



Total Worker Health in Action!

Advancing worker safety, health, and well-being

Volume 6 Number 3 September 2017

Managers' Buzz

Anita L. Schill, PhD, MA, MPH, and L. Casey Chosewood, MD, MPH



With planning for the upcoming 2nd International Symposium to Advance *Total Worker Health*[®] well underway, the NIOSH *Total Worker Health* (TWH) program is pleased to invite you to submit an abstract centered on this year's theme of Work & Well-Being: How Safer, Healthier Work Can Enhance Well-Being. We look forward to

bringing together researchers and practitioners from around the world, all committed to advancing worker safety, health, and well-being. This is an exciting opportunity to learn about best and promising practices in the TWH field and to identify future directions for research. Find out how to submit your abstract and how to access the official TWH Symposium website in [Updates from the Office for TWH](#).

The Total Worker Health program continues to examine the close relationship between work and health. In this issue's [TWH Exclusive](#), we're excited to share an interview with documentary filmmakers from the upcoming film *Working on Empty*. This editorial feature explores why Executive Producer Dr. Peter Schnall and Associate Producer for Research Dr. Marnie Dobson Zimmerman are creating the film and shares the impact they hope it will have on revealing the links between work and chronic disease.

Don't miss out on our upcoming NIOSH TWH Webinar in partnership with NIOSH's National Center for Productive Aging and Work. Join us September 28 from 1:00 to 2:30 pm Eastern as we explore Interventions and Promising Practices in the Aging Workplace. Learn how to register in [Updates from the Office for TWH](#).

We invite you to stay up-to-date on the latest Total Worker Health news, research, events, and more by joining the conversation on Twitter ([@NIOSH_TWH](#)), on the [NIOSH Total Worker Health LinkedIn Group](#), or by email at twh@cdc.gov.

Total Worker Health Exclusive

***Working on Empty* Documentary Feature**

TOTAL WORKER HEALTH[®]

In this issue:

- [Managers' Buzz](#)
- [Total Worker Health Exclusive](#)
- [Updates from the NIOSH Office for Total Worker Health](#)
- [Updates from the NIOSH National Center for Productive Aging and Work](#)
- [Spotlight on NIOSH Fundamentals of Total Worker Health Approaches](#)
- [Updates from the NIOSH Centers of Excellence for Total Worker Health](#)
- [News from NIOSH TWH Affiliates and Partners](#)
- [New Publications and Resources](#)
- [Conferences, Webinars, and Trainings](#)

Chia-Chia Chang, MBA, Partnership Development Lead, NIOSH Office for Total Worker Health

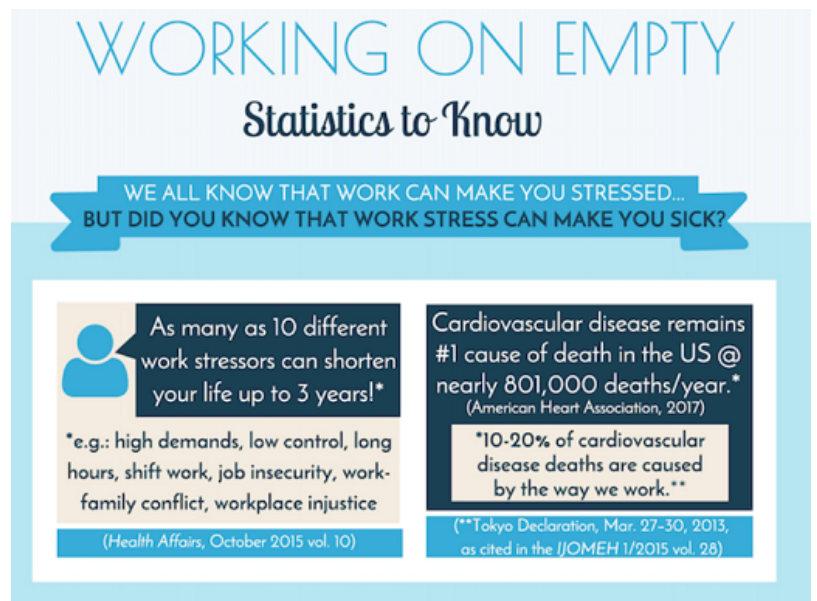
At the 2nd International Symposium to Advance Total Worker Health, we are excited to have the opportunity to show a preview of the upcoming feature-length documentary film, *Working on Empty*. The film is part of [Working on Empty](#) (WOE), “a transmedia project on declining American worker health, poor work-life culture, and the laws, policies, and workplace practices that perpetuate these conditions.” To learn more about this film which is in the early stages of production we interviewed Executive Producer Peter Schnall, MD, MPH, and Associate Producer of Research, Marnie Dobson, PhD. Dr. Schnall is also Director of the Center for Social Epidemiology and Clinical Professor of Medicine at the University of California at Irvine, Center for Occupational and Environmental Medicine; Dr. Dobson is Associate Director of the Center for Social Epidemiology.

Why did you decide to create *Working on Empty*?

Many people have been researching the impact of work on health for decades. A substantial body of literature shows that working conditions impact the mental and physical well-being of workers. Work plays a major role in burnout, depression, anxiety, high blood pressure and cardiovascular disease.

We believe that the public, in general, doesn’t understand well the relationship between work and health. There is a belief that stress is good because it helps you work harder and be more productive. However, if we are chronically stressed from work—e.g. because of feeling threatened by job insecurity, being unclear about the criteria for performance evaluations, not having enough control at work, etc. —it leads to hypertension, cardiovascular disease, and other illnesses.

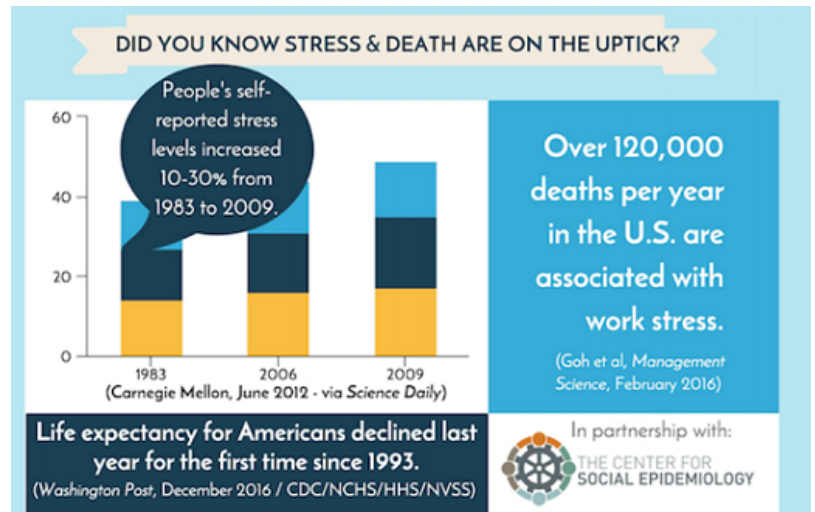
One intent in making the film is to point out that stress related to work and poor working conditions is not inevitable. The poor health outcomes that we just described are partly the consequence of the way work is organized. They are preventable, and we need to do something to prevent them. Companies feel a constant pressure to increase productivity, some by going “lean” and, as a result, people are working harder and longer. We believe that many businesses don’t understand the consequences when they increase work demands. It results in worse health and more disability claims, absenteeism, sick days, and presenteeism. Productivity goes down when work hours exceed 40 hours per week. If companies knew more about these costs, they could rethink how they manage work, avoid situations with excessive demands, and increase engagement.



What are your next steps in making the film?

We're telling the story through the voice of working people to illustrate what work life is really like in the U.S. We're looking for a director and are doing this in phases. We want to interview working people across a range of occupations and industries. We encourage people to get in touch with us if they're willing to talk about a job where they've experienced stressful work. We would like to bring their stories to the screen so that audiences can relate and see themselves more clearly through others' experiences.

We also would like to bring in experts and labor representatives, where appropriate, to explain what working people are seeing and translate what these stressors and risks are to make them more understandable. And we want to bring in business leaders who are making positive change in their workplaces to talk about what they're doing and why they're doing it. We would like to provide positive alternatives so the audience can see not just the problem, but solutions. We would love for heads of companies to come and tell us about their efforts to make a healthy workplace that encourages positive participation by workers.



How do you think a full-length documentary film format can be helpful in showing the impact of work on worker safety and health?

We need to reach a more general audience and increase understanding of why work is contributing to health problems. Documentary films can help people understand social issues that they may want to champion. Translation of research into social and public policy is a long-term process. That is why we have a package—a book, a blog, tools (to guide workplace changes), and other written materials in addition to the film—to make the information more understandable. It's a challenge to explain complex ideas in everyday language and in ways that are entertaining and interesting. We're working hard to find people to help us translate our findings and ideas about work into accessible materials.

What would you like people to do after they see the film?

We want people to understand that they can have a role in making work healthier. We would like to make it clear to everyone that unhealthy working conditions are counterproductive and result in more negative consequences than positive ones. Work doesn't have to be organized that way. Also we find that frequently people are afraid to speak up, for fear of losing their jobs. One aim of our film is to highlight stories of working people taking action collectively. The film can let them know that they're not alone and that they can work together to try to make changes.


We urge people to look at our website and the *Agenda for Healthy Work in America* (<http://workingonempty.org/>) which has goals and action items that can be adopted to help create a "healthy" workplace. We can change the culture of work and working conditions.

Once the documentary is completed, are there future projects and follow-ups in the works?

The film is part of a package including a blog, Facebook page, the Healthy Work Agenda, and tools to help guide building a healthy workplace. We hope to promote healthy work as a campaign in the U.S. We believe that many people are interested in this change. We hope to stimulate involvement and are delighted to attend the TWH conference to share

our ideas.

Overall, some parts of the effort to promote healthy work are still underdeveloped. There's no easy to use tool, as yet to assess healthy work; there is limited national data on how occupations and companies are doing. If we're going to really change the nature and culture of work in the U.S., we need to know who is doing a good job so we can show others how to do it too.

Editors' Note: To view the extended preview of the Working on Empty documentary, join the Office for Total Worker Health at the 2nd International Symposium to Advance Total Worker Health May 8–11, 2018. To learn more about the documentary and contact the filmmakers, please visit the [Working on Empty website](#) .

[Top of Page](#)


Updates from the NIOSH Office for Total Worker Health



Abstract Submission Now Open for 2nd International Symposium to Advance *Total Worker Health*[®]

The 2nd International Symposium to Advance Total Worker Health is scheduled for May 8–11, 2018, at the NIH campuses in Bethesda, MD. Abstract submission will open soon and remain open until October 31, 2017. To submit your abstract and learn more about the symposium, please visit the official website of the NIOSH TWH symposium, www.twhsymposium.org. Additional information can also be found [here](#).

NIOSH TWH Webinar: Interventions and Promising Practices in the Aging Workplace

Join the NIOSH TWH Webinar Series on Thursday, September 28, from 1:00 to 2:30 pm Eastern time for a webinar co-sponsored with the National Center for Productive Aging and Work. Drs. Donald Truxillo, Alyssa McGonagle, and Ruth Finkelstein will present on three perspectives for interventions to address the challenges and opportunities posed by an aging workforce. [Register and join us](#) ! Free Continuing Education credits are pending for this activity.



[Top of Page](#)

Updates from the NIOSH National Center for Productive Aging and Work (NCPAW)

NCPAW invites you to view its [Program Performance One Pager](#) (PPOP). The updated PPOP provides a snapshot of the center's priorities, accomplishments, and future activities. PPOPs explain the relevance and impact of NIOSH programs in a short, easy-to-understand question format:

What are our priorities? (Outlines the occupational safety and health priority areas and partners)

What do we do? (Describes major activities in these priority areas)

What have we accomplished? (Highlights the program's accomplishments in the past year)

What's next? (Notes plans for the upcoming year)

Learn more about recent accomplishments of NCPAW and other NIOSH programs, including [TWH](#), on the [PPOP homepage](#).

[Top of Page](#)

Spotlight on NIOSH Fundamentals of Total Worker Health Approaches

Editors' note: In this and several upcoming editions of TWH in Action!, we will take a closer look at the fundamental elements of the TWH approach. Today we look at...

Defining Element 2: Eliminate or Reduce Safety and Health Hazards and Promote Worker Well-being

A hazard-free work environment is a Defining Element of *Total Worker Health*[®]. This element places emphasis on hazard-prevention and healthier job design. It prioritizes efforts to prevent injury and illness from the work while improving work environment to advance health and well-being.

Programs aligned with a TWH approach rarely, if ever, begin with health education interventions. They all begin by first addressing harmful working conditions, redesigning the work environment, and organizing work to safeguard and improve health. For example, if an organization wanted to use TWH strategies to address the needs of manufacturing workers with arthritis, they would first work to evaluate job tasks and eliminate hazards and risks for injury. They would organize work so that there is job rotation and flexibility to take breaks when needed. Next, they might provide ergonomic consultations to ensure that the work tools and equipment are optimized and provide training so that work requirements do not worsen MSD risks or arthritis symptoms. Lastly, the employer could offer arthritis self-management strategies, like muscle strengthening programs, weight loss, or education on how to manage and cope with arthritis pain.



To learn more about the role of preventing harmful working conditions by using Total Worker Health approaches, visit the [Fundamentals of TWH Approaches webpage](#).

[Top of Page](#)

Updates from the NIOSH Centers of Excellence for Total Worker Health

[Harvard T.H. Chan School of Public Health Center for Work, Health, and Well-Being](#)

The Harvard Center is launching an implementation and resource guide, *Implementing an Integrated Approach: Weaving Worker Health, Safety, and Well-being into the Fabric of Your Organization*. This guide includes tools and real-world examples to create and maintain supportive working conditions to improve employee safety, health, and well-being. The guide enlists common management systems and processes to help organizations accomplish the following:

- motivate key worksite stakeholders to support and participate in an integrated approach;
- target efforts on working conditions related to organizational goals and objectives;
- plan and implement policies and practices that create and sustain positive working conditions; and
- evaluate and improve efforts to enhance worker safety, health, and well-being.

The implementation guide and its accompanying tools & resources will be accessible through the Harvard Center website: <http://centerforworkhealth.sph.harvard.edu/>.

The center has received funding for a two-year research project using integrated approaches to develop and pilot-test an intervention program for professional drivers within a large national transportation company in Chile. Working collaboratively with Mutual de Seguridad, a Chilean company promoting safety and health both at work and in the community, and a long-distance transportation company in Chile, the center's team will assess relationships between specific conditions of work and the safety and health of drivers and crews. The team will then co-develop and implement an intervention targeting the conditions of work identified as priorities by workers and management.

[Oregon Healthy Workforce Center \(OHWC\)](#)

Summer internship season at OHWC recently concluded. In this round, seven interns focused on research and outreach-dissemination projects in conjunction with center leadership, including the recently hired Dissemination Liaison, Helen Schuckers. The addition of a dissemination intern position underscores OHWC's goal to move the outcomes of center intervention research into practice. Learn more about their projects [here](#).

Donald Truxillo, Ph.D., Professor, Industrial/Organizational Psychology at Portland State University, will be a speaker at NIOSH's *Total Worker Health*[®] webinar, *Interventions and Promising Practices in the Aging Workplace*, on September 28. [Register here](#).

With a number of regional and national events in the coming months, the fall will be a busy time at the center. OHWC is excitedly preparing for the fall 2017 symposium, *Navigating Mental Health in the Workplace*, with keynote speaker Nancy Spangler, PhD from the Partnership for Workplace Mental Health. She will be joined by Alisha Moreland, MD from

Oregon Health & Science University), Gina Nikkel, PhD from the Foundation for Excellence in Mental Health Care), and Jennifer Dimoff, PhD from Portland State University). The event is scheduled for November 30 in Portland.

Learn more about OHWC by viewing its [YouTube channel](#); visiting the blog, [Oregon and the Workplace](#); accessing materials in the [Toolkit Kiosk](#) and [Resource Directory](#); and getting updates via [Twitter](#).

[University of Colorado, CU Anschutz Center for Health, Work, & Environment \(CHWE\)](#)

The Center is currently recruiting for the [Small+Safe+Well \(SSWell\) Study](#) to examine what small organizations are doing to support the health, safety, and well-being of their workforce, the impact on health outcomes, and how employees perceive their workplace health and safety culture. The goal of this project is to advance the field of TWH by understanding whether changes to organizational culture impact employee health and safety outcomes. This fall, CHWE will pilot a new **Total Worker Health® Leadership Training** course for decision makers in small businesses.

The Center and NIOSH are co-hosting the 2017 International Understanding Small Enterprises (USE) Conference October 25-27th in downtown Denver. This event will bring together small businesses, researchers, students, and public health professionals from around the globe to understand the unique needs of small businesses and share strategies for cultivating healthy work environments. The conference will feature presentations on the latest research in workplace health and safety, networking opportunities, and in-depth trainings on a broad range of safety and well-being topics. Registration is available [here](#).

[University of Illinois-Chicago \(UIC\) Center for Healthy Work](#)

The UIC Center for Healthy Work has officially launched its website! Be one of the first to view it by visiting <http://publichealth.uic.edu/healthywork>. You'll find more information about research and outreach projects. The *Resources* page provides a comprehensive list of sources related to precarious work. Sources include publications, stories and articles, policy initiatives, trainings, data sources, and advocacy information.

Members of the UIC Center for Healthy Work will participate in *Public Health: Stronger Together*, the upcoming Illinois Public Health Association annual conference. Session presentations will include "Work as a Social Determinant of Health: The Role of Public Health in Creating Healthy Work Opportunities for Our Communities" and "Changing the Narrative: Recognizing Our Responsibility in Challenging the Structural Determinants of Health." During the sessions, the UIC Center for Healthy Work will share its findings on how public health and other sectors define and describe the relationship between work and health.

[University of Iowa Healthier Workforce Center of the Midwest \(HWCMW\)](#)

The University of Iowa HWCMW has been working with its partner, the [Nebraska Safety Council](#) (a NIOSH TWH Affiliate) and the NSC's [WorkWell](#) division, to educate Nebraska employers on the value of Total Worker Health strategies. Recently, the HWCMW attended a WorkWell Leading Wellness 101 training and visited award-winning worksites in Lincoln, Nebraska. WorkWell and HWCMW are working together to incorporate TWH concepts into health and safety training materials and to develop a new level for the [Governor's Wellness Award](#) that includes TWH initiatives. "The Total Worker Health program is a great framework for hardwiring wellness and safety into a business culture," says WorkWell director Lisa Henning. "When organizations look at their people and operations from this perspective, their company grows exponentially."

HWCMW will co-host the [Hawkeye on Safety](#) conference in Cedar Rapids, Iowa, on September 20. In addition, members of the HWCMW will be participating in Thursday's Small Business Panel and presenting "Discovery and Dissemination of *Total Worker Health*[®] Practices among Midwest Small Employers" at [USE 2017](#) in Denver, Colorado (October 25–27). Kevin Kelly, Shelly Campo, and Diane Rohlman will present "*Total Worker Health*[®]: Occupational Safety and Health Policy in a Post-Industrial Economy" at the annual meeting of the [American Anthropological Association](#) in Washington, D.C. (November 29–December 3).

Stay connected to HWCMW on [Twitter](#), [YouTube](#), and [Facebook](#) or subscribe to the monthly [e-bulletin](#).

[Top of Page](#)

News from our NIOSH TWH Affiliates and Partners

NIOSH Welcomes a New TWH Affiliate: [Association of Occupational Health Professionals in Healthcare \(AOHP\)](#)

The Association of Occupational Health Professionals in Healthcare describes itself as "the only national association dedicated to the health, safety, and well-being of healthcare workers". They believe that occupational health professionals have a responsibility to advocate for all aspects of an employee's health, including organizational policies that help to recognize occupational hazards and advocate for new, safer technologies to mitigate these hazards. As a new NIOSH TWH Affiliate, AOHP will disseminate TWH materials and resources to its membership, share best practices, and collaborate with NIOSH on topics of mutual interest related to healthcare health and safety.

Ohio Bureau of Workers' Compensation

NIOSH TWH Affiliate

The Ohio Bureau of Workers' Compensation (BWC) is developing a new program to benefit Ohio's workforce. The primary objective is to use TWH concepts to prevent occupational injuries and improve the health of workers at small companies (with 50 or fewer workers) in high-hazard industries. Additionally, the program will benefit injured workers that meet certain criteria related to injury diagnoses, occupation, comorbid conditions, and time away from work, among others. Initially, the program will target Ohio workers in the following industries: agriculture, automotive repair and service, construction, firefighting, health care and social assistance, manufacturing, police and public safety, public employers, restaurant and food service, transportation and trucking, trash collection, and wholesale and retail.

SAIF Corporation

NIOSH TWH Affiliate


SAIF in Oregon has partnered with Health Links, housed at the Center for Health, Work & Environment at the University of Colorado, and KrowdFit, an incentivized wellness promotion program, to conduct a pilot study in Oregon workplaces. This pilot is about discovering the most effective means of engaging employers in applying TWH principles. The pilot will pair two tools—an environmental assessment tool and an individual engagement tool—to learn what combination most


influences businesses to change environments, policies, and culture. SAIF has begun recruiting businesses for participation, and the study is expected to take eight to 12 months. For additional information, please contact Sabrina Freewynn, SAIF's *Total Worker Health*[®] consultant, at sabfre@saif.com.


[Top of Page](#)



New Publications and Resources


Six New Publications from Centers of Excellence for Total Worker Health

[Assessment of ambient exposures firefighters encounter while at the fire station: An exploratory study.](#)  Researchers at the Harvard T.H. Chan School of Public Health Center for Work, Health, and Well-Being studied air quality within a few fire stations in and around Boston, Massachusetts, and physical and organizational factors that may influence levels of contaminants in stations in relation to increased potential for cancer risk.

[Associations between trunk flexion and physical activity of patient care workers for a single shift: A pilot study](#) . Researchers at the Harvard Center for Work, Health, and Well-Being explored the relationship between trunk flexion and physical activity at work among patient care workers during a single shift. In this study, occupational physical activity and trunk flexion were measured during a work shift among patient care workers from two hospitals. Results suggest that within the context of the patient care worker, the physical demands of the job while perceived to be moderate to high in terms of the exposure to trunk flexion, are actually of low intensity physical activity levels.

[Impact of occupational injuries on non-workers' compensation medical costs of patient-care workers.](#)  Harvard Center researchers assessed data on OSHA reportable workplace injuries for patient care workers over a three-year period. Results show that injury was associated with increased odds of positive expenditures and increased expenditures paid for by group health insurance.

[Lifting and exertion injuries decrease after implementation of an integrated hospital-wide safe patient handling and mobilisation programme.](#)   Harvard Center researchers evaluated a program for safe handling and mobilization of patients. Results indicate that implementing such a program as part of a patient mobilization initiative is associated with reductions in recordable worker injury and increases in improved work practices.


[Nurses' but not supervisors' safety practices are linked with job satisfaction](#)  [online ahead of print]. Researchers at the Harvard Center gathered responses from nurses and their unit supervisors in 94 nursing units across two Boston, Massachusetts, area hospitals. Units with favorable safety practices identified by front-line nurses were associated with greater job satisfaction than were units with favorable practices identified by unit supervisors. This study suggests that nursing supervisors should align safety assessments with the help of front-line nursing staff to identify safety practices for improved job satisfaction.

[Predictors of low back pain in nursing home workers after implementation of a safe resident handling programme](#)

Researchers at CPH-NEW examined the impact on low-back pain of a program for safe handling of residents. In this study, use of a resident lifting device predicted reduced low-back pain in nursing home workers. Other physical and psychosocial demands of nursing home work also contributed to low-back pain, whereas frequent intense aerobic exercise appeared to reduce risk of low-back pain.

Recent CPH-NEW News and Views: Emerging Topics Briefs


[Issue #52](#) : A Nationally-Representative Employer Survey on Total Worker Health


[Issue #53](#) : Work Organization and the Health of Human Service Workers: The Impact of Managerialism

[Top of Page](#)


Conferences, Webinars, and Training


September

12th to 14th—Glorian Sorensen, of the Harvard T.H. Chan School of Public Health Center for Work, Health, and Well-being, was recognized with the HERO Workplace Health and Well-Being Mark Dundon Research Award at the [HEROForum17 on Engagement and the Emerging Workforce](#) , in Phoenix, Arizona. Abigail Katz of the Harvard Center gave a presentation entitled “Exploring the Association Between Organizational Safety and Health Climates and Two Productivity Measures.”


28th—In the second annual installment of the Productive Aging and Work series, the NIOSH TWH Webinar Series will present *Interventions and Promising Practices in the Aging Workplace*, a webinar co-sponsored by the National Center for Productive Aging and Work. [Register now](#)  and join from 1:00 to 2:30 pm Eastern time. Free Continuing Education credits are pending for this activity.

October

2nd—Dr. Chosewood will present two workshops at the Fall meeting of the [Employee Assistance Roundtable](#)  (EAR) in Los Angeles, California. Workshop topics include: *Total Worker Health*[®] 101: The Essential Guide for Improving Worker Safety, Health and Well-being; and The New Way We Work: Can We Survive and Thrive in the Modern Economy.

4th—Dr. Chosewood will give an overview of the Total Worker Health program to the faculty, staff and community partners of the University of California-Irvine’s [Center for Occupational and Environmental Health](#) . The lecture will close out a workshop exploring regional opportunities for the promotion of healthy work.

4th to 6th—Jennifer Cavallari, ScD, Assistant Professor, Community Medicine and Healthcare at UConn Health Center, will present a keynote address, “Designing Workplaces for Worker Wellbeing through Total Worker Health” at the annual meeting of the New England Association of Occupational Health Nurses Conference, in Norwich, Connecticut.

13th—CPH-NEW Investigator Alicia Kurowski, ScD, will present “Introducing Total Worker Health in Your Workplace” at the [Vermont Safety and Health Council Annual Expo](#) , in Burlington, Vermont.

25th to 27th—The [Understanding Small Enterprises \(USE\) Conference](#) will take place in Denver, Colorado. Dr. Glorian Sorensen will deliver the keynote address, “Pathways to Implementing Total Worker Health: Implications for Small Enterprises.”

31st—Abstract submission for the 2018 2nd International Symposium to Advance Total Worker Health closes at 11:59:59 pm Pacific daylight time. [Submit your abstract](#) and join other TWH researchers and practitioners interested in advancing worker safety, health, and well-being.



November

30th—The Oregon Healthy Workforce Center will host its fall 2017 symposium, *Navigating Mental Health in the Workplace*, in Portland, Oregon. [Registration](#) is now open.

SAVE THE DATE May 8-11, 2018—The 2nd [International Symposium to Advance Total Worker Health®](#) returns to the campus of the National Institutes of Health, in Bethesda, Maryland. This is the only NIOSH-sponsored conference dedicated solely to advancing Total Worker Health research and practice. Abstract submission is now open. Esteemed presenters from nonprofit, government, private, and academic institutions will share their perspectives and research findings on Total Worker Health. The hands-on, practical symposium will also offer how-to workshops and provide the latest updates on new tools and interventions, and share innovative programs employers can put in place right away.

[Top of Page](#)

Contributors

Editorial Board

L. Casey Chosewood, MD, MPH, Executive Editor

Anita L. Schill, PhD, MA, MPH, Executive Editor

CDR Heidi Hudson, MPH, Editor-in-Chief

Reid Richards, Managing Editor

Seleen Collins, Copy Editor

Margaret Bertsch, NIOSH Web Editor

Steve Leonard, NIOSH Web Publisher

Please send your comments and suggestions to us at twh@cdc.gov.

[Top of Page](#)

This newsletter is published quarterly via email by the National Institute for Occupational Safety and Health Total Worker Health® Program to inform members of the public health community as well as interested members of the general public of program-related news, new publications, and updates on existing activities and initiatives.

Page last reviewed: September 22, 2017

Content source: [National Institute for Occupational Safety and Health](#) , Total Worker Health® is a registered trademark of the U.S. Department of Health and Human Services.