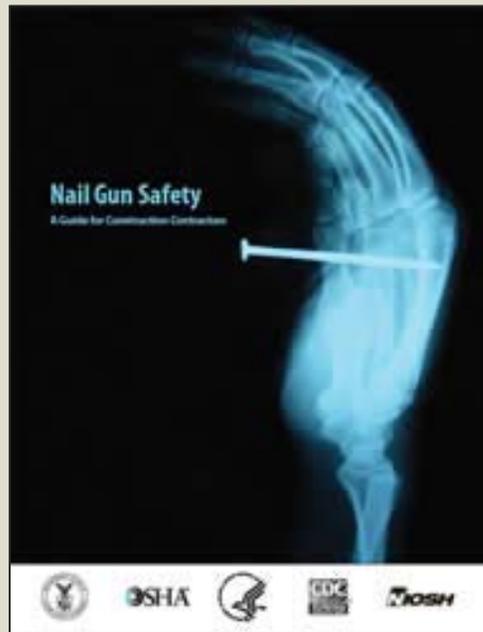


Program Year 2014: **91,110** workers complete OSHA-10 or OSHA-30

Since Inception: **726,000** workers complete OSHA-10 or OSHA-30

THE RESEARCH TEAM:

***Drs. Ashley Schoenfisch and Hester Lipscomb
Duke University School of Medicine***



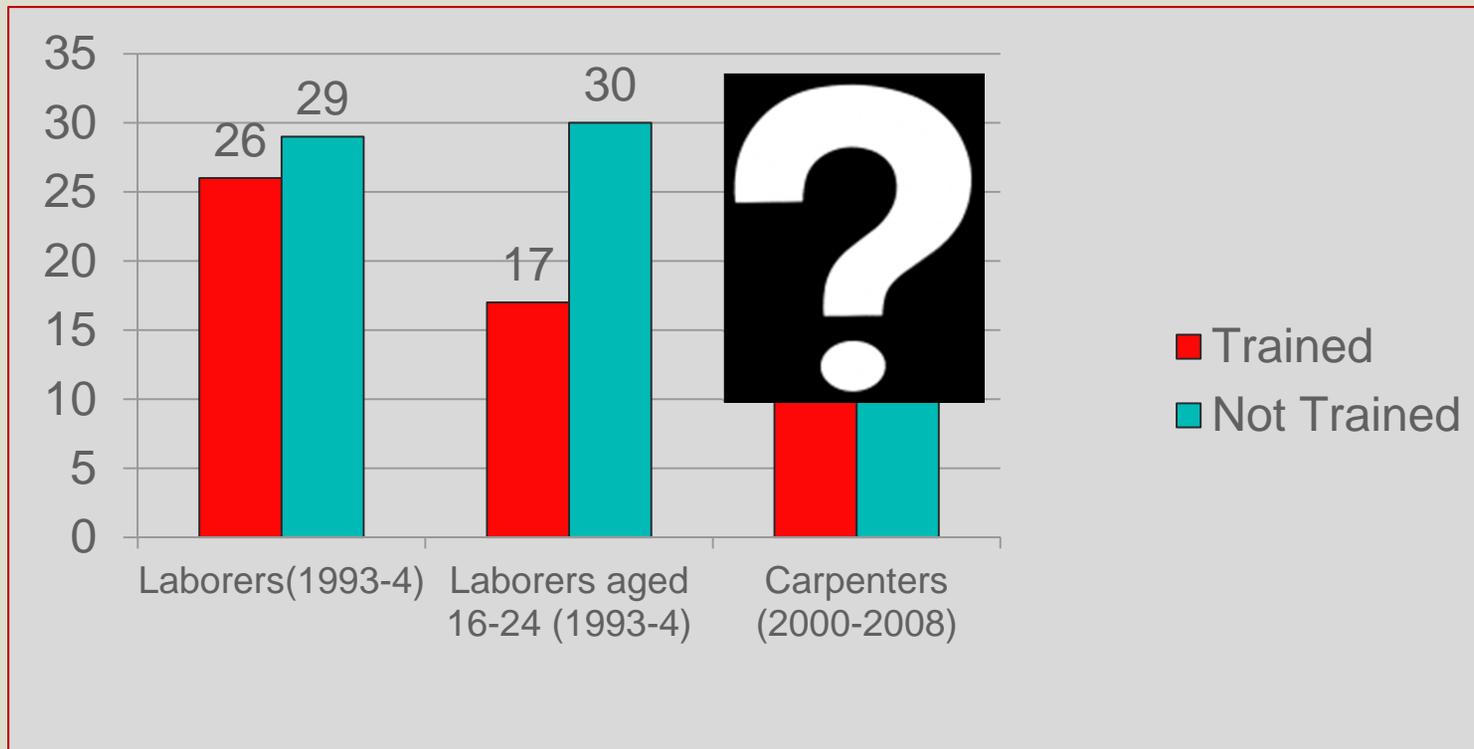
- Hester Lipscomb, Ashley Schoenfisch, et al [2013]. *Work-related injuries involving a hand or fingers among union carpenters in Washington state, 1989-2008.*
- Hester Lipscomb, Ashley Schoenfisch, et al [2014]. *Twenty years of workers' compensation costs due to falls from height among union carpenters, Washington state.*
- Hester Lipscomb, Ashley Schoenfisch, et al [2015]. *Workers' compensation claims for musculoskeletal disorders and injuries of the upper extremity and knee among union carpenters in Washington state, 1989-2008.*

THE COHORT



17,106 union carpenters in Washington State who worked 99.4 million man-hours between 2000 and 2008

Annual Workers Compensation Claims Approved per 200,000 hours (100 FTE)



Our research resembled the the 2003 study of 8000 construction laborers in Washington state – with a larger data cohort, a standardized (OSHA-10/OSHA-30) training program and more detailed trade and injury claim information.

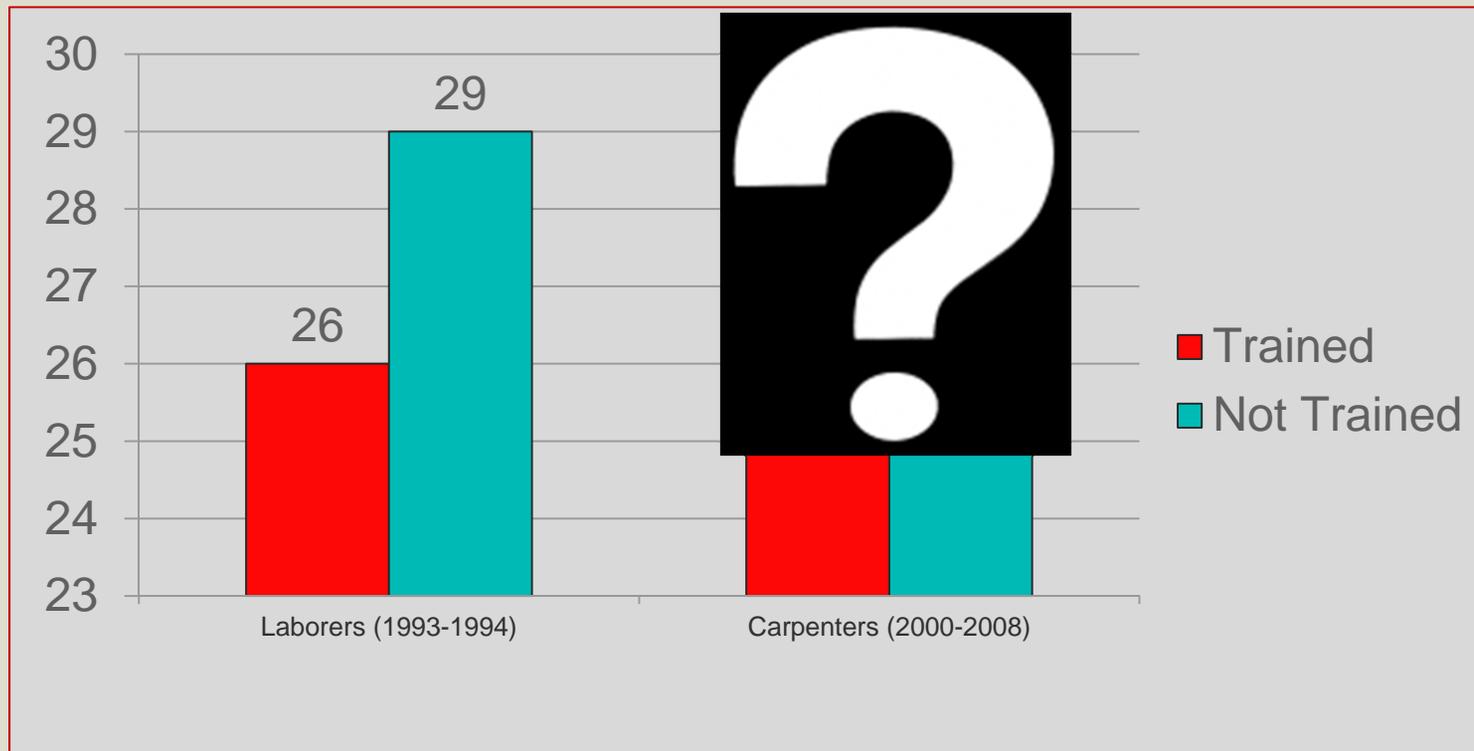
THE COHORT

- 98% Men
- 55% over 40, 45% under 40
- 9,894 Workers Comps Claims Approved
- 1,514 Workers Comp Claims with Paid Lost Time
- **432** with OSHA outreach training through the union in the past five years



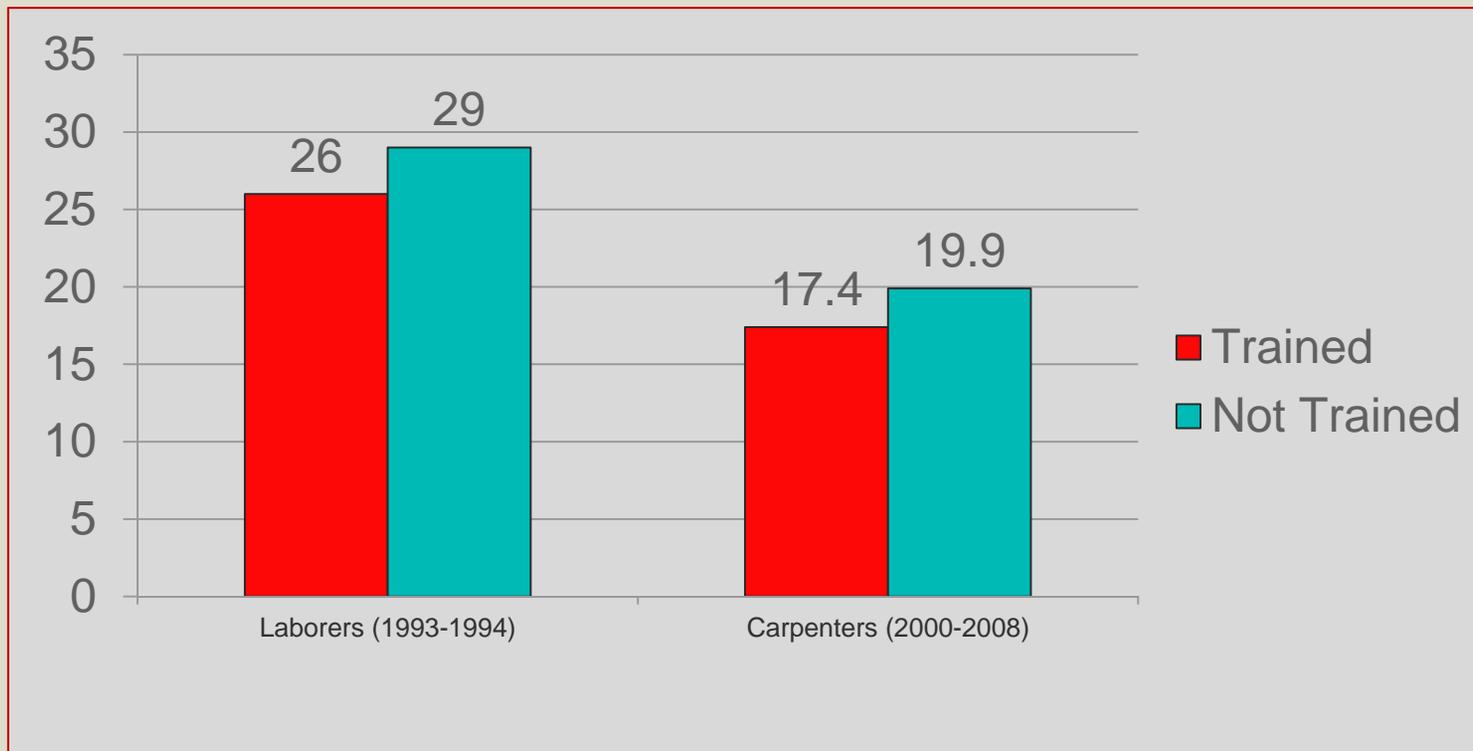
17,106 union carpenters in Washington State who worked 99.4 million man-hours between 2000 and 2008

Annual Workers Compensation Claims Approved per 200,000 hours (100 FTE)



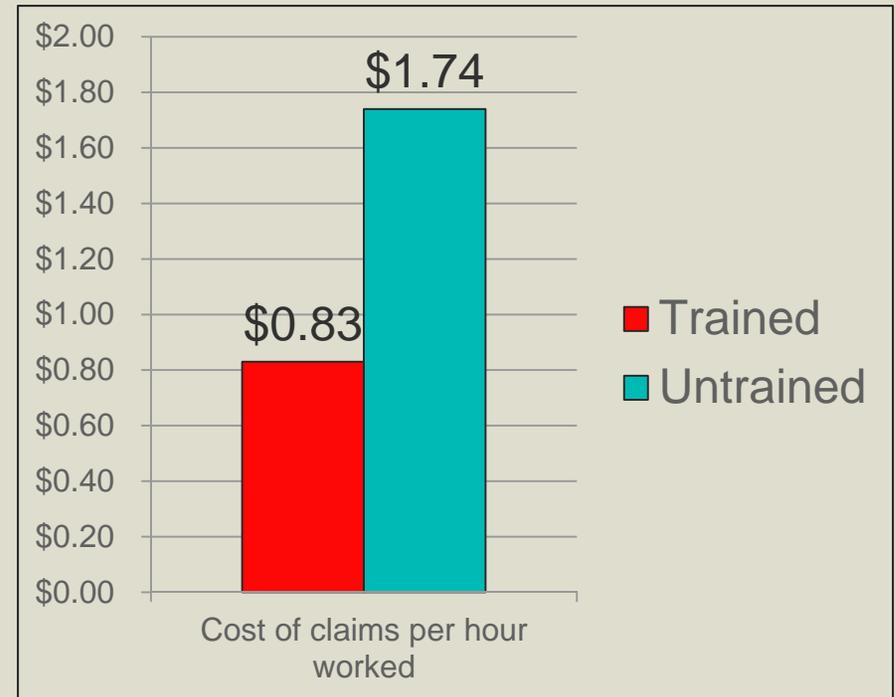
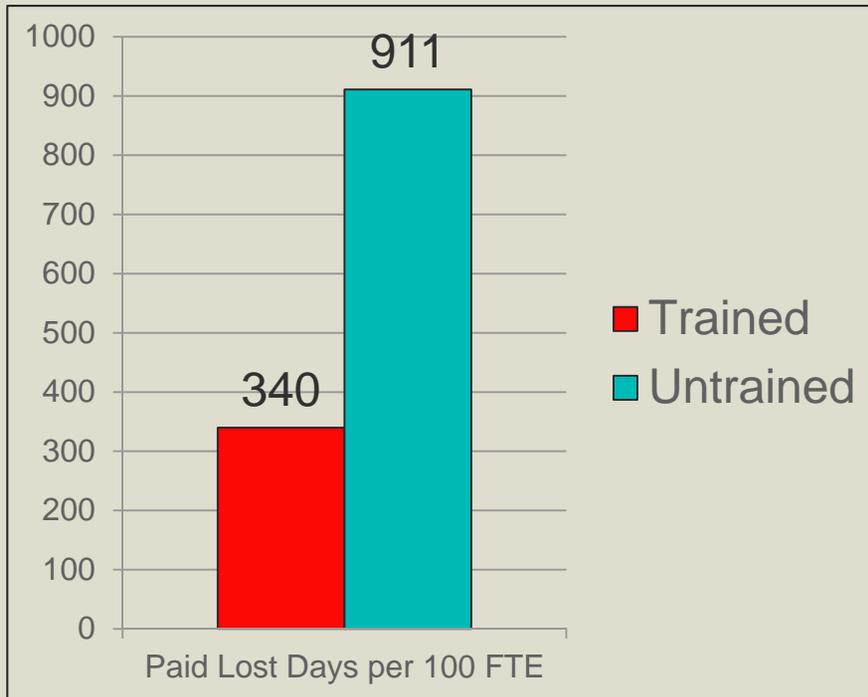
So, what do you guess we found?

Annual Workers Compensation Claims Approved per 200,000 hours (100 FTE)



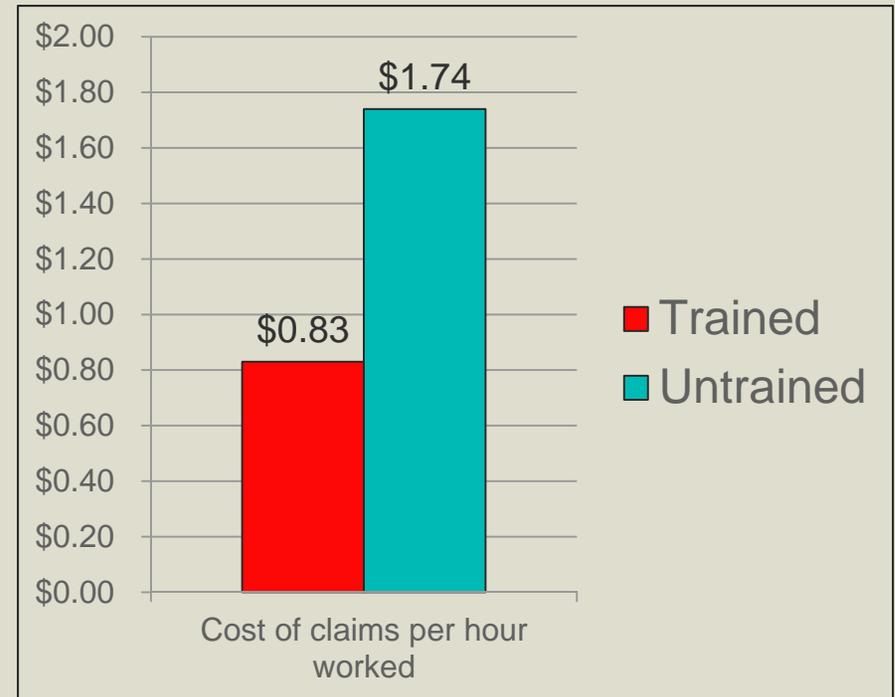
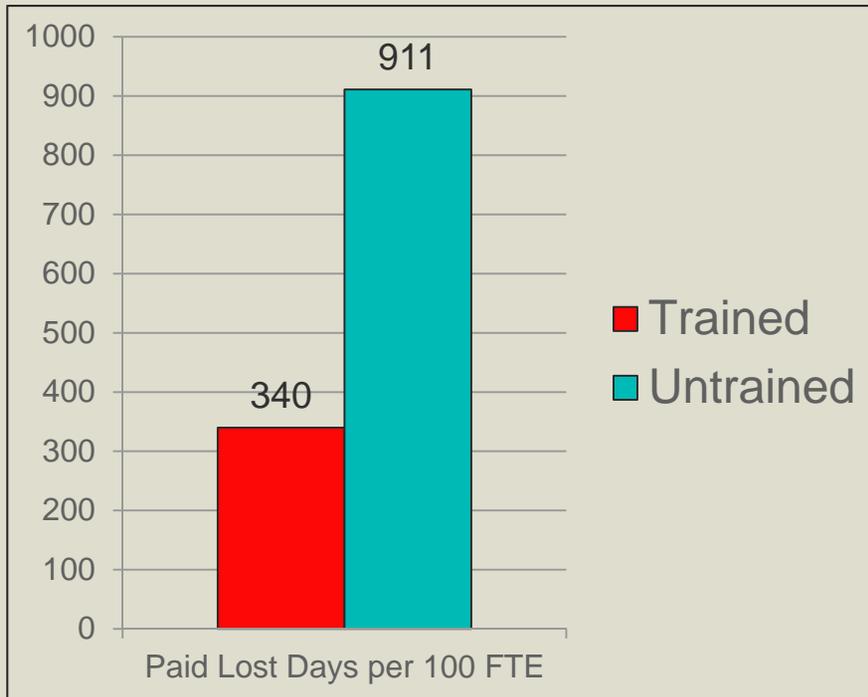
**A 13% reduction in injury claims – very close to the 12% in the earlier study!
(But also like the earlier study, not statistically significant at $p = .05$.)**

Then we noticed something strange in the data...



If the rate of injuries for the two groups was fairly close, the **severity** of those injuries was radically different. This *was* statistically significant, but hard to relate to our original hypothesis. What do you make of it?

Then we noticed something strange in the data...



One possibility is that contractors who are serious about protecting their workers prefer to hire those with the union's safety training. They probably are more likely to take other proactive safety measures, on their own or jointly with employees.

Of course, it's also possible that this is an anomaly. Comps claims vary widely in cost, and a single fatality or disability could have a distinct effect on a dataset this size.

Questions?

Dr. Ashley Schoenfisch
Duke University
ashley.schoenfisch@duke.edu

Clayton Sinyai
CPWR – The Center for Construction
Research and Training
csinyai@cpwr.com

