The Oregon Institute of Occupational Health Sciences, home of OHWC, receives base operations funding from the Oregon Workers’ Compensation System to achieve our mission, and we leverage these funds to obtain federal and other research dollars. On average, for every dollar invested in our mission by the State’s Workers’ Benefit Fund in 2015 and 2016, our scientists were awarded an additional $1.56 of grant funding. Dollars for research in Oregon have a significant positive impact on the state. For example, expenditures for goods and services and the salaries of scientific and support personnel produce a multiplier effect on the economy. Moreover, our researchers collaborate with others from around the world, as shown on the map at right. Research coming out of the Institute can lead to new technologies and jobs as spin-offs from productive research.
Total Worker Health® Interventions

Faculty members in the Institute of Occupational Health Sciences are developing, testing, and disseminating workplace intervention programs that integrate safety, health and wellbeing into single or associated programs that reduce injuries and improve wellbeing by improving work organization and individual behavior such as exercise while improving lifestyle behaviors and reducing stress. (http://tinyurl.com/Occ-Health-Sci)

In 2015, the OHWC team conducted behavioral and organizational change interventions in multiple industries including construction, home care, health care, transportation and in broader cross-sections of the workforce, including young workers. A major accomplishment of the OHWC was publishing the results of hypothesis-based research on TWH using strong (randomized trial) research designs and the development of tools and toolkits to disseminate those results; they are available at www.ohsu.edu/ohwc. The research team also successfully competed for renewed federal funding (2016-2021) of the OHWC. Preliminary research to support the application was conducted at call centers (pictured), in transportation and in hospitals. The Center grant application was funded in September, 2016.

Dr. Anger concentrated on implementing TWH interventions in construction and agriculture, specifically in vineyards. A worksite intervention pilot study conducted in four Portland area construction companies provided evidence of improved knowledge, greater interaction between supervisors and employees, improved safety, health and wellbeing measures in employees and supervisors, and positive reactions and ratings of the intervention. The intervention was modified for use in agriculture and new wellbeing topics were added to expand the prevention and sustainability aspects of the team-based wellbeing education.

An example of a TWH session with surveys (left) and health data collection (right).

“...The program was fun and there was lots of good information. I particularly liked how the staff delivered the program. I would recommend this to others including our main offices…” - Supervisor Training attendee
Dr. David Hurtado was recently recruited from the Harvard T.H. Chan School of Public Health. He is a social and behavioral scientist who investigates social determinants of workers’ health. In particular, Dr. Hurtado examines how work-time control, peer support and employment conditions contribute to occupational health and safety, especially in high-risk industries such as health-care. His research focuses on how modifiable workplace conditions relate to risk factors for mental illnesses, musculoskeletal disorders, and non-communicable diseases. You can learn more about Dr. Hurtado's work at: http://tinyurl.com/David-Hurtado-Work-Time-Contro

The Influence of Coworkers and Peers on Workplace Health

Peers influence health-related information, attitudes and behaviors at the workplace, and peer-based training has been shown to be effective for personal protective equipment and safety-related procedures. With seed funding from the Oregon Healthy Workforce Center and the Oregon Institute of Occupational Health Sciences, Dr. Hurtado is conducting pilot studies in preparation for extramural grants to develop effective peer-based programs that improve occupational health and safety. Dr. Hurtado and his lab innovate by applying Social Network Analysis to detect which workers and social relations are critical to influencing safer workplace norms and practices positively. The goal of this research is to develop interventions that build upon pre-existing supportive peer interactions.

In 2016, Dr. Hurtado started research partnerships with two organizations to investigate how coworkers and workplace peers can make a positive difference in occupational health and safety. At the Samaritan Lebanon Community Hospital, Dr. Hurtado and his lab are developing a program to identify, train and evaluate the effects of nurses that champion safe patient handling and teamwork at their units. At the Multnomah County’s Department of Community Justice, they will evaluate the mental health effects of a peer-based program that provides social support and stress management to parole probation officers. These two studies are expected to inform best ways to design and implement workplace programs based on supportive peer interactions.

“...It (supervisory training) made me more aware of being a good role model to fellow coworkers and to also always be a good safety representative...I especially enjoyed the weekly meetings and the camaraderie shared by our team...” - Supervisor Training attendee
Dr. Olson’s research focuses on total worker health interventions for isolated workers like truck drivers and home care workers. His team also studies behavioral self-management methods. Organizational and behavior change tactics he has studied include:

- Policy changes to reduce job stress
- Alterations of the sleeping environment for truck drivers
- Leadership training to increase supportive supervision
- Competition to increase healthy behaviors
- Support groups to promote workplace safety & health
- Motivational interviewing
- Behavioral self-monitoring

For more information about Dr. Olson’s lab, visit: http://tinyurl.com/Ryan-Olson-Lab

Work, Family, and Health Network Study Improves Employee Sleep

With today’s modern technologies and growth of knowledge-based work, the boundaries between work and non-work time are blurring. This can create stressful work-family conflict that harms worker health. Related to this problem, Dr. Olson led the publication of the flagship paper on sleep outcomes for the Work, Family, and Health Network intervention trial (the Institute’s Leslie Hammer was a co-author and key leader in the overall project). This intervention aimed to reduce work-family conflict and improve employee health and productivity. The approach involved a series of in-person training sessions for employees plus extra activities for supervisors to increase employee control over work time and increasing family supportive supervision. Dr. Olson collaborated with Dr. Brad Wipfli to develop the OHSU Enterprise App for iPhone/iPod Touch that was used by supervisors in the program to set goals and self-monitor their supportive supervisory behaviors. While the intervention did not overtly target sleep, increasing employee control over work time and family supportive supervision led to about 1 hour more sleep per week for intervention participants compared to control. This adds up to about a week’s worth of full nights of sleep over the course of a year.

COMPASS Pilot Study Findings

Home care workers who care for society’s most vulnerable citizens have limited safety and health support structures, and have elevated injury rates. With Diane Elliot at OHSU and Jennifer Hess from the University of Oregon, Dr. Olson developed and pilot tested the COMmunity of Practice and Safety Support (COMPASS) program for home care workers. COMPASS is a peer-led group program where workers meet regularly for shared learning, goal setting, and social support for solving problems and making changes. It was developed with input from the Oregon Home Care Commission and the Service Employees International Union Local 503, and is a research project of our Oregon Healthy Workforce Center. The COMPASS pilot test established the program as feasible and enjoyable, and workers showed large knowledge gains before and after meetings and reported making changes to safety and health behaviors.

“I thought it was amazing to be able to learn and share and get information from other people and help them when they need it, and they help me. I just thought it was great.”

-Compass Program participant
**Results of COMPASS Randomized Trial**

In 2016 the results of the COMPASS randomized controlled trial were published (Ryan Olson with collaborators Diane Elliot and Miguel Marino at OHSU, and Jennifer Hess from the University of Oregon, among others). Home care workers participated in the peer-led and supportive group program for one year. Post-program results showed that COMPASS participants made large safety improvements, including hazard correction in homes and increased use of ergonomic tools. Those they care for independently confirmed the safety improvements. Home care workers also made health changes, such as improved fruit and vegetable consumption and increased good cholesterol. These are important findings because evidence-based and supportive structural programs for home care workers are extremely scarce. Future plans are focused on studying the long-term impact of COMPASS within the Oregon Home Care Commission’s training system.

**New Funding to Improve Sleep of Truck Driving Teams**

Truck drivers experience very challenging sleep conditions due to variable work hours and noise and uncomfortable temperatures when parked at truck stops. However, truck driving teams, where one partner drives while the other sleeps, experience special additional challenges. They perform shift work (driving outside of normal day shift hours) and sleep in a bouncing/jostling vehicle. To address this problem Dr. Ryan Olson and Peter Johnson (University of Washington), proposed a project aimed at reducing driver fatigue and improving sleep and Total Worker Health. Co-investigators also include Steven Shea and Miguel Marino (OHSU Family Medicine). This project was funded in 2016 (NIOSH) as part of the Oregon Healthy Workforce Center, and will evaluate engineering and behavioral technologies to impact fatigue, sleep and Total Worker Health. This includes an active suspension seat to reduce vibrations while driving, a mattress with a special suspension that may alter vibration profiles during sleep, and a behavioral sleep program.

**Results of the SHIFT Randomized Trial**

Excessive weight gain and ill health are common among truck drivers who, due to their work environment, are often sedentary and have poor diets. To address this, Dr. Ryan Olson developed SHIFT (Safety & Health Involvement For Truckers), a National Heart, Lung and Blood Institute (NHLBI)-funded weight loss and health promotion intervention for truck drivers. The intervention is supported by computer-based training, weekly weight and behavior logging and motivational interviewing. With the support of 5 trucking firms, a randomized controlled trial of the program was conducted with drivers (n=452) recruited from 22 terminals. Results published in 2016 showed that SHIFT produced significant and medically meaningful weight loss – over 7 lbs difference between groups. This is only the second program globally to produce a result of this size using a gold standard, randomized controlled design. This degree of weight loss is sufficient to produce an estimated $200 in annual health care savings per person and reduce risk for developing diabetes and high blood pressure.
Helping High-risk Populations

Occupational and environmental exposures impact all people. However, certain populations are at greater risk, including children, young workers, and those working in hazardous industries, such as immigrant workers who may have additional risk factors. Diane Rohlman PhD, conducts research to identify, characterize, and prevent occupational and environmental illness and injury in these high-risk populations.

PUSH (Promoting U through Safety & Health)

This program is aimed at reducing the incidence of workplace injury among young workers using training tools specifically designed to address the needs of this population. In 2015, we created 8 new custom educational videos, designed 21 supervisor-led activities for young workers, and coordinated the development of an expanded online training curriculum with a group of national young worker safety experts and stakeholders. Our PUSH partner, Portland Parks and Recreation Aquatics Department, continues to require the online PUSH training for all new seasonal hires.

In addition, our PUSH team completed a study funded by the Bureau of Labor and Industries Apprenticeship and Training Division and the Oregon Department of Transportation, Office of Civil Rights. The purpose of the study was to identify and characterize factors impacting construction workers’ health and safety that reach beyond traditional occupational hazards. The study had two goals: 1) conduct an assessment of the health and safety needs of construction apprentices, and 2) develop and evaluate an online nutrition training program for construction apprentices.

We also worked with Portland Youth Builders (PYB), an alternative education and pre-apprenticeship program that prepares at-risk youth for careers in the building trades. We used the nutrition training developed for registered apprentices to educate over 60 students about the importance of healthy diets on work performance and success in education.

“The content in the PUSH training helps us ensure that our staff is prepared to work safely and provides information about their rights as workers and encourages them to speak up when they have questions. We also value the health promotion focus of the training, because we are aware that on the job, healthy workers are safe workers.” - Larissa Doty, Aquatics Coordinator, Portland Parks and Recreation
Leslie Hammer, PhD, was recently recruited from Portland State University. She is Associate Director of the Oregon Healthy Workforce Center, one of six Total Worker Health™ centers of excellence funded by the National Institute for Occupational Safety and Health. She focuses on ways in which organizations can help reduce work and family stress and improve positive outcomes by facilitating both formal and informal workplace supports. For more information on Dr. Hammer’s work, visit: http://tinyurl.com/Leslie-Hammer-Supervisor-Train

Safety & Health Improvement Program (SHIP)
Dr. Hammer recently completed the Safety and Health Improvement Program, which was designed to train supervisors to support balance in employee’s work-family demands using a team-based approach. SHIP was tested and shown to be effective in reducing stress and improving safety among City of Portland construction workers. It is now available as a do-it-yourself Toolkit (http://tinyurl.com/ship-prog).

“Employees were cautious at first but now they’re the ones asking supervisors if they can revisit the team effectiveness goals. They’re really enthusiastic.” - SHIP Program participant

SERVe (the Study of Employment Retention for Veterans)
SERVe, a Department of Defense-funded study, is designed to improve the health and well-being of Oregon veterans, service members and their families, and to increase retention of veterans and service members in the Oregon workforce. The Veteran-Supportive Supervisor Training builds on previous validated work, where supervisors in the civilian workforce were trained to better support their employed service members, and involves over 40 organizations in Oregon. Such interventions are particularly critical given the high level of veteran unemployment, and will only strengthen national programs aimed at increasing recruitment and hiring of veterans.


SERVe Team, L to R, Ryan Olson, Jason Malach-Fuller, Sarah Haverly, Krista Brockwood, Brad Wipfli, Leslie Hammer, Kent Anger, Wylie Wan, Alicia Starkey, Cynthia Mohr, Kathleen Steppe and Phoenix Rain Bird
Outreach and Education

We are proactively engaged in providing timely occupational health and safety information to employees, employers, health and safety professionals, doctors, nurses, and the public.

(http://tinyurl.com/Outreach-Education)

The Web…

Occhealthsci.org, the Institute’s widely respected health & safety resource webpage, links to over 1,200 occupational safety & health resources. In 2016 we began our transition to a new platform that will improve our ability to present information in a format more useful to the devices and computers used today.

Continuing Education…

We provide two health, safety and wellbeing symposia per year, one sponsored jointly with the Portland State University Occupational Health Psychology program.

2015 symposia:

- Mindfulness and Total Worker Health
- Temporary and Contingent Worker Safety and Health: Best Practices, Challenges and Solutions

Social Media…

We use the full range of available web technologies to provide the public with the latest in health and safety information, and continue to improve our ability to engage with Linkedin, Twitter, Facebook, and our blog, Oregon and the Workplace, including live engagement during events.

Conferences…

Oregon OSHA-sponsored Conferences are an important means by which we reach out to working Oregonians. In addition, we are frequently asked to provide health & safety training. Members of the Institute also attend conferences sponsored by other organizations, including the American Society of Safety Engineers and the American Heart Association. Overall, conferences allow us to meet Oregonians in all corners of the state.

2016 symposia:

- How to Create and Sustain a Culture of Safety (May)
- Diversity and Inclusion in the Workplace: Impact on worker health and well-being (Nov.)

The Oregon Healthy Workforce Center also sponsored the 2016 Occupational Health Psychology (OHP) Summer Institute conference “OHP Innovation and Creative Strategies Leading to Total Worker Health” (July), and the annual partner’s luncheon (November).
The Toxicology Information Center (TIC), directed by Dr. Fred Berman, and the Occupational Health and Safety Information Center, directed by Dede Montgomery, CIH, answer citizen and professional inquiries about workplace safety issues and hazards of exposure to chemicals and other agents. Dr. Berman and Ms. Montgomery handle hundreds of requests from occupational safety and health professionals, business owners, government agencies, physicians and nurses, the media, and the general working public. The TIC is open to calls from 7:30 a.m. to 5:00 p.m., Monday through Friday.

In addition to the TIC, Dr. Berman serves as consultant to the Oregon Department of Agriculture’s Pesticide Analytical and Response Center and is a co-investigator with the National Pesticide Information Center, a U.S. Environmental Protection Agency-sponsored project operated cooperatively with Oregon State University.

Ms. Montgomery also partners with a variety of organizations, including O[yes] (Oregon young employee safety), SAIF, Oregon OSHA, the Oregon Health Authority, and American Society of Safety Engineers.

The Information Center also publishes various online and paper newsletters designed to provide up-to-date information about the Institute, as well as a series of Health Impact Safety Guides available online for use as health education tools in the workplace.

“We (the Qorvo EHS Collaboration Team of EHS managers/engineers) met face-to-face (with Dede) in Texas this week. Wanted to let you know ... they liked the presentation and appreciated your obvious passion and knowledge ... THANK YOU for taking time with us!...PS — signed up for the Summer Institute at PSU in July.”

“Fred is very good at sticking to the science and risk facts, but at the same time handling the communication and human relations side of the issue/concern. Thanks so much for ... the Toxicology Information Center. Fred is the perfect person to lead the TIC.”

– John Burnham, Portland Public Schools
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