

**Center for
Health
Work &
Environment**

2023



ANNUAL REPORT



2022-2023

OUR TEAM

LEADERSHIP

Lee Newman, MD, MA
Director, Distinguished Professor

Carol Brown, PhD
Deputy Director

Sara Higgins
Associate Director for Business Services

Liliana Tenney DrPH, MPH
Director of Outreach and Programs
Co-Director, Center of Excellence
for *Total Worker Health*®

CORE TEAM

Stephen Brindley, MS
Senior Professional Research Assistant

Jaime Butler-Dawson, PhD, MPH
Senior Research Associate

Cortney Cuff, MBA
Senior Program Manager of Training
and Community, Continuing
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Lyndsay Krisher, DrPH, MPH
Senior Instructor

Sarah Levine, MPH
Professional Research Assistant

Yaqiang Li, PhD, MPH
Research Instructor

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Francesca Macaluso, MPH
Instructor

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Assistant Professor, Certificate in *Total Worker Health*® Director (MAP ERC)

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Associate Professor, Director of
Interdisciplinary Education (MAP ERC)

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Program Manager

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Professional Research Assistant

Joelle Wedel, PA-C, MS
Senior Professional Research Assistant

OTHER FACULTY

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Professor

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Adjunct Professor

Jay Lemery, MD
Professor

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Professor, Senior Associate Dean
of Faculty and Chief Well-being
Officer, CU School of Medicine

Courtney Welton-Mitchell, PhD, MA
Assistant Professor

Brian Williams, MD, MPH
Clinical Assistant Professor

MOUNTAIN & PLAINS EDUCATION AND RESEARCH CENTER (MAP ERC)

William Brazile, PhD, CIH, CSP
Associate Professor; Industrial Hygiene
Program Director (MAP ERC)

Gwenith Fisher, PhD
Occupational Health Psychology Program
Director (MAP ERC), Associate Professor

Elizabeth Esty MD, MPH
Clinical Instructor, Occupational and
Environmental Medicine Residency
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Tom Johnson, PhD
Professor, Health Physics
Program Director (MAP ERC)

Sheryl Magzamen, PhD, MPH
Associate Professor; Epidemiology
Program Director (MAP ERC)

Paul Ogden, MD, MSPH
Program Director (Occupational
and Environmental Medicine
Residency & Fellowship, MAP ERC),
Clinical Assistant Professor

John Rosecrance, PhD
Occupational Ergonomics & Safety
Program Director (MAP ERC), Professor

Morgan Valley, PhD
Deputy Director (MAP ERC),
Assistant Professor

STUDENT TEAM MEMBERS

Marisa Davis

Emily Evans

Matthew Schilz, MPH, MSW

OUR CENTER

Our center strives to find connection with each other and within our community. To create a more connected and thriving environment, our SAFE Squad organizes volunteer and outdoor activities, potlucks and games, and ways for on-site and remote staff to connect. Thank you, SAFE Squad!

We partnered with We Don't Waste for the third consecutive year to help run one of their mobile food markets. We Don't Waste works to reduce hunger and food waste in the Denver area by recovering quality, unused

food from the food industry and delivering it to nonprofit partners, such as food pantries, soup kitchens, shelters, schools and daycare programs, and more.

We also try to “walk the talk” when it comes to advising employers to encourage their employees to get outdoors! We upheld our annual practice of Shinrin Yoku, the Japanese tradition of “forest bathing.” Across three states, our employees enjoyed the outdoors on walks and hikes.





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A NOTE FROM OUR DIRECTOR

LEE NEWMAN

Even in chaotic times, we can discover resilience — areas of human endeavor that inspire. Join me in finding inspiration in the efforts of our amazing students, faculty, and staff in this year’s annual report. By creating a fiscally and structurally sound center, these researchers, public health practitioners, educators and trainees have continued to innovate and demonstrate how our work makes a difference in lives of workers in Colorado, the U.S. and globally.

This year we conducted a so-called “self-study” as part of our academic accreditation. We were reviewed by an independent team of esteemed professors from Harvard, University of North Carolina and University of Colorado. Here’s a bit of what they had to say about us:

“This is a truly unique and impressive center—an absolute leader... (that has) expanded to have both a national and international presence that is exemplary.”

They highlighted our research for its “extremely impressive strengths,” and, I’m pleased to say, recognized our success in helping to develop early- and mid-career faculty members. We are all counting on them, the emerging leaders in the field of occupational health, safety, and well-being.

They highlighted our excellent outreach and continuing education programs and something we have strived for: to create “bilateral partnerships connecting outreach and research.”

“The CHWE faculty and staff have critically important connections with the Colorado School of Public Health, including with Colorado State University, and are building strong external partnerships in the state, region, nationally and internationally.”

As you read this year’s report, I know you will agree with me that the Center is one of those special places where people feel connected to the mission and where we each strive for personal and professional growth that supports both our own well-being and the well-being of workers. From the occupational medicine clinics where our trainees learn to treat injured workers to the healthcare and agricultural industries where we promote leadership adoption of *Total Worker Health*®, it is clear: We will continue to improve worker safety, health, and well-being, especially for those in greatest need and facing the greatest burden of risk.

Be inspired: read on. And thank you for your support, partnership and encouragement.

Lee S. Newman, MD, MA
Director, Center for Health, Work & Environment
Distinguished Professor, Colorado School of Public Health





IMPACT

JULY 1, 2022 - JUNE 30, 2023

\$7,119,158
in research grants

\$56,184
awarded for pilot
project grants

80
publications

19
new grants submitted

14
new grants awarded

RESEARCH

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MENTAL HEALTH EMERGENCY PREPAREDNESS FOR THE SCHOOL WORKFORCE

IMPACT

500

teachers and
staff trained

6

schools participated

18

hours of new curriculum
developed/delivered

teachers to support one another and engage with emergency preparedness planning efforts. Our team worked with six schools (elementary, middle and high school) from a single district, training nearly 500 school-based personnel, working in collaboration with safety and security team members and mental health staff.

We hosted three-hour interactive trainings during professional development days with teachers and staff and, using a participatory approach, developed a training curriculum based on feedback from over 60 Colorado teachers and staff across six districts.

Teachers and staff shoulder a significant burden of responsibility for emergency preparedness in pre-K to 12 schools. Teachers are expected to lead drills by directing and evacuating students, locking down classrooms, performing safety checks, and emotionally supporting students. Education staff often have unanswered questions and increased anxiety associated with drills and other emergency preparedness efforts.

The team completed a two-year research project on psychological preparedness training for the public-school workforce, complementing current emergency preparedness plans and drills. The project included shared-leadership and peer-support components, encouraging

OUTCOME

The newly published training manual is a comprehensive guide that will allow other interested school districts to implement their own mental health integrated emergency preparedness training and feedback process. We are offering the manual at no cost in hopes that districts will take this next step to support the mental health of teachers and staff before and during emergencies.

PROJECT TEAM:

PIs: Courtney Welton-Mitchell, PhD; Natalie Schwatka, PhD, MPH; Co-I: Miranda Dally, MS; Key Personnel: Sarah Levine, MPH





THE WELL-BEING AND CANCER AT WORK STUDY

IMPACT

130

patients enrolled

22

participants in 3 focus groups

The Well-being and Cancer at Work (WeCanWork) study is a multi-year, two-phase longitudinal intervention study assessing the employment, financial, and well-being status of employed patients diagnosed with cancer. Since enrollment began in April 2022, **we have enrolled over 130 patients with cancer, primarily low-income, employed men.**

We wanted to learn from oncology care teams and occupational medicine physicians about their perceived roles, challenges, and opportunities in providing employment-related support to patients. We conducted three focus groups between September 2022 and February 2023 to gather input from oncology care teams and occupational medicine physicians. **We identified a major opportunity for collaboration between occupational health professionals and oncology clinics to assist cancer survivors' ability to navigate employment challenges.**

For phase two of the study, we will launch the new intervention at University of Colorado Health (UCHealth) with oncology care teams to understand the impact of adding occupational medicine consulting for patients with cancer. The initial pilot project will involve UCHealth oncologists and care team members, including social workers, patient navigators and nurses, to refer employed patients diagnosed with cancer to occupational medicine physicians. **This will be the first study of its kind to test the impact of occupational medicine as a specialty for multidisciplinary care in oncology.**

PROJECT TEAM:

PI: Cathy Bradley, PhD, MPA
Co-Is: Lee Newman, MD, MA;
Lili Tenney, DrPH, MPH

Key Personnel: Miranda Dally, MS; Carol Brown, PhD; ; Madison Goering, MPH; Amy Robinson, MPH; Joelle Wedel, PA-C, MS



MOUNTAIN WEST HUB

EMPOWERING COMMUNITIES TO ADDRESS CLIMATE IMPACTS TOGETHER

This project seeks to understand how rural and urban communities in the Mountain West are experiencing climate stressors (drought, air quality, and wildfires), and what current and future actions they envision to build climate resilience and advance health equity. This year, we established the Mountain West Climate Health Engagement Hub, funded by the National Institutes of Health, to facilitate learning and build partnerships among community members, scientists, public health practitioners and policy professionals to work towards **climate justice**.

The Mountain West Hub is currently focused on two communities in Colorado, one rural and one urban: the San Luis Valley (SLV) and West Denver.

Like much of the U.S. Mountain West, these communities face several climate-driven challenges, such as more frequent wildfires, hotter seasons, persistent droughts, and unsafe air quality.

In its first year, the team brought together four diverse advisory boards to share their expertise as to how climate and air quality impact West Denver and SLV.

In the coming year, the team will share a narrative report based on one-on-one interviews and advisory board meeting notes, summarizing key themes related to climate experiences and priorities for action in West Denver and the SLV.

PROJECT TEAM:

PIs: Katherine Dickinson, PhD, MS; Kathy James, PhD, MSPH, MSCE; Co-I: Lisa Cicutto, PhD; Cerise Hunt, PhD, MSW; Lee Newman, MD, MA; Liliana Tenney, DrPH, MPH; Program Evaluator: Carol Brown, PhD

HEAT EXPOSURE AND STRESS IN TOMATO AND PEPPER WORKERS IN MEXICO

FINDINGS

120

tomato workers participated

44

pepper workers participated

100.58

Fahrenheit in greenhouse

94.3%

humidity in greenhouses

We completed the first round of data collection for a new research project measuring heat exposure and heat stress among the workers in tomato and chili pepper sectors in Jalisco, Mexico, and the perceived and direct impacts on the health and productivity of workers. The project is part of the International Labour Organization (ILO)'s Vision Zero Fund.

Our findings show heat exposure is a major hazard for workers. Protective measures are currently underutilized by many companies and workers themselves face barriers to protecting themselves from heat in the workplace. The Mexican government, represented by the Mexican Institute of Social Security (IMSS), has prioritized this issue and allocated resources to help address it as part of an existing collaboration with our center.

■ **THIS YEAR** we completed two longitudinal, prospective cohort studies throughout the tomato and chili pepper seeding and harvesting seasons. The work has the potential to protect the health of workers and communities by generating knowledge that can address the health risks of heat stress, heat stress, especially important in the face of rising global temperatures due to climate change. IMSS and the ILO will use our study results to address these serious climate impacts for the betterment of workers in Mexico and globally.

PROJECT TEAM:

PIs: Lee Newman, MD, MA; Carol Brown, PhD; Key Personnel: Diana Jaramillo, MPH; Karely Villarreal Hernandez, MPH; Madison Goering, MPH





CLIMATE CHANGE IMPACTS ON VIETNAMESE FARMING POPULATIONS

We undertook a study to identify occupational safety and health needs related to climate change of farmers in Vietnam. With funding from the International Labour Organization's Vision Zero Fund and partnerships with researchers from the Hanoi University of Public Health and Vietnamese Chamber of Commerce and Industry, they conducted focus groups with 44 farmers from Can Tho, Ninh Binh, and Lam Dong provinces. Representatives from the provinces' Department of Labor, Invalids, and Social Assistance, Department of Health, Women's Union, and Farmer's Union were also interviewed. The research team developed a summary of the preliminary findings and recommended priority areas to representatives from government and labor organizations in a workshop held in October 2023 in Hanoi, Vietnam.

**WEATHER
CHANGES
AFFECT
EVERY
ASPECT
OF
HUMAN
LIFE AND
HEALTH."**

The team's recommended priority areas for action included: tailoring water, rest, and shade approaches for farmers in the informal sector; co-developing occupational safety and health trainings with farmers so that the recommendations are practical for farmers to implement; and preparing workers for climate-related hazards, such as salinity intrusion, that they are not currently experiencing but may experience in the future.

PROJECT TEAM:

PIs: Miranda Dally, MS; Megan Cherewick, PhD; Key Personnel: Sara Higgins

COMMUNITY AND AGRICULTURAL RESEARCH IN THE SAN LUIS VALLEY

Kathy James, PhD, MSPH, MSCE, center researcher, leads three community-based studies, exploring the impacts of environmental and climate exposures on human health. All three studies partner with James' large network of community stakeholders for overlapping citizen science activities.

THE METALS AND METAL MIXTURES: COGNITIVE AGING, REMEDIATION, AND EXPOSURE SOURCES STUDY

As part of the Metals and Metal Mixtures: Cognitive Aging, Remediation, and Exposure Sources (MEMCARE) Superfund Research Center, researchers Kathy James and Francesca Macaluso, MPH, are leading a community science effort to characterize environmental metal exposures in pregnant women, their young children, and newborns living near legacy mining sites in the San Luis Valley, Colorado.

Our team is analyzing data from study participants (including urine, fingernails, water, and soil) to evaluate changes in maternal exposure to heavy metals across pregnancy and the impacts of exposure on newborns. Study findings will inform new environmental health education materials (infographics) specific to the region, which we are sharing through social media and community partners.

IMPACT

19

community residents reached (pregnant women, newborns, and children)

12

community well samples tested

6

infographics developed on study content in english and Spanish

1

presentation on preliminary results at the 2023 NIH Superfund Research Program Annual Grant

PROJECT TEAM:

Co-I: Kathy James, PhD, MSCE, MPH; Key Personnel: Francesca Macaluso, MPH

AQUIFER HEALTH AND DROUGHT

Our center is investigating the impacts of climate change–driven drought on water quality.

In the San Luis Valley, we collected a total of 736 water samples from private well owners and analyzed them for heavy metals. While private wells are exempt from EPA regulations, 151 have levels of heavy metals above EPA regulations. Our team not only covered the cost of having these samples analyzed but provided each participant with a report the results and individual interpretations of their water quality. Heavy metals at levels that may cause health effects were found in the following percentage of samples:

94.8% of samples contain arsenic
85.9% of samples contain lead
99.1% of samples contain uranium

Using these results, we plan to create a map and special model of where these metals are elevated and how they are driving health outcomes. We hope that continued interaction with the community and communication about the metal levels will improve widespread understanding and community health.

PROJECT TEAM:

PI: Kathy James, PhD, MSPH, MSCE;
Key Personnel: Nicholas Stoll, MPH

IMPACT	
736	water samples from private wells
151	wells with elevated levels of heavy metal
6	Colorado counties represented

AGRICULTURE WORKER MENTAL HEALTH

IMPACT	
296	WellBQ surveys collected
26	organizations participated

We completed a two-year study as part of our Center of Excellence for *Total Worker Health*® research, exploring the state of mental health in agricultural workers in the San Luis Valley. The project leveraged community knowledge and networks to better assess the state of mental and behavioral health among agricultural workers in the San Luis Valley and identify strategies to fill gaps in available support.

Thanks to James' longstanding relationships with community partners, the team successfully recruited 296 agriculture workers to complete the NIOSH Worker Well-being Questionnaire (WellBQ). The team's preliminary results show that climate change may be a lead stressor contributing to behavioral health challenges. Farm owners identified water scarcity as the top stressor, while field workers identified access to nutritious food as their number one stressor. We partnered with 26 local organizations to complete a capacity assessment that will be used to identify gaps and opportunities for behavioral health supports for community and the workforces. We are working on disseminating these findings and proposing intervention strategies.

Field workers are:

- 31% more likely to experience a work-related injury
- 54% more likely to experience anxiety

than farm/ranch owner/operators from our sample

PROJECT TEAM:

PI: Gwen Fisher, PhD, Kathy James, PhD, MSPH, MSCE; Key Personnel: Nicholas Stoll, MPH



CLIMATE & HUMAN HEALTH STUDIES IN LATIN AMERICA

TIMELINE OF RELATIONSHIP AND STUDIES WITH PANTALEON

2016

INITIAL STUDY:

Longitudinal analysis of kidney function and CKDu trends and risk factors 2013-2016

Intervention study to increase hydration and protect kidneys

Recommendations to enhance heat stress prevention program

Electronic data collection and data management system for the clinics

2017

2018

NEW STUDIES

- Kidney injury incidence
- Kidney toxin exposure
- Biomarkers of early detection
- Environmental assessment (water & air)

Increased kidney surveillance and development of clinical follow-up procedures

IMPLEMENTATION AND EVALUATION OF ENHANCED PROGRAMS:

- Hydration
- Health & Rest
- Nutrition
- Lifestyle factors

Screening & early detection



2019	2020	2021	2022	2023
<p>Hearing loss prevention</p> <p>Multi-country data harmonization</p> <p>Total Worker Health System Approach and Leadership Training</p>	<p>COVID-19 Protocols</p> <p>COVID-19 Antibody Tests & Seroprevalence Studies</p>		<p>NEW STUDIES 2021-2028</p> <ul style="list-style-type: none"> • Environmental exposures and CKDu in male cane cutters • Environmental exposures and CKDu in women (workers & communities) • Off-the-job recovery & home exposures 	



OUR HISTORY WITH PANTALEON

Since 2016, our center has partnered with Pantaleon, one of Latin America's largest agribusinesses, to study and improve the health of agricultural workers in the region. This longstanding partnership has spurred multiple studies and is the most in-depth study of kidney disease among this population. Our work has impacted the health of workers, their families, and communities and continues to expand and build on itself. We are conducting several National Institutes of Health (NIH)-funded research studies investigating the impact of high exposures to air contaminants, extreme heat, and dehydration on kidney health among agricultural workers in Latin America. These studies aim to deepen our understanding of how these exposures, individually or in combination, contribute to chronic kidney disease of unknown origin (CKDu). Our findings will ultimately inform critical interventions to reduce global risks for agricultural workers, their families, and their communities.

IMPACT

3,590

workers involved

5

NIH-funded research studies

12

consulting projects

32

trips to Guatemala

26

publications published





STUDY 1

PARTICULATE EXPOSURE AND KIDNEY HEALTH

This year we completed our second and final year of data collection in Guatemala in collaboration with Pantaleon and Colorado State University. We measured individual-level airborne and heat exposures among 143 male sugarcane cutters across two six-month harvest seasons. We are now exploring the relationships between these exposure measurements to kidney health and will be working with our partners to distribute the findings.

STUDY 2

RECOVERY FROM WORK IN THE HEAT

Lyndsay Krisher, DrPH, is wrapping up a two-year MAP ERC-funded pilot study to examine workday and off-work heat exposures, core body temperature, and recovery practices of sugarcane workers in Guatemala. She is analyzing data to characterize the workers' response to repeated heat stress and understand the contributions of household and other non-occupational factors on the workers' health.



STUDY 3

WOMEN'S AIRBORNE EXPOSURE AND KIDNEY HEALTH

Jaime Butler-Dawson, PhD, is finishing up a three-year NIH-funded research study that is characterizing environmental exposures among female sugarcane workers and female community members in southwest Guatemala. She is examining the relationships between environmental exposures (airborne pollutants, organic chemicals, and heat) and kidney health among these two groups of women at risk for high exposures both at work and at home.

STUDY 4

AIR POLLUTANTS, HEAT EXPOSURE, AND KIDNEY HEALTH IN WOMEN

We received another NIH grant this year to assess agricultural workers' exposure to air pollution, heat, and kidney toxins, but this time, the study will be only among women workers, an understudied population at risk for CKDu. The study, spanning five years, seeks to characterize personal exposure, evaluate relationships with kidney function, and investigate associations between markers of kidney injury, cellular stress, and inflammation, utilizing advanced statistical methods for pollutant mixtures.


PROJECT TEAM:

PIs: Lee Newman, MD, MA; John Adgate, PhD, MSPH, Joshua Schaeffer, PhD, MS; Co-Is: Lyndsay Krisher, DrPH, MPH; Jaime Butler-Dawson, PhD; Miranda Dally, MS; Field team: Stephen Brindley, MS; Karely Villarreal Hernandez, MPH; Diana, Madison Georing, MPH



PILOT PROJECTS

Each year, we award funding to junior investigators and established researchers in other fields of discipline with support from the Mountain & Plains Education and Research Center (MAP ERC) and the *Total Worker Health®* Pilot Project Awards programs. These research grants support innovative studies and research-to-practice projects in occupational safety and health and *Total Worker Health*.



MAP ERC STUDENTS
and training director enjoy quality
time together

MAP ERC PILOT PROJECTS



**ROZ STOA,
MS**

Addressing Newcomer Adjustment, Well-Being, and Safety through Organizational Support and Self-Determination Theory

This study will uncover how organizations socialize newcomers and the ways those practices impact safety behavior and compliance, and potentially reduce risk of occupational injury. Results can inform onboarding practices to increase the safety and well-being of new employees, those often at greater risk.



**PARI SHAH
THIBODEAU,
PHD, LCSW, MSW**

Examining Workplace Trauma and Moral Injury Amongst Healthcare Social Workers

This study seeks to better understand the prevalence of trauma exposure and the association between trauma and moral injury amongst healthcare social workers.



**PAIGE
WITTER, MS**

Development of an Alanine Electron Paramagnetic Resonance Neutron Dosimeter

This study will aid in the ongoing evaluation of the health and safety risks to workers in multiple occupational fields united by potential exposure to neutron radiation. The results from this study will provide a basis for a passive, inexpensive, wearable neutron dosimeter that will be appropriate to use in wide-spectrum neutron fields.

TOTAL WORKER HEALTH PILOT PROJECTS



**LYNDSEY
KRISHER,
DRPH, MPH**

Individual and Household Determinants of Renal Insufficiency Among Agricultural Workers: A Total Worker Health® Approach

This project seeks to understand the factors that contribute to or reduce risk for kidney damage in agricultural workers. This will be the first study to examine non-occupational factors, including conditions of the home environment and individual determinants, in a high-risk worker population.



**CEDRA
GOLDMAN,
AIA, WELL AP,
MPH**

How Supportive Physical Work Environments Impact Nursing Home Staff Well-Being

This project seeks to characterize worker well-being in nursing home facilities using the NIOSH Worker Well-being Questionnaire (WellBQ).



**ANA PINTO,
PHD**

Effects of Frequent Active Breaks In Prolonged Sitting Versus Continuous Physical Activity on Behavioral and Health-Related Outcomes in Sedentary Office Workers at Risk for Type 2 Diabetes: A Pilot Study

This project will provide novel data on the effects of breaking up sedentary behavior bouts of brief but frequent physical activity on behavioral and health-related outcomes in office workers.



PUBLICATIONS

MAP ERC PUBLICATIONS

OCCUPATIONAL HEALTH PSYCHOLOGY

Brossoit, RM, Crain, TL, Stevens, SC, Wong, JR, Guasta, L. *Alert at Work? Perceptions of Alertness Testing and Recommendations for Practitioners*. *Occup Health Sci*. 2022; 7: 379–396.

Chari R, Sauter SL, Petrin Sayers EL, Huang W, **Fisher GG**, Chang CC. *Development of the National Institute for Occupational Safety and Health Worker Well-Being Questionnaire*. *J Occup Environ Med*. 2022; 64(8): 707–717.

INDUSTRIAL HYGIENE

Cothorn, EJ, **Brazile, WJ**, Autenrieth, DA. *The Evaluation of Worker Exposure to Airborne Silica Dust During Five OSHA Table I Construction Tasks*. *Annals of Work Exposures and Health*. 2023; 67(5): 572–583.

Erlandson G, Magzamen S, Sharp JL, Mitra S, Jones K, Poole JA, Bradford M, Nonnenmann M, Reynolds SJ, Schaeffer JW. *Preliminary Investigation of a Hypertonic Saline Nasal Rinse as a Hygienic Intervention in Dairy Workers*. *J Occup Environ Hyg*. 2022; 20: 1–14.

HEALTH PHYSICS

Newhauser WD, Williams JP, Noska MA, Borrás C, Holahan EV, Dewji SA, **Johnson TE**, et al. *The Professional Radiation Workforce in the United States*. *J Appl Clin Med Phys*. 2022; 23(1): e13848.

Tolmachev SY, Auxier JD, Nilsson M, Powell BA, Rucker TL, **Sudowe R**. *Radiochemistry and Nuclear Chemistry Workforce in the United States*. *J Appl Clin Med Phys*. 2022; 23(1): e13789.

OCCUPATIONAL AND ENVIRONMENTAL MEDICINE

Kreffit SD, **Rose CS**. *Histopathologic Insights into Distal Lung Injury and Inflammation following Military Deployment*. *Am J Respir Crit Care Med*. 2022;206(3):233–234.

Hua JT, Cool CD, Lowers HA, Go LHT, Zell-Baran LM, Sarver EA, Almberg KS, Pang KD, Majka SM, Franko AD, Vorajee NI, Cohen RA, **Rose CS**. *Characterizing Lung Particulates Using Quantitative Microscopy in Coal Miners With Severe Pneumoconiosis*. *Arch Pathol Lab Med*. 2023

*Trainees (former or current) underlined, faculty bolded

CHWE PUBLICATIONS

Baraghoshi D, Niswander C, Strand M, Wheat S, Ramstetter J, Stoll N, Fox J, James KA. *Exacerbation of Renal, Cardiovascular, and Respiratory Outcomes Associated with Changes in Climate*. *Yale J Biol Med*. 2023; 96(2): 159–169.

Dally M, Macaluso F, James KA, Newman LS, Sorensen CJ. *Addressing Climate Change in the Workplace*. *Workplace Health Saf*. 2022; 70(7): 340.

Dally M, Suresh K, Van Dyke M, James KA, Bauer AK, Krisher L, Newman LS. *Occurrence of Occupational Injuries and Within Day Changes in Wet Bulb Temperature Among Sugarcane Harvesters*. *J Agromedicine*. 2023; 28(3): 523–531.

Dally, M, Amador, JJ, Butler–Dawson, J, Lopez–Pilarte, D, Gero, A, Krisher, L, Cruz, A, Pilloni, D, Kupferman, J, Friedman, DJ, Griffin, BR, Newman, LS, Brooks, DR. *Point-of-Care Testing in Chronic Kidney Disease of Non-Traditional Origin: Considerations for Clinical, Epidemiological, and Health Surveillance Research and Practice*. *Annals of Global Health*. 2023; 89(1): 7.

Goldman C, Czaja C, Moses XJE, Van Dyke M. *Nursing Home Adoption of CDC and ASHRAE COVID-19 Built Environment Recommendations: A Characterization Study of Colorado Nursing Home Facilities*. *HERD*. 2022; 15(4): 5–12.

Grover EN, Allshouse WB, Lund AJ, Liu Y, Paull SH, James KA, Crooks JL, Carlton EJ. *Open-source Environmental Data as an Alternative to Snail Surveys to Assess Schistosomiasis Risk in Areas Approaching Elimination*. *Int J Health Geogr*. 2023; 22(1): 12.

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IMPACT

JULY 1, 2022 - JUNE 30, 2023

29,074

hours of training
content delivered

29,074

training hours

8,985

learners

2,813

continuing education
credits issued

94

trainings conducted

2

EDUCATION

CONTENTS

26	TRAINING MEXICO'S SOCIAL SECURITY TEAMS IN TOTAL WORKER HEALTH
28	MOUNTAIN & PLAINS EDUCATION AND RESEARCH CENTER
30	STUDENT PROFILES
34	CONTINUING EDUCATION

TRAINING MEXICO'S SOCIAL SECURITY TEAMS IN TOTAL WORKER HEALTH

 **FULL TEAM**
from first week at IMSS.
*Soy
residente*

IMPACT

200

Mexican occupational health and
safety professionals trained

100%

of participants intended to make
changes in their work practices as
a result of the training

80

hours of new TWH content
delivered in Spanish

99%

of participants agreed that their
TWH knowledge increased

99.4%

of participants agreed that the
course was useful for their work

99%

of participants agreed the
information presented in the
course was useful for their work

4.6/5

overall course quality rated 4.6/5



OUTCOME

Participants' confidence to change organizational practices through their work with companies increased.

“[THE TOOLS WE USED TODAY] ARE GOING TO MAKE OUR DECISION MAKING MORE FOCUSED AND METHODICAL.”

In August 2023, ten staff members from our center traveled to Atlixco, Mexico, and led a two-week certification training on *Total Worker Health®*. This training was in partnership with the Mexican Institute of Social Security (Instituto Mexicano del Seguro Social (IMSS)) and trained 200 IMSS employees who specialize in occupational medicine, safety and engineering and work with businesses across the country, impacting the lives of millions of workers and their families.

Throughout this training program, participants engaged in lectures, group activities, journal clubs, and daily quizzes. The 80 hours of training material was translated into Spanish with a different *Total Worker Health* (TWH) focus each day. From leadership to mental health and chronic disease prevention in the workplace, participants covered a wide range of topics relevant to the most critical challenges workers face today. Our staff agreed that they never taught a more engaged group of learners.

PROJECT TEAM:

Lee Newman, MD, MA; Carol Brown, PhD;
Diana Jaramillo, MPH; Liliana Tenney, DrPH,
MPH; Natalie Schwatka, PhD; Madison Goering,
MPH, MSW; Karely Villarreal Hernandez, MPH;
David Shapiro, BA; Mike Van Dyke, PhD



MOUNTAIN & PLAINS EDUCATION AND RESEARCH CENTER

IMPACT (OVERALL)

2007 - PRESENT

\$833,830

in Total Worker Health® pilot grants awarded

\$307,519

in MAP ERC pilot grants awarded to new investigators

223

MAP ERC trainees to date

164

alumni

MAP ERC TRAINING PROGRAMS

The Mountain & Plains Education and Research Center (MAP ERC) creates opportunities for graduate and post-graduate trainees to learn from accomplished faculty and other trainees in six different occupational health and safety disciplines. We offer tuition support, research funds, and stipends to qualified students. The following six students were nominated by the directors from each of our programs to highlight for this year's report.



WELCOMING NEW AND RETURNING trainees at our MAP ERC Annual Picnic



STUDENT PROFILES

ANA PAULA DE OLIVEIRA PEREIRA, MD, MPH
(Occupational Medicine Resident)



Tell us about your main project:

One of the surprising aspects of my residency training is this shift in my thinking as a physician. Most of my medical experiences in the past involved treating the aftermath of preventable diseases and injuries in individuals. During my occupational medicine residency, my vision has evolved toward understanding the environmental factors that lead to health changes in the general population and workers. While on worksite visits, I think about alternatives to implement preventive interventions at the workplace and in the environment. It is also fascinating how the multidisciplinary occupational health team works together as pieces of a perfect engine, assessing risk factors and creating solutions to improve the workplace and environmental safety.

What is one surprising discovery you've made or experience you've had in your training?

The MAP ERC allows trainees like me to pursue advanced knowledge in the occupational and environmental health field while simultaneously being exposed to various clinical and administrative settings that effect a well-rounded education in occupational medicine. The Certificate in Total Worker Health® program offers many choices for tailored learning that suit my interests and prepare me to recognize and manage the health challenges of industrial and agricultural workers in evidence-based practice. Through this funding, I have a phenomenal opportunity to learn from and work with professionals from various occupational and environmental health disciplines and to participate in collaborative research.

What impact has the MAP ERC had on your training?

One of my areas of interest is mild traumatic brain injury (mTBI) in the workplace. This condition tends to be overlooked and underreported, causing potential delays in care and disability. My project aims to disseminate information to physicians and non-physicians involved in recognizing and caring for these patients. The goal is to provide an occupational medicine standpoint on the importance of worksite preventive measures, early treatment, and return to work, to decrease the occurrence of mTBIs and permanent functional impairments. Under the direction of Dr. Kathryn Mueller and Dr. Paul Ogden, I have sorted through the most current relevant evidence to provide guidelines for professionals from different backgrounds.

RAISSA CHUNKO

(Health Physics / Radiological Health PhD)



Tell us about your main project:

My project is a post-detonation nuclear forensic project which focuses on developing techniques for rapid analysis of radionuclides from unusual urban matrices, so that radiation doses affecting emergency and cleanup workers and the public can be better estimated. I am working on developing and optimizing a rapid analysis of plutonium from asphalt samples using extraction chromatography resins that can be employed if an improvised nuclear device (IND) detonates in a city environment.

What is one surprising discovery you've made or experience you've had in your training?

I have been fortunate enough to visit a couple of national laboratories including Idaho National Laboratory (INL) and Los Alamos National Laboratory (LANL). At LANL, I visited a site referred to colloquially as "The Tunnel." This site was constructed in the 1940s and burrows into the side of a canyon wall, 300 feet below the surface of the earth. Walking into the bunker and down the hall was an experience I still struggle to put fully into words. The concrete walls, fluorescent lighting, and musky air culminated in a feeling of walking into a truly spectacular piece of history. Standing in the room where the first neutrino was detected was so surreal, and I will never forget the feeling.

This experience is one I never thought I would have the opportunity to see in my lifetime. I have a great many dreams and I am grateful for the support of the MAP ERC so I can chase them all.

**I HAVE A GREAT
MANY DREAMS
AND I AM
GRATEFUL FOR
THE SUPPORT
OF THE MAP ERC
SO I CAN CHASE
THEM ALL."**

AMANDA RIVERA, MPH, CHES®

(Certificate in Total Worker Health®)



Tell us about your involvement in the program:

My professional background is grounded in health promotion and health education. Much of the work I have done thus far has been around behavior change at an individual level. As I began to pursue my graduate degree in Leadership and Public Health Practice, I learned about Total Worker Health (TWH). I was thrilled to learn of this emerging innovation in workplace health and well-being. I felt that I would benefit tremendously from learning more about how, as a leader, I could play a role in both organizational and individual level efforts for enhancing workers' health.

What is one surprising discovery you've made or experience you've had in your training?

In my first semester in the program, I was amazed to learn just how influential work is on individual health and well-being. I gained greater insight into how risk factors in the workplace can contribute to chronic problems that were previously considered unrelated to work.

TONY J. ZBYSINSKI III
(Occupational Ergonomics and Safety)



Tell us about your main project:

I am investigating the role of co-exposures on ionizing radiation and neurocognitive mortality among Department of Energy cohorts, focusing on potential risk and the role of work design interventions. I hope to highlight how beneficial work design interventions can be to ensure workers live not only longer but also healthier lives.

What is one surprising discovery you've made or experience you've had in your training?

If I had to pick out one it would be during my involvement in a project in the interdisciplinary symposium course. I spoke to the site safety manager about safety culture and the general perception of it at the company. Our conversation further reinforced my impression from interactions with employees that it was important to identify hazards such as those that present a risk of musculoskeletal disorders. Prior to becoming a MAP ERC trainee, I thought it would be challenging to implement safety mechanisms. I have been pleasantly surprised to find that workers are very interested in improving safety; they just need the help of a diverse group of experts like those the MAP ERC is training.

COLTON CASTRO
(Industrial Hygiene)



Tell us about your involvement in the program:

My main project involves working with sugarcane cutters in Guatemala who are experiencing a high burden of chronic kidney disease of unknown origin (CKDu). I am assisting Drs. Schaeffer and Adgate on characterizing particulate matter exposures in the workers. I am attempting to develop a cost-effective way to conduct in-field analysis using Fourier-Transformed-Infrared (FTIR) spectroscopy to detect different elements. If successful, this analysis would have applications outside of Guatemala by allowing for end-of-shift analysis of any worker exposed to particulate matter that is easily analyzed by FTIR spectroscopy.

What impact has the MAP ERC had on your training?

I am so thankful for continuous support as I become the first in my family to graduate from college and earn a master's degree. The MAP ERC has had a profound impact on how I approach problem-solving. The ERC places us into groups with students from other programs, where we collaborate to develop solutions to our community partners' problems. These collaborations are essential to my future career, considering I will not always have the answer to every question I am asked, and I can rely on this network of scholars I now know.

JULIA BECKEL

(Occupational Health Psychology)



Tell us about your main project:

My current main project is at the crossroads of racial/ethnic diversity and workplace safety. I am exploring how the practices and policies an organization utilizes to support their diverse workforce also influence how individuals of different racial/ethnic backgrounds communicate about safety. I am hoping that by better understanding how diversity practices also influence safety communication, we can potentially identify a mechanism to mitigate occupational health disparities — or the undue burden of injury, illness, and work-related disability experienced by minority groups in the workplace.

What is one surprising discovery you've made or experience you've had in your training?

In my first year of the training program, I had the opportunity to visit a uranium mine. Given I was a bit inexperienced, I remember wondering how my skillset as a psychologist would be applied or relevant to this kind of work environment. I remember trying to be very creative with research ideas that I could pursue as a psychologist related to mining. I just accepted a full-time job this summer, and the first applied work experience I had was doing a safety culture assessment in the mining industry! I felt adequately prepared and thought back to my first experience visiting the uranium mine in my first semester.

CLIMATE & WORKER HEALTH TARGETED RESEARCH TRAINING

Launched this year, the Climate & Worker Health Targeted Research Training (TRT) program supports future leaders in the field of climate and workforce health. The program emphasizes populations experiencing disparities in exposure and adaptation measures, including rural, migrant and precariously employed, Black, Indigenous, and People of Color (BIPOC), Latino/a, and aging workforces.

The two-year program is led by more than 20 members of the faculty from the ColoradoSPH, CU School of Medicine, CU Boulder, and CSU. This new program, in a new field of study, will capitalize on the breadth of expertise of the faculty, who are eager to cross traditional disciplinary lines to find solutions. Trainees cross disciplinary lines to find solutions taught by a forward-thinking faculty and student cohort to address one of the most urgent challenges we face today in public health.

WELCOME OUR FIRST COHORT!

Miranda Dally, MS - DrPH
candidate at the Colorado
School of Public Health,
Environmental and
Occupational Health

Channing Bice, MS - PhD
candidate at Colorado
State University,
Journalism and Media
Communication

Jacob Smoot, MEM - PhD
candidate at Colorado
State University, Toxicology



CONTINUING

IMPACT

4,452

individuals trained

3,106

Health Links webinar attendees

546

attendees for Ethics webinars

258

Spanish speaking learners

183

CU learners through Skillsoft

84

trainings conducted (65 online courses offered, 22 in-person trainings)

HEALTH LINKS WEBINARS

These hour-long virtual trainings expand our center's reach by educating working professionals about *Total Worker Health*® and offering free continuing education credits for individuals in human resources, health education, and occupational health and safety. One of the best-attended webinars from the last year is an annual topic, "The State of Workplace Mental Health 2023".

Each webinar, we are encouraged by the level of attendee engagement in the Q&A, and we will expand our follow-up communication with attendees in the next year.

We are expanding this series by offering sponsorship opportunities to qualifying organizations. This will increase our reach and sustainability and add value to our network.

POWER OF PARTNERSHIPS

Our center has a long history of partnering with a variety of organizations to expand our reach and provide high-quality occupational health and safety learning opportunities to working professionals. This year we worked directly with professional associations and community partners to plan, execute, or provide continuing education at a variety of educational events, including:

- National Occupational Research Agenda (NORA) Oil & Gas Extraction Sector Spring Safety Summit
- Western States Occupational Network (WestON) annual meeting
- American Industrial Hygiene Association (AIHA) – RMS Fall Tech Conference
- Association of Occupational Health Professionals (AOHP) annual conference

In 2023, we launched a new partnership with the National Hearing Conservation Association to provide continuing education credits for their International Hearing Protector Fit-Testing Symposium. The Center has also expanded its educational offerings through a partnership with the Society for Total Worker Health™ and played an integral role in developing the *Total Worker Health* (TWH) Peer Learning Series.



EDUCATION

TOTAL WORKER HEALTH® PROFESSIONAL PROGRAM

As a complement to the Certificate in *Total Worker Health*®, we developed a fully online TWH training for professionals who may not wish to enroll in a formal university program. The program provides practicing professionals essential tools for creating thriving workplaces. It prepares learners to apply the TWH approach—applied solutions that advance worker health, safety, and well-being — in whatever work setting they serve in.

ETHICS AND FUTURE OF WORK WEBINAR SERIES

For the third consecutive year, our center partnered with the CU Center for Bioethics and Humanities to host an ongoing series discussing the intersection of ethics and the future of work. This last year, we discussed fair chance hiring for employees in recovery, the implications of artificial intelligence (AI) on workers, and the ethical impacts of emerging child labor laws. These webinars attracted more than 1,500 live views, and the recorded replays on YouTube are still watched to date.

ONLINE COURSES

Our top online courses from the last year:

- Mental Health in the Workplace: **231 learners**
- Leadership Skills for Managing Worker Stress and Fatigue through COVID-19: **82 learners**
- Supporting Employees Affected by Cancer: **73 learners**
- *Total Worker Health*® Professional Program: **14 learners**
- Leadership Skills for Managing Worker Stress and Fatigue: **25 learners**



Explore our
course catalog!



IMPACT

JULY 1, 2022 - JUNE 30, 2023

122,549

workers reached through
Health Links

32,550

people reached
through communications

250

event attendees (Research
Day, Health Links, Partner
Awards)

8

digital platforms

3

PRACTICE

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OUTREACH

OUR OUTREACH CORE CONTINUES TO DEVELOP AND DELIVER HIGH QUALITY COMMUNICATIONS, EDUCATION AND TRAINING, AND PRACTICAL INTERVENTIONS TO REACH OUR VAST RANGE OF COMMUNITIES AND AUDIENCES.

HOW DO WE IMPACT INDIVIDUALS WITH OUR RESEARCH, ONLINE COURSES, WORKPLACE PROGRAMS, ESSENTIAL TRAININGS?

IF OUR PROJECTS ARE THE ARMS AND LEGS OF OUR IMPACT, DOING THE WORK IN COMMUNITIES, THEN OUR COMMUNICATIONS STRATEGY IS THE FINGERTIPS, THE FINAL TOUCH, SHARING OUR WORK WITH WORKPLACES, PROFESSIONAL ASSOCIATIONS, ACADEMIA, AND INDIVIDUALS.

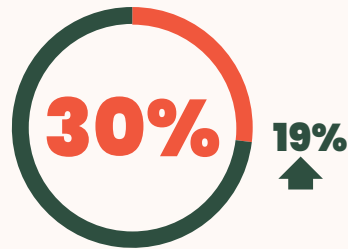
SEE WHO WE'RE REACHING!

REPORTING PERIOD: JULY 1, 2022 – JUNE 30, 2023

CENTER FOR HEALTH, WORK, AND ENVIRONMENT



WEBSITE VIEWS



EMAIL OPEN RATE (1,780 CONTACTS)



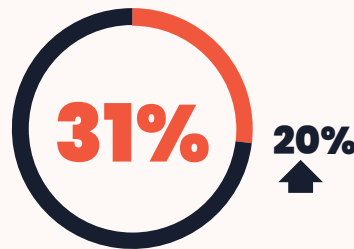
NEWSROOM VIEWS

16%

HEALTH LINKS



WEBSITE VIEWS



EMAIL OPEN RATE (3,010 CONTACTS)

SOCIAL METRICS

1,050
followers

1,170
followers

48,560
impressions

39,834
impressions

1,820
profile visits

18,210
profile visits





RECOVERY FRIENDLY WORKPLACE INITIATIVE

IMPACT

123	RFW workgroup members
96	individuals from 65 organizations at RFW Event (June 8)
76	individuals attended ASSP Conference for RFW session
41	individuals in peer learning series participants
40	organizations signed RFW pledge
22	RFW advising sessions
14	organizations completed Mental Health survey

CULINARY HOSPITALITY OUTREACH
and Wellness (CHOW) partners with Health Links on Recovery Friendly Workplace practices for hospitality members (Bodega Denver).



We have made great headway, with the Recovery Friendly Workplace (RFW) Initiative working with partners and employers to increase awareness, and support for working people struggling with common behavioral health conditions including substance use and addiction.

In partnership with the Colorado Consortium for Prescription Drug Abuse Prevention and the Helen and Arthur E. Johnson Depression Center, we have assisted 268 Colorado employers through our facilitated peer learning series, a new workgroup, and community trainings. Highlights include:

EMPLOYER WORKGROUP

We co-lead this group, which represents Colorado employers who are champions for RFW policies and practices and are the voice of local employers on statewide mental health, substance use, treatment and recovery. This group was founded on the success of our peer learning series from the previous year, which convened business leaders and recovery specialists from across the state.

THE PLEDGE

We developed the Colorado RFW Pledge, for C-suite executives and other business leaders across all sectors, as is an acknowledgment that an organization prioritizes mental health, addiction prevention, treatment, and recovery support for all employees.

LEGISLATION

We participated as a subject matter expert in the national advisory group helping to draft the legislation and are working to propose it in Colorado. The Legislative Analysis and Public Policy Association (LAPPA), with the help of subject matter experts, is in the process of developing a Model Recovery-(friendly) ready Workplaces Act.

A group of seven people, four men and three women, are sitting on a rooftop patio. They are smiling and looking towards the camera. In front of them is a low, dark grey table with various dishes, glasses, and bottles. Large potted plants are visible on the left side of the patio. The background shows a city skyline and a body of water under a clear sky.

SOCIETY FOR TOTAL WORKER HEALTH™

IMPACT

238	members
39	U.S. states represented
4	countries represented (United States, Canada, Italy, Mozambique)

After helping launch the Society for Total Worker Health in September 2022, we celebrated growth and engagement from individuals across a large range of occupational safety and health disciplines, government, academia, public health, public policy, industry, and labor groups.

The Society reached 245 members in 2023, with contributions from the founding interim Board of Directors led by Lee Newman, Lili Tenney, David Shapiro, Mwnangi Nadong (MAP ERC alum), and Bob McLellan. CHWE members Tenney and Shapiro were elected President and Treasurer in the Society's first ever election.

Major accomplishments of the last year also included hosting an inaugural annual member meeting and launching the *Total Worker Health®* Peer Learning Series. The series format engaged participants in discussions after brief presentations from members and guest speakers within industry and the diverse Total Worker Health community.



NATIONAL SUPPLEMENTAL SCREENING PROGRAM

IMPACT

29,444

total exams
completed

1,915

exams in fiscal
year 2023

Since 2005, faculty and staff from our center have partnered with Oak Ridge Associated Universities and the Department of Energy (DOE) to administer the National Supplemental Screening Program (NSSP), which provides free medical screenings to former DOE site workers, as part of the DOE's "Former Worker Program."

Former employees of national energy laboratories and nuclear weapons facilities are screened for occupational health conditions, such as chronic respiratory illnesses, hearing loss, kidney or liver disease, and certain cancers. In addition, the NSSP screening identifies other significant health problems such as diabetes, hypertension, and lipid disorders.

Our Center's Miranda Dally has a new study underway that focuses on the NSSP's identification of new cases of disease at the first rescreening exam. Study findings indicate that NSSP re-screenings often identify previously undiagnosed conditions, lending credence to the effectiveness of the program's longitudinal health surveillance model. We hope to publish this work in 2024.

PROJECT TEAM:

Lee Newman, MD, MA; Joelle Wedel,
PA-C, MS; Miranda Dally, MS



HEALTH LINKS®

Our employer *Total Worker Health*® advising arm has been expanding our offerings and diving deeper into areas where employers need more help. We enrolled our first organization outside of the United States and fostered local partnerships to reach healthcare and public health providers in needed areas of worker health, safety and well-being.

Health Links updated the Healthy Workplace Assessment®, the first changes to the tool since 2017. The enhancements reflect the emerging issues facing workplaces today and a broadened understanding of the worker experience. The updated Assessment now features a more in-depth understanding of workplace culture and more inclusive language.



HEALTH LINKS PARTNER PROGRAMS

Health Links partnered with the Colorado Department of Public Health and Environment (CDPHE) to **launch CO-CARES, a new initiative to support healthcare and public health workers' pandemic recovery.** CO-CARES (Colorado Alliance for Resilient and Equitable Systems) connects healthcare and public health workers of all kinds to a variety of free resources and tools that support recovery, improve well-being, improve teamwork, and foster organizational resilience. Through CO-CARES, we are expanding our program to better serve healthcare and public health organizations by providing free access to Health Links and the Workplace Mental Health Module.

In partnership with CDPHE and the Colorado Healthy Hospital Compact, **we developed the Food@Work survey and resources** workplaces can use to benchmark and learn best practices about serving food at work based on the Food Service Guidelines for Federal Facilities. The module includes evidence-based resources and a survey that helps employers measure their workplace food offerings across five benchmarks.

16%

OF ORGANIZATIONS THAT RE-CERTIFIED
IMPROVED THEIR SCORES ON THE HEALTHY
WORKPLACE ASSESSMENT®





IMPACT SNAPSHOT

(JULY 1, 2022 – JUNE 30, 2023)

KEY HIGHLIGHTS

62

ORGANIZATIONS
PARTICIPATED IN
HEALTH LINKS

12+

INDUSTRIES
REPRESENTED

113

ADVISING
SESSIONS (TOTAL)

SPECIALIZED ADVISING SESSIONS

22

RECOVERY
FRIENDLY
WORKPLACE

6

MENTAL
HEALTH

3

DIABETES
PREVENTION PROGRAM

CERTIFICATION LEVELS*

3

KICK-
START

39

CERTIFIED
LEADER

10

CERTIFIED
PARTNER

* Number of organizations that participated

% CHANGES BY BENCHMARK

26% HEALTH PROGRAMS AND POLICIES



58% SAFETY PROGRAMS AND POLICIES



58% WORKPLACE ASSESSMENT



55% ORGANIZATIONAL SUPPORTS




50% ENGAGEMENT



47% EVALUATION



 **ABSOLUTE CAULKING & WATERPROOFING,**
a dedicated partner and Certified Healthy
Workplace for the last 4 years.



EVENTS

RESEARCH DAY

125

ATTENDEES

35

STUDENT
PRESENTATIONS

6

6 AWARDS
DONATED BY
SPONSORS

SOCIETY OF OCCUPATIONAL HEALTH
PSYCHOLOGY

AMERICAN INDUSTRIAL HYGIENE
ASSOCIATION – ROCKY MOUNTAIN SECTION

CENTRAL ROCKY MOUNTAIN CHAPTER OF
THE HEALTH PHYSICS SOCIETY

ROCKY MOUNTAIN ACADEMY OF
OCCUPATIONAL AND ENVIRONMENTAL
MEDICINE

AMERICAN SOCIETY OF SAFETY
PROFESSIONALS COLORADO CHAPTER

Research Day emphasizes collaboration via transdisciplinary teams to conquer some of occupational health and safety's most wicked or vexing problems. Student research and keynote presentations from this year explored mental health in the workplace, climate change, and diversity, equity, and inclusion.

CHWE PARTNER AWARDS

In September 2023, our center hosted its fourth annual recognition event to honor the commitment and achievements of its key partners.

INDIVIDUAL LIFETIME ACHIEVEMENT AWARD:
STEPHEN REYNOLDS

COMMUNITY IMPACT AWARD: CHERRY CREEK
SCHOOL DISTRICT, SAFETY AND SECURITY
TEAM

PARTNER OF THE YEAR: SAN LUIS VALLEY
ECOSYSTEM COUNCIL

10TH HEALTH LINKS ANNUAL EVENT

The Health Links Annual Event brings together champions of employee health and well-being from a variety of industries for morning workshops and afternoon panels, networking, and award ceremonies.

87

ATTENDEES
REPRESENTING
70 SEPARATE
ORGANIZATIONS

41

WORKSHOP
ATTENDEES



PANELISTS SPEAK
at Health Links Annual Event



“THIS YEAR’S EVENT PROVIDED FANTASTIC OPPORTUNITIES FOR LEARNING AND NETWORKING. THE WORKSHOP TOPICS WERE EXTREMELY RELEVANT AND ENGAGING. MY FAVORITE PART WAS THE AFTERNOON PANEL AND NETWORKING SESSION – IT’S ALWAYS REFRESHING TO HEAR FROM AND CONNECT WITH OTHERS WHO SHARE SIMILAR CHALLENGES AND EXPERIENCES.”

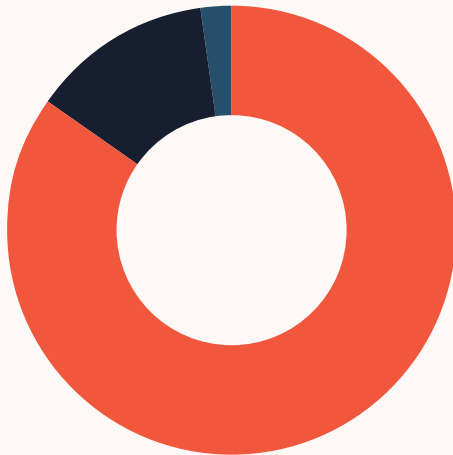
KAYLA GRAY, EMPLOYMENT LIFECYCLE
PRINCIPAL PROFESSIONAL, COLORADO
SCHOOL OF PUBLIC HEALTH



ATTENDEES
mingle with exhibitors

FINANCIALS

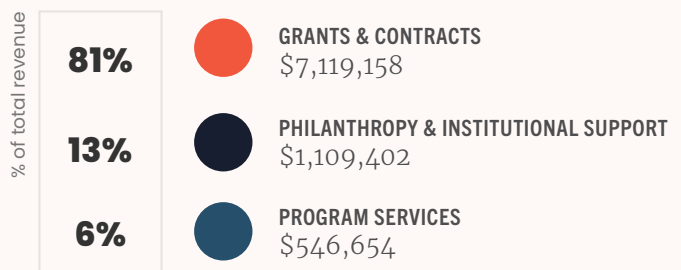
TOTAL VOLUME (\$)



REVENUE

FY22 total / \$8,775,214

* FY21 runs July 2022–June 2023



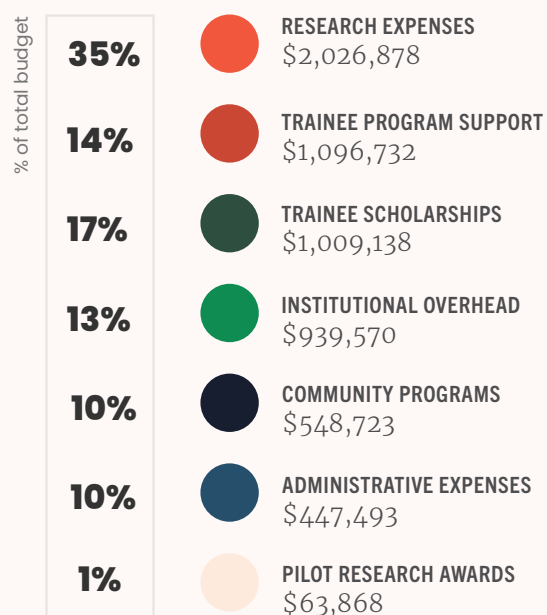
TOTAL VOLUME (\$)



EXPENSES

FY22 total / \$7,351,980

* FY21 runs July 2022–June 2023



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SLV Health

Society for Total Worker Health™

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