



## **Oregon Fatality Assessment and Control Evaluation (OR-FACE)**

***Analysis of Oregon occupational fatalities from  
surveillance, investigation, and assessment findings***

***Barb Epstien, MPH, CIH, FAIHA***

***Illa Gilbert-Jones, CIH, CSP***

**Session A1: Topics in Safety**

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## **Overview**

- What is OR-FACE
  - Mission
  - History
- Surveillance data (occupational fatalities, 2003-2015)
- Investigations
- Outreach
- Research projects



## Mission (background)

- Workplace fatalities: preventable, yet unacceptably common events
  - Each day traumatic injuries kill ~13 workers on the job
  - Each year ~ 350,000 workers killed on the job globally, with nearly 5,000 deaths in US
  - Current Oregon occupational fatality rate = 2.6 deaths per 100,000 workers (national average = 3.5)



## Mission (goal / objectives)

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



## FACE History

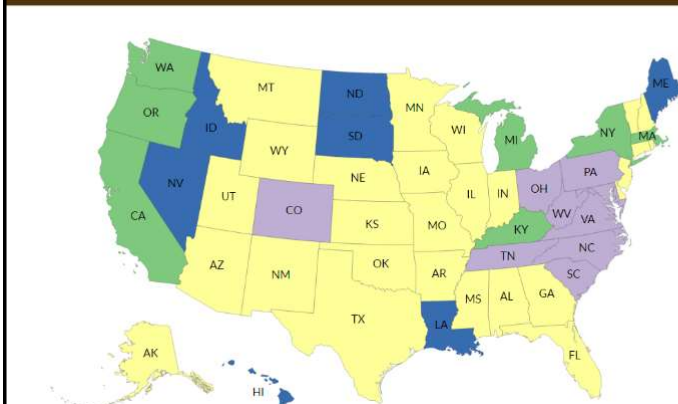


- NIOSH surveillance research program
  - Began in 1982
  - Expanded to states in 1992
- OR-FACE
  - Joined 14 other state programs in 2002
  - 2010 only 9 states
  - Currently only 7 states



## NIOSH Fatality Assessment and Control Evaluation (FACE) Program

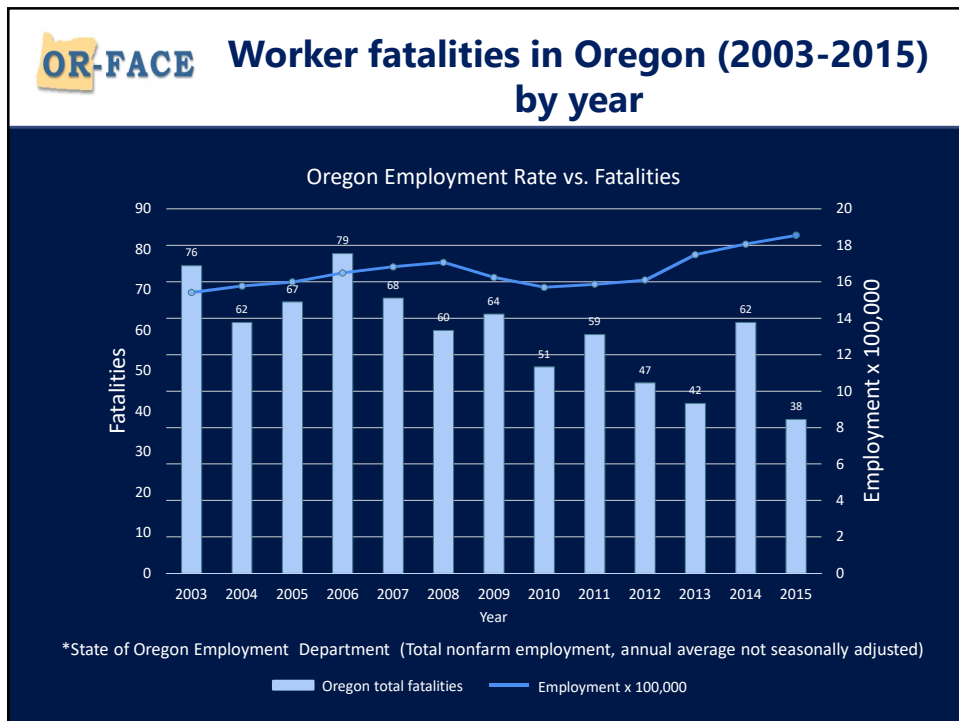
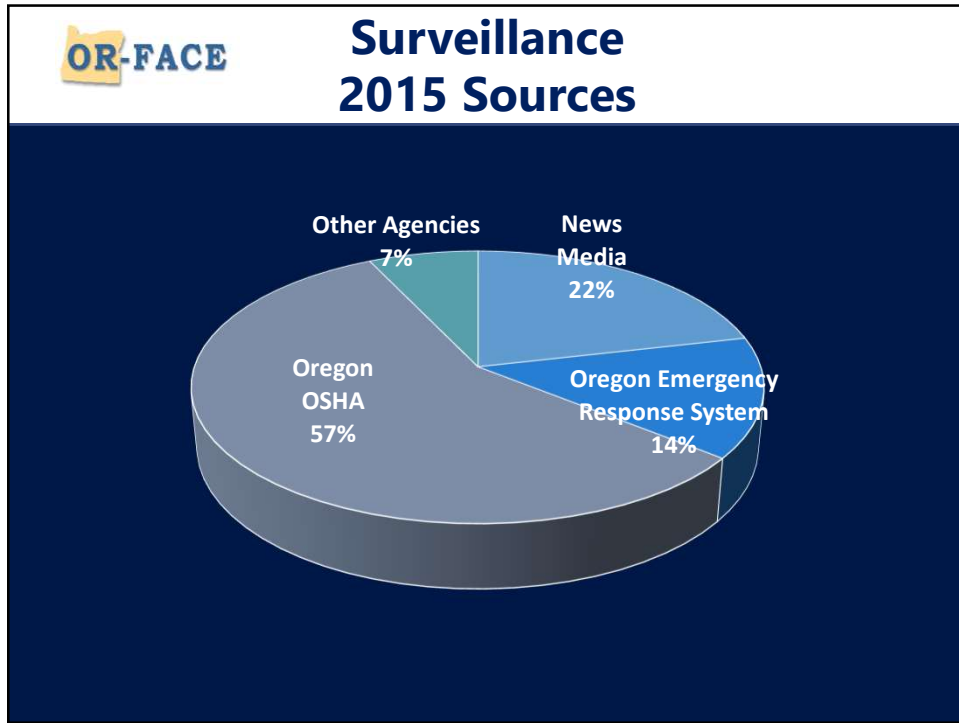
All States

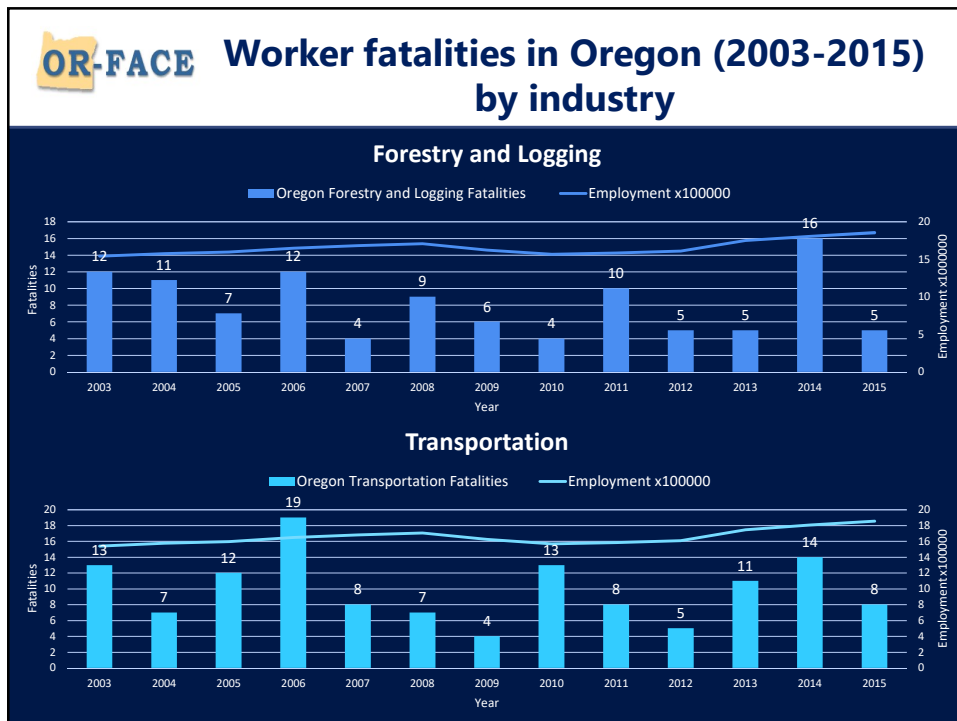
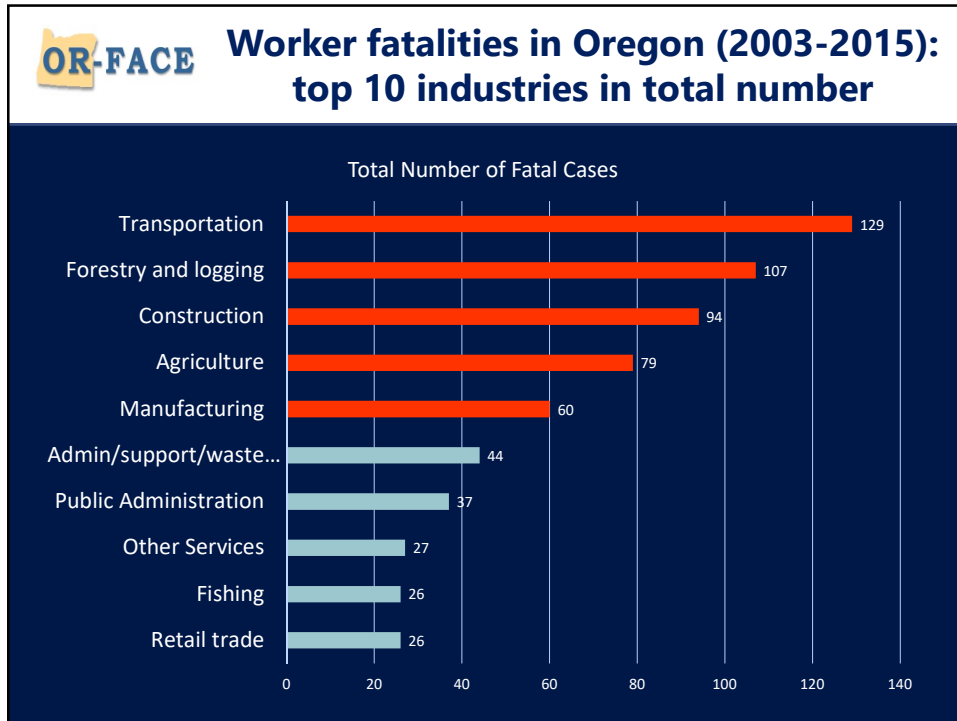


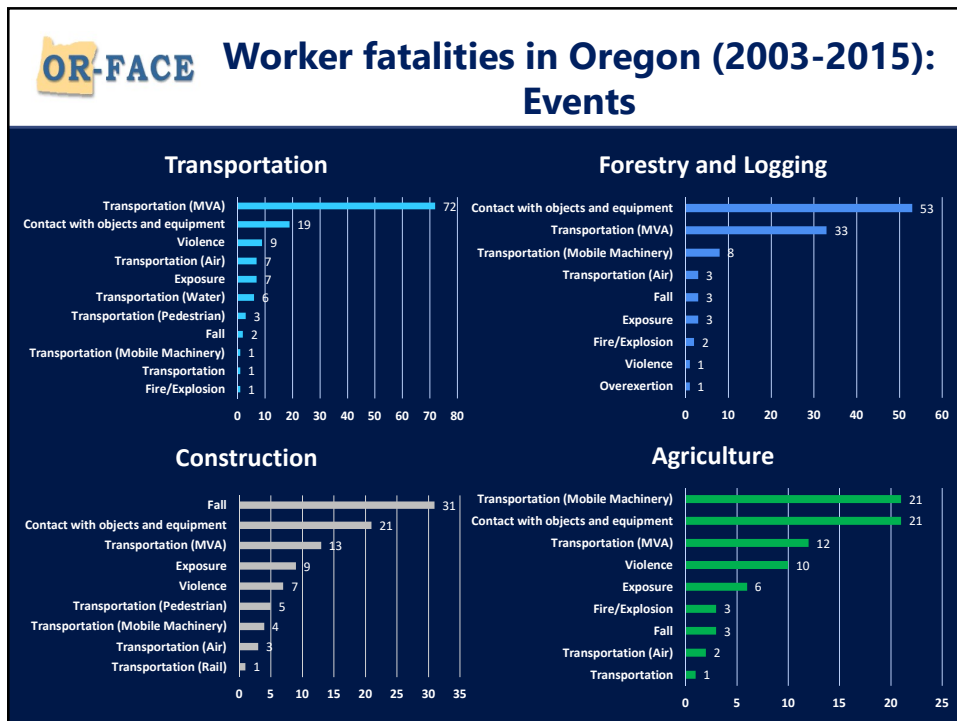
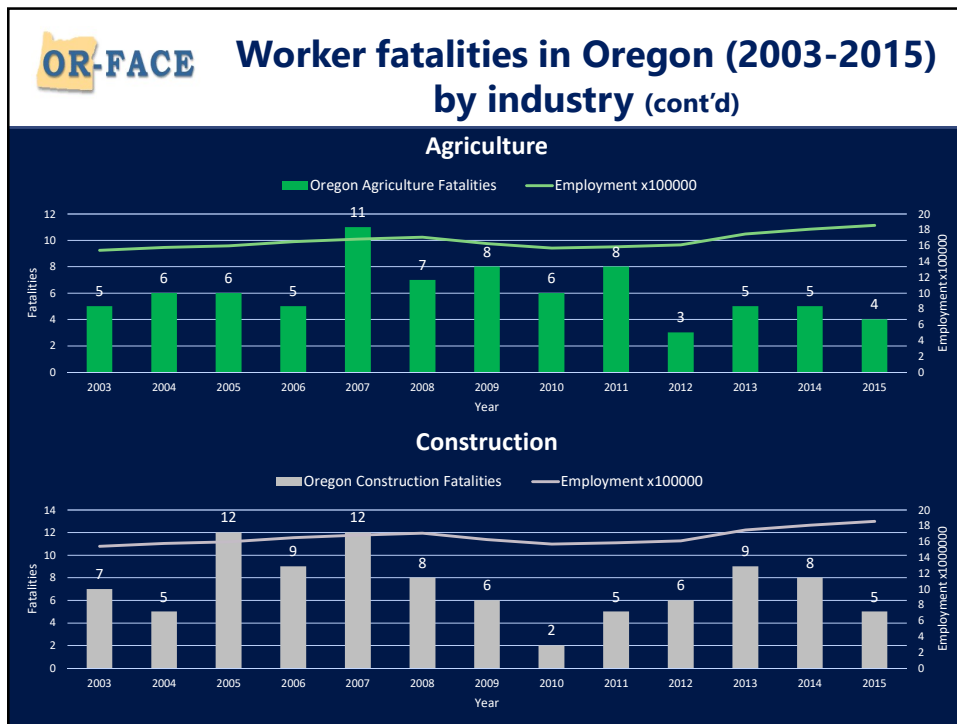
About This Map

- State FACE
- NIOSH FACE
- Non-FACE states where investigations have been conducted
- States where no FACE investigations have been performed











## Investigations

### Guiding Principles

- Maintain confidentiality
- Provide facts
- Provide best practice recommendations
  - Beyond regulatory requirements
  - Hierarchy of controls



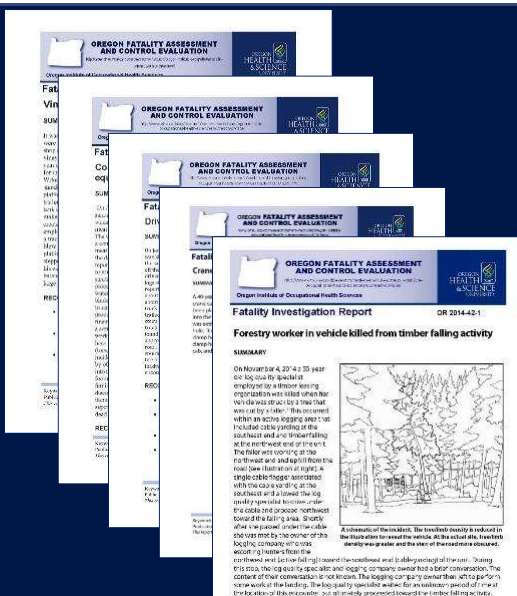
## Targeted Investigations

- Goals
  - Prevent fatal work-related injuries
  - Study work environment, workers, tasks, tools... and management role in controlling how these factors interact
- OR-FACE priorities
  - Portland metro (broad) & surrounding
  - Fall in construction
  - Transportation / mobile machinery
  - Temporary / contingent workers
  - Others, per collaborative partnerships
  - Multiple factors beyond OSHA scope



## Recent Investigative Reports (2015-2017)

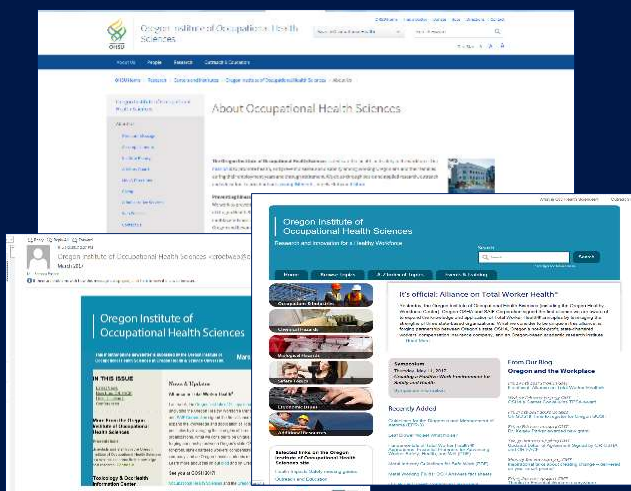
- Vineyard worker killed in fall from trailer
- Contract sanitation worker killed cleaning meat blending equipment
- Driver killed when ejected from logging truck
- Crane operator killed by falling steel beam
- Forestry worker killed in vehicle from timber falling activity



## Outreach / Resources

- [Oregon Institute of Occupational Health Sciences](#)

- Education
- Outreach
- Publications
- Newsletter
- Blog
- Symposia
- Online videos





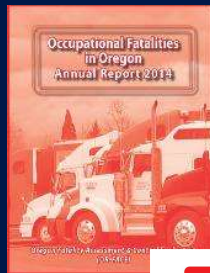




## Outreach / Publications

- Annual reports
- Interactive maps
- Safety booklets
- Toolbox talks
- Hazard alerts
- Blogs

## OR-FACE Annual Reports (since 2003)



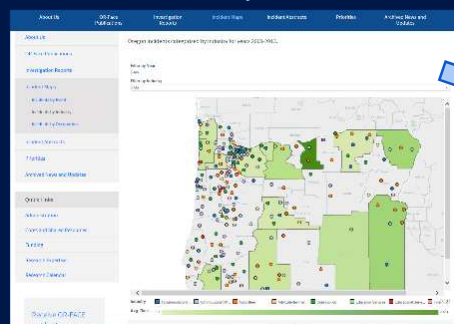
- Published 18 months
- Case abstracts, based on document review
  - OSHA investigation
  - Police investigation
  - Medical examiner reports
  - National Transportation Safety Board
  - US Coast Guard
  - Others



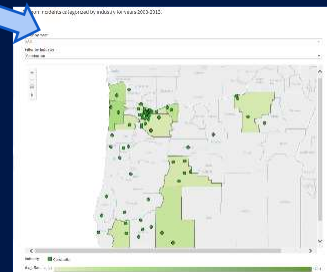
## Interactive maps

(2003-2013) by industry

Industry



Construction

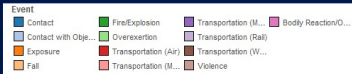
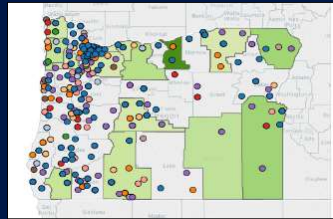




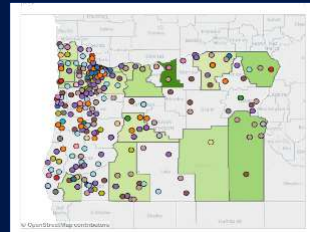
## Interactive maps

(2003-2013) by event, occupation

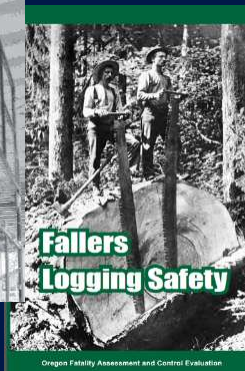
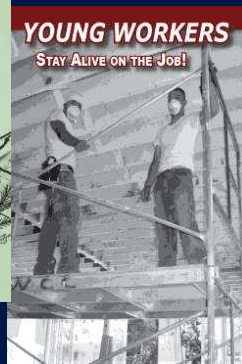
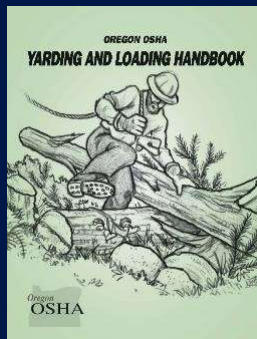
Event



Occupation



## Safety booklets



**OR-FACE**

## Toolbox Talks

- FATAL HAZARD**: Use hooks. Don't chain. Move beyond.
- FATAL HAZARD**: Install guardrails, block openings. Wear fall arrest system. Know location in.
- FATAL HAZARD**: Never exceed load of a lift or crane. Use a spotter and communication system to prevent lifts over workers. Never work directly under a load.
- FATAL HAZARD**: Use a cricket or table to keep supplies stacked level and flat. Never place ladder under unstable load. Consider other access equipment.
- FATAL HAZARD**: Work away from. Avoid lower CDL. Conduct hazard safe work procedure.
- FATAL HAZARD**: Lock wheels before mounting platform. Consider guardrails for added protection. Teach fall protection to young workers.
- FATAL HAZARD**: Set all brakes. Chock wheels and lock dolly. Avoid standing or working in points.
- FATAL HAZARD**: Follow manufacturer's set-up directions. Check security of stumps and guylines daily. Make sure guylines share equal loads. Use proper deflection in skyline.

**OR-FACE**

## Keep it simple...

**FATAL HAZARD**

- 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

**Toolbox Talk Guide** **OR-FACE**

**Load of Lumber Shifts and Falls on Construction Worker**

**INSTRUCTIONS:** Hold the guide with this side facing you and the other side facing your crew. Then read the story.

Our safety talk today is about a 32-year-old framer from another company who died when a load of lumber fell on him. He was on a ladder to access a stairwell hole to the second level of a house while a rough terrain forklift was lifting a bundle of lumber to the same level. The lumber weighed at least 600-800 lbs more than the maximum possible for the lift arc, and the forklift tipped over. The lumber shifted and dropped on the victim's head and upper body, pinning him against the ladder. The lumber shifted again and he fell to the first floor deck. The worker probably died from being crushed before the fall.

So here are some ways we can prevent something like this from 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 directly under a load, or under the swing radius of a lift or crane, unless you are required to be there as a rigger or guide.
- Use a spotter and communication system to make sure everyone knows about lifts in advance, and to prevent material from passing over workers.

**ASK:** "Does anyone have more ideas or comments to share?"  
Pause for discussion. Then see if there are ways to take action.

**END WITH ACTION PLAN (ideas for what to ask or say).**

- "Are there any operations we do that might cause us to push forklifts too close to 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.



# Peer-reviewed publication

- Safety Science v.86 (2016) pp.122-131



## Hazard Alerts

- One page
- Bulleted
- Recommendations
- of similar cases







- Use knowledge gained through surveillance and investigation, e.g. identify high hazard industries, prevalent injuries, needs for prevention
- Develop and conduct field studies
- Ultimate aim: from lessons learned, produce evidence-based, practical intervention tools & methods



## Current Research Projects

- Social network analysis
  - *Identify info pathways and opinion leaders to better target communications in high risk industries*
- Preventing falls in residential construction
  - *Test “trigger event” hypothesis*
- Mobile toolbox talks
  - *Establish & evaluate mobile marketing system to promote fatality prevention toolbox talks in residential construction*



## FACE’s “Bottom Line...”

- Targeted investigations
  - Identify contributing factors
  - Develop comprehensive, best-practice recommendations for preventing similar deaths
- Targeted research
  - Surveillance → investigation → identify high hazard industries, prevalent injuries, prevention needs
  - Develop and conduct field studies
- Outreach
  - Produce evidence-based, practical prevention tools & methods

