Mission, Resources and Proposed Projects

Construction Safety Summit

January 2015

Illa Gilbert-Jones, CIH, CSP

Oregon Institute of Occupational Health Sciences

Agenda

- What is OR-FACE
  - Mission
  - History
- Surveillance/Assessment
- Investigation
- Outreach

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OREgon Fatality Assessment & Control Evaluation

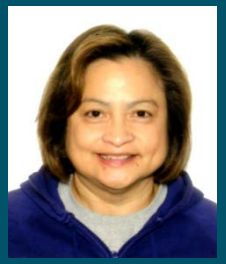
- NIOSH surveillance research program
  - Began in 1982
  - Expanded to states in 1992
- OR-FACE
  - Joined 14 other state programs in 2002
  - 2003 - 76 fatalities

OR-FACE Mission

- **Prevent traumatic work-related deaths in Oregon through**
  - **Surveillance**
  - **Targeted investigation,**
  - **Assessment**
  - **Outreach**

OR-FACE Staff

Ryan Olson, PHD
Program Director



Illa Gilbert-Jones, MS, CIH, CSP
Program Manager/Field Investigator

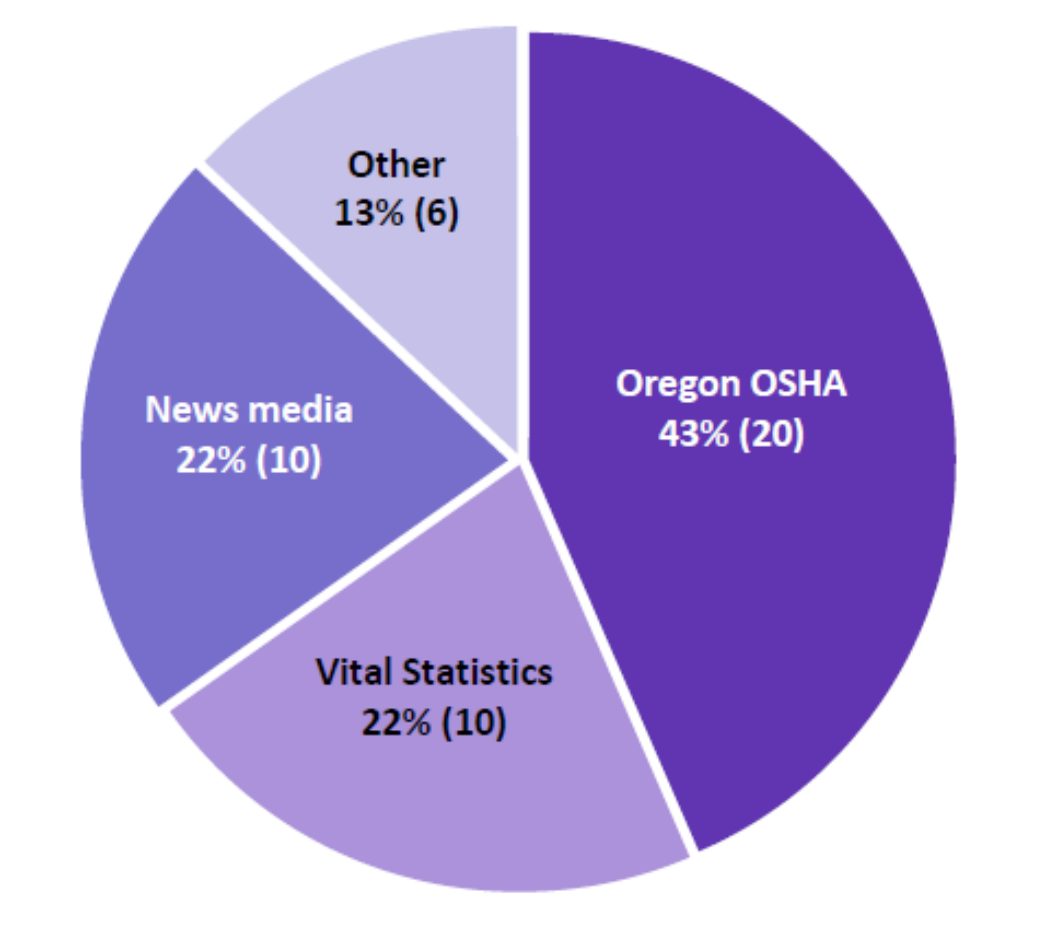
Melodie Bianchini
Student Worker

Contract Investigators with expertise in construction, logging, manufacturing, maritime

Surveillance

Police reports
Coast Guard
CFOI
FAA

Google alerts



Death certificates
Medical examiner

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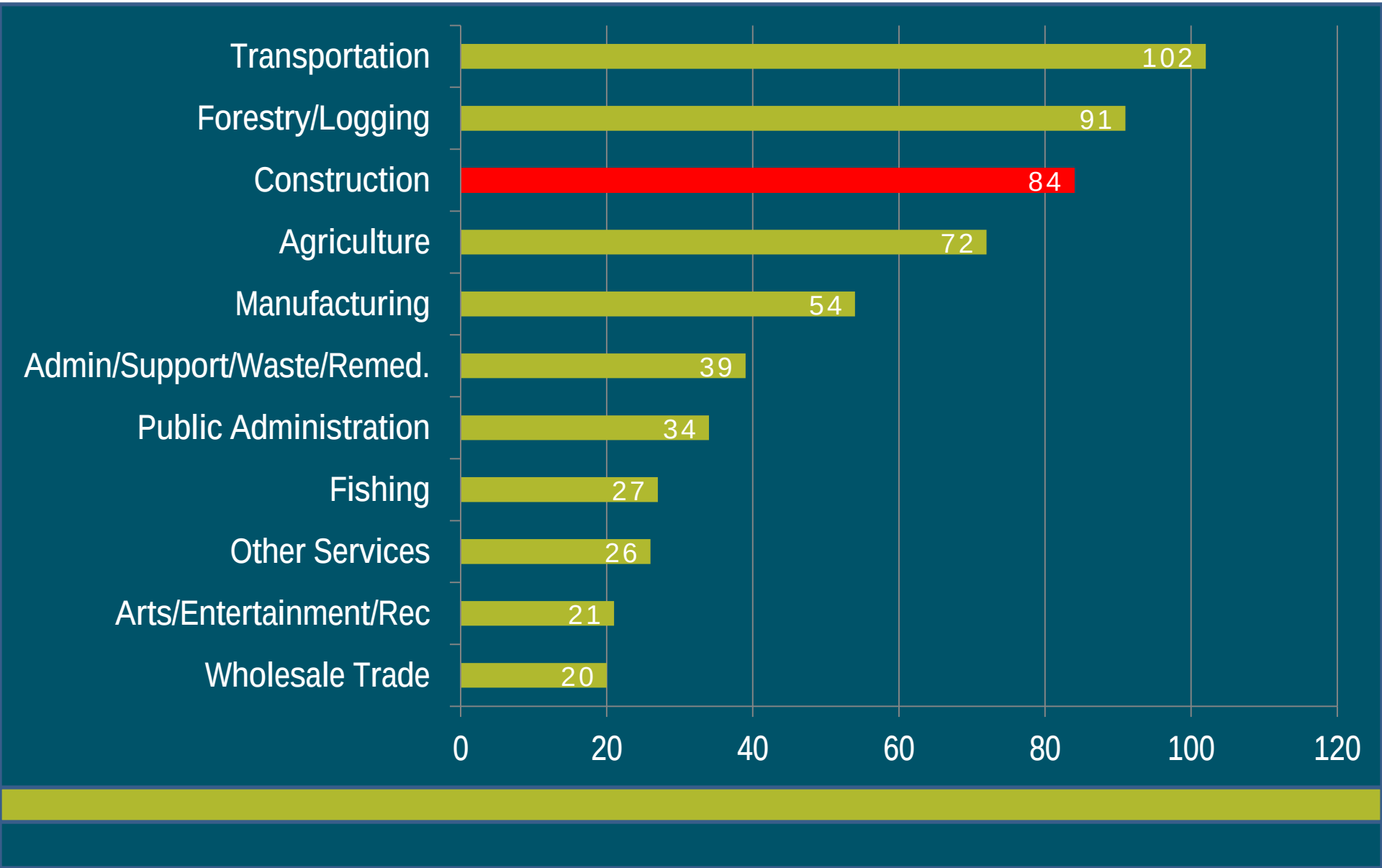
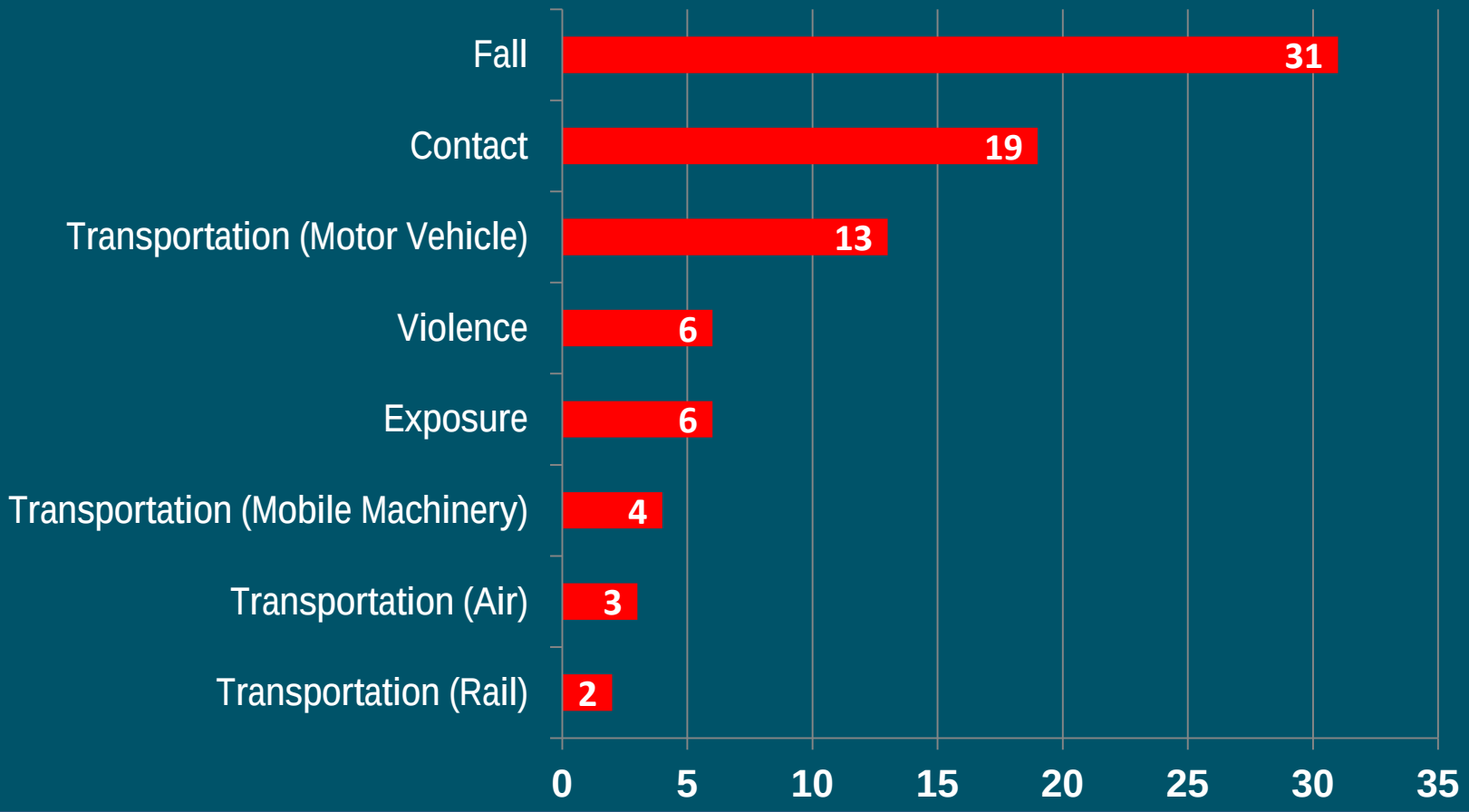
Worker fatalities in Oregon (2003-2013)
Top 10 industries in total number



OR-FACE Cases

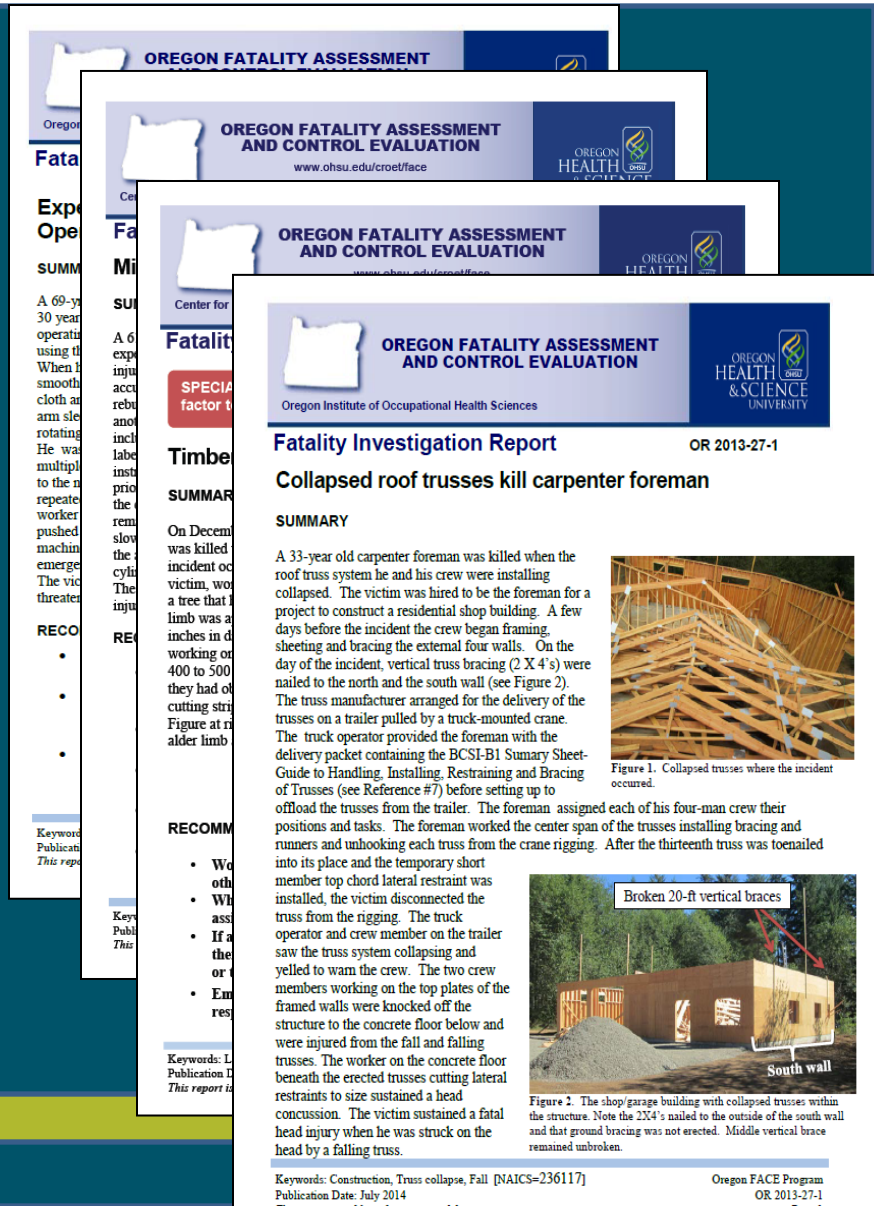
OR-FACE Cases



Investigations

Published (2013-2014)

1. Experienced journeyman machinist killed while operating an engine lathe
2. Millwright fatality involving a hydraulic accumulator
3. Timber faller killed while working under a hung tree limb
4. Collapsed roof trusses kill carpenter foreman



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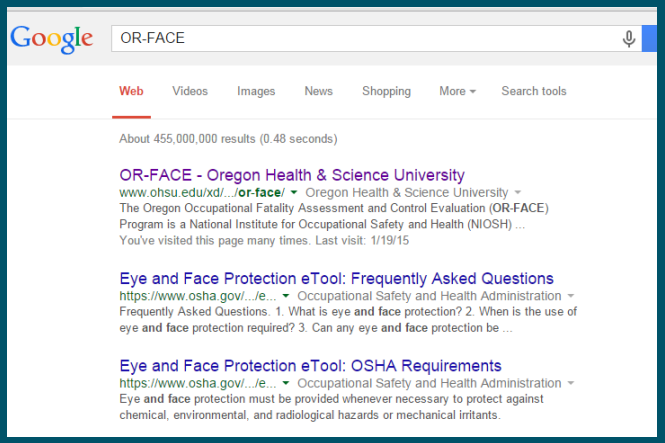
Outreach

- Website
- Publications
- Interventions
- Presentations

Website

http://www.ohsu.edu/xd/research/centers-institutes/oregon-institute-occupational-health-sciences/outreach/or-face/



Subscribe to receive publications

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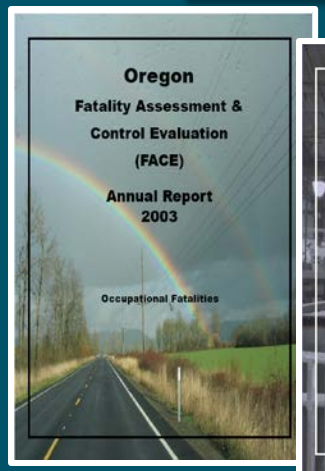
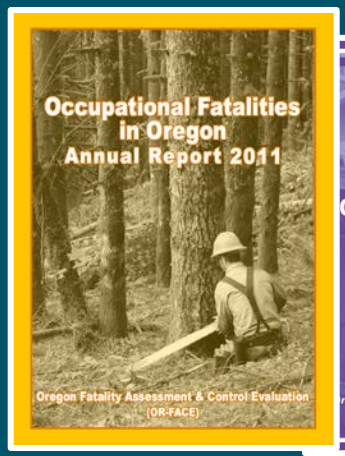
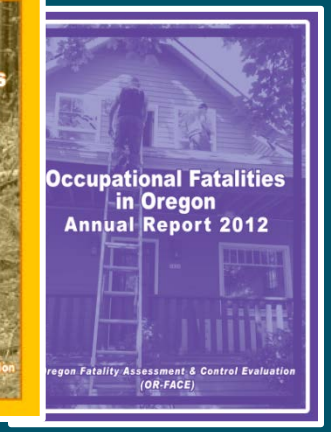
Publications

Annual Reports





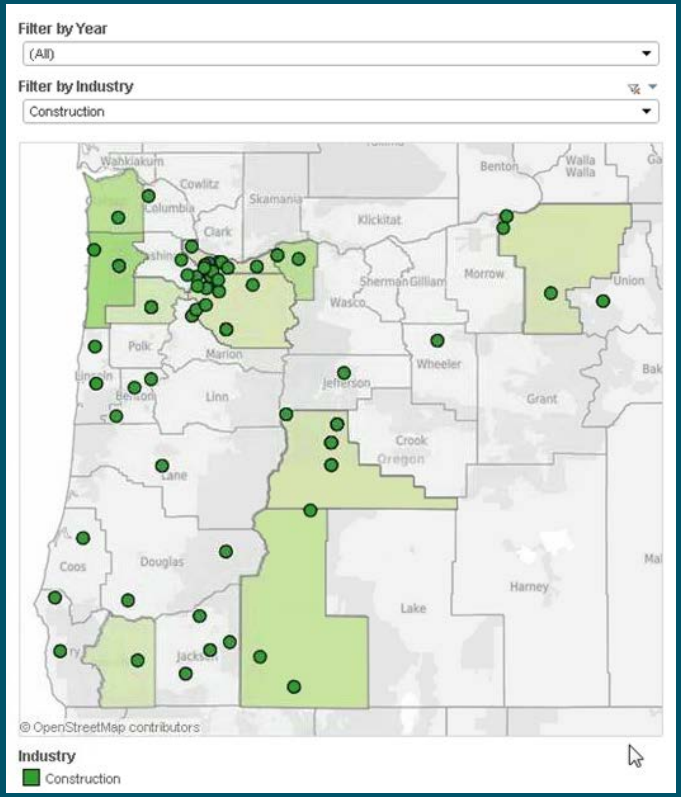


- Published 18 months
- Abstract of cases
- Based on report review
  - OSHA investigation
  - Police investigation
  - Medical examiner
    - Pathology
    - Toxicology
  - National Transportation Safety Board
  - US Coast Guard

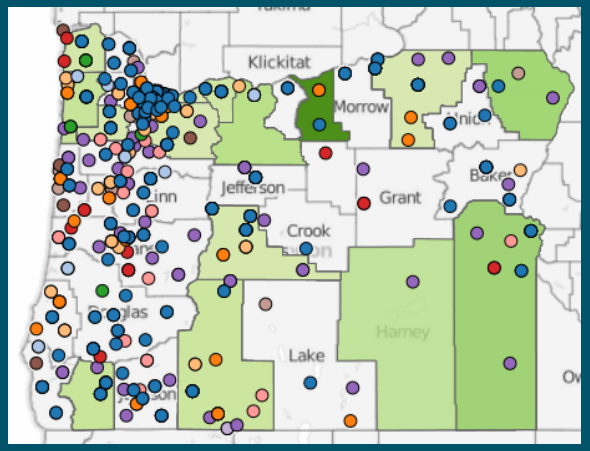
Publications

Interactive Maps (2003-2012)

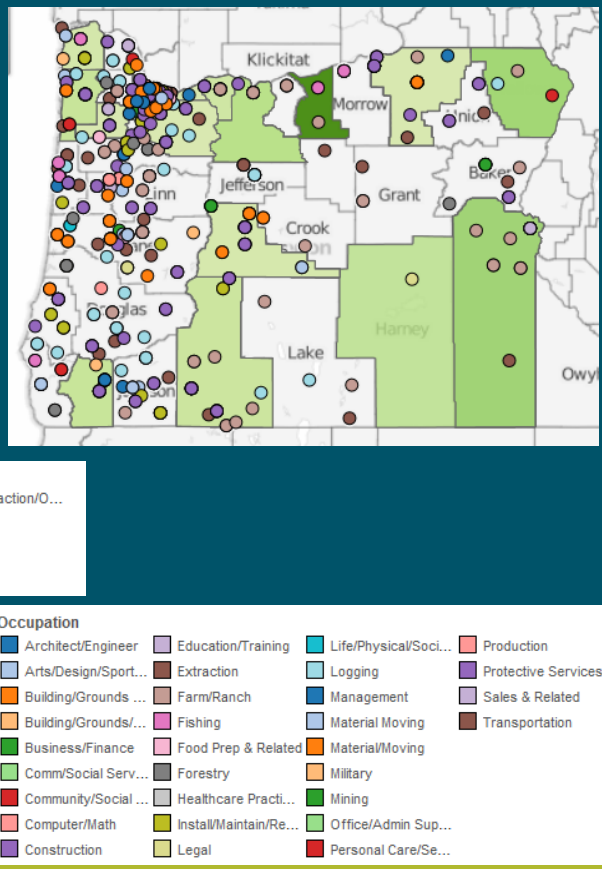
Industry



Event



Occupation



Publications

Hazard Alerts

OR-FACE Fatality Alert

November 2003

OHSU OREGON HEALTH & SCIENCE UNIVERSITY

Truck mounted pile driver presents fatal electrocution hazard

Incorrectly spotting for overhead power lines can result in fatal ele

Case 2003
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with an ov
subcontrac
Service ac
was aware
came into
proximity
were actua
that the vi
and thinki
pile-drivin
ground. W
jumped fr
current fr
died of inj

1 OR2003-36-01

Case OR2
1PM a 20-
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the lower p
driving to
worker.

2 OR2003-37-01

NOTE: B
companies
unmarked
performed

3 OR2003-37-01

Fatal Fall Alert

Gravity Kills

In 3 years, 22 Oregon workers died in falls. Risk increases greatly over age 35, and again over age 65. Fall hazards are everywhere. Falls from ladders are #1. Please observe the following safety tips.

Recommendations

- **Make sure ladder is in good condition, base and locks are secure. Set base 1/4 working length from wall, supported at top by both rails extending 3-4 ft above dismount level.**
- **Three-point rule: Get a firm grip with three of four limbs, especially in icy conditions.**
- **Beware losing your balance from the unexpected release of a weight you are carrying or pulling, or from overreaching.**

Much more! See Oregon OSHA's readable manual *FALL PROTECTION FOR THE CONSTRUCTION INDUSTRY* and other resources online *at www.croetweb.com*

- **Avoid standing up from a kneeling position next to a ledge, where momentary dizziness can cause you to lose balance.**
- **Cover and guard holes securely.**

Fatal Stories, 2003-2005

LADDERS

Store ladder A female retail clerk fell from the sixth step of a step-ladder in a company storeroom, and died 5 days later. She sustained a fracture to the left knee and femur. The clerk was admitted to a local hospital, where she developed sepsis.

Icy lumber load A lumber yard worker was killed when he fell about 11 ft off a loaded semi-trailer. The worker placed an extension ladder against the load and climbed to the top to strap it down. Ice had formed on a layer of plastic covering the load, and the worker apparently slipped as he was stepping from the ladder.

Roof exit A school custodian died after falling about 12 ft from a ladder. He used a fully extended extension ladder to access a roof to retrieve balls. The spring-loaded locks were not set properly, which allowed the custodian to climb the ladder successfully, but the ladder collapsed when he put his weight on it to return to the ground.

ELEVATED LEDGE

Concrete tank A construction worker died after falling about 19 ft into a concrete tank. The worker was removing concrete from an underground water treatment tank that was being dismantled, and was chipping away the fastening strip from the top edge. He was either bending over or kneeling to perform this task, and apparently lost his balance when he stood up to move to the next section.

Conveyor belt A miner fell 12 ft onto a concrete floor from a crossbeam of an elevated conveyor at a sand and gravel operation, and died the next day. The miner and two coworkers were installing a new conveyor belt. The miner was standing on a crossbeam, pulling on a rope tied to the new belt. The rope unexpectedly came loose, causing him to fall.

Hay trailer A rancher fell about 12 ft off a trailer onto his head, and died 2 weeks later. The rancher was feeding horses from the top of a trailer when the string broke on a bale of hay he picked up, sending him backward off the trailer. He walked a few hundred yards to his house, and went to the hospital. He was discharged 4 days later, refused physical therapy, and later died of a massive pulmonary embolism.

HOLE IN ROOF OR FLOOR

Skylight A roofer's helper died when he fell through a skylight to a concrete floor 35 ft below. The worker was assisting his father, a roofing contractor, repair water leaks on the flat roof of a commercial warehouse. Clearing up for the day, the worker was backing up with a torch hose when he stepped or tripped into the skylight.

Insulated hole A journeyman roofer died after falling through a covered hole 20 ft onto a concrete floor during a warehouse reroofing project. The roofers removed a fan and covered the hole with a square of insulation, unsecured and unmarked. Wearing sunglasses, the roofer walked across the roof, kicked loose the insulation over the hole, and fell through it.

Loading-hole gate A female fish processor was killed after falling 12 ft through a loading hole on a second-floor storage area. The opening was designed for use by a forklift: three sides closed by fixed guardrails, and the fourth with a removable gate of two 2x4 rails that sat in cradles. The rails were not pinned or blocked. As the processor leaned over the bottom rail of the gate to catch boxes being thrown up to her, the rail dislodged.

TRIPS AND OTHER FALLS

Trip fracture An 88-year-old pawnbroker tripped over a bag on the floor of his shop and fractured his hip. The victim died from complications in the hospital 4 days later.

OR-FACE PLEASE POST Oregon Fatality Assessment and Control Evaluation 503-494-2502 www.ohsu.edu/croet/face

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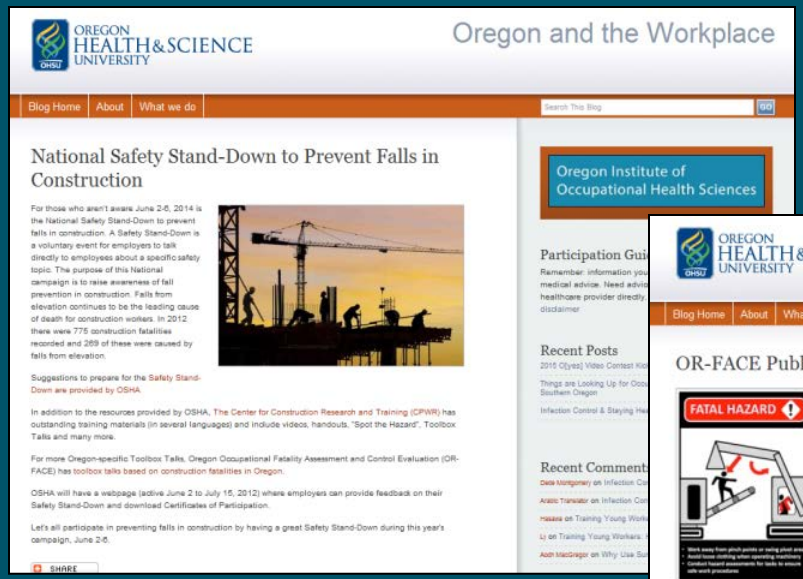
- One page
- Bulleted recommendations
- Abstract of similar cases

Publications

Blogs



Preventing Construction Fatalities:
The Toolbox Guide Initiative

OR-FACE
PSU Occupational Health Psychology
Hoffman Construction
Fortis Construction
SAIF Corporation

PLAN
ahead to get the job done safely.

PROVIDE
the right equipment.

TRAIN
everyone to use the equipment safely.

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Safety communication studies

Recommendations

- **Technical communications**
  - **5th-7th grade level (refinery communication at 16th grade level (4% can understand)**
- **Use pictures**
  - **Increase comprehension (often by 100%)**
  - **Several pictures if subject is complex**
- **Use simple text**
  - **Never more than one page**
  - **Lots of white space**
- **Communicate as if you were human**

Tool Box Talk Guides: *Evidence-Based Structure*

FRONT: Scripted Story

BACK: Line Drawing

High urgency alert word in color

ipt with instructions
lack boxes

Line drawings increase understanding and viewing distance

Top 3 preventive acti
in bullets

Prompts for discussion and correcting hazards

Toolbox Tal

Load of Lumb

INSTRUCTIONS
side facing you

Our safety talk toda
framer from another company who died when a load of lumber fell on him. He was on a ladder to access a stairwell h
house while a roug
bundle of lumber to
weighed at least 60
maximum possible
tipped over. The lu
the victim's head ar
against the ladder.
he fell to the first flo
probably died from

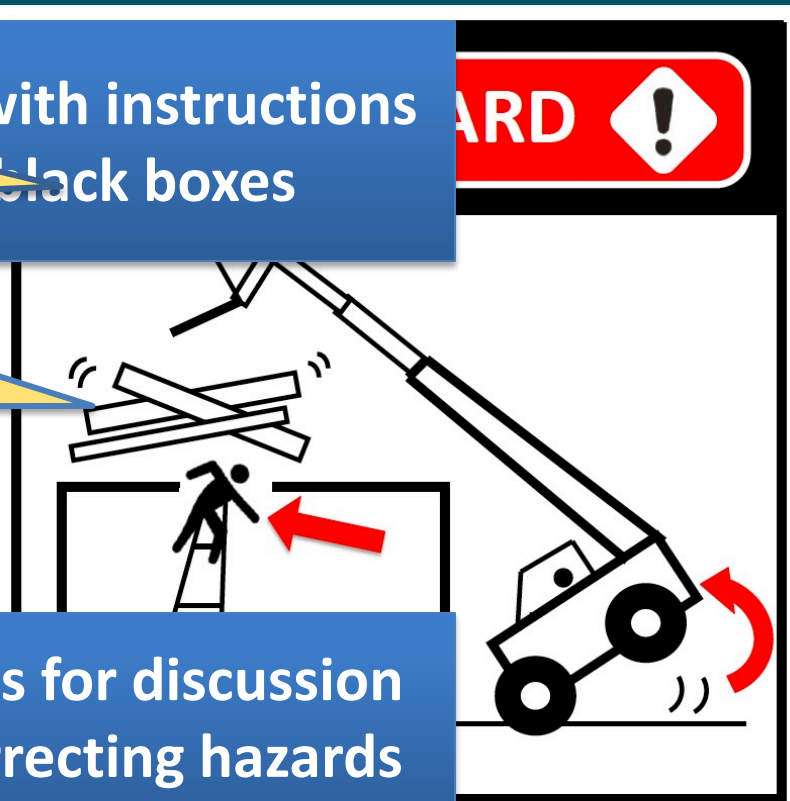
So here are son
happening where we work.

- Never exceed the load or extension limits of a lift or crane. You should be trained before you operate a lift or crane, and I can make sure you get the training.
- Never work dire
are required to b
- Use a spotter an
advance, and to

ASK: "Does any
Pause for

END WITH ACT

- "Are there any
their limits?"
- "Does anyone have ideas for improving our communication systems?"
- "What do you all do to make sure people are not under loads being moved?"
- Discuss a similar situation at your current site.
- Express your commitment to training people for each machine they operate.
- Commit to follow-up at the next safety talk.



- Never exceed load or extension limits of a lift or crane
- Use a spotter and communication system to prevent lifts over workers
- Never work directly under a load

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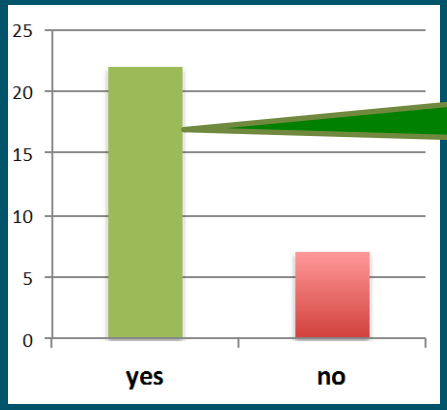
3 Field Studies (sample findings)

- **Study 1: Current Pre-Shift Practices (n=29)**

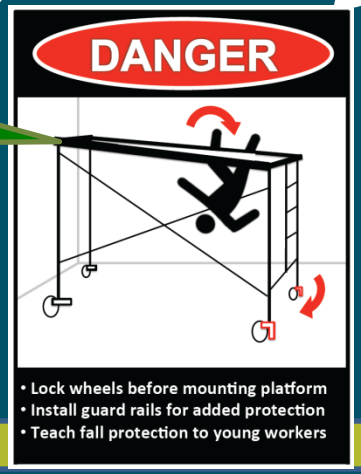
My company conducts pre-shift talks/briefings



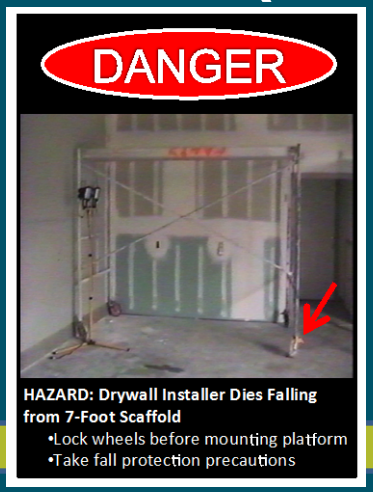
frequency
27% weekly
34% daily

- **Study 2: Image Viewing Distances (n=30)**

1 to 3 *M* greater viewing distance



VS.



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Study 3: Field Test (n=119)

Supervisors

Talk with FACE report

vs.

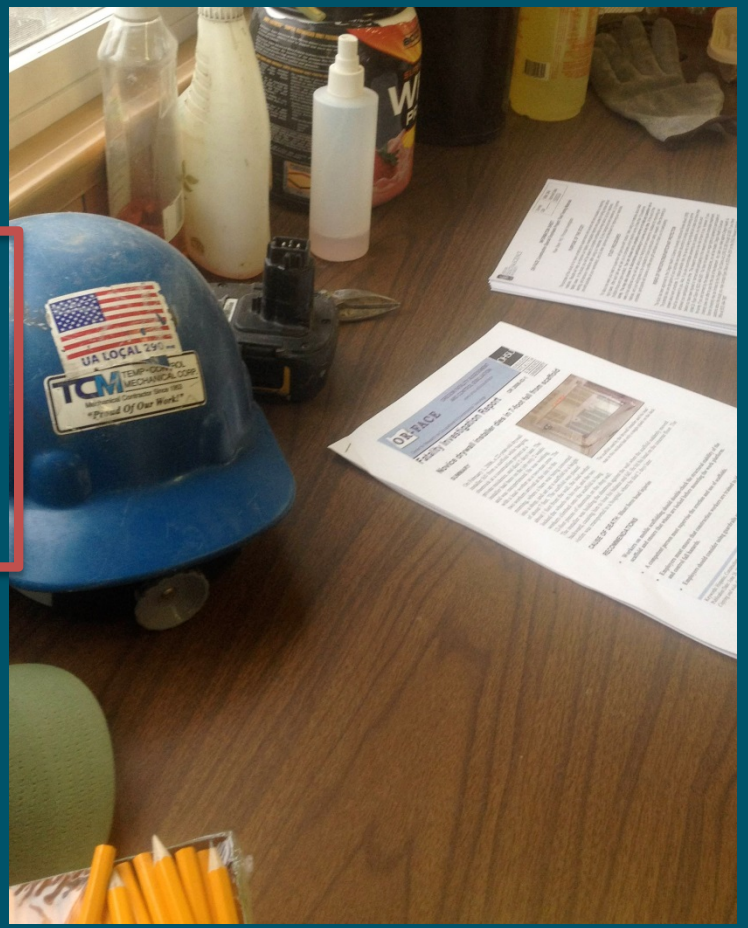
Talk with Tool Box Guide

Preferred 3:1

Workers

- **Reactions**
- **Behavioral intentions**
- **Preference**

Similar positive ratings all *M* > 3.7 (out of 5)



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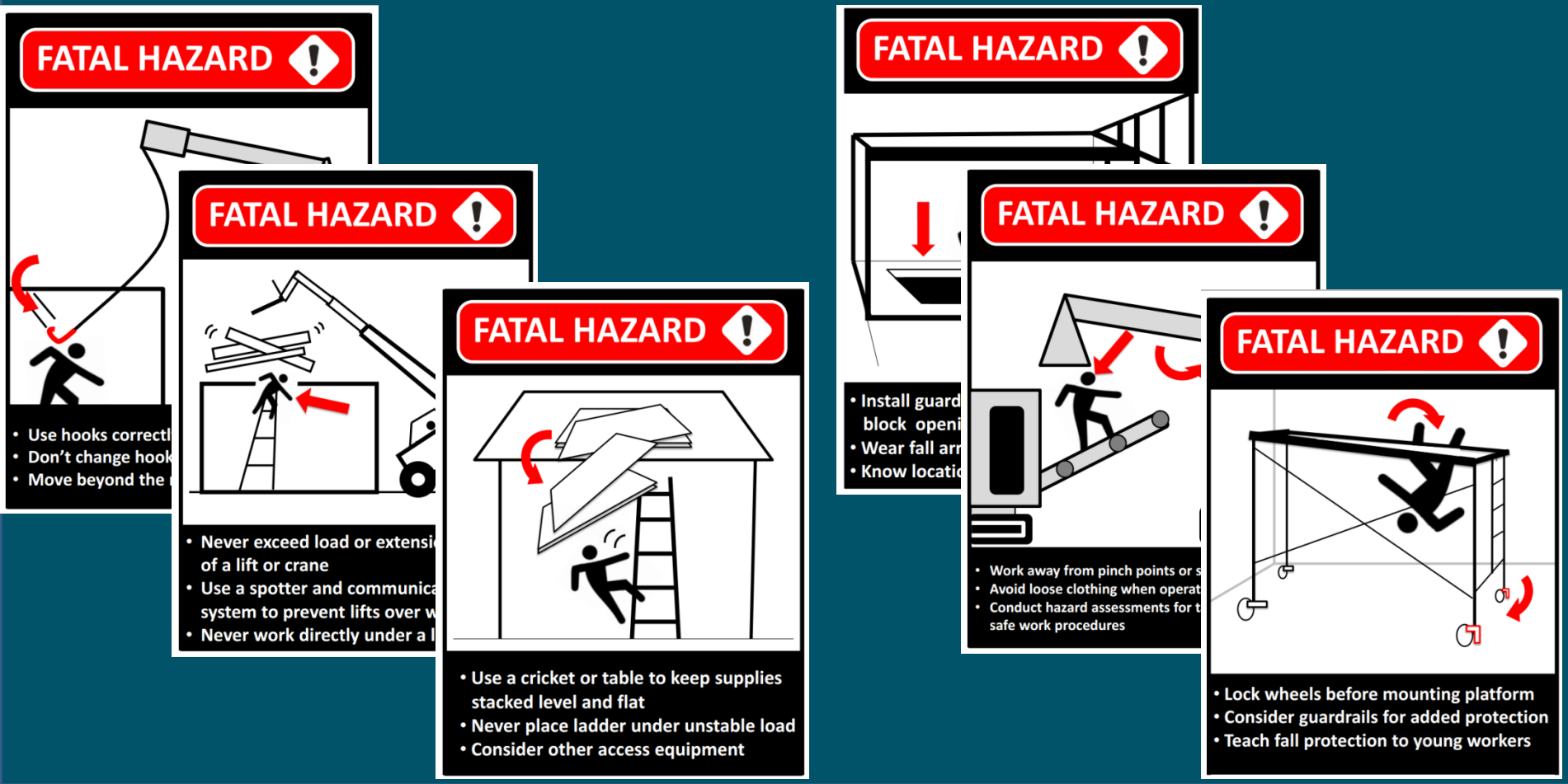
Publications

Published



Proposed Projects

- **Mobile system to promote and evaluate**
  - **toolbox talks**
  - **hazard alerts**
- **Format – what would be best**
  - Voice (story)
  - Email
  - Picture

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Proposed Projects

- Preventing falls in residential construction
  - Identify Participants
    - Homebuilders Association
    - SAIF Corporation
  - Study
    - Experience in recent serious (non-fatal) fall from elevation will increase contractors participation in surveillance survey
    - Small grants program to supply fall prevention equipment and training.

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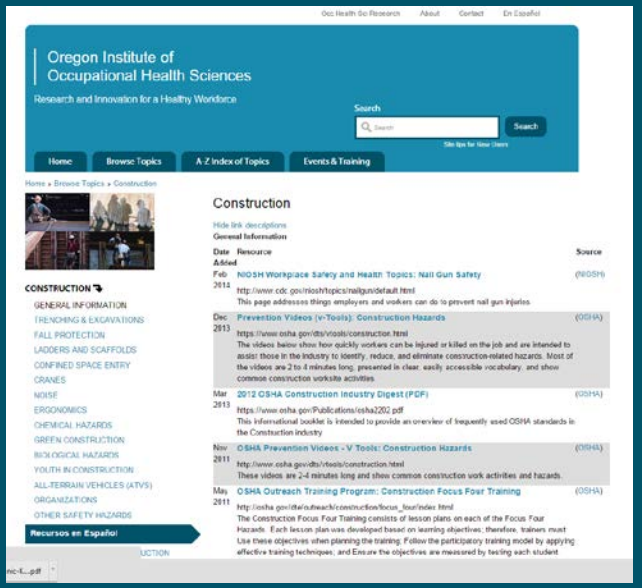
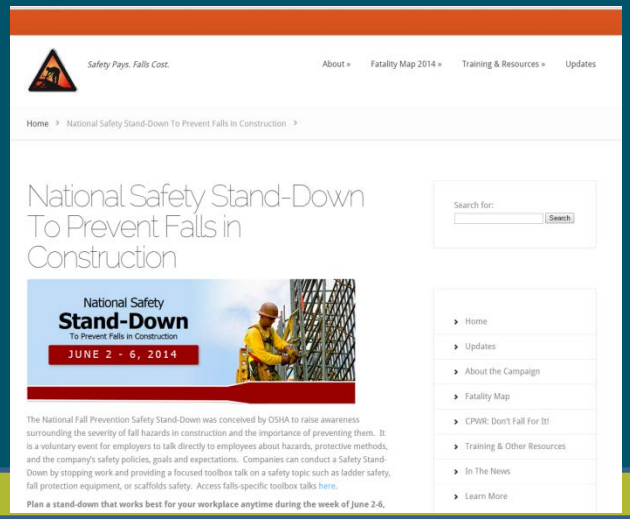
Other Resources

- **Oregon Institute of Occupational Health Sciences**
  http://croetweb.com/index.cfm
  - **Safety toolbox talks**
  - **Online videos**
  - **Newsletter**
  - **Blog**



- **NIOSH (CPWR)**
  - **Stop Construction Falls – National Safety Stand-Down to Prevent Falls in Construction**



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Questions?