

## **Annual Report 2024**

Psychosocial Organizational Environmental **Johns Hopkins POE**Total Worker Health
Center in Mental Health





# **Annual Report 2024**

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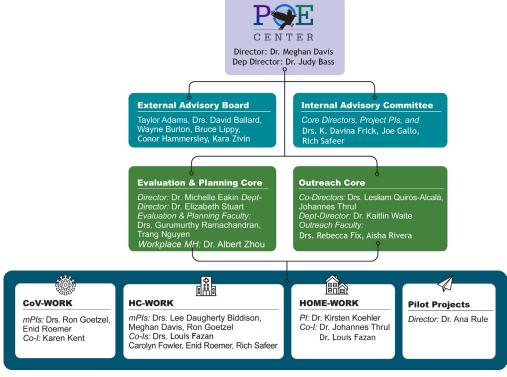
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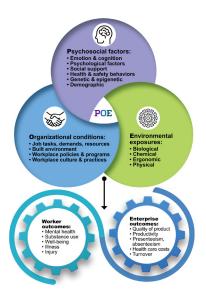


#### **About the POE Center**

The major goal of the Johns Hopkins P.O.E. Total Worker Health® Center in Mental Health (POE Center) is to promote worker mental health and well-being. To achieve this, the POE Center leverages its partnership with the Johns Hopkins Education and Research Center (JH ERC) and collaboration with the Northeast Center for Occupational Health and Safety, among other Centers, and has convened experts across three departments in the Johns Hopkins Bloomberg School of Public Health (Environmental Health & Engineering; Health, Behavior & Society; and Mental Health), Johns Hopkins Medicine, the Johns Hopkins School of Nursing, and the Johns Hopkins Carey School of business. These experts, reflectingmultiple dimensions of Total Worker Health®, mental health and substance use disorder, occupational safety and health, business, healthcare, and vulnerable populations, perform the research, education, outreach and evaluation activities that integrate the psychosocial (P), organizational (O), and environmental (E) contexts of worker health and well-being. Given the rapid evolution of who works, how they work, and where they work—changes that have accelerated given employer and governmental response to the COVID-19 pandemic—there is a need to identify and empower resilient systems for health

protection and health promotion to maintain workforce functions, health, and well-being before, during and after crises, work the POE Center addresses through research, education, evaluation, communication and dissemination activities.





#### What is P-O-E?

The acronym for the POE Center stands for (P) psychosocial factors, (O) organizational conditions, and (E) environmental exposures and is a nod to Baltimore-born Edgar Allan Poe, who penned the famous poem, "The Raven," and is buried in Baltimore, Maryland. The POE Center uses holistic approaches to understand how these psychosocial, organizational and environmental factors independently and jointly contribute to individual worker health and safety, as well as enterprise outcomes.



# Occupational Impacts from Emerging Infections: H5N1 Avian Influenza and Wellbeing in the Ag Workforce

#### A few thoughts from POE Center Director Meghan Davis, DVM MPH PhD

Over a decade ago, I would have felt more at home in coveralls and boots on a dairy farm than what I wear to work in urban Baltimore as the director of the POE Center. But even in my second life in academic research and practice, I still don Tyvek, pull on gloves, and get out into the field sometimes. One summer, I pulled on Tyvek to evaluate occupational health exposures to infectious diseases in a hog barn. Barely ten minutes later, as sweat ran down the back of my leg into my rubber boots, making a squelching sound as I walked, I was struck by the trade off—do our agricultural workers risk heat stress in order to protect themselves from occupational hazards?

It seems a ridiculous trade off, but it's one our agricultural workers face routinely. This past year, as my unusual background as a former dairy veterinarian collided with my current roles in occupational health and spillover prevention, detection and response, I found myself on the front lines of the conversation about how to respond to H5N1 avian influenza. Also known as 'bird flu," one particular genotype of a clade of this virus—a clade that has been making the rounds in poultry production in the United States since 2022—spilled over into dairy cows and set off a shock wave in the dairy industry, infectious disease researchers, and public health responders. Sure—cows can get influenza, but it's not common and before this event, it almost never had been Influenza A, one of the major types that can infect both animals and humans.

Infect humans it did. As I write this, almost 60 people in the U.S.—most of them dairy or poultry workers—are known to have been infected with H5N1, and it's likely that many more have been infected without being diagnosed. Because H5N1 is the kind of virus that can cause pandemics, using PPE to prevent infections ought to be an easy recommendation. But it isn't. One particular cluster of infected workers was tied to work on an infected layer facility in Colorado in 104°F heat. What happens when you need to exit the facility every hour or two—if not more frequently—take off all your PPE carefully to avoid exposure, make sure you clean up, and only then can you get a drink of water?

The POE Center was founded on a commitment to frontline workers—agricultural workers, first responders including police and firefighters, healthcare workers, and other essential workers—those who stock shelves and serve food. These were the workers who had to show up during the COVID-19 pandemic because what they do is critical for the function of society and the economy. These also are the workers who face high rates of burnout and mental health challenges.



"Not only do we owe these at-risk workers better protection, but we also must do a much better job — immediately — of monitoring and testing them to ensure the virus doesn't spread beyond our control."

- Drs. Erin M. Sorrell, Monica Schoch-Spana and Meghan F. Davis, from "Workers at the Front Lines of Bird Flu," a guest essay for the New York Times, May 1, 2024



"Farmworkers and producers face mental health challenges related to burnout, the burden of testing and response requirements, and the stress of depopulation."

- Dr. Meghan F. Davis, from Potential Research Priorities to Inform U.S. Readiness and Response to Avian Influenza A (H5N1): Proceedings of a Workshop—in Brief, National Academies of Sciences, Engineering and Medicine (2024)



One of the reasons I was called to occupational health and Total Worker Health was that I saw these challenges every day in my first life as a veterinarian in rural practice. This can be tough, lonely work for farmers and veterinarians—because I sometimes spent hours with farmers and farmworkers as I did herd check, a surgery or a dystocia, I got to know their struggles in a way that helped me understand the barriers dairy and other farmers face to seek help—too busy, too hard to access a professional who understands what farming life is like. Too much stigma. These are the same ones veterinarians face. These are among the same ones that many of our frontline workers note as challenges too.

For dairy farmers and the often migrant or immigrant workers employed by them, H5N1 avian influenza now is part of the mix of occupational hazards, and addressing it also comes with unexpected job tasks (try drenching hundreds of cows in the autumn heat of California to keep them rehydrated—and alive—in the face of an unexpected H5N1 outbreak). The economic impact may not be known for some time, despite the USDA indemnification programs for milk and cow losses. Job security for the workers is another concern. Add to this concern for infection and the difficulty to use PPE in these settings, and the stressors can pile on. Right now, H5N1 is a virus that is of high concern, but has not yet tipped over into what we experienced with the COVID-19 pandemic because it hasn't yet established human-to-human transmission, and only periodically causes more severe cases. Should either of these change (and influenza viruses have an annoying tendency to change), the threat to the industries affected will be significant.

What we need for all our frontline workers is to strengthen engagement and bi-directional channels of communication, pay attention to innovation (could we re-design PPE to be more comfortable for everyone?), and invest in their health and well-being. Whether our workers are responding to an emerging infectious disease or not, they are foundational to the function of our food systems, healthcare systems, and beyond. Robust connections among the NIOSH Centers aid to deliver balanced information, expertise and support for these important workers.











Panel Speakers Gregory Gray, MD MPH FIDSA - U. Texas Medical Branch Meghan F. Davis, DVM MPH PhD - Johns Hopkins Christopher D. Heaney, PhD MS - Johns Hopkins





The POE Center is pleased to continue its support and partner-ship with The Luv u Project for the Carolyn C. Mattingly Award for Mental Health in the Workplace.

In the inaugural year of the award in 2022, 3 winners and 3 honorable mentions were recognized. In 2023 there were 2 winners and 4 honorable mentions. The Luv u Project announced the 2024 winners in October 2024. The winners were Franklin County Cooperative of forty government agencies in Ohio, and Shell, an international corporation with a Global Mental Wellbeing Program. In addition, Careforth and Higginbotham received honorable mention recognition. Awards were presented at "An Evening of Luv" on Thursday, November 21, 2024 in Bethesda, Maryland.

Franklin County Cooperative award (left to right) - David Ballard<sup>1</sup>, Ron Goetzel<sup>1</sup>, Jodi Leis<sup>4</sup>, Enid Roemer<sup>1</sup>, Kimberly Jinnett<sup>1</sup>, Rich Mattingly<sup>3</sup>

<sup>1</sup>Award Committee Member <sup>2</sup>Shell <sup>3</sup>Luv u President and Founder <sup>4</sup>Franklin County Cooperative Shell award (left to right) -David Ballard<sup>1</sup>, Ron Goetzel<sup>1</sup>, Krystal Sexton<sup>2</sup>, Enid Roemer<sup>1</sup>, Kimberly Jinnett<sup>1</sup>, Rich Mattingly<sup>3</sup>







## **Center Activities: Spring Seminars**

1/31/24 - Panel discussion on pandemic learnings, with Delta Omega Alpha Chapter in honor of the Centennial of the Public Health Honor Society

3/28/24 - Zach Taylor & Emily Williams - South Carolina Migrant Education Program, Annual Panel for National Farmworker's Awareness Week

4/8/24 - W. Courtland Robinson, PhD- Forced Labor

5/6/24 - Zhiqing (Albert) Zhou, PhD- Workplace Mental Health

\*\* CE provided for these seminars





## **Center Research-in-Progress Presentations**

3/4/24 - Meghan Davis - Psychosocial, Organizational, and Environmental Stressors for Health Care Workers

4/1/24 - Masoumeh Aminesmaeili - Maryland Opioid Overdose Deaths from 2018 to 2022: Occupational Pattern and its Sociodemographic Variations

5/6/24 - Kaitlin Waite - Preliminary findings from CoVET 2.0; a qualitative study identifying risk factors for mental health concerns among veterinarians and animal care workers during the COVID-19 pandemic and beyond

10/14/24 - Ana Rule & Kirsten Koehler - Environmental Monitoring

11/4/24 - Johannes Thrul - Ecological Momentary Assessment

12/2/24 - Lourdes Perez - Psychosocial Stressors for Latino/a Farmworkers



#### **Curricular Activities**

For academic year 2023-24, the POE Center launched a new 3-credit online course, earning "Excellence in Teaching" recognition, Total Worker Health, that is open to both degree-seeking and external students. The latter includes professionals in the workforce who are interested to grow their knowledge and skills in Total Worker Health®. This continues as an eight-week course (full term) offered in the fourth term of the Johns Hopkins Bloomberg School of Public Health under the direction of Dr. Meghan Davis and involving numerous key faculty in the POE Center and beyond. This is a core course in the Occupational Health Psychology PhD program and will be central to our planned certificate for Total Worker Health in Mental Health, which currently is under review.

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#### Total Worker Health

"Traditional occupational safety and health programs focus on protection of workers from harm, whereas Total Worker Health® offers a holistic approach to promote worker well-being and address employer goals. Join experts in the field and your peers to consider how psychosocial, organizational and environmental factors influence worker and enterprise outcomes and what strategies hold promise to improve these."

## **Occupational Health Psychology Program**

Given the substantial public health research gaps in occupational health psychology, healthy work design, and Total Worker Health, the primary focus of this program is to train PhD research scientists. In addition, given the need to educate existing practitioners in a wide variety of disciplines in occupational health psychology and Total Worker Health, the program will also offer a certificate program that will be open to Johns Hopkins students as well as occupational health practitioners outside the institution.

Under the direction of Drs. Zhiqing Zhou and Meghan Davis, this program trains doctoral students across three departments at the Johns Hopkins Bloomberg School of Public Health—Mental Health, International Health and Environmental Health & Engineering. Typical trainees work on established and emerging topics of relevance to workplace mental health and wellbeing in either domestic or global contexts and will complete their degree in four to five years. This program is offered through the Johns Hopkins Education & Research Center (ERC) with support from the POE Center.



## **Research Projects**

#### CoV-WORK

Karen B. Kent, M.P.H.; Ying Zhang, M.S.P.H.; Enid Chung Roemer, Ph.D.; Ron Z. Goetzel, Ph.D.

This study examined the experience of food service workers at five Johns Hopkins hospitals during the COVID-19 pandemic. The broader aim was to better understand the psychosocial, organizational, and environmental (POE) stressors affecting front-line food service workers throughout the COVID-19 pandemic. For these non-clinical hospital workers, making a living meant possible exposure to the COVID-19 virus at a time when daily COVID-19 fatalities were high, and little was known about how the virus was transmitted. This project delivered a report to partner groups in 2023 and celebrated the publication of the work in 2024:



Johns Hopkins Bloomberg School of Public Health

Kent KB, Zhang Y, Roemer EC, Davis MF, Safeer R, Mojica A, Goetzel RZ. The Psychosocial, Organizational, and Environmental Stressors Experienced by Food Service Workers in a Hospital Setting During the COVID-19 Pandemic. J Occup Environ Med. 2024 Jul 1;66(7):556-563. doi: 10.1097/JOM.0000000000003108. Epub 2024 Apr 10. PMID: 38595305; PMCID: PMC11230843.

#### **HC-WORK**

Lee Daugherty Biddison, M.D., M.P.H., Louis Fazen, M.D., Carolyn Fowler, Ph.D. M.P.H., ACC, Rich Safeer, M.D., FACLM, FAAFP, FACPM, Ron Goetzel, Ph.D., Enid Roemer, Ph.D. and Meghan Davis, D.V.M. M.P.H. Ph.D.

The goal of this project is to improve the mental health, well-being, physical health and safety of essential workers in healthcare, a workforce already burdened with burnout, mental health challenges, and related well-being concerns prior to, exacerbated during, and most likely continuing past the COVID-19 pandemic. To address multiple dimensions of stress and burnout, we are partnering with a multi-disciplinary team at Johns Hopkins Medicine (JHM), a large integrated health care system employing 42,000 workers, and then bridge out to other healthcare systems in later years, in order to achieve the following specific aims: 1) Identify measures that integrate psychosocial, organizational, and environmental factors to guide decision making for Total Worker Health® (TWH) programs; 2) Understand psychosocial, organizational, and environmental factors associated with worker, enterprise, and implementation outcomes to improve TWH program content and delivery; and 3) Initiate an augmented well-being peer-support program to improve the culture of health at a health care institution, with a focus on mental health.

This study has implemented an enhanced Champion program and a leadership program that includes psychosocial, organizational and environmental dimensions. This intervention is taking place at one hospital within a multi-site healthcare system.



#### **HOME-WORK**

Kirsten Koehler, Ph.D.; Johannes Thrul, Ph.D., and Louis Fazen, M.D.

This study is preparing to launch with a goal to understand the differences in environmental exposures and worker mood, sleep, and well-being when telecommuting compared to working on-site. The project will evaluate differences in the indoor environmental exposures between the two work locations among workers who telecommute and evaluate the relationship between work location and environmental exposures with worker and enterprise outcomes.

## Research Pilot Project Program

The pilot program enhances Total Worker Health and mental health research training through direct support of student, post-doctoral, and early investigator research projects with 3 to 5 awards annually of up to \$25,000.

#### **Completed**

Masoumeh Amin-Esmaeili, PhD student at the Johns Hopkins Bloomberg School of Public Health: Occupational Pattern of Drug Overdose Deaths in Maryland, 2018-2020: Implication for Prevention of Workplace Fatal Overdose

#### **Ongoing**

Anna Tillery, PhD student at the Johns Hopkins Bloomberg School of Public Health: Occupational Stress and Covid-19 In The Cheyenne River Sioux Tribe Covid-19 Wayakta He? Study (\$12,500)

Raluca Matei, post-doctoral fellow at the Johns Hopkins Peabody Institute: Work-Related Influences on Musicians' Mental Health: A Pilot Study (\$12,500)

Lourdes Perez, PhD student at Penn State University: Nervios, Occupational Injuries and Substandard Housing among Men and Women Farmworkers: A Mixed-Methods Study (\$25,000)

Caitlin Ceryes, PhD, Assistant Professor at Towson University: Assessing occupational healthcare needs and disparities among Delmarva poultry processing workers (\$13,500)

Kaitlin Waite, D.V.M. M.P.H., Postdoctoral Fellow a the Johns Hopkins Bloomberg School of Public Health: Identifying Occupational Drivers and Risk Factors for Mental Health Concerns Among Veterinarians and Animal Care Workers during COVID-19 Pandemic: A Pilot Study to Inform Evaluation of Access and Effectiveness of Intervention Measures

Carolyn Gigot, PhD student at the Johns Hopkins Bloomberg School of Public Health: An in-depth exploration of occupational health interventions across the hierarchy of controls in industrial livestock operations during COVID-19

Christen Dunn, PhD student at Old Dominion University: A Pilot Study of Work Exposures and Sleep Health in Firefighters

Angela Aherrera, Dr.PH. M.P.H., Postdoc at the Johns Hopkins Bloomberg School of Public Health: Hazardous Thread? A pilot study to evaluate microfiber, metal exposure, and worker health in the garment industry

Paulani Mui, M.P.H., Assistant Scientist at the Johns Hopkins Bloomberg School of Public Health: Protecting, Supporting, and Creating a Culture of Total Worker Health for the Public Health Workforce in an Age of Political Polarization and Burnout



#### **Publications**

#### **Core Center Publications**

- Coats SF, Roemer EC, Kent KB, Zhang Y, Davis MF, Goetzel RZ. Scoping Review of Workplace Mental Health and Well-being Programs in Higher Education Institutions. J Occup Environ Med. 2024 Jun 1;66(6):461-466.. Epub 2024 Mar 13. PMID: 38471831.
- Kent KB, Zhang Y, Roemer EC, Davis MF, Safeer R, Mojica A, Goetzel RZ. The Psychosocial, Organizational, and Environmental Stressors Experienced by Food Service Workers in a Hospital Setting During the COVID-19 Pandemic. J Occup Environ Med. 2024 Jul 1;66(7):556-563. Epub 2024 Apr 10. PMID: 38595305; PMCID: PMC11230843.
- Roemer EC, Goetzel RZ, Davis MF, Zhang Y, Kent KB, Harter J, McGee EO, Troester JM, Hilton L, Stratton KJ, Vietas J, MacKenzie EJ. Proceedings from a National Summit on Workplace Mental Health and Well-Being: A Focus on the Graduate Academic Environment. J Occup Environ Med. 2024 Aug 19. Epub ahead of print. PMID: 39164875.

#### Other Relevant Publications by POE Center Faculty

- Goetzel RZ. Making Workplace Health Promotion Fun. (2024) American Journal of Health Promotion. Volume 38, Issue 2, February 2024, Pages 286-289.
- Zhang, H., Zhou, Z. E., Xiao, J., Liu, Y., & Shi, Y. (2024). A little gratitude goes a long way: How customer gratitude promotes employee customer-oriented organizational citizenship behavior. Journal of Managerial Psychology.
- Busse, K. A.\*, Rodriguez, W. A.\*, Che, X. X., & Zhou, Z. E. (2024). When home stress translates to work: The impact of interpersonal conflict at home on employee silence. Stress and Health.
- Amin-Esmaeili, M., Susukida, R., Byregowda, H., Zhou, Z. E., Mitchell, M., & Johnson, R. M. (2024). Maryland opioid overdose deaths from 2018 to 2021: Occupational pattern and its sociodemographic variations. Occupational and Environmental Medicine, 81(9), 462-470.
- Gan, Z., Gan, J., Zhou, Z. E., & Tang, H. (2024). Organizational benefits of commuting support: The impact of flexible working hours on employees' OCB through commuting control. Social Indicators Research, 1-15.
- Singh, R., Gilles, A. A., McGrath, J., Zhou, Z. E., & Jackson, C. L. (2024). Disparities in sleep duration and quality by industry of employment and occupational class among Native Hawaiian/Pacific Islanders and non-Hispanic Whites in the United States. Sleep Health. https://doi.org/https://doi.org/10.1016/j.sleh.2024.05.006
- Zhang, H., Zhou, Z. E., Zhang, L., Liu, Y., & Shi, Y. (2024). How customer mistreatment hinders employee sleep quality and next-morning vigor: The effects of affective rumination and mindfulness. Applied Psychology: An International Review, 73(3), 1188-1211.
- Rodriguez, W. A. \*, Zhou, Z. E., Busse, K. A. \*, & Che, X. X. (2024). Family-to-work conflict and instigated incivility: The role of negative affect and supervisor behaviors. Stress and Health, 40(1), e3282.
- Gould CA, Frattaroli S, Williams DL, Bulzacchelli MT, Barnett DJ, Davis MF. When Things Go South, It Does Affect You: Perceptions of Vibrio-Related Occupational Risk and Harm Among Chesapeake Bay, USA,-Based Watermen. J Occup Environ Med. 2024. PMID: 39511842.
- Erin M. Sorrell, Monica Schoch-Spana and Meghan F. Davis, Workers at the Front Lines of Bird Flu, guest essay for the New York Times, May 1, 2024.



#### **Presentations**

- Goetzel RZ. Do Workplace Health Promotion (Wellness) Programs Work? What Does the Latest Research Tell Us? Art and Science of Health Promotion Conference. Hilton Head SC. April 2024.
- Goetzel RZ. Why Is Everyone So Damn Grumpy? HERO Forum. October 2024, Baltimore, MD.
- Goetzel RZ. 2024 International Corporate Health Leadership Council (ICHLC) Annual Meeting. Environmental, Social, and (Corporate) Governance ESG: How Corporate Medical Directors Can Generate a Structured Framework for Risk Management and Value Generation. Orlando, FL. May 2024.
- Goetzel RZ. It's More than Designations, It's about the Culture Substance Abuse and Mental Health Services Administration (SAMHSA) Wellness in Workplace Summit. Rockville, MD. August 2024.
- Goetzel RZ. What is The Value on Investment (VOI) for Health and Wellbeing Programs? The Difference between Return on Investment (ROI) and VOI, and How to Measure Both. Workplace Wellness Council of Massachusetts (WWCMA). October 2024.
- "Workplace Mental Health," invited talk at Global Occupational Health Quarterly Forum, Virtual, Abbvie, 2024
- ""Total Worker Health in Mental Health," invited talk at Mid-Atlantic Regional Conference in Occupational and Environmental Medicine (MARCOEM), Baltimore, MD, 2024.
- ""Key Influences on Belonging at Multiple Levels Across a Higher Education Organization," invited talk at Health Enhancement Research Organization (HERO) University Summit, Baltimore, MD, 2024.
- ""Workplace Mistreatment: Evidence of Prevalence, Antecedents, Impacts, and Interventions," invited talk at California Labor Lab, University of California San Francisco, Virtual, 2024.
- ""Workplace Violence," invited talk at Graduate Seminar in Injury Research and Policy: Violence & Suicide Prevention, Johns Hopkins University, Baltimore, MD, 2024
- ""Work-Life Balance and Stress Management," invited talk at Delaware Army National Guard 49th Annual Safety & Occupational Health Conference, Dover, DE, 2024 "Total Worker Health in Mental Health", invited talk at Mid-Atlantic Regional Conference in Occupational and Environmental Medicine (MARCOEM), Baltimore, MD, 2024.
- ""Key Influences on Belonging at Multiple Levels Across a Higher Education Organization," invited talk at Health Enhancement Research Organization (HERO) University Summit, Baltimore, MD, 2024.
- ""Workplace Mistreatment: Evidence of Prevalence, Antecedents, Impacts, and Interventions," invited talk at California Labor Lab, University of California San Francisco, Virtual, 2024.

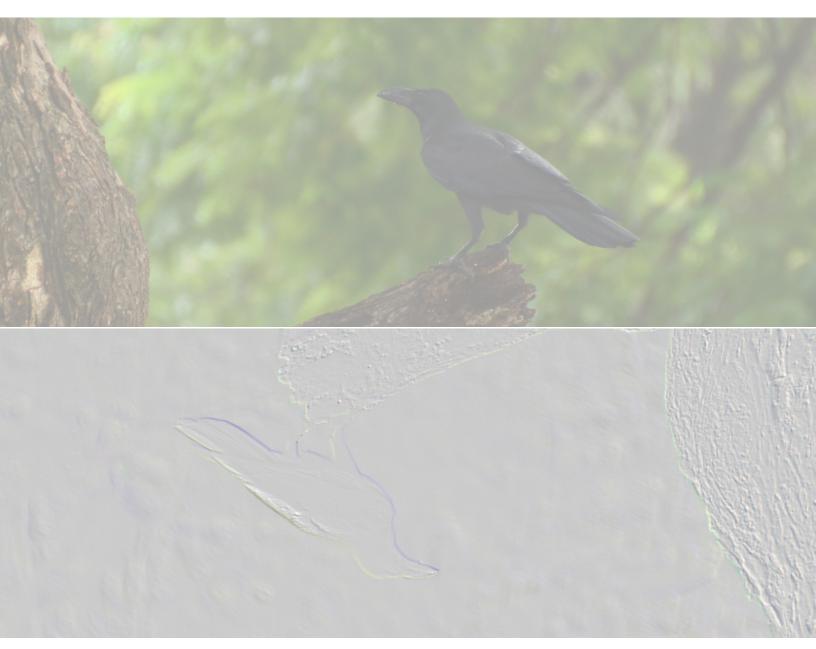


### Media & Social Media

The POE Center manages social media activity on X (formerly Twitter), BlueSky, LinkedIn and occasionally Facebook. These posts spotlight POE Center activities and accomplishments (including live posting for some events) and amplify NIOSH TWH program and other social media campaigns. For example, the POE Center partnered with the Department of Mental Health and the BSPH Well-being Initiative for World Mental Health Day.







## Johns Hopkins P.O.E. Total Worker Health Center® in Mental Health

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