

NIOSH Office of Extramural Programs

FY21 Annual Report



Oregon Healthy Workforce Center is a National Institute for Occupational Safety and Health (NIOSH) *Total Worker Health*® Center of Excellence [Grant: NIOSH U19OH010154]

REPORTING PERIOD

- October 1, 2020
- September 30, 2021



Oregon Institute of
Occupational
Health Sciences

A full-page background image with a blue tint. It shows a man in safety gear (hard hat, safety glasses, high-visibility vest, and cargo pants) standing on the back of a white truck. He is smiling and has his left arm resting on the truck's body. The background is a flat, open field under a clear sky.

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Definitions

NIOSH: National Institute for Occupational Safety and Health

OHWC: Oregon Healthy Workforce Center

TWH: *Total Worker Health*®



Center Summary and Major Goals

The Oregon Healthy Workforce Center (OHWC) is a National Institute for Occupational Safety and Health (NIOSH) Center of Excellence in *Total Worker Health*®. Founded in 2011, OHWC is housed within Oregon Health & Science University's (OHSU) Oregon Institute of Occupational Health Sciences (Institute), and also includes investigators from the OHSU-Portland State University (PSU) School of Public Health, PSU, the University of Washington, and Johns Hopkins University. OHWC's work is focused on OSHA region 10 (Oregon, Washington, Alaska, and Idaho) and beyond.

Our mission is to improve the safety, health, and well-being of workers using NIOSH's *Total Worker Health* (TWH) approaches. To accomplish this mission we conduct intervention research, translate and disseminate effective interventions, and conduct outreach and education. Our outreach program includes partnering with regional and national stakeholders to collaboratively develop practitioner trainings and deliver them widely. Our ultimate goals are to improve working conditions, policies, and programs in workplaces; improve the safety, health, and well-being of workers; and create communities of practice that advance TWH approaches.

As a center focused on TWH-informed solutions for occupational safety, health, and well-being, OHWC's research and outreach addresses a broad range of factors, including the work environment and exposures, organizational policies, supervisor and peer support, work-life balance, and health behaviors. During the past year, we have completed randomized controlled trials of innovative interventions for call center employees and team truck drivers, and continued strong dissemination and outreach efforts. We have also continued maintaining our cross-study data repository using a set of common measures and recently published a paper comparing occupational risk factors across five occupational samples (Hanson et al., 2021). Highlights from our Research, Outreach, and Planning and Evaluation Cores are reported below.



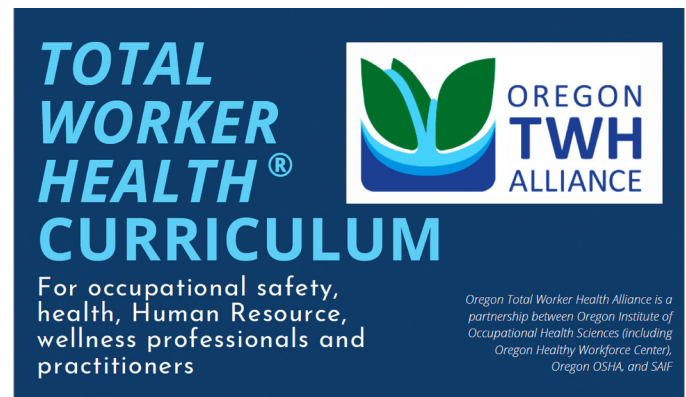
Program Highlights of Impact

COVID Conversations

In response to the pandemic and urgent and evolving worker needs, we developed COVID Conversations, which are informal live discussions between safety and health professionals and occupational health nurses geared toward addressing industry-specific pandemic challenges, lessons learned, and tips. Two Conversations were conducted each month live, and the sessions were recorded and made available on our OHWC [YouTube channel](#)¹. Each of the ten sessions averaged between 15–35 attendees, and the recordings were watched 374 times with the *Best of COVID* episode viewed 40 times. Additionally, each Conversation was supplemented with a blog (see Outreach section), with blog views averaging between 3,000–4,000 views per month.

Diversity, equity, and inclusion (DEI) —looking inward

While DEI has always been a major focus within the *Total Worker Health* framework, the events of this past year prompted OHWC to take an inward look into our own organizational culture and employee experiences. Members at OHWC and its home, the Oregon Institute of Occupational Health Sciences made concerted efforts to increase our understanding of historical contexts underlying inclusion and bias, continue our honest self-examination in light of last year's events, and commit to actively integrating a DEI-informed lens in all of our planning, evaluation, research process, and outreach/education/dissemination/implementation activities. Learn more [here](#)².



Practitioner education

Our practitioner-focused trainings developed and delivered through the Oregon TWH Alliance [a state-wide stakeholder partnership that came together in 2017 and consists of OHWC, the Institute, SAIF (Oregon workers' compensation provider and NIOSH TWH Affiliate), and Oregon OSHA] have gained ground as an avenue for building TWH implementation capacity, and we continue to develop resources and training materials. The education focuses on TWH principals, policies and practices, as well as guided strategies for implementing TWH within organizations. All trainings have been fully virtual during this reporting period due to COVID-19. The foundation course, *TWH 101: The Basics*, has been taught to over 300 safety and health, human resource, and wellness professionals, a full-day course taught to 60 practitioners in 2021, and the *TWH Awareness* class (one hour) has been taught to more than 50 practitioners. Finally, OHWC staff presented information about TWH to more than 2000 live and virtual participants at the American Society of Safety Professionals Safety 2021 conference.

1 https://www.youtube.com/channel/UCXF8ZmB51EM_H3KMy4X8oYw/videos

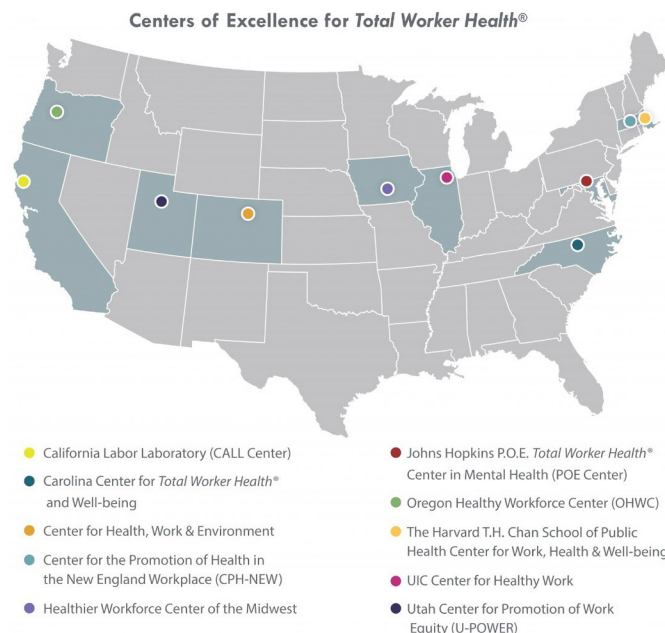
2 <https://www.ohsu.edu/oregon-institute-occupational-health-sciences/diversity-equity-and-inclusion>

Successful completion of research projects under pandemic conditions

Both the Active Workplace Study and the Tech4Rest study experienced major disruptions as the pandemic altered working conditions. Both projects rapidly adapted to the impacts of the pandemic, and successfully modified operations and protocols to maximize success. This included working with a special research panel formed at the University and with organizational partners, to implement modified study procedures. For call center employees this included creating opportunities to continue to participate in the research while working from home. For team truck drivers, we received approval to offer the study opportunity to these essential workers at a worksite in California using adjusted protocols to protect both research staff and workers from exposure to COVID-19.

SAIF “Leadership Project”

In our inaugural top-down dissemination partnership, OHWC has formalized a technology transfer and partnership agreement with SAIF to include our Safety and Health Improvement Program (SHIP) training program in their new “Leadership Project”, geared toward improving workplace culture via a menu of leadership-oriented online and in-person trainings. The license specifies that SAIF will disseminate SHIP to their policy holders (which comprises nearly half of Oregon’s employees) free of charge, that it will be disseminated directly to their catalog of partnering organizations by SAIF consultants, and that implementation and feedback data will be shared with us quarterly. This will allow us to track both feedback and data from individual organizations and meta-data from SAIF on how many organizations have engaged the training and whether they plan to maintain the training internally following initial engagement.



Successful renewal as a TWH Center of Excellence

OHWC is now one of 10 TWH Centers of Excellence. In our next cycle (2021–2026) our expanded theme will be *TWH intervention effectiveness, translation, and outreach to advance safe and healthy work design*. Our funded research projects include a focus on shift schedules, sleep, and health among firefighters (led by Dr. Bowles); translating an established intervention to address pain management among home care workers (led by Dr. Olson); developing a new intervention to address burnout in healthcare workers (led by Drs. Hurtado and Lenhart); and creating a TWH climate survey scale (led by Dr. Huang). Most of the OHWC’s research projects will be supported by NIOSH’s funding from projects will be supported by NIOSH’s funding from the [American Rescue Plan](https://www.whitehouse.gov/briefing-room/legislation/2021/01/20/president-biden-announces-american-rescue-plan)³, which prioritizes addressing mental health among health care workers and first responders. Through our Outreach Core (led by Dr. Rameshbabu and Ms. Montgomery, a certified Industrial Hygienist) we will continue to build new and diverse partnerships, further our work with the Oregon TWH Alliance, provide education, and deliver consultation to organizations on implementing TWH strategies.

3 <https://www.whitehouse.gov/briefing-room/legislation/2021/01/20/president-biden-announces-american-rescue-plan>



Events: Biannual Symposia

Adapting to Climate Change for Worker Safety, Health, and Well-being

MAY 21, 2021

From air quality and heat exposure to infectious disease, climate change contributes to conditions and hazards that require us to respond quickly to mitigate adverse safety and health effects on workers. In this symposium, we discussed the occupational risks introduced or exacerbated by our changing environment and some strategies for addressing them. Watch recordings [here](https://www.ohsu.edu/oregon-institute-occupational-health-sciences/adapting-climate-change-worker-safety-health-and-well)⁴.

Work as a Social Determinant of Health

NOVEMBER 13, 2020

Work, as a social determinant of health, has received attention in the Public Health field, and specifically in the area of Occupational Health. Within the backdrop of the COVID-19 pandemic and a public health crisis of systemic racism, the goal of the symposium was to help us understand the root causes of social determinants of health through the lens of the opportunities and conditions of work that shape our everyday lives. Watch recordings [here](https://www.ohsu.edu/oregon-institute-occupational-health-sciences/worker-health-work-social-determinant-health)⁵.

⁴ <https://www.ohsu.edu/oregon-institute-occupational-health-sciences/adapting-climate-change-worker-safety-health-and-well>

⁵ <https://www.ohsu.edu/oregon-institute-occupational-health-sciences/worker-health-work-social-determinant-health>



Research Core | 2016–2021



Active Workplace Study

LED BY: Brad Wipfli, PhD and Steve Shea, PhD

The Active Workplace Study evaluates an intervention to reduce sedentary behavior and advance worker safety, health, and well-being. The intervention addressed the use of pedal stand active workstations, sit-stand desks, and promoted physical activity during and outside of work. Dr. Wipfli's team recruited and collected data from 241 call center employees across four worksites. Due to COVID-19 restrictions, the data collection protocol was adjusted for the fourth worksite. Preliminary results revealed statistically significant increases in moderate physical activity at work and the use of active workstations, as well as decreases in average and maximum duration of extended bouts of sitting. Data analyses are ongoing, and the primary results manuscript is nearly complete. The study has also supported several undergraduate research interns and poster presentations, including one in Summer 2021.

- [Study webpage](#)¹

Tech4Rest

LED BY: Ryan Olson, PhD and Pete Johnson, PhD

Tech4Rest is an intervention study developed to advance the sleep, safety, health, and well-being of team truck drivers. Truck drivers who work in teams take turns sleeping and driving, and typically sleep in a moving vehicle which can negatively impact the quality and quantity of sleep they experience. Interventions being studied involve enhancing cab conditions with a therapeutic mattress and active suspension seat to reduce vibration and improve comfort, as well as a behavioral intervention component (Fit4Sleep) focused on improving physical activity and sleep hygiene practices. Pilot study results were published in 2020 (Olson et al., 2020; see Research Dissemination section for full list of publications), which indicated that the therapeutic mattress improved self-reports of sleep quality and quantity, and was universally preferred by all teams relative to their original mattress and a comparison new coil spring mattress. The addition of an active suspension seat and the Fit4Sleep program produced larger effect sizes for most outcomes, and also increased objectively measured physical activity. The team further disseminated the pilot study results via a presentation at the Comfort Congress in September 2021 and through the Oregon Health Workforce Center's Oregon in the:

- [Workplace blog](#)²
- [Study webpage](#)³

The Tech4Rest randomized controlled trial was implemented between October 2020 and September 2021 with 49 team truck drivers. Data collection is finished. Data processing, analyses, and results will be completed and written up for publication during the no-cost extension year.

1 <https://www.ohsu.edu/oregon-healthy-workforce-center/active-workplace-study>

2 <https://blogs.ohsu.edu/occupational-health-sciences/2021/06/15/bedrooms-on-18-wheels-improving-sleeping-conditions-for-truck-driving-teams>

3 <https://www.ohsu.edu/oregon-healthy-workforce-center/tech4rest>

Research Core Study Improvements by Health Domain

SLEEP AND FATIGUE

Tech4Rest: sleep duration ($d=0.37$), sleep quality ($d=1.49$), sleep-related impairment ($d=-0.93$), fatigue ($d=-0.56$), sleep hygiene ($d=-0.52$)

PHYSICAL ACTIVITY

Active Workplace: percentage of time spent pedaling at desk ($d=0.68$), percentage of time spent sitting/lying ($d=0.26$), percentage of time spent in moderate to vigorous physical activity ($d=0.74$), general physical activity ($d=1.83$); **Tech4Rest:** days per week with 30 min moderate physical activity ($d=1.83$), actigraphically measured weekly activity bouts of 10+ min ($d=0.30-1.07$).

EATING BEHAVIORS

Tech4Rest: sugary drinks consumed per day ($d=-0.80$), sugary snacks consumed per day ($d=-0.75$), fast food consumed per day ($d=-1.30$)

MUSCULOSKELETAL PAIN

Tech4Rest: musculoskeletal pain in the neck ($d=-0.54$), shoulders ($d=-0.53$), and low back ($d=-0.20$)



Pilot Projects

The OHWC Research Core funded three pilot projects during this funding cycle:

1

A natural experiment for the impact of schedules on sleep, health, and safety in firefighters

LED BY: Nicole Bowles, PhD

2

Community of Practice and Safety Support for Navigating Pain (COMPASS-TPM)

LED BY: Ryan Olson, PhD

3

Pilot-testing the feasibility of a TWH interpersonal burnout intervention

LED BY: David Hurtado, ScD and Abigail Lenhart, MD

Each pilot study led to the development of a full-scale research project which was funded in the new cycle, and two projects produced peer-reviewed publications (see Greenspan et al., 2020 and Watkins et al. 2020, in the Research Dissemination section).

Affiliated Research Projects

In addition to OHWC's core projects, we have expanded OHWC's TWH portfolio by welcoming affiliated projects into the fold (these are non-Center-funded projects with a TWH focus). We have invited these project teams to deliver periodic chalk talks at the ISC, which has served to increase interdisciplinary partnerships between Institute researchers (many of whom are part of the OHWC), encourage exchange of ideas and feedback, and facilitate collaborative project development.

Examples of our affiliate projects are:

Safety & Health Involvement for Truckers (SHIFT)

PI: Ryan Olson, PhD

Safety & Health Impacts For Transit operators during Onboarding (SHIFT Onboard)

PI: Ryan Olson, PhD

Study for Employment Retention of Veterans (SERVe)

PI: Leslie Hammer, PhD

Military Employee Sleep and Health (MESH)

PI: Leslie Hammer, PhD

Readiness Supportive Leadership Training (RESULT)

PI: Leslie Hammer, PhD

Safe Patient Handling Champions

PI: David Hurtado, ScD

Needs assessment and program evaluation for parole officers and juvenile correction counselors

PI: David Hurtado, ScD

Needs assessment and program evaluation of health department employees

PI: David Hurtado, ScD

Evaluation of health outcomes in organizations with paid parental leave policy in the workplace

PI: David Hurtado, ScD

Mental Health Awareness Training for Workplace Leaders and Supervisors (MHAT)

PI: Jennifer Dimoff, PhD

Safety climate research

Emily Huang, PhD

***PI: Principal Investigator**



Outreach, Education, and Dissemination

Outreach during COVID-19

OHWC's Outreach Core has focused heavily on community engagement and the dissemination of TWH education, resources, and interventions. Because of restrictions due to the pandemic, outreach efforts expanded to be entirely remote during this time period. Some highlights for this past year include:

Biannual symposia

Work as a social determinant of health

Fall 2020; 81 attendees; rated 4.78 out of 5 by attendees

Adapting to Climate Change for Worker Safety, Health and Well-being

Spring 2021; 65 attendees; rated 4.89 out of 5 by attendees

Conference participation

The Outreach Core also presented virtually at a number of conferences, most of which were remote. Examples include society chapter meetings for the American Society of Safety Professionals, the Health Enhancement Research Organization 2021 Forum, and the American Industrial Hygiene Conference.

Stakeholder partnerships

We also continue a number of collaborative efforts with safety and wellness groups including American Heart Association, Center for Parental Leave Leadership, Cascade Centers, American Society of Safety Professionals (ASSP), American Industrial Hygiene Association, Oregon State Association of Occupational Health Nurses, Portland Human Resource Management Association, Oregon Public Health Association, Non-Profit Association of Oregon, the Safe From Hate Alliance geared toward ensuring safe and inclusive workplaces for people in the trades, and PCUN (Oregon's largest Latino union in the U.S.).

COVID Conversations

See Program Highlights of Impact section.

Education

OHWC's education efforts are geared toward increasing TWH-focused capacity in both, academia and practice. In particular, our initiatives are focused on increasing learning opportunities for students and researchers in the area of TWH, as well as on building capacity among practitioners for implementing TWH strategies within organizations.

FOR PRACTITIONERS

As mentioned above (Program Highlights of Impact section), our *TWH trainings for practitioners*, *TWH 101: The Basics* (3 hours); *TWH: What OSH Professionals Should Know About TWH* (1 hour); and *TWH 101 + Workplace Solutions* (8 hours) reached >400 attendees at virtual meetings, events and conferences.

FOR STUDENTS

The Cascadia Occupational and Environmental Health Academic Consortium (COEHAC) was formed in Summer 2020 and represents a collaborative effort between our Center, OHSU, Portland State University, Oregon State University, University of Washington, and University of British Columbia to streamline Occupational Health course offerings in our region.

Research dissemination in peer-reviewed journals

1. Wipfli, B., Wild, S., Richardson, D., Hammer, L.B. (2021). Work as a Social Determinant of Health—A Necessary Foundation for Occupational Health and Safety. *Journal of Environmental and Occupational Medicine*. DOI: [10.1097/JOM.0000000000002370](https://doi.org/10.1097/JOM.0000000000002370)¹
2. Wipfli, B., Wild, S., Donovan, C., Hanson, G. C., Thosar, S. S. (2021). Sedentary Work and Physiological Markers of Health. *International Journal of Environmental Research and Public Health*, 18(6), 3230. DOI: [10.3390/IJERPH18063230](https://doi.org/10.3390/IJERPH18063230)²
3. Hanson, G., Rameshbabu, A., Bodner, T., Hammer, L., Rohlman, D., Olson, R., Wipfli, B., Kuehl, K., Perrin, N., Alley, L., Schue, A., Thompson, S., Parish, M. (2021). A Comparison of Safety, Health, and Well-being Risk Factors Across Five Occupational Samples. *Frontiers in Public Health*, section Occupational Health and Safety, 9:614725. DOI: [10.3389/FPUBH.2021.614725](https://doi.org/10.3389/FPUBH.2021.614725)³
4. Wipfli, B., Wild, S., Hanson, G. C., Shea, S. A., Winters-Stone, K., Thosar, S. S. (2021). The active workplace study: Protocol for a Randomized Controlled Trial With Sedentary Workers. *Contemporary Clinical Trials*, 103, 106311. Advance online publication. DOI: [10.1016/J.CCT.2021.106311](https://doi.org/10.1016/J.CCT.2021.106311)⁴
5. Olson, R., Johnson, P., Shea, S., Marino, M., Rimby, J., Womack, K., Wang, F., Springer, R., Donovan, C., Rice, S. (2020). Advancing the Safety, Health, and Well-being of Commercial Driving Teams Who Sleep in Moving Semi-trucks: The Tech4rest Pilot Study. *Journal of Occupational and Environmental Medicine*, 62 (12), 1082–1096. DOI: [10.1097/JOM.0000000000002063](https://doi.org/10.1097/JOM.0000000000002063)⁵
6. Perry, M. L., El-Askari, L. M., Hammer, L. B., Brown, N. D. (2020). Securing Your Own Mask Before Assisting Others: Effects of a Supervisor Training Intervention on Supervisors and Employees. *Occupational Health Science*, 4, 417–443. DOI: [10.1007/S41542-020-00075-0](https://doi.org/10.1007/S41542-020-00075-0)⁶
7. Watkins, S., Shannon, S., Hurtado, A., Shea, S., Bowles, N. (2020). Interactions Between Home, Work, and Sleep Among Firefighters. *American Journal of Industrial Medicine*. DOI: [10.1002/AJIM.23194](https://doi.org/10.1002/AJIM.23194)⁷
8. Greenspan, L. S., Alley, L., Rice, S. P., Olson, R. (2020). Exploring Biopsychosocial Correlates of Pain, Pain Management Strategies, and Risk for Opioid Misuse Among Home Care Workers in Washington State. *Home Health Care Services Quarterly*, 1–21. DOI: [10.1080/01621424.2020.1810191](https://doi.org/10.1080/01621424.2020.1810191)⁸
9. Womack, K.N.; Alvord, T.W., Trullinger-Dwyer, C.F., Rice, S.P., Olson, R. (2020) Challenging Aggressive Behaviors Experienced by Personal Support Workers in Comparison to Home Care Workers: Relationships Between Caregiver Experiences and Psychological Health. *International Journal of Environmental Research and Public Health*, 17, 5486. DOI: [10.3390/IJERPH17155486](https://doi.org/10.3390/IJERPH17155486)⁹
10. Newman, L., Scott, J., Childress, A., Hammer, L., Watkins, C. (2020). Education and Training to Build Capacity in Total Worker Health®: Proposed Competencies for an Emerging Field. *Journal of Occupational and Environmental Medicine*, e-pub ahead of print. DOI: [10.1097/JOM.0000000000001906](https://doi.org/10.1097/JOM.0000000000001906)¹⁰

1 <https://doi.org/10.1097/jom.0000000000002370>

2 <https://doi.org/10.3390/ijerph18063230>

3 <https://doi.org/10.3389/fpubh.2021.614725>

4 <https://doi.org/10.1016/j.cct.2021.106311>

5 <https://doi.org/10.1097/jom.0000000000002063>

6 <https://doi.org/10.1007/s41542-020-00075-0>

7 <https://doi.org/10.1002/ajim.23194>

8 <https://doi.org/10.1080/01621424.2020.1810191>

9 <https://doi.org/10.3390/ijerph17155486>

10 <https://doi.org/10.1097/jom.0000000000001906>

Publications from affiliate projects (select)

1. Friedland, A., Hernandez, A. F., Anstrom, K. J., Chen-Lim, M. L., Cohen, L. W., Currier, J. S., Forrest, C. B., Fraser, R., Fraulo, E., George, A., Handberg, E., Jackman, J., Koellhoffer, J., Lawrence, D., Leverty, R., McAdams, P., McCourt, B., Mickley, B., Naqvi, S. H., O'Brien, E. C., HERO Research Program (2021). Design of the Healthcare Worker Exposure Response and Outcomes (HERO) research platform. *Contemporary Clinical Trials*, 109, 106525. Advance online publication.
DOI: [10.1016/J.CCT.2021.106525](https://doi.org/10.1016/J.CCT.2021.106525)¹¹
2. Hammer, L., Brockwood, K., Haverly, S. (2021) The Key Role of Supervisors for Supporting Veterans in the Workplace Military Veteran Employment: A Guide for the Data-Driven Leader, New York, NY.
DOI: [10.1093/OSO/9780190642983.001.0001](https://doi.org/10.1093/OSO/9780190642983.001.0001)¹²
3. Huang, Y. H., Chang, W. R., Cheung, J. H., Lee, J., Kines, P., He, Y. (2021). The Role of Employee Perceptions of Safety Priorities on Safety Outcomes Across Organizational Levels. *Ergonomics*, 64(6), 768–777.
DOI: [10.1080/00140139.2020.1859139](https://doi.org/10.1080/00140139.2020.1859139)¹³
4. Huang, Y. H., He, Y., Lee, J., Hu, C. (2021). Key Drivers of Trucking Safety Climate From the Perspective of Leader-Member Exchange: Bayesian Network Predictive Modeling Approach. *Accident; Analysis and Prevention*, 150, 105850.
DOI: [10.1016/J.AAP.2020.105850](https://doi.org/10.1016/J.AAP.2020.105850)¹⁴
5. Kelly, K. M., Newman, L. S., Cherniack, M., Punnett, L., Hammer, L. B., Sorensen, G. (2021). Critical Points in Lemke's Total Worker Health® Calculus. *Journal of Occupational and Environmental Medicine*, Advance online publication.
DOI: [10.1097/JOM.0000000000002300](https://doi.org/10.1097/JOM.0000000000002300)¹⁵
6. Kao, K.Y., Thomas, C.L., Spitzmueller, C, Huang, E. (2021) Being Present in Enhancing Safety: Examining the Effects of Workplace Mindfulness, Safety Behaviors, and Safety Climate on Safety Outcomes. *Journal of Business and Psychology*, 36 (1), 1–15.
DOI: [10.1007/S10869-019-09658-3](https://doi.org/10.1007/S10869-019-09658-3)¹⁶
7. Mohr, C.D., Umemoto, S.K., O'Neill, A.M.S., Lee, J.D., Hammer, LB (2021). Married but Drinking Alone: An Exploration of Solitary Drinking Among Military Couples. *Alcoholism-Clinical and Experimental Research*, 45:50A.
8. Mohr, C.D., Hammer, L.B., Brady, J.M., Perry, M.L. and Bodner, T. (2021), Can Supervisor Support Improve Daily Employee Well-being? Evidence of Supervisor Training Effectiveness in a Study of Veteran Employee Emotions. *Journal of Occupational and Organizational Psychology*, 94: 400–426.
DOI: [10.1111/JOOP.12342](https://doi.org/10.1111/JOOP.12342)¹⁷
9. Olson, R., Rice, S., Mansfield, L. R., Wipfli, B., Bodner, T., Anger, W. K., Bauer, T. N. (2021). Bus Operators' Body Weight Changes During Their First 2 Years of Work: A Retrospective Survey. *Journal of Occupational and Environmental Medicine*, Advance online publication.
DOI: [10.1097/JOM.0000000000002347](https://doi.org/10.1097/JOM.0000000000002347)¹⁸
10. Anger, W. K., Farahat, F. M., Lein, P. J., Lasarev, M. R., Olson, J. R., Farahat, T. M., Rohlman, D. S. (2020). Magnitude of Behavioral Deficits Varies With Job-Related Chlorpyrifos Exposure Levels Among Egyptian Pesticide Workers. *Neurotoxicology*, 77, 216–230.
DOI: [10.1016/J.NEURO.2020.01.012](https://doi.org/10.1016/J.NEURO.2020.01.012)¹⁹

11 <https://doi.org/10.1016/j.cct.2021.106525>

12 <https://doi.org/10.1093/oso/9780190642983.001.0001>

13 <https://doi.org/10.1080/00140139.2020.1859139>

14 <https://doi.org/10.1016/j.aap.2020.105850>

15 <https://doi.org/10.1097/jom.0000000000002300>

16 <https://doi.org/10.1007/s10869-019-09658-3>

17 <https://doi.org/10.1111/joop.12342>

18 <https://doi.org/10.1097/jom.0000000000002347>

19 <https://doi.org/10.1016/j.neuro.2020.01.012>

Popular media dissemination

Our [Oregon and the Workplace Blog](https://blogs.ohsu.edu/occupational-health-sciences)²⁰ continues to be one of our most active outlets for non-academic dissemination. During the pandemic, our blog posts became more frequent as we kept pace with changing safety and health recommendations and worker needs. Twenty-nine specific blogs were posted during this time period addressing COVID-19 with topics ranging from mental health, to vaccine information, best work practices, and educational opportunities. Our COVID-19 related blogs alone led to ~27,000 total page views during this time period. Some of our most popular blogs during this past year are:

2,518 PAGE VIEWS

4 Key strategies to help supervisors support employee well-being during COVID-19

498 PAGE VIEWS

Oregon OSHA's COVID-19 rule effective today

1,271 PAGE VIEWS

Wishing you health and well-being

374 PAGE VIEWS

Winding down COVID conversations

673 PAGE VIEWS

Hierarchy of controls and Total Worker Health®

349 PAGE VIEWS

Changing a toxic culture at work podcast

523 PAGE VIEWS

Employee well-being during a pandemic

324 PAGE VIEWS

Recap: fatigue at work

523 PAGE VIEWS

Caring for caregivers during the pandemic

324 PAGE VIEWS

Bedrooms-on-18-wheels: improving sleeping conditions for truck driving teams

²⁰ <https://blogs.ohsu.edu/occupational-health-sciences>

Aside from weekly blog posts, we continue to publish in popular media outlets such as Medium. Recent posts include:

Learning from different industries to improve safety, health, and well-being at work.

[Medium](#)²¹, 2021

BY: Schuckers, H.

Looking for ways to support your employees? Start with work-life balance.

[Medium](#)²³, 2021

BY: Schuckers, H., and Rameshbabu, A.

How managers can support employee well-being during a pandemic.

[Medium](#)²², 2021

BY: Hammer, L., and Alley, L.

10 Things to Know About Total Worker Health®.

[Medium](#)²⁴, 2020

BY: Schuckers, H.

Oregon Healthy Workforce Center

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Improving the safety, health and well-being of workers through Total Worker Health research, dissemination, outreach and education. Visit, www.YourWorkpath.com

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- Leslie Hammer, PhD
- Katia M Costa-Black

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Jul 21, 2021

Learning from different industries to improve safety, health, and well-being at work



Each industry has a unique set of workplace conditions, factors, environmental and occupational hazards, as well as organizational policies and practices that require careful planning to ensure the safety, health, and

21 <https://oregonhealthyworkforcecenter.medium.com/learning-from-different-industries-to-improve-safety-health-and-well-being-at-work-d3cfc11e216f>

22 <https://oregonhealthyworkforcecenter.medium.com/how-managers-can-support-employee-well-being-during-a-pandemic-37c1dee5ae8a>

23 <https://oregonhealthyworkforcecenter.medium.com/looking-for-ways-to-support-your-employees-start-with-work-life-balance-9b889707f85f>

24 <https://oregonhealthyworkforcecenter.medium.com/10-things-to-know-about-total-worker-health-24d23c12c9c4>

Invited talks by Center Directors, Drs. Leslie Hammer and Ryan Olson:

OHSU Research Town Hall on Wellness.

Hammer, L.B., Lenhart, A., & Ey, S.

September, 2020

Supervisor and Co-worker Support for Employees during and after COVID-19 Return to Work.

Hammer, L.B.

September, 2020 | Society for Occupational Health Psychology. Virtual Webinar

Has the Global Health Crisis finally put a spotlight on Mental Health in Communications?

Hammer, L.B. (Panelist)

October, 2020 | International Public Relations Communications Association. London, UK

Translation of the Safety and Health Improvement Program (SHIP) Leadership Training.

Hammer, L.B.

January, 2021 | NIOSH Future of Work: Organizational Design webinar

The Military Employee Sleep and Health Study (MESH): The negative and positive impact of COVID on a Randomized Controlled Trial.

Hammer, L.B.

March, 2021 | Presentation for the University of North Carolina

Meeting the Mental Health Needs of Unemployed Individuals: Scope of the Problem and Testing Evidence-Based Strategies.

Hammer, L.B. (Moderator)

April, 2021 | Webinar presented by the National Institute for Mental Health and the American Psychological Association

Total Worker Health® and Leadership.

Hammer, L.B.

May, 2021 | City of Eugene Leadership Conference, Eugene, OR

Total Worker Health®: An Invitation to Join In!

Olson, R.

May, 2021 | B.F. Skinner Lecture at the Association for Behavior Analysis – International convention

Other dissemination efforts

What's Work Got To Do With It? Podcast²⁵

Started in 2018, the goal of our podcast was to showcase the public health relevance of workplace issues, and to offer an accessible platform to share our research. During this past year, we released these episodes:

291 PLAYS

NIOSH 50th Anniversary – an Interview with NIOSH Director John Howard

3 PARTS

587 PLAYS CUMULATIVELY

Meet the Scientists at the Institute

232 PLAYS

Summer Interns

263 PLAYS

Safety Climate

173 PLAYS

Impacts of COVID-19 and Wildfire Smoke on Wildland Firefighters

238 PLAYS

Changing a Toxic Workplace Culture

157 PLAYS

Farmworkers' Experiences During COVID-19

297 PLAYS

The Nation's Opioid Epidemic

206 PLAYS

Mental Health and Suicide Prevention in Construction

²⁵ <https://www.ohsu.edu/oregon-institute-occupational-health-sciences/whats-work-got-to-do-it-podcast>

YourWorkpath website for dissemination

Launched in 2018, [YourWorkpath](https://www.yourworkpath.com) is a dedicated online interactive repository to disseminate our educational and evidence-based resources.

- In February 2021, Dissemination Specialist, Helen Schuckers, MPH, launched a new monthly drop-in “Toolkits and Tools Tour” session held the last Tuesday of each month to reach organizations in different industry sectors. In addition, one-on-one meetings are offered to any interested organizations. A supplemental video was developed as part of these outreach efforts.
- Through activity on YourWorkpath.com, the Dissemination Workgroup and Institute staff have developed strong partnerships, with Pineros Y Campesinos Unidos del Noroeste (PCUN), TriMet, Eugene Water and Electric Board (EWEB), St Louis Community College (slated to adopt Promoting U through Safety & Health/PUSH in Fall 2021), and SAIF Corporation in Oregon (disseminating our Safety & Health Improvement Program/SHIP) toolkit).

For more information on our dissemination efforts, click below:

- ▶ [YourWorkpath.com](https://www.yourworkpath.com)²⁶
- ▶ [A Year of Impact Meeting Guides](#)²⁷
- ▶ [Happy 50th to NIOSH! We are celebrating on our podcast](#)²⁸
- ▶ [Farmworkers experience during COVID](#)²⁹
- ▶ [10 years at OHWC and YourWorkpath updates](#)³⁰
- ▶ [OHWC SHIP and SAIF Leadership Series Partnership](#)³¹
- ▶ [OHWC's new Medium page](#)³²
- ▶ [COMPASS within Oregon Home Care Commission](#)³³
- ▶ [PUSH Intervention on YourWorkpath.com](https://www.yourworkpath.com/push)³⁴

26 <https://www.yourworkpath.com>

27 <https://www.ohsu.edu/oregon-institute-occupational-health-sciences/health-impacts-safety>

28 <https://blogs.ohsu.edu/occupational-health-sciences/2021/06/14/nioshs-50th-anniversary-podcast-episode>

29 <https://blogs.ohsu.edu/occupational-health-sciences/2021/05/03/farmworkers-experiences-during-covid-19>

30 <https://blogs.ohsu.edu/occupational-health-sciences/2021/01/27/10-years-at-ohwc-and-yourworkpath-updates>

31 <https://blogs.ohsu.edu/occupational-health-sciences/2021/04/06/ohwc-ship-and-saif-leadership-series-partnership>

32 <https://oregonhealthyworkforcecenter.medium.com>

33 <https://www.oregon.gov/DHS/SENIORS-DISABILITIES/HCC/PSW-HCW/Pages/COMPASS.aspx>

34 <https://www.yourworkpath.com/push>

Training scientists in dissemination

The OHWC Dissemination Workgroup (led by Helen Schuckers, MPH) meets bi-monthly with the goal of helping researchers adopt best practices for disseminating intervention research. Each workgroup is dedicated to a topic, some presented by invited speakers with pertinent expertise, and each session is abundantly discussion-based and action-oriented. Some of the workgroup topics in this past year included *Press Releases 101*, *Dissemination Checklist*, *Licensing Structure for Toolkits and Tools*, *OHSU Inclusive Language Guide*, *Multimedia strategies to communicate TWH*, *Marketing and Brand Strategy*, and the *OHSU Center for Diversity and Inclusion Diversity and Multicultural Resource Guide*.

Web resources for COVID-19

Our COVID-specific resource page titled [COVID-19 and the World of Work](#)³⁵ was augmented with additional resources to support workers, employers/managers, and community members during this difficult time. Additionally, a new webpage addressing COVID-19 strategies and best practices for construction was developed and supported in collaboration with the Oregon COVID-19 Construction Task Force.

Analytics Related to Social Media and Web Resources

COVID-19 Resources

1,051 PAGE VIEWS

COVID and World of Work

2,900 PAGE VIEWS

OHWC web pages

1,358 PAGE VIEWS

COVID-19 Construction Task Force web page

Websites

8,991 PAGE VIEWS

OHWC

79,115 PAGE VIEWS

Oregon Institute of Occupational Health Sciences

12,673 PAGE VIEWS TO DATE, SINCE 2018 LAUNCH

YourWorkpath.com

³⁵ <https://www.ohsu.edu/oregon-institute-occupational-health-sciences/covid-19-and-world-work>



OHWC Social Media Efforts (reported to date):

1,111 FOLLOWERS

Twitter

203 FOLLOWERS, STARTED FALL 2020

LinkedIn

468 FOLLOWERS

Facebook

~27,000 TOTAL PAGE VIEWS

Oregon and the Workplace Blog

6,400+ VIEWS TO DATE, TOTAL

YouTube Channel

6,380+ LISTENERS NATION AND WORLDWIDE

23 EPISODES TOTAL SINCE LAUNCH IN FALL 2018

What's Work Got To Do With It Podcast

Connect With Us

Oregon Healthy Workforce Center



www.ohsu.edu/ohwc

Oregon Institute of Occupational Health Sciences (home of OHWC)



www.ohsu.edu/oregon-institute-occupational-health-sciences

YourWorkpath



www.yourworkpath.com

Social Media



twitter.com/ohsuocchealth



facebook.com/occhealthsci.ohsu



linkedin.com/company/occhealthsci



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