

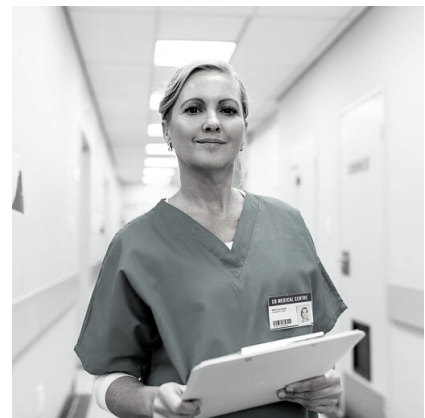


HARVARD T.H. CHAN
SCHOOL OF PUBLIC HEALTH

CENTER FOR WORK,
HEALTH, & WELL-BEING

FISCAL YEAR 2022

ANNUAL REPORT



HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH
CENTER FOR WORK, HEALTH, AND WELL-BEING

A NIOSH *TOTAL WORKER HEALTH*® CENTER OF EXCELLENCE

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HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH CENTER FOR WORK, HEALTH, AND WELL-BEING NIOSH TOTAL WORKER HEALTH® ANNUAL REPORT OCTOBER 1, 2021 - SEPTEMBER 30, 2022

SUMMARY

The mission of the Harvard T.H. Chan School of Public Health Center for Work, Health, & Well-being is to improve the safety, health, and well-being of workers through designing, testing, implementing, and disseminating effective and integrated workplace policies, programs and practices that foster a healthy work environment, reduce potential hazardous job exposures, and promote safe and healthy behaviors. Building on our systems-level conceptual model centered on the conditions of work, we focus on social and health disparities; understanding contributors to work-related well-being and mental health indicators; and generating and applying research evidence to advance policy and practice recommendations to improve working conditions. We have well-established productive partnerships among Harvard, Boston College School of Social Work, Bouvé College of Health Sciences at Northeastern University, Mass General Brigham, Boston University, and HealthPartners; a partnership with MIT Sloan School of Management new in this cycle; and collaborative relationships with an array of employers and stakeholder groups. These affiliations reflect a strong foundation for the Center in its current five-year cycle, which began September 1, 2021.

The Center's Research Core includes four research projects, three of which are currently underway. The **Boston Hospital Workers Health Study** is based on a long-standing partnership between the Center and Mass General Brigham (formerly Partners HealthCare), the largest private employer in Massachusetts, and aims to improve the health of the hospital workforce and reduce within-workforce disparities by identifying the roots of disparities in the conditions of work. The **Fulfillment Center Intervention Study** is testing a participatory workplace intervention that introduces "Health and Well-being Committees" to multiple fulfillment centers in one company – to solicit workers' concerns regarding safety hazards and stressful work conditions, and implement action plans to address them, creating a strong channel for worker input. The **Thriving Workers, Thriving Workplaces Study** began on September 1, 2022; the objective of this study is to understand the ways in which work – including working conditions and workplace policies – shapes the extent to which workers thrive from their work. And in 2024, the **Older Workers' Health and Well-being Study** will begin, focusing on workers aged 50 and older through analysis of six waves of data from the U.S. Health and Retirement Study. In addition, the Center's **Outreach Core** has developed and is disseminating a suite of evidence-based products to build the capacity of employers to implement a *Total Worker Health* (TWH) approach, including a focus on the conditions of work central to the Center's conceptual model. The **Policy Working Group** supports the Center's efforts to define policy priorities, determine critical policy research questions, identify public and organizational policy implications of research findings, and craft policy guidelines.

RELEVANCE

The Center aims to improve the health, safety, and well-being of working populations by conducting research to identify working conditions that influence worker health outcomes; testing intervention methods to improve these outcomes; and translating this research into best practice and policies. The Center additionally seeks to understand and characterize disparities in workers' exposures and health outcomes in relation to socioeconomic position, race/ethnicity, and age, in order to guide recommendations to address those disparities.

KEY PERSONNEL

PROJECT AND CORE LEADS AND CO-LEADS

Glorian Sorensen, PhD, MPH

Director and Principal Investigator, Center for Work, Health, & Well-being

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SECTION II

THE RESEARCH CORE

BOSTON HOSPITAL WORKERS HEALTH STUDY

PROJECT LEAD: ERIKA SABBATH



The *Boston Hospital Workers Health Study* represents a solid partnership, in place since 2006, between the Center and Mass General Brigham (MGB, formerly Partners HealthCare), a multi-hospital network of 10 hospitals including Massachusetts General Hospital & Brigham and Women's Hospital. The hallmark of this study is a linked employee database designed to examine the effects of the conditions of work on a range of worker health outcomes. We have been granted unusual access by MGB to employee record databases from occupational health, human resources, and patient care services, and during the previous funding cycle we began working with MGB to integrate occupational Covid-19 data into the database. Patient care worker surveys are linked to the records in the database using secure study IDs. In the current funding cycle, our aims are to further invest in the database to create novel exposure assessments, and to use those assessments to understand the relationships between dimensions of the work environment and outcomes for both workers and employers. During the period of October 1, 2021-September 30, 2022 we have had major accomplishments in three areas: 1) collecting and analyzing qualitative data from low-wage service workers and their managers to understand their workplace stressors and occupational health hazards; 2) producing scientific research and supporting trainees in using project data for dissertations and other program milestones; and 3) working with MGB and the Outreach Core to translate findings into policy and practice.

For our qualitative data collection, we have built relationships with manager- and director-level employees at each of the two hospitals in the four low-wage worker groups on which we are focusing: patient care associates, environmental services, patient and materials transport, and food services. Using carefully developed and piloted instruments, we have conducted key informant interviews with these managers, learning about the structural and interpersonal barriers to work-related wellbeing that their workers face. We also participated in walk-throughs of key areas of the hospitals and shadowed workers in our target roles to understand the physical and psychosocial hazards of their jobs. Our research team is in the midst of conducting interviews in English and Spanish with low-wage service workers in these groups, with rich insights emerging about the ways that work shapes their health and wellbeing. We plan to conclude these interviews in November 2022.

The findings will inform our planned 2023 survey content, will shape our strategy for reaching hard-to-survey groups, will contribute qualitative data that complements analyses from our quantitative survey, and will inform our efforts to share back our findings with workers, managers, and health system administrators. We are now in the process of planning our Spring 2023 survey content and data collection strategy.

We have also focused on expanding our database from solely nurses and nursing assistants to include nearly all employees at the two hospitals. While this is a long process, we now have the infrastructure in place to make this expansion. We continue to work on empirical studies using project data. Three example analyses currently underway are a comparison of workers' and managers' perception of safety conditions and their comparative associations with injury rates; a study of work-related determinants of diabetes in nurses and nursing assistants (led by a doctoral student at Boston College); and analysis of associations between vicarious trauma and chronic disease outcomes (led by a doctoral student from Harvard).

Finally, we have continued to work closely with the Outreach Core and MGB leadership to translate our findings and develop new research questions. In mid-2022, we met with the Center's Policy Working Group to present our aims and solicit feedback on how to make our work more policy relevant. We received excellent suggestions and are in the process of implementing them. We meet regularly with MGB leadership to learn more about stressors and strains that the workforce is currently experiencing and how we can address those issues in our empirical papers and our data collection efforts.

FULFILLMENT CENTER INTERVENTION STUDY

PROJECT LEAD: ERIN KELLY
PROJECT CO-LEAD: LISA BERKMAN



The *Fulfillment Center Intervention Study* leverages an established partnership with the e-commerce division of a national retail firm to implement and test a participatory workplace intervention that introduces "Health and Well-being Committees" (HaWCs). HaWCs solicit and prioritize workers' concerns regarding safety hazards and stressful work conditions, and implement action plans to address them, creating a new channel for worker input into the conditions of work. This innovative, prevention-oriented strategy aligns with the *Total Worker Health* paradigm, focusing on warehouse workers who face a double burden of physically taxing and high-strain jobs that negatively impact mental and physical health, including injury-related disability. The team is engaged in a cluster-randomized trial to evaluate whether HaWCs impact worker health.

We hypothesize the intervention will improve mental health and positive psychological well-being, reduce injuries, and encourage injury reporting. The primary outcome is psychological distress, a measure that captures many mental health problems. Because fulfillment center workers earn low wages and are disproportionately Black and Latino/a, our study aims to modify working conditions to promote the health of workers subject to systemic social inequities. Project goals include delivering the participatory intervention to randomized sites, collecting survey data 12-months post-baseline to evaluate the efficacy of this intervention, and collecting and analyzing process data to address implementation, adaptation, and sustainability. The primary achievements during the first year of the study have been: 1) launching our participatory intervention and process data collection activities; 2) making significant progress on our survey data collection for the outcome evaluation; and 3) data management and preliminary analysis of survey data.

Launching the intervention and process data collection: All eight sites randomized to treatment have launched HaWC committees with two launched in September 2021 and six more launched over the spring and summer of 2022. HaWC committees have implemented dozens of workplace action projects in key areas which include increasing training opportunities, improving the workflow and cleanliness of buildings, making work more enjoyable and addressing workers' safety and health concerns. Facilitation format and materials have been adapted to needs on the ground. For instance, based on feedback from the first two sites about the need for ongoing support, we have revised the intervention protocol by extending the initial technical assistance period through an additional 4 HaWC meetings, but with lighter involvement from the research team facilitator during this period (i.e., the research lead will attend HaWC and pre-planning meetings, but facilitation is handed over to the fulfillment center associate and supervisor co-leads). Facilitation materials have also been simplified and streamlined to support greater ease of adoption. The process data collection on implementation barriers and sustainability factors is well underway and includes data from interviews with HaWC co-leads and building managers, observations of HaWC meetings, survey questions about HaWC awareness, and ethnographic field notes from selected site visits.

Significant progress on survey data collection: Baseline survey data collection has been completed in all 16 sites, and 6- and 12-month survey data have been collected for the first cluster of four sites (two treatment, two controls). Six and twelve-month survey data will be collected in the remaining sites through summer of 2023.

Conducting management and preliminary analysis of the data: The research team has ramped up the cleaning, coding, and descriptive analysis of the baseline survey data, including preparation of codebooks and other documentation. Team members recently prepared a presentation on preliminary findings from the process analysis concerning lessons learned about effective intervention implementation, to be presented in October 2022 at the 3rd International Symposium to Advance *Total Worker Health*.

THRIVING WORKERS, THRIVING WORKPLACES STUDY

PROJECT CO-LEADS:
GREGORY WAGNER AND
SUSAN PETERS



As of September 1, 2022, the Center added a new research project, the *Thriving Workers, Thriving Workplaces Study*. This study leverages data collected from our existing Center research projects including the *Boston Hospital Workers Health Study* and the *Fulfillment Center Intervention Study*. Later in the *Thriving Workers, Thriving Workplaces Study*, we will add new data collected in the commercial construction industry. We will utilize these three data sources to answer key research questions based on the central hypothesis that specific identifiable and modifiable working conditions and organizational policies, programs, and practices are associated with workers' thriving, and that certain occupational and demographic factors can strengthen or weaken these relationships. Using The Thriving from Work Questionnaire, our novel validated instrument of work-related well-being, we will test hypotheses across different worker samples to identify salient features of working conditions, occupations, and demographic factors that impact worker well-being across occupational groups. Findings from this study have the potential to improve work environments and the design of jobs to improve the overall health and well-being of workers. The research team members have been engaged in planning the survey instruments for both the *Boston Hospital Workers Health Study* and the *Fulfillment Center Intervention Study* and have made methodological advances in establishing methods to measure thriving at the group level. The team has also developed a user manual for the Thriving from Work Questionnaire for researchers and practitioners. Manuscripts have been submitted on the development and utility of the questionnaire and the team has also validated a Spanish version. The next focus will be on analyzing data collected in the *Fulfillment Center Intervention Study*.

THE OUTREACH CORE

CORE LEAD: JACK DENNERLEIN

The Center's Outreach Core continues to translate the Center's evidence-based research findings and disseminate best practices and policy recommendations. Our major accomplishments include the following, grouped by each of the four aims of our Outreach Core.

COMMUNICATION AND DISSEMINATION

Implementing an Integrated Approach: Weaving Worker Health, Safety, and Well-being into the Fabric of Your Organization

Our Center investigators continue to reference and refer collaborators to our “Guidelines for Implementing an Integrated Approach,” available for download from our website since 2017. The total number of downloads by an array of organizations and individuals is nearly 3,000. People who download the Guidelines are then included in our newsletter dissemination and other communications.

Workplace Integrated Safety and Health (WISH) Assessment

A team of Center researchers under the leadership of Dr. Sorensen previously validated the Center’s Workplace Integrated Safety and Health (WISH) Assessment. Several Center research projects have or are currently utilizing some or all of the WISH items. The WISH Assessment has been available on the Center’s website since June of 2018 and has been downloaded a total of more than 700 times.

Center Newsletter

In the past year, we have published two e-newsletters, sharing updates from the Center’s research projects, details of upcoming events, and links to recent publications. The newsletters were disseminated by email in March 2022 and September 2022. Future newsletters will feature links to NIOSH, other NIOSH-funded Centers, and TWH Affiliates. Our database of newsletter recipients is close to 3,000 and we expect that number will continue to grow with each issue.

Center Website and Social Media

Our Center website (<https://centerforworkhealth.sph.harvard.edu/>) provides the public with information about our research projects, Center Investigators, external advisors, events and news, publications, case studies, summary sheets, education opportunities, and other resources. Our website was visited nearly 33,000 times by almost 15,000 viewers (i.e., unique page views) in this reporting period.

Our Center has an active Twitter presence – we have almost 800 followers and are following 335 people/organizations. This number continues to increase. We are also active on LinkedIn with 359 connections; this number also continues to increase.

IMPLEMENTATION

Dissemination and Implementation (D&I) Partners

Our D&I partners, which include professional associations, policy organizations, industry groups, worker advocacy groups, and strategic business networks, are critical to our outreach and communication efforts. We intend to share with our D&I partners our evidence-based findings and implementation products created by our TWH research and practice. We are periodically in touch with our D&I Partners about specific topics and expect the frequency of these interactions to increase as our research projects progress.

All the Right Moves (ARM) Capacity Building Suite

Drs. Dennerlein and Peters are leading the refinement of the *ARM Capacity Building Suite* for construction companies, based on the successful ARM (All the Right Moves) project that was developed during the previous funding cycle. As part of that project, researchers developed “Interactive Talks” for use with construction workers, providing a participatory method for companies to determine workers’ experiences to drive change. During the current reporting period, the ARM Capacity Building Suite components have been tested with a national construction company. We have adapted materials and developed tools, resources, and trainings, so ARM can be implemented by construction companies with less involvement of our researchers.



HealthPartners Institute: Institutionalizing the Center’s Capacity Building Suite

The Center is continuing a partnership with HealthPartners and HealthPartners Institute of Minnesota, to provide an opportunity for HealthPartners clients to learn about and engage with key TWH concepts and approaches. This project will help our research team to better understand HealthPartners clients’ perceptions of the value of (and barriers to) adopting the Center’s Capacity Building Suite, and will also promote buy-in and further institutionalization of the TWH approach among HealthPartners’ clients. To achieve these goals, the research team will develop a webinar, conduct focus groups, and survey organizations.

SAIF of Oregon, a *Total Worker Health* Affiliate, creating tools for small businesses

During the current reporting period, Dr. Jack Dennerlein and Ms. Lisa Burke have been meeting monthly with representatives from SAIF, a TWH Affiliate located in Oregon, working together to develop tools and resources for small businesses, based on the content of the Center’s Implementation Guidelines and our projects with construction companies. The result of this collaboration is a suite of tools that will be used by SAIF consultants with their small business clients, to broadly share the TWH approach.

POLICY

The Policy Working Group

Under the leadership of Dr. Greg Wagner, the Policy Working Group is continuing the Center’s efforts to define key policy priorities, determine critical policy research questions, identify policy implications of research findings, and craft policy guidelines that support *Total Worker Health*. The Policy Working Group meets several times each year to discuss implications of our current and future research to support both organizational and public policy. The external members of the Policy Working Group bring an impressive range of experience and expertise to discussions with Center Investigators about public and workplace policy implications of our research. The Center’s Policy Working Group convened in November 2021, March 2022, and May 2022.

EDUCATION AND TRAINING

Courses

In May 2022, Dr. Sorensen was a lecturer at a three-day course in Reykjavik, Iceland that focused on how we can develop, implement, and evaluate organizational interventions, “Designing, Implementing, and Evaluating Organizational Interventions”. The course was sponsored by the Nordic Institute for Advanced Training in Occupational Health.

In addition, Dr. Sorensen’s segment of the Harvard University MOOC (Massive Open Online Course) “Improving Your Business Through a Culture of Health,” with Harvard Business School Professor Robert Huckman, continues to be available to the public through Harvard University’s online courses. More than 74,000 people have enrolled in this free course since it became available in 2018.

In April 2022, Dr. Sabbath presented at the Boston College School of Social Work, to students in the “Social Determinants of Health and Health Disparities” course. The topic was: Work, Workplaces, and Health.

In April 2022, Dr. Sabbath presented at the Boston College School of Social Work, to students in the “Public Health in a Global Society, Boston College Program in Global Public Health” course. The topic was: Case study: Health equity and occupational injuries.

HARVARD AND VISITING PRE-DOCTORAL AND DOCTORAL STUDENTS, AND POST-DOCTORAL RESEARCH FELLOWS

The Center has mentored and trained several doctoral students and research fellows in the past year:

- *Elizabeth Stelson*, a PhD candidate at the Harvard Chan School and a licensed social worker, received pilot funding from the Harvard Education and Research Center for her study, “Substance use provider occupational wellbeing study: Identifying sources of stress and resilience among frontline substance use workers in Massachusetts”. Ms. Stelson completed this study with our Center, resulting in her receiving a dissertation grant building on her work with substance abuse providers. Drs. Sabbath, Berkman, Kubzansky, and Sorensen are mentoring Ms. Stelson, who is also analyzing data from the *Boston Hospital Workers Health Study* as part of her dissertation.
- *Dena Javadi*, MSPH, a Harvard Chan School PhD Student, received Harvard ERC pilot funding, under the mentorship of Drs. Peters and Wagner. The objective of this study, “Thriving from Work: workplaces and communities”, was to build on work conducted through a previous NIOSH-funded ERC pilot grant that supported the development of a valid and reliable measure of Thriving from Work. Ms. Javadi is additionally working with the *Fulfillment Center Intervention Study*.
- *Yaminette Diaz-Linhart*, PhD, MPH, MSW is a postdoctoral fellow at the MIT Sloan School of Management and is working on the *Fulfillment Center Intervention Study* under the mentorship of Dr. Kelly, looking at workplace conditions and organizational policies that impact workers' well-being. Dr. Diaz-Linhart's research interests include worker voice, workplace well-being, meaning of work, professionalization, health care management and public/nonprofit management.

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- Alex Kowalski PhD, MCP was an investigator on the *Fulfillment Center Intervention Study* while completing his doctorate at the MIT Sloan School of Management, working closely with Dr. Kelly at the MIT Institute for Work and Employment Research. Alex was a key member of the research team, contributing his expertise on scheduling issues for warehouse workers, helping design of the study including contributing to power analyses and statistical analysis plans, and managing administrative data that is critical to the project. Following the completion of his PhD program, Alex became an assistant professor in the Human Resource Studies department at Cornell University's ILR School.
 - *Kirsten Siebach*, MSW, was the Project Manager for the *Fulfillment Center Intervention Study*, working with Dr. Kelly at the MIT Sloan School of Management. As part of the study, Ms. Siebach oversaw intervention design and implementation, as well as early survey data collection. She is currently pursuing a PhD at Johns Hopkins University, where she hopes to research the social determinants of mental health.
 - *Grace DeHorn*, MSW, joined the *Fulfillment Center Intervention Study* as the new Project Manager and works with Dr. Kelly at the MIT Sloan School of Management. Ms. DeHorn brings expertise in mixed methods studies of low-wage workforces, including previous experience studying retail workers, and is responsible for survey data collection, documentation and cleaning of survey data, and overall project management.
 - *Emma Cedstrand* is a licensed psychologist and PhD student at the Institute of Environmental Medicine at the Karolinska Institute in Sweden. She spent 3 months at the Center, while finishing her thesis. Emma's primary interest is the psychosocial work environment's effect on health and how organizations can work to reduce psychosocial hazards and help employees thrive at work.
 - *Ann Sophie Lauterbach*, M.Sc. is a second year PhD student at the Graduate School for Behavioral and Social Sciences, Future of Work Lab, at the University of Konstanz in Germany. She studied public administration and organizational psychology in multiple countries. Her current research includes exploration of innovative office design and its effects on employee well-being and gender differences in absenteeism and presenteeism in remote work settings.
 - *Siw Tone Innstrand*, PhD worked with our Center for two months in 2022, as part of her Fulbright Scholarship. She is a professor in occupational health psychology in the Department of Psychology and Director of the Center for Health Promotion Research at the Norwegian University of Science and Technology. She is one of the leaders in Norway of the EU project H-work - Multilevel Interventions to Promote Mental Health in SMEs and Public Workplaces; Dr. Sorensen serves on their board.
 - *Adam Chati*, PhD was at the Center for three months in 2022 as part of his Fulbright Fellowship. He is a Professor of Human Management and Organizational Behavior, and Faculty of Law, Economics and Social Sciences at Hassan II University of Casablanca in Morocco. His areas of interest include well-being and remote work, including operating technology to teach and being one's own IT person when working remotely. He worked closely with Dr. Dennerlein while at the Center.
 - *Winnie Chin*, ScD, MS, was a postdoctoral research fellow mentored by Dr. Sorensen in 2020-2022. Dr. Chin's work focused on building research expertise on cancer prevention and occupational health for firefighters. This position was supported by the Dana-Farber Cancer Institute with funds raised through Team Boston Fire's participation in the Pan Mass Challenge, and Last Call Foundation.

SEMINARS CO-SPONSORED WITH THE HARVARD ERC

The Center co-sponsored two seminars with the Harvard T.H. Chan School of Public Health Education and Research Center (ERC) during this reporting period.

- On November 15, 2021, Joseph Fuller, Professor of Management Practice, Harvard Business School; Co-Head, Managing the Future of Work Project; and Co-Head, Project on Workforce, presented on "The Post-Covid Workforce". Discussion topics included the changing dynamics of the workforce, implications for employers, and vehicles for addressing factors inhibiting workforce participation. Thirty-seven people attended via zoom.
- On April 4, 2022, NIOSH Director John Howard, MD, MPH, JD, LLM, MBA presented on "Cannabis and Work". Participants learned about industries where cannabis consumption is most prevalent; hazards to workers in the cannabis industry; the relationship between cannabis consumption and occupational injuries; and the ways to determine worker impairment. This was a hybrid event – some attendees were in person and others on zoom -- with 61 total participants.

CENTER SPONSORED WEBINAR

On May 3, 2022, Susan Carney Lynch presented on "Staffing in Long-term Care Facilities: A Critical Issue for Worker Health and Resident Care Quality Nationwide". This seminar focused on the current staffing crisis in our nation's nursing homes and its impact on worker health and resident quality of care and quality of life. The seminar will also address a number of proposed policy and practice recommendations designed to significantly improve working conditions for nursing home staff in the areas of training, wages, career ladders, and workplace safety. There were 581 people who registered for this event and 186 who participated.

CONFERENCE AND WEBINAR PRESENTATIONS

Sorensen G. (September 2022). The Future of Research on Work, Safety, Health, and Wellbeing. Workshop with FGV EAESP, Centro de Estudos, Em Planejamento, E Gestao de Saude, Brazil. (Remote)

Sabbath EL. (September 2022). A public health approach to workplace mental health. Nova Scotia First Responders Mental Health Conference, Halifax, Nova Scotia, Canada. (Remote)

Sabbath, EL. (2022, July). Strategies to support employee mental health. Business Research Intelligence Networks Employee Wellbeing Summer, Boston, MA.

Peters SE (July 2022). Thriving Workers, Thriving Workplaces. NIOSH Centers Meeting 2022 Early Career Scientist Quick-Take Session. (Remote)

Peters SE, Gundersen DA, Wagner GR (June 2022). Thriving from Work: The development of a novel measure of work-related well-being. Wellbeing at Work 2022 Conference. 6th International Conference on Wellbeing at Work. (Remote).

Peters SE (May 2022). Thriving from Work Questionnaire. Institute for Work and Health, Toronto. Ontario, Canada. (Remote; 41 attendees)

Dennerlein J. (May 2, 2022). Occupational Ergonomics: Assessing, Preventing and Compensating Work-related Musculoskeletal Disorders (WMSDs). 2022 American Occupational Health Conference: Shaping the Future of OEM, Salt Lake City, UT.

Dennerlein J. (March 23, 2022). Office Work: Input Devices Matter in Preventing MSD. Centre of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD). Waterloo, Ontario, Canada (Remote).

Dennerlein J. (March 2, 2022). *Total Worker Health®*: Why business leaders should care. Velocity EHS Seminar (Remote).

Peters SE (February 2022). Thriving from Work Questionnaire: Conceptualization and Development. 33rd International Congress on Occupational Health 2022 (ICOH 2022). (Remote)
Dennerlein J (December 2021). Improving COVID-19 Policies and Practices using *Total Worker Health®* approaches for essential workplaces: A Case Study in the Energy Supply Sector. Ex4OSH 2021 Expanding Occupational Safety and Health: An International Conference. (Remote)

Dennerlein J (December 2021). Integrated *Total Worker Health®* approach to improve workers' safety, health, and well-being in the transportation industry in Chile: The "Get on Board" Pilot Program. Ex4OSH 2021 Expanding Occupational Safety and Health: An International Conference. (Remote)

Peters SE, Gundersen DA, Wagner GR (December 2021). Thriving from Work Questionnaire: Conceptualization and Development. Ex4OSH 2021 Expanding Occupational Safety and Health: An International Conference. (Remote)

Dennerlein J. (November 10, 2021). Occupational Safety in Construction: The Association of Worker Safety Climate with Organizational Safety Management Systems and Safety Incentives Programs. Department of Environmental Health Seminar, University of Cincinnati, Cincinnati, OH.

Dennerlein J. (November 9, 2021). *Total Worker Health®* Approaches: Building Organizational Resilience During the Time of COVID-19. Education and Research Center Seminar, University of Cincinnati, Cincinnati, OH.

In December 2021, Ms. Lisa Burke and Ms. Lorraine Wallace represented the Center at the National Council for Occupational Safety and Health (National COSH) Conference on Worker Health and Safety, participating in virtual exhibitor sessions that allowed conference participants to hear about the Center's work, ask questions and share information about their work and priorities. More than 40 conference participants spent time speaking with us via zoom. The attendees were primarily workers, labor unions representatives, and researchers. We made available online several of our non-academic "Summary Sheets" based on recent publications using data from our projects in the Healthcare and Construction industries.

Many of the Center's researchers will be participating in the 3rd International Symposium to Advance *Total Worker Health* in October of 2022. Dr. Sabbath will be leading a discussion featuring Karina Nielsen, Leslie Hammer, and Chris Cunningham on *Work Organization as a Core Dimension of Total Worker Health: Toward an Expert Consensus*; Dr. Peters will be presenting *Development of the Thriving from Work Questionnaire: A Measure of Work-Related Well-being*; Dr. Dennerlein will be presenting *Mental Health of Construction Workers*; Drs. Sorensen, Dennerlein, Peters, and Lovejoy are featured in a keynote session discussion of *Approaches and Challenges to Improving Conditions of Work across Industries*; Drs. Sorensen, Peters and Pronk will join Arif Jetha of the Institute of Worker Health to present on *Protecting Workers in the Post-Pandemic World*; and Lisa Burke will join the Directors of Outreach from other *Total Worker Health* Centers as part of a panel discussion, *Accelerating Research to Practice: Connect with NIOSH Total Worker Health Centers*.

PUBLICATIONS

CENTER PUBLICATIONS

Peters SE, Dennerlein JT, Wagner GR, Sorensen G. Work and worker health in the post-pandemic world: A public health perspective. *Lancet Public Health* 2022; 7(2): e188-e194. [doi.org/10.1016/S2468-2667\(21\)00259-0](https://doi.org/10.1016/S2468-2667(21)00259-0)

Pronk NP. A Call to Action for Dissemination and Implementation: Response from the Workplace. *ACSM's Health & Fitness J* 2022; 26(1):55-58. [doi:10.5888/pcd15.180525](https://doi.org/10.5888/pcd15.180525)

Kelly KM, Newman LS, Cherniack M, Punnett L, Hammer LB, Sorensen G. Critical Points in Lemke's Total Worker Health Calculus. *J Occup Environ Med* 2021 Nov 1; 63(11): e821-e822. PMID: 34138825; PMCID: PMC8711778. [doi: 10.1097/JOM.0000000000002300](https://doi.org/10.1097/JOM.0000000000002300)

Spoonheim JB, Pronk NP. Improving Health and Well-being at Work: A case report from the field. *ACSM's Health & Fitness J* 2021; 25(5):71-73. [doi:10.1249/FIT.0000000000000698](https://doi.org/10.1249/FIT.0000000000000698)

Igoe KJ, Pronk NP, Dennerlein JT. Interview for Harvard School of Public Health. How COVID-19 has changed the standards of worker safety and health – and how organizations can adapt. [How COVID-19 Has Changed the Standards of Worker Safety and Health — and How Organizations Can Adapt 2021.](https://www.hsph.harvard.edu/news/insights/2021/04/21/how-covid-19-has-changed-the-standards-of-worker-safety-and-health/)

Lovejoy M, Kelly EL, Kubzansky LG, Berkman LF. Work Redesign for the 21st Century: Promising Strategies for Enhancing Worker Well-Being. *Am J Public Health* 2021; 111, 1787_1795. <https://doi.org/10.2105/AJPH.2021.306283>

Collins JE, Boden LI, Gundersen DA, Katz JN, Wagner GR, Sorensen G, Williams JAR. Workplace Integrated Safety and Health Program Uptake in Nursing Homes: Associations with Ownership. *Int J Environ Res Public Health* 2021; 18(21), 11313. doi.org/10.3390/ijerph182111313

PUBLICATIONS FROM AFFILIATED PROJECTS

Stelson EA, Sabbath-Clayton LL, Sorensen G, Kubzansky LD, Berkman LF, Sabbath EL. Residential addiction treatment providers: Identifying the role of social context in worker health and turnover. *Social Science & Medicine*, 2022; 314. doi.org/10.1016/j.socscimed.2022.115462

Stelson E, Sabbath-Clayton LL, Sorensen G, Sabbath EL. (2022). Working conditions, worker health and wellbeing, and turnover of residential addiction treatment providers in Massachusetts. Harvard T.H. Chan School of Public Health Center for Work, Health, & Well-being. Retrieved from https://centerforworkhealth.sph.harvard.edu/sites/default/files/SUP_wellbeing_study_report.pdf.

Roodbari H, Nielsen K, Axtell C, Peters S, Sorensen G. Testing Middle Range Theories in Realist Evaluation: A Case of an Organisational Intervention. *Int J Workplace Health Manag* 2022 Jul 19; doi.org/10.1108/IJWHM-12-2021-0219

Halvorsen CJ, Werner K, McColloch E, Yulikova O. How the Senior Community Service Employment Program Influences Participant Well-Being: A Participatory Research Approach with Program Recommendations. *Research on Aging*. June 2022. [doi:10.1177/01640275221098613](https://doi.org/10.1177/01640275221098613)

Dennerlein JT, Eyllon M, Garverich S, Weinstein D, Manjourides J, Vallas SP, Lincoln AK. J Occup Environ. Associations Between Work-Related Factors and Psychological Distress Among Construction Workers. Med 2021 Dec 1; 63(12):1052-7. [doi: 10.1097/JOM.0000000000002311](https://doi.org/10.1097/JOM.0000000000002311)

Roodbari H, Nielsen K, Axtell C, Peters SE, Sorensen G. Developing initial middle range theories in realist evaluation: a case of an organizational intervention. Int J Environ Res Public Health 2021; 18(16): 8360. [doi: 10.3390/ijerph18168360](https://doi.org/10.3390/ijerph18168360)

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