

# Oregon Institute of Occupational Health Sciences



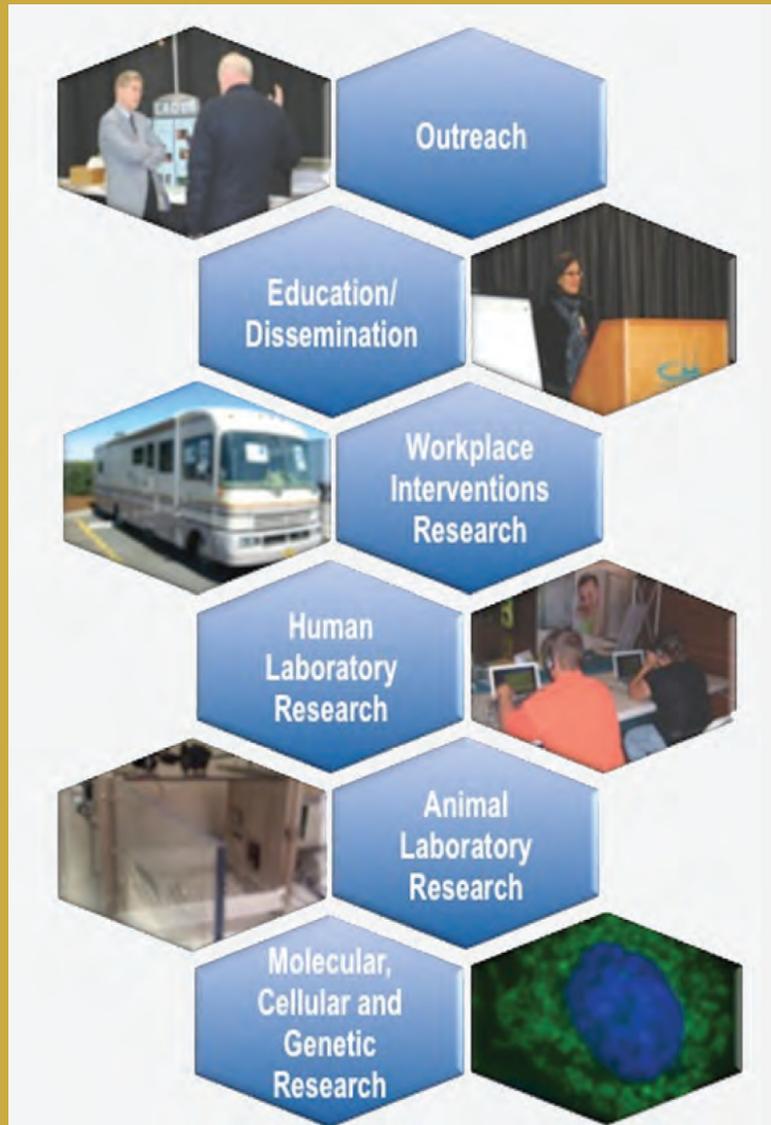
*Research and innovation for a healthy workforce*



# **Main Research Areas**

- 1. Total Worker Health**
- 2. Occupational Exposures: Mechanisms, Consequences and Prevention**
- 3. Injury, Treatment, Recovery and Prevention**
- 4. Sleep and Shiftwork: Impact on Health, and Safety**

# **THEME: SLEEP, SLEEP DISORDERS, SHIFT WORK, SAFETY AND HEALTH**



**Sleep and Shift Work:  
Impact on Health, Safety and Performance  
(Symposium / Free Consultations / Seminars)**

**Organizational factors that  
improve sleep, health, safety and performance  
(Ryan Olson, PhD)**

**Physiology of shift work, sleep loss &  
sleep disorders in humans  
(Steven Shea, PhD, Saurabh Thosar, PhD)**

**Physiology of shift work in animals  
(Matthew Butler, PhD)**

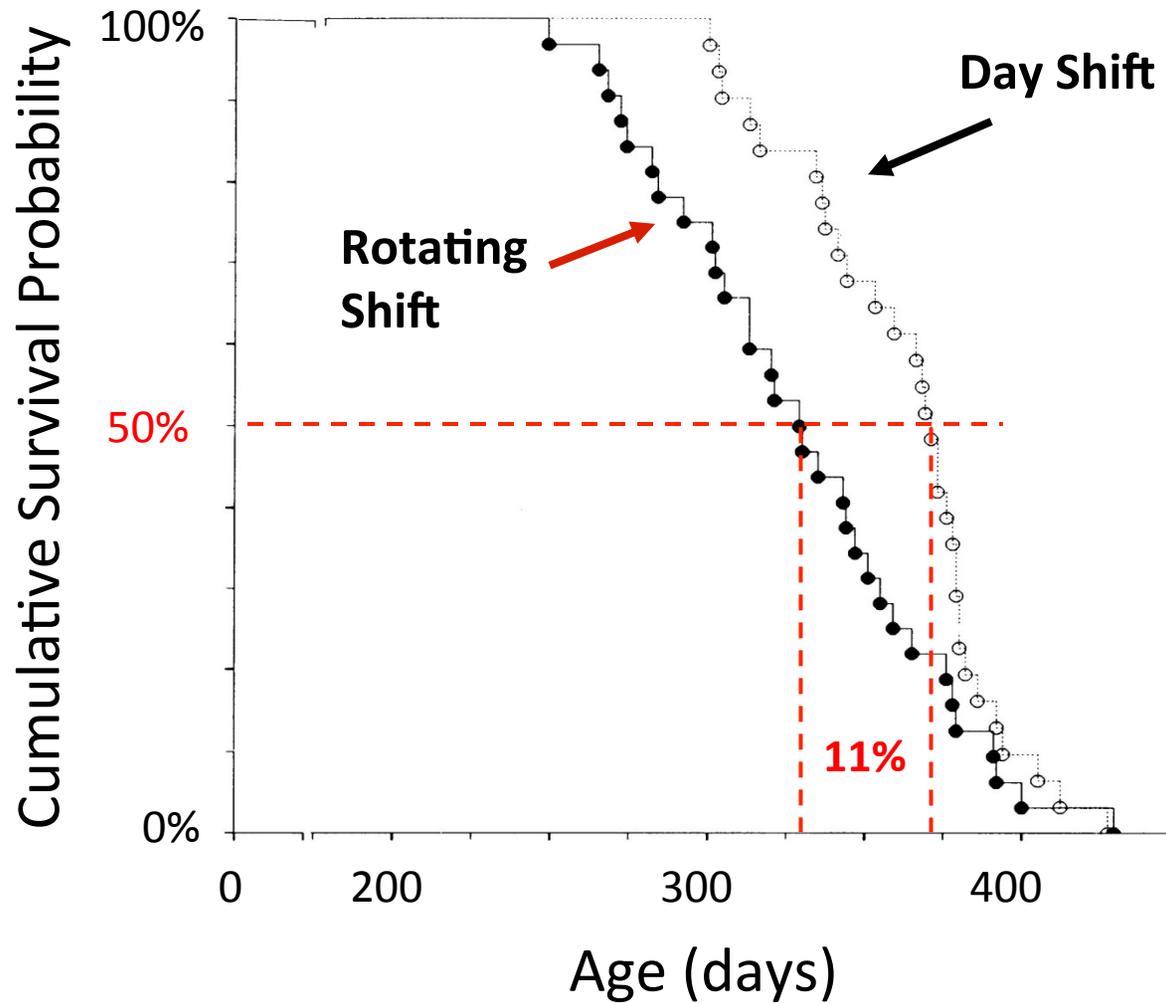
**How the Circadian Pacemaker Works  
(Charles Allen, PhD; Doris Kretzschmar, PhD)**

**Epigenetic changes with simulated night shift work  
(Mitch Turker, PhD)**

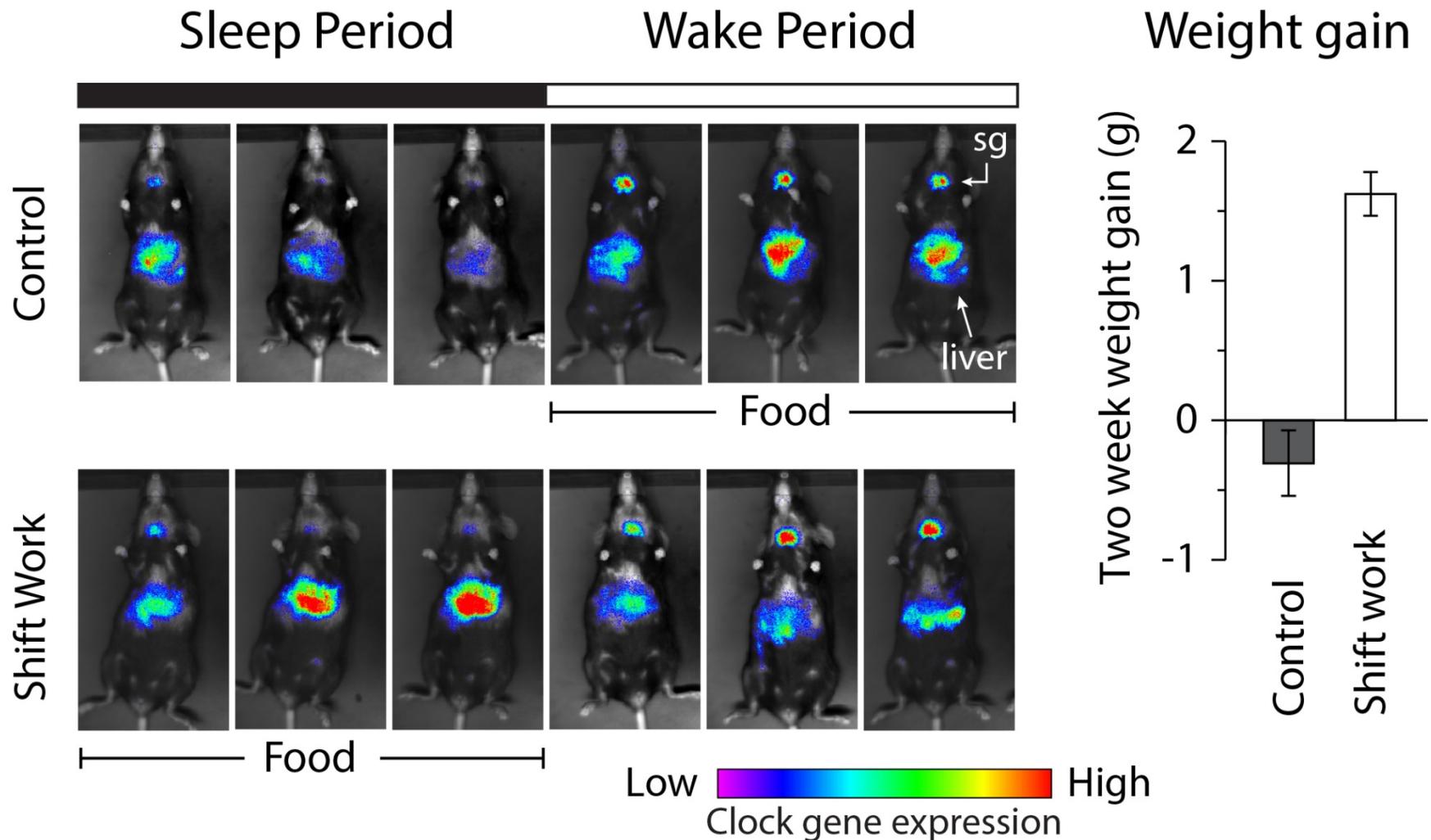
# Shift Work Risk for Oregonians

- Safety: Fatigue and reduced alertness
  - Medical errors, car accidents, major disasters.
- Health risk
  - Obesity and diabetes
  - Cardiovascular disease and hypertension
  - Cancer
  - Mood disorders

# A rotating shift reduces lifespan in hamsters

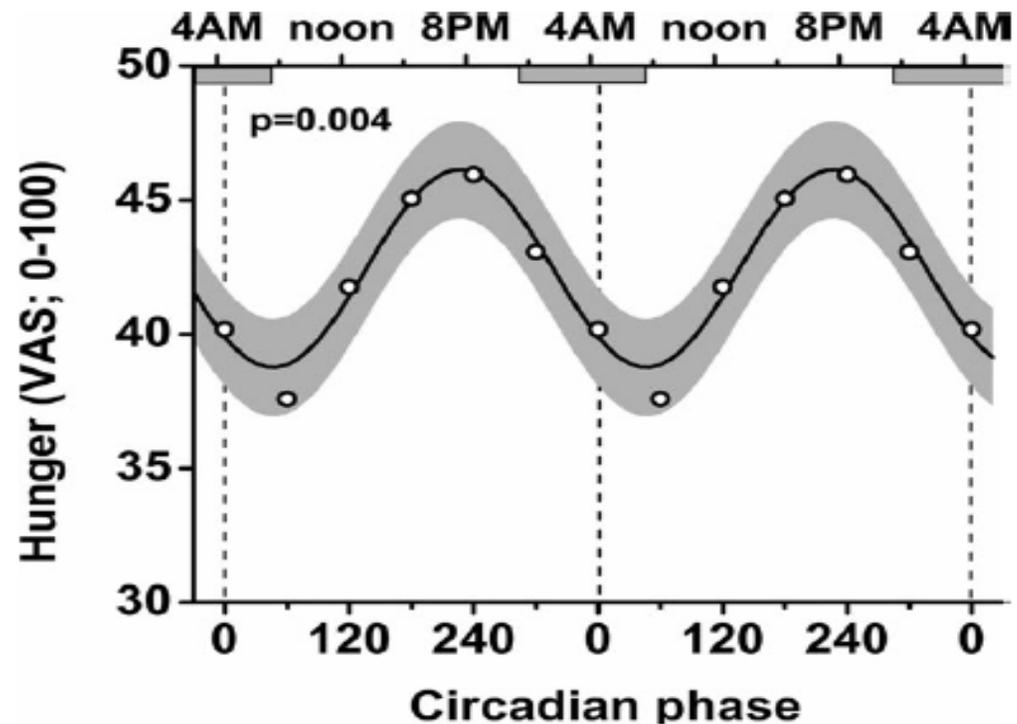


# Mis-timed food breaks the clock and leads to weight gain without increased food intake



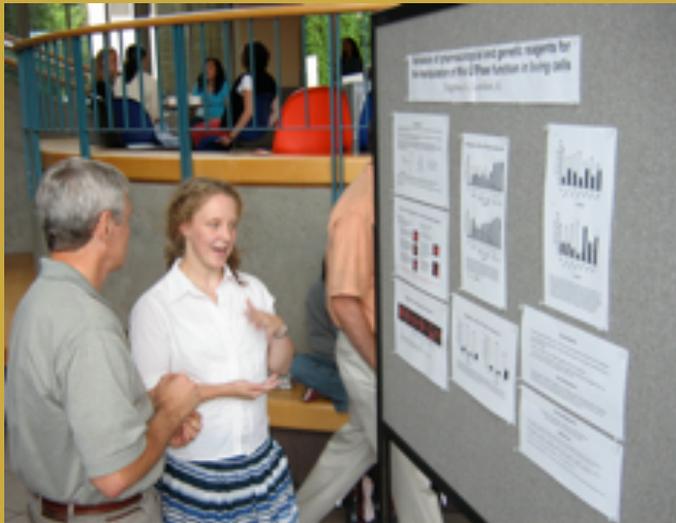
## The Internal Circadian Clock Increases Hunger and Appetite in the Evening Independent of Food Intake and Other Behaviors

Frank A.J.L. Scheer<sup>1,2</sup>, Christopher J. Morris<sup>1,2</sup> and Steven A. Shea<sup>1,3</sup>



# Summer Intern Program (see pamphlet)

- 10-15 interns/year (from ~150 applicants/year)
- Interns work on a project over summer
- Present a scientific poster



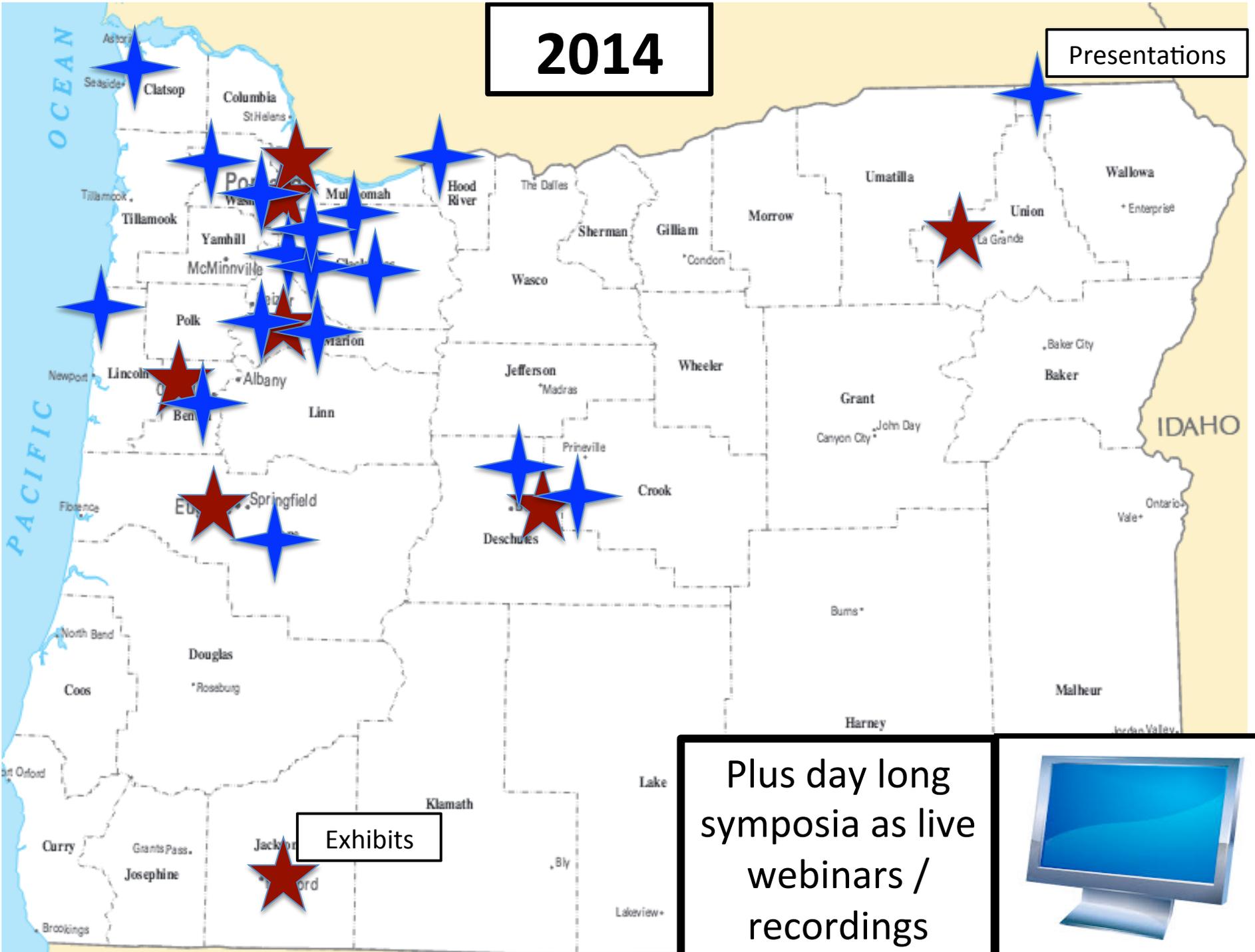
# Outreach & Education

- Occupational Health and Safety Information Center
- Toxicology Information Center
- Exhibits & presentations
- Symposia
- Summer Intern Program
- Online resources
- Social media

Oregon Institute of  
Occupational Health Sciences

2014

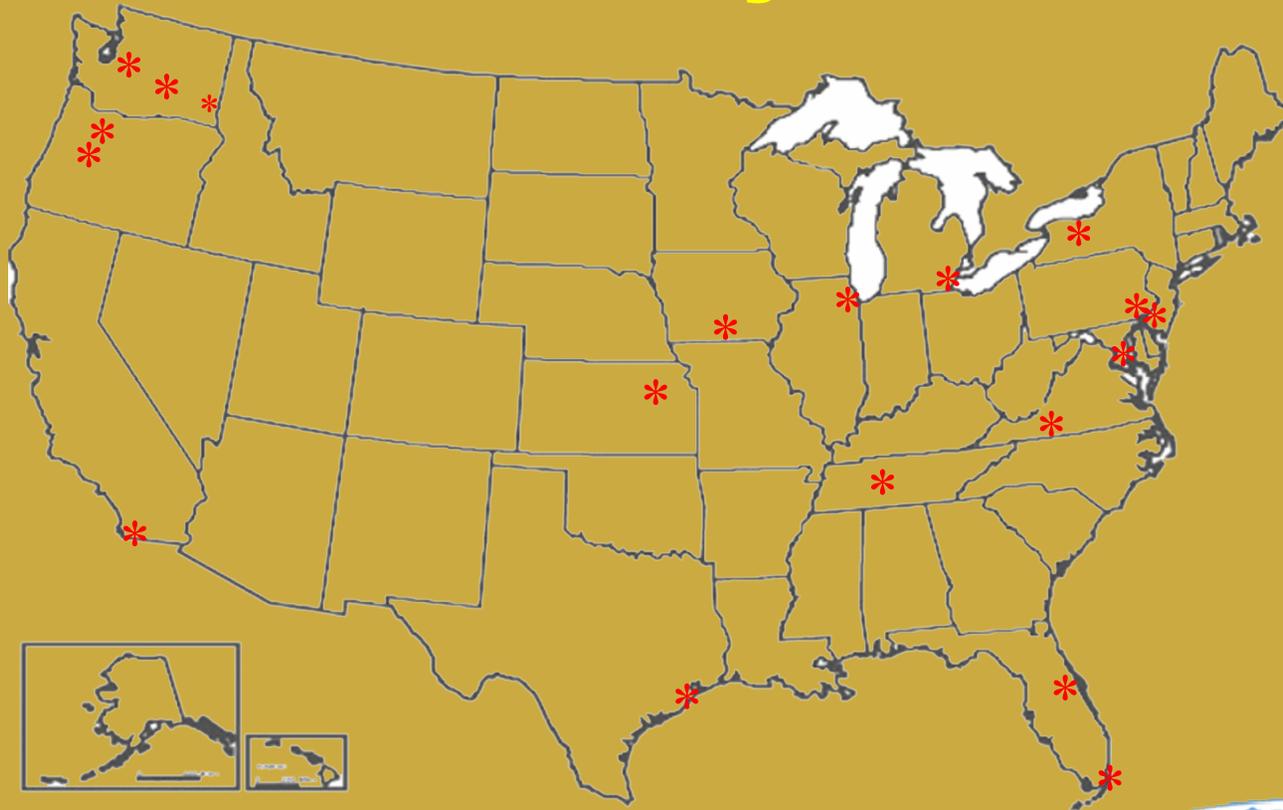
Presentations



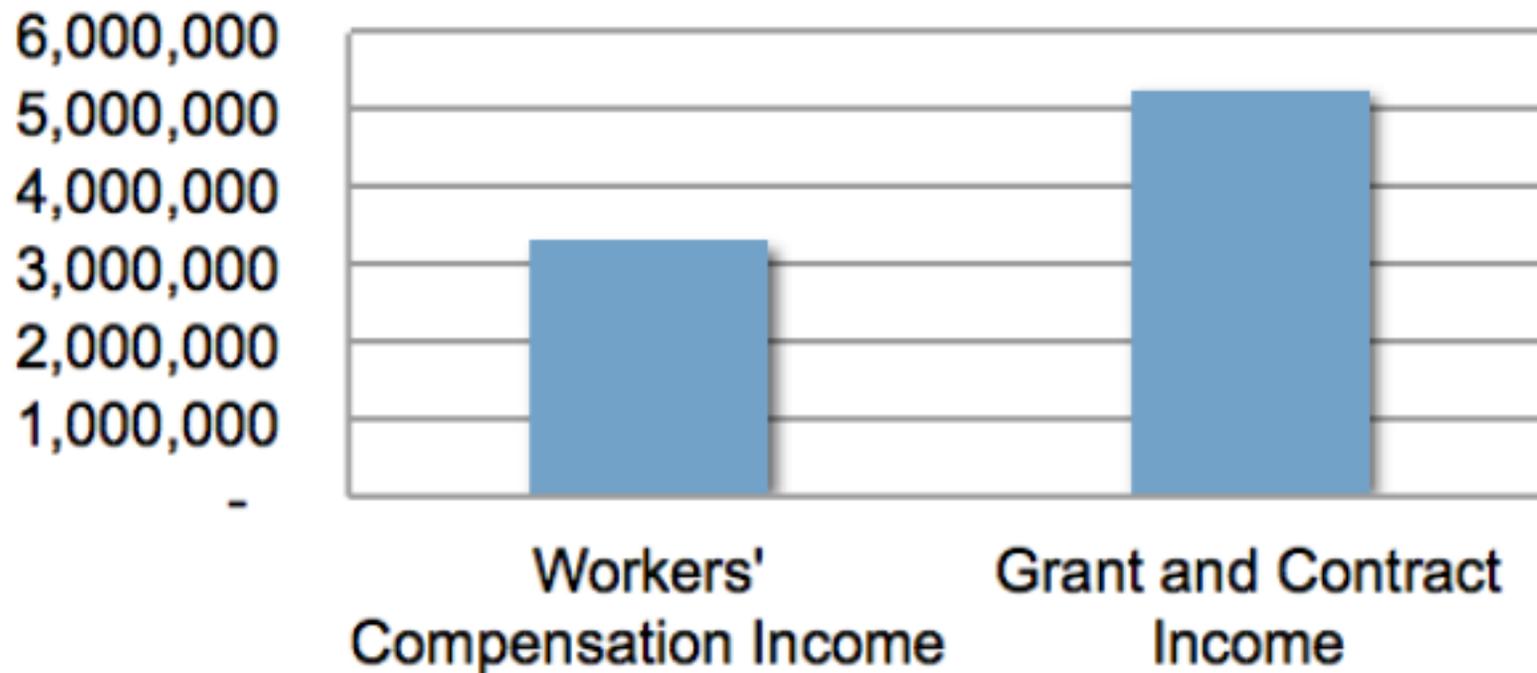
Plus day long symposia as live webinars / recordings



# Faculty Reach 2014



## Workers' Compensation Income vs. Grant Total Awards



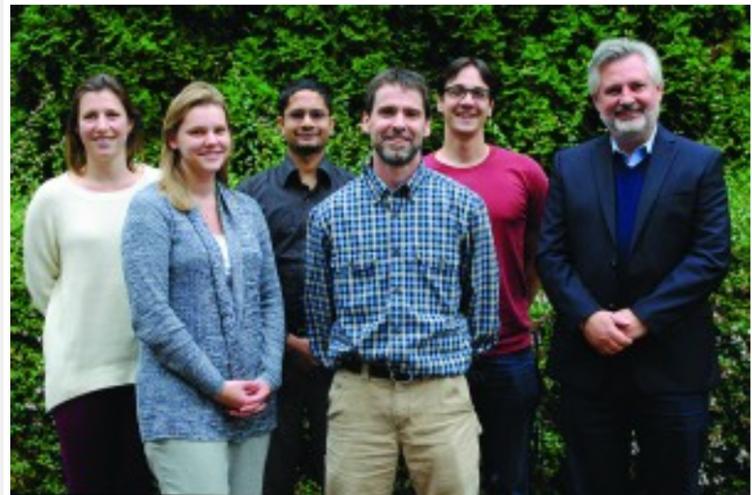
**>\$4 M additional commitment from OHSU 2012-2017**

## Occupational Health Sciences Director awarded 2.5M grant

Steven A. Shea, Ph.D., Director, Oregon Institute of Occupational Health Sciences and colleagues were awarded \$2.5M from the National Institutes of Health (NIH) to study the role of the internal body clock on cardiovascular risk.

Adverse cardiovascular events, such as heart attacks and sudden cardiac death occur most commonly, on average, at about 9 AM in the general population, but most frequently at around 3 AM in people with obstructive sleep apnea. The goal of the newly funded study is to determine if the internal body clock affects cardiovascular function differently in people with sleep apnea and to explore how this affects explaining the different timing of adverse events in people with sleep apnea.

Dr. Shea is the principal investigator of this project and his colleagues are the following researchers: Matthew Butler PhD, Saurabh Thosar PhD, Michael Roberts, Alec Berman, and sleep medicine physicians from OHSU Health Care System (Jonathan Emens MD). The work will be performed as part of the Oregon Clinical & Translational Research Center at OHSU.



Laboratory Staff of Dr. Steven A. Shea (at far right) L-R: Sally Roberts, Christine Swanson, Saurabh Thosar, Noal Clemons, Matthew Butler

# **Upcoming Emphases**

**(with input from External Advisory Board)**

1. Wide dissemination of effective workplace interventions to improve safety and overall health of workforce
  2. Strategic partnerships
- 
3. Targeted recruits and collaborations to fill gaps in basic to applied research themes
  4. Involvement with new School of Public Health – teaching and research



# Faculty Positions

Oregon Institute of  
Occupational Health Sciences

**Occupational Health and Behavior Change  
Basic or Applied Research**

**Oregon Institute of Occupational Health Sciences (at OHSU)**

Leslie Hammer, PhD

- Professor in the Dept. of Psychology at Portland State University.
- Director of the Center for Work-Family Stress, Safety, and Health.
- Leader in the field of Occupational Health Psychology

David A. Hurtado, ScD, ScM

- Yerby Postdoctoral Fellow, Harvard School of Public Health
- Social epidemiology
- Goal to evaluate how the work environment impacts the health and well-being of workers, families and organizations

# Oregon Healthy WorkForce Center



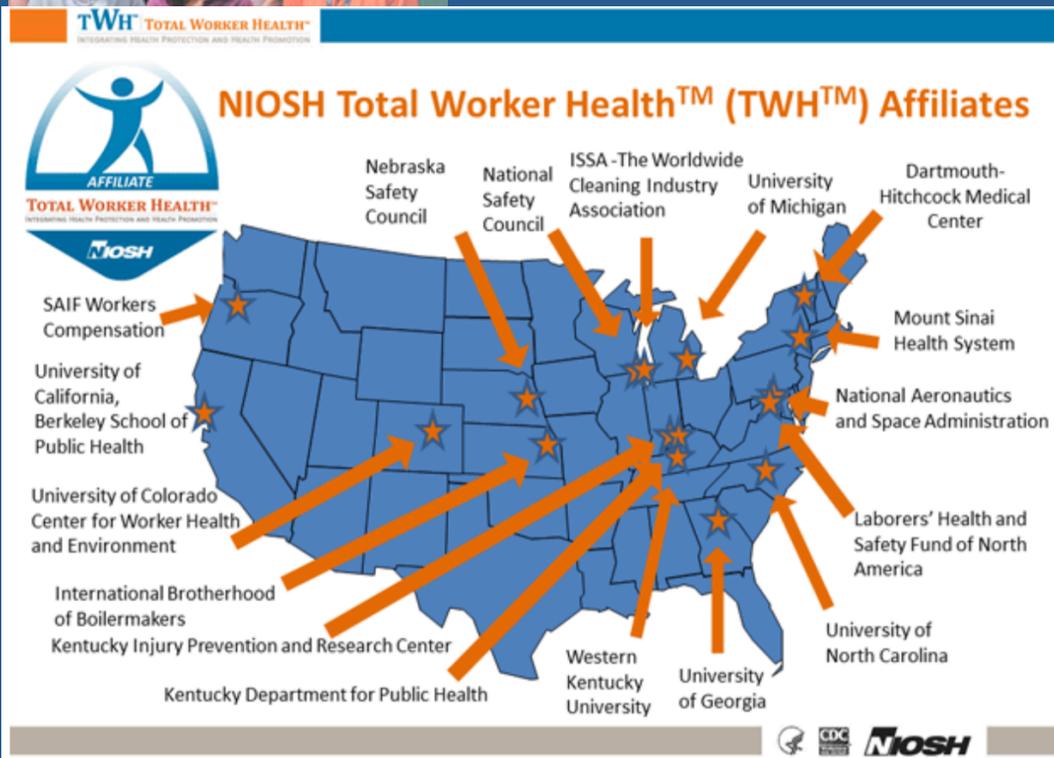
Portland State University



Kent Anger (Director)



Leslie Hammer (Associate Director)



University of Oregon

154  
2011

**OHWC OREGON HEALTHY WORKFORCE CENTER**  
A NIOSH CENTER OF EXCELLENCE

# What is Total Worker Health?

## NIOSH redefined Occupational Safety and Health in 2011

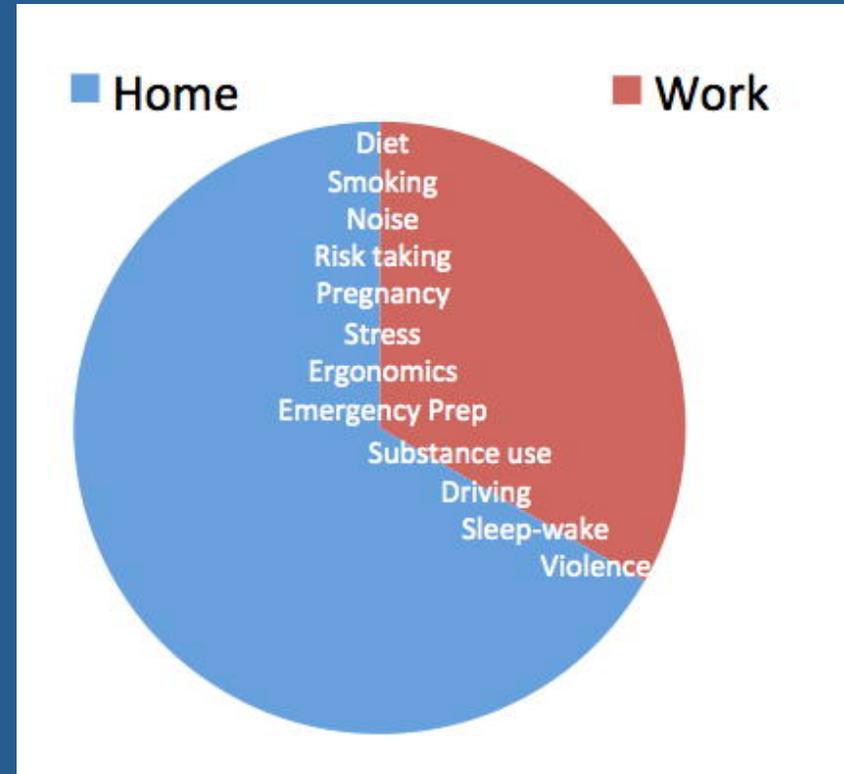
### Total Worker Health (TWH)<sup>TM</sup>

is a strategy for integrating:

- traditional occupational safety and health (OSH)
- with well-being & personal health

Why is this better?

It's what we're testing



# Oregon Healthy Workforce Center

Theme: Intervention Effectiveness (RCTs)

- Team-based TWH intervention in **home care workers**



- **safety in city construction wkrs**
- **commercial construction wkrs**
- Talking Safety + social media in **young workers** – **City parks & recreation department**

# What have we changed?

- Training/education – Big pre-post increases
- Safety – increased safe tool use
- Biomarkers – Lower BMI, cholesterol, BP
- Well-being – Greater life satisfaction
- Lifestyle – Reduced sugary snacks, increased exercise
- Reaction – Very positive about programs
- Effects sustained at 6 months post-program

# How are we disseminating these?

- **Home Care** – HCC adopted program for their system-wide offerings to all HC workers
- **Public construction workers** – generic toolkit is about finished (focus groups to review in early 2016)
- **Young Workers in recreation (PUSH)**
  - PPR adopted PUSH training for all new workers
  - BOLI funded an extension for transportation workers
- **Private construc. wkrs** – still in pilot with + changes,
  - PNASH funded an adaptation for vineyard workers
  - BOLI has offered funding if I can find a construction co. in transportation to let us implement it in their co.



# Education

- Summer Institute on Occupational Health Psychology
- National Corrections Conference (1<sup>st</sup>)
- [thru] Summer Interns



# Oregon Healthy Workforce Center

anger@oshu.edu

www.ohsu.edu/ohwc

Facebook & Twitter



Healthcare  
Call Centers  
Transportation

OHSU and Dr. Anger have a significant financial interest in Northwest Education Training and Assessment [or NwETA], a company that may have a commercial interest in the results of this research and technology. This potential individual and institutional conflict of interest has been reviewed and managed by OHSU.

## Department of Health and Human Services

### Part 1. Overview Information

<b>Participating Organization(s)</b>	Centers for Disease Control and Prevention (CDC)  The policies, guidelines, terms, and conditions of the HHS Centers for Disease Control and Prevention (CDC) stated in this funding opportunity announcement (FOA) might differ from those used by the HHS National Institutes of Health (NIH). If written guidance for completing this application is not available on the CDC website, then CDC will direct applicants elsewhere for that information.
<b>Components of Participating Organizations</b>	National Institute for Occupational Safety and Health (NIOSH)
<b>Funding Opportunity Title</b>	NIOSH Centers of Excellence for Total Worker Health® (U19)
<b>Activity Code</b>	U19
<b>Announcement Type</b>	New
<b>Related Notices</b>	<ul style="list-style-type: none"><li>• <a href="#">NOT-OD-16-004</a> - NIH &amp; AHRQ Announce Upcoming Changes to Policies, Instructions and Forms for 2016 Grant Applications (November 18, 2015)</li><li>• <a href="#">NOT-OD-16-006</a> - Simplification of the Vertebrate Animals Section of NIH Grant Applications and Contract Proposals (November 18, 2015)</li><li>• <a href="#">NOT-OD-16-011</a> - Implementing Rigor and Transparency in NIH &amp; AHRQ Research Grant Applications (November 18, 2015)</li></ul>
<b>Funding Opportunity Announcement (FOA) Number</b>	PAR-15-361