

2018-19

ANNUAL REPORT

THE
HUMAN
SIDE
of WORK

Center for Health, Work & Environment
colorado school of public health



NOTE *from the* DIRECTOR

LEE NEWMAN

Use of the word “sustainability” abruptly doubled in the U.S. about 10 years ago. It has been a familiar buzz word ever since—no doubt triggered by a major recession and fueled by a decade in which many Americans woke to the existential threat of climate change. This increase in concern for the health of the planet has not just individuals—but also organizations—journeying towards greater understanding of their role in the crisis, as well as the solution. For those of us working closely with leaders of institutions to address how they can improve the well-being of workers, we have heard the mantra of corporate social responsibility repeated in C-suites, boardrooms, and investor meetings.

Sustainability is a complex concept that can be applied globally, institutionally, and personally. The evolving definition reflects this complexity. Sustainability has evolved from simply meaning “the ability to be maintained over a period of time” to “the avoidance of the depletion of natural resources to maintain an ecological balance.”

Four pillars have been erected to comprehensively address sustainability—economic, social, institutional, and environmental aspects of society and the planet.

Viewed through this lens, the work of our Center strengthens all four pillars by helping organizations adopt work practices that support the sustained safety, health, well-being, and prosperity of employees and their communities. Consider a few examples:

- Our research collaboration with an agribusiness in Guatemala has prevented kidney failure in thousands of farmers amidst an international epidemic. We are contributing to the sustained health and employment of vulnerable workers and the economic viability of agricultural production. Our publications help others around the world affected by or researching the issue build on this success.
- Our SSWell study and Health Links™ teams have advised more than 700 businesses to improve the safety, health, and well-being of their employees, creating a more sustainable national workforce.
- Our leadership trainings of Colorado small business leaders are helping organizations achieve Total Worker Health® state-wide, integrating values for better and more sustainable working conditions.

- Our Center has graduated over 100 occupational health and safety professionals whose job it is to prevent injury and illness in the American workforce. Students in the MAP ERC Health Physics Program are studying the effects of radiation on nature, wildlife, and displaced families in Fukushima, Japan, eagerly working towards a safe and healthy environment for all.

Now let us look internally for a moment. As they say in every preflight safety announcement when the oxygen masks drop from the ceiling: “Put on your own mask before helping others.” Metaphorically, for the Center to continue promoting the safety, health, and well-being of all workers, we need to “put on our own mask” by making sure we foster sustainability in our own workplace. How well is the Center doing in meeting our own social, economic, and personal sustainability goals? As someone who teaches other leaders how to foster an organizational culture that is people and health-centered, I am proud of our culture. I also see room for improvement.

As you will learn by reading about the people and projects highlighted in this year’s annual report, we thrive on collaboration, innovation, and finding practical solutions with high impact. We are committed to rigorously evaluating our effectiveness as scientists, educators, public health professionals, and mentors—ultimately measured by our impact on the well-being of workers, ourselves included.

Among the Center’s own sustainability goals, this year we have begun a multiyear project to reduce the Center’s impact on the environment, while maintaining our dedication to the health and safety of workers.

To start, we are examining ways to reduce the Center’s carbon footprint—a challenging proposition as we try to improve worker health in countries thousands of miles south of the U.S. border and in companies far beyond the Rocky Mountains. Stay connected with us on LinkedIn, Facebook, Twitter, and our website to see how we are doing.

We invite you to join us by reducing your own environmental impact and continuing to help workers around the world.

Warmly,



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

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▼ PHOTO BY Tomás Bernal



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IMPACT

SNAPSHOT

4,449

*Visits to the
Center homepage*

8%

increase

11,272

*Visits to the Health
Links™ homepage*

115%

increase

219

*Organizations recognized
by Health Links*

189

*Health Links
advising sessions*



644 *followers*
@CHWENEWS



383 *followers*
@CHWENEWS



784 *followers*
@HEALTHLINKSNEWS



1,874 *followers*
@HEALTHLINKSCERTIFIED

56

*small businesses
enrolled in SSWell Study*

83

publications

1,410

*former energy workers
screened from the
National Supplemental
Screening Program*

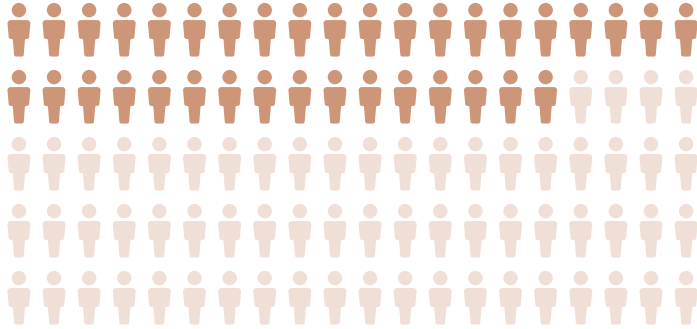
7,323

professionals trained in health & safety

104%


increase over previous year

2018



2019



 ~ 100 professionals

\$101,108

awarded to pilot research projects

27

*Mountain & Plains
Education and Research
Center trainees*

16,529

training hours

INTERNATIONAL TOTAL WORKER HEALTH®

Our collaboration with one of the world's largest agribusinesses, Pantaleon, headquartered in Guatemala, in partnership with the Colorado School of Public Health's Center for Global Health, has led to numerous enhancements to Pantaleon's operations, worker health, and scientific research. Most notably, our work has informed new interventions in the field around hydration, nutrition, hearing conservation, and kidney health. This year, the project was expanded beyond Guatemala to include other operations in Mexico and Nicaragua. Taking our lessons learned in Guatemala, our team worked with Pantaleon's clinical personnel in each location to tailor the new approaches to hydration and kidney health screening to these different contexts.

Our team's primary focus this last year was to develop the framework of a "Total Worker Health (TWH) System" at Pantaleon. We implemented culturally tailored versions of the Health Links Healthy Workplace Assessment™, a health and safety culture survey, and a health risk assessment, in addition to interviewing top company leaders. We used these data to help develop new TWH programs and policies at all levels of the company and to develop and deliver TWH leadership trainings. To date, we have trained 120 executives and managers, impacting a total of 26,705 workers through implementing TWH programs that address fatigue, sleep, stress, and chronic disease.

▼ PHOTO BY Lyndsay Krisher



Pantaleon, Guatemala

SMALL+SAFE+WELL (SSWELL) STUDY

Nearly half of all Americans are employed by small businesses, yet there is relatively little small business intervention research on TWH. The Small+Safe+Well (SSWell) study is a multiyear intervention that facilitates organizational change through modified TWH practices, safety climate, and health climate. The study is designed to better understand whether organizational adoption of TWH policies, programs, and practices impact individual workers' safety, health, and well-being. Businesses in the study enroll in Health Links™, complete an employee health and safety culture survey, and participate in a TWH Leadership Training Program over multiple years. In a paper published in the Journal of Environmental and Occupational Medicine, findings from the study demonstrate that employees working for a business with leaders committed to safety and health are more likely to perceive that their company cares about their safety and health and are more likely to actively participate in TWH initiatives.

We completed recruitment activities for the study in August 2019, enrolling a total of 143 businesses from across Colorado. We will conclude data collection in August 2020 and begin to evaluate the effectiveness of our intervention.



Anne Lake, Creative Director, Co-Founder, Blue Bear Creative

▲ PHOTO BY Tomás Bernal

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 TWH Pilot Project Awards programs. These research grants support innovative studies and research-to-practice projects in occupational safety and health and TWH.

This year, we funded six innovative projects, including projects addressing the health, safety, and well-being of early childhood education providers in Colorado; pilot testing the implementation of a safety and health curriculum for young workers; and a unique application of a design sprint process to quickly develop a health and safety intervention for day laborers.

\$101,108

*awarded to pilot
research projects*

PRACTICE

Andrea Linzmeyer, Equine Manager, Urban Farm at Stapleton



outreach

Our Outreach Core is vital to the Center's mission of impacting worker safety and health by delivering science-based information to key stakeholders and across disciplines. Through translation, communication, and dissemination strategies, we aim to raise awareness and increase access to and adoption of research and practice. Partnerships with regional and state organizations provide opportunities for engaging in real dialogue to better understand the needs, questions, and concerns of those we are aiming to impact.

We strive to use a wide variety of methods and channels in our outreach. Through our newsletters, we reach over 7,500 contacts, including students, academic partners, business owners, and industry professionals. The Center and Health Links™ are collectively reaching 1,400 and 2,200 followers on Twitter and Facebook, respectively. Through hosting and speaking at conferences and events, we have reached more than 15,000 individuals over the past year.

HEALTH LINKS™

In its eighth year, our Health Links program continues to put public health into practice by translating Total Worker Health (TWH) to employers and encouraging organizations to integrate their health and safety efforts. Employers are looking for easy-to-understand tools and resources to help them keep employees healthy and safe. Health Links offers employers, of every size and industry, access to an evidence-based Healthy Workplace Assessment™, certification, and mentoring through personalized advising sessions.

Since 2013, Health Links has reached over 700 organizations. In the past year, Health Links has recognized 219 organizations across eight states representing 124,640 workers.

Through formative research, including focus groups, program evaluation, and business engagement, we have designed an employer-facing program to be relevant to diverse audiences, with the aim of better understanding what different employers value and how they implement TWH in a “real-world” setting. New research from Health Links published in the Journal of Occupational and Environmental Medicine shows that implementation of TWH differs by business size, with larger businesses having more robust programming and policies across health and safety.

124,640

Workers reached



1,706

Professionals trained



Colorado Department of Public Health and Environment, Certified Healthy Workplace™ Leader

HOW HAVE ORGANIZATIONS IMPROVED IN EACH BENCHMARK?



52%
*Organizational
Supports*

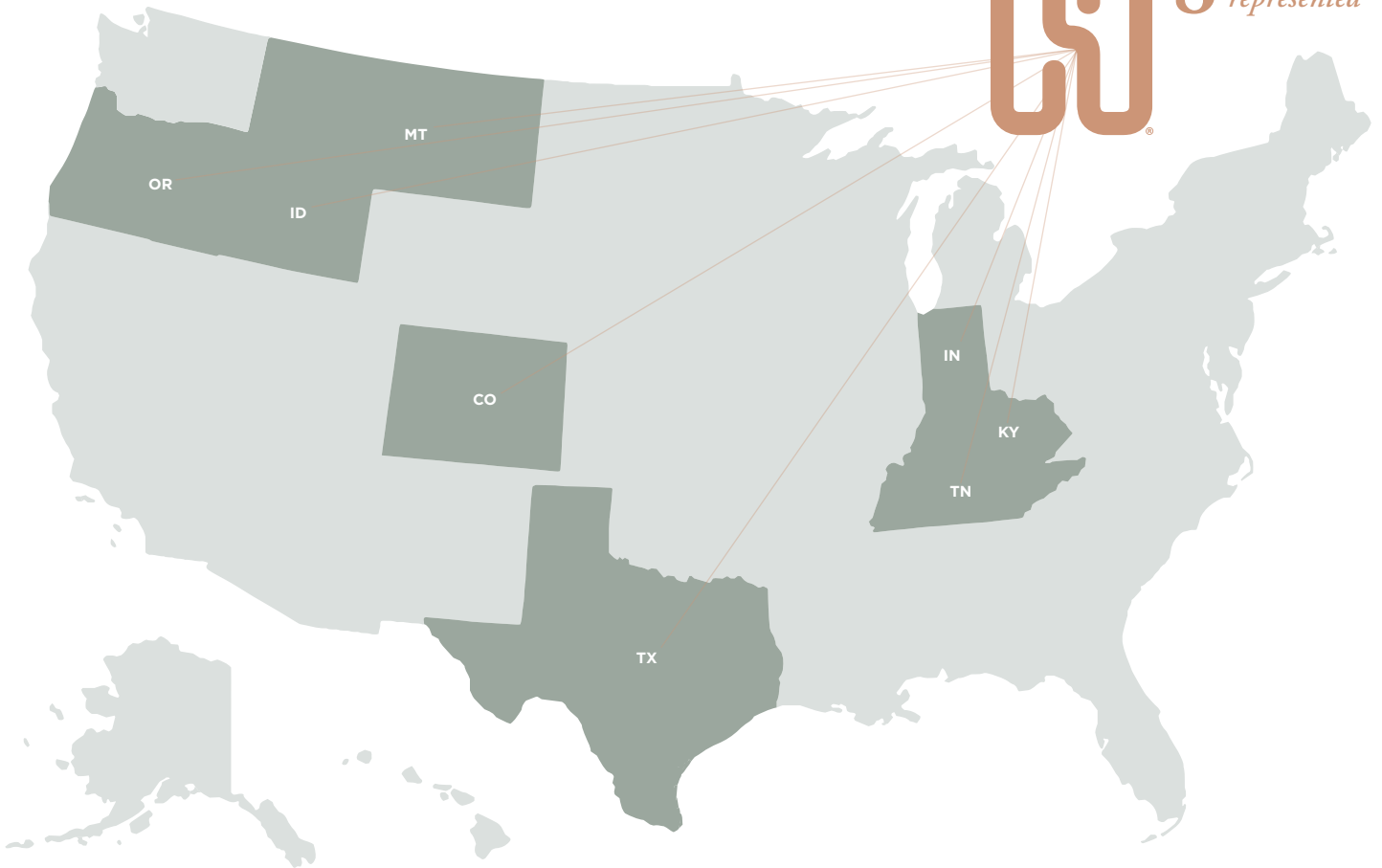


47%
*Workplace
Assessments*

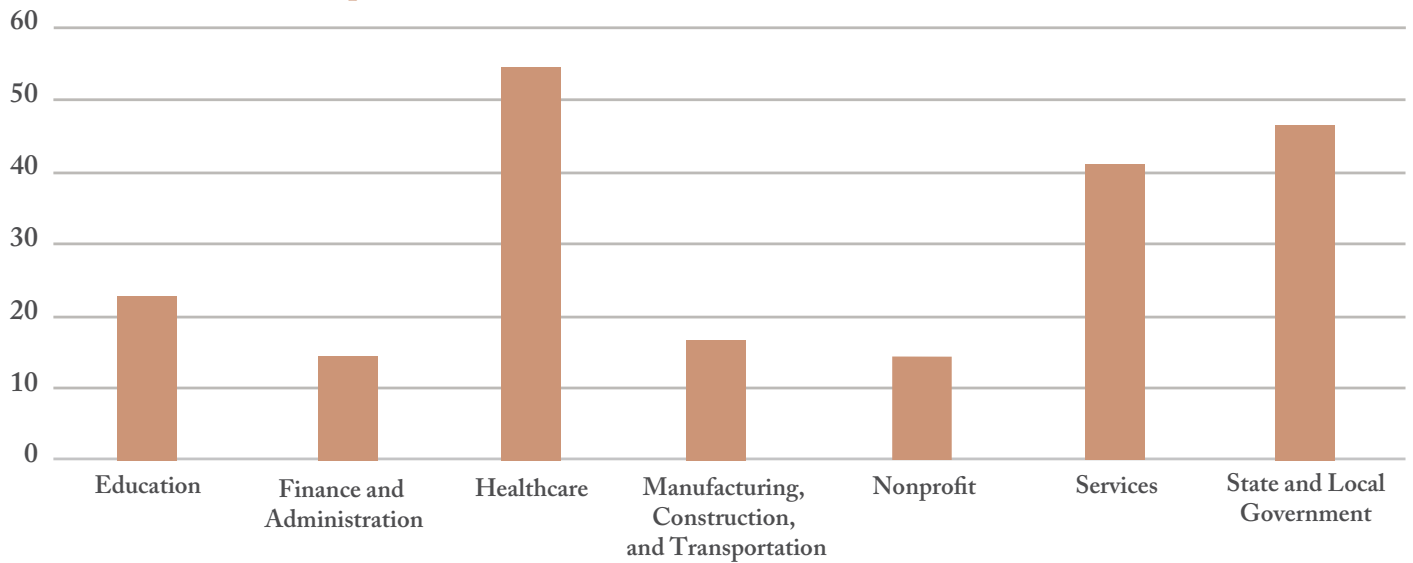


62%
*Health Programs
& Policies*

09 8 states represented



15+ industries represented



 **51%**
Safety Programs
& Policies

 **49%**
Engagement

 **42%**
Evaluation



219

organizations participated in Health Links in FY 2018–2019 (728 overall)

91

Kick-Start

23

Certified

24

Partner

71

Leader

189

Advising sessions

71%

of organizations that re-certified improved their scores on the Healthy Workplace Assessment™

HEALTH LINKS™ ANNUAL EVENT

On August 15, we hosted the seventh annual Health Links event, Celebrating Colorado's Healthiest Places to Work. We welcomed over 200 attendees who participated in programming focused on "A Day of Total Worker Health." We held three workshops: "Fighting Fatigue," "Health Links Data Lab," and "Employee Engagement." In addition to our record attendance, we were joined by 22 exhibitors and the Governor's Council for Health and Active Lifestyles. In connection with this year's event, Colorado Governor Jared Polis proclaimed August 15 as Colorado's Day of Total Worker Health.

▼ PHOTO BY Tomàs Bernal



▼ PHOTO BY Amanda Kuja

Doull Elementary



FAMILY-FRIENDLY WORKPLACES

In March 2019, Health Links launched the Family-Friendly Workplace module to help employers create a culture that supports all employees as caregivers. We are working directly with employers to better understand what being a family-friendly workplace means. More than 90 employers have completed our Family-Friendly Workplace Survey. We have worked directly with 23 employers in Austin, Texas, through our partnership with the United Way for Greater Austin to provide tailored recommendations to support family-friendly workplace policies and practices focused on four components: benefits, flexibility, caregiving, and engagement. We identify opportunities for organizations to make changes (big or small) to create a culture that is supportive of all employees and their families.

In 2020, we are developing additional modules. The Built Environment module focuses on workspace design and how worksites can promote health. The Get Outdoors Employers Toolkit encourages organizations to promote health through the responsible and safe use of the outdoors and nature.



TWH *workforce capacity building*

TOTAL WORKER HEALTH (TWH) LEADERSHIP TRAINING

We developed the TWH Leadership Program as part of the Small+Safe+Well (SSWell) study out of a demonstrated need to train senior leaders from small enterprises on the importance of TWH to their business strategy, company culture, and personal well-being. To date, we have delivered the program to five cohorts of small business leaders from both urban and rural areas of Colorado. The program includes a six-hour, in-person training and three months of training transfer activities: online goal tracking and virtual one-on-one coaching. Our goal is to help small business leaders change their organizational strategy for TWH.

We received a grant from Pinnacol Assurance to develop a hybrid (online and in-person) version of the training for specific industries. We are creating an online TWH Leadership 101 training to give leaders basic knowledge of what it means to be an effective TWH leader. After completing the online training, leaders will attend a one-hour, in-person training on how to apply an industry-specific TWH Leadership toolkit. Our aim is to increase the adoption and implementation of TWH leadership skills and best practices in small and mid-sized businesses. We believe this hybrid, industry-specific version of our TWH Leadership Program will increase the accessibility and applicability of TWH principles and practices across industries.

TOTAL WORKER HEALTH EDUCATION, TRAINING AND CAPACITY BUILDING WORKGROUP (TETRAC)

Building on efforts that began at the first and second International TWH Symposia, and at a November 2017 workshop held at the University of North Carolina, we are helping coordinate the TWH Education, Training and Capacity Building Workgroup (TeTRAC). TeTRAC is a collaborative composed of representatives from the NIOSH Office for TWH, other TWH Centers of Excellence, TWH affiliates, and academic institutions that are developing educational programs for this workgroup. Dr. Lee Newman is leading the effort to develop and disseminate guidelines that academic institutions can use for defining the core principles, competencies, skills, and knowledge needed by future TWH professionals and practitioners. The workgroup has drafted a manuscript that will be submitted for publication in a peer-reviewed journal.

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...joining the TWH Leadership Program was helpful because we received ongoing support and consistent reminders from experts at the Center about keeping our health and safety culture present in everyday activities.

ANNA STOUT, EXECUTIVE DIRECTOR, ROICE-HURST HUMANE SOCIETY



Rachel Livingston, Program Coordinator, Urban Farm at Stapleton

▲ PHOTO BY Tomàs Bernal

events

RESEARCH DAY

Our 11th Annual Research Day Symposium brought over 150 students, faculty, and business leaders together for a day of learning and discussions of how science-driven decisions can create a workplace environment that leads to successful business practices.

Claudia Asensio, the head of sustainability at Pantaleon and keynote speaker at the event, shared how Pantaleon and the Center have worked together to promote the health of Pantaleon's workforce and to understand the causes of chronic kidney disease of unknown origin (CKDu) over the past three years.

As always, the event featured the work of students and faculty from the Colorado School of Public Health and trainees supported by the Mountain & Plains Education and Research Center. It provided students the chance to interact with professionals currently working in the field of environmental and occupational health and safety. The event concluded with an award ceremony for the best student research presentations.

AMERICAN INDIAN AND ALASKA NATIVE WORKSHOP

In July, we collaborated with the NIOSH Western States Division to plan and host the second American Indian and Alaska Native Occupational Safety and Health Workshop. This year's program focused on "Building Bridges to Enhance the Well-Being of American Indian and Alaska Native Workers." The event brought together members from many tribes across the U.S., including the Cochiti, Lumbee, Tohono O'odham, Shoshone-Bannock, Ojibwe, and Oneida people, as well as representatives from NIOSH and academia. It culminated in strategic planning for advancing a collaborative agenda to improve American Indian and Alaska Native worker health, safety, and well-being.

EDUCATION

MAP ERC trainee profiles

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 five different occupational health and safety disciplines. We offer tuition support, research funds, and stipends to qualified students. The five following students were nominated by the directors from each of our programs.



STEPHANIE STEWART
OCCUPATIONAL & ENVIRONMENTAL MEDICINE FELLOW

Tell us about your main project.
I am currently doing rotations in a variety of settings, from general occupational medicine to sub-specialties such as toxicology and physiatry. I have also spent time at the Division of Workers' Compensation.

What is one surprising discovery you've made or experience you've had in your training?
I enjoy taking care of patients with work-related injuries and getting them back to work as safely as possible.

What impact has the ERC had on your training?
Post-graduate occupational medicine training is not funded by Medicare, like most other medical specialties. The ERC is essential, as it provides funding for salary and coursework. With consistent ERC financial support, the future of the occupational medicine residency and fellowship program is secure.

What does the future hold for you?
I plan to do outpatient medicine, focusing on addiction and workplace injuries.

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JESSICA NUNEZ
INDUSTRIAL HYGIENE

Tell us about your main project.
My main project is focused on dairy industry employees. I am investigating the nasal carriage and exposure of livestock-associated MRSA among dairy farm workers.

What impact has the ERC had on your training?

ERC has exposed me to working with multiple disciplines in a teamwork environment where the goal is to better provide a Total Worker Health® approach. Through these interactions I have met numerous professionals and friends within the industry. We all bring our experiences and expertise to better serve the population we are caring for.

What does the future hold for you?

I hope to stay in Colorado and use my degree in industrial hygiene and safety to further benefit occupational and community health.

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ANNA DEAK

HEALTH PHYSICS



Tell us about your main project.

My intended project attempts to distinguish radiocaesium-carrying particles by their size in order to study how size affects migration and deposition behavior in water-soil environments. This knowledge will help in developing efficient processes to decontaminate freshwater bodies contaminated by radioactivity to minimize doses to personnel doing the cleanup.

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

My most surprising discovery was learning about the many different occupations funded by the MAP ERC. I've learned about their region of expertise and how I can collaborate with each one on potential projects.

What impact has the ERC had on your training?

The ERC has shown me a wide range of health-related problems that can occur at work that I never knew existed. The weekly presentations have helped me learn and connect with other professionals in the field that could be a great resource to me in facing these problems.

How have you benefited from the interdisciplinary courses or relationships you've made in the ERC?

I am more comfortable in reaching out to the proper departments for health-related work problems. I am also better at identifying potential work hazards and helping develop solutions to prevent accidents.

What does the future hold for you?

I hope to use my skills and training to foster radiologically-safe working environments, with an emphasis on minimizing radiation exposure.

Q
&
A



MOLLY HISCHKE

ERGONOMICS & SAFETY

Tell us about your main project.

Low back pain is one of the most common musculoskeletal disorders among workers who manually harvest fruits and vegetables. My research project involves using wearable measurement technologies to quantify trunk postures among vegetable and fruit pickers in Colorado and Sardinia.

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

I have had the opportunity to present my work at an international conference in Italy.

What impact has the ERC had on your training?

My training requires that I take various courses from other disciplines. As a result, I've gained depth and breadth within not only my own discipline, but across the multiple disciplines within the ERC.

How have you benefited from the interdisciplinary courses or relationships you've made in the ERC?

Through coursework, I have collaborated with other trainees who have different strengths and working styles. Group work, especially group work with students from a variety of backgrounds, has helped build my communication, collaboration, and teamwork skills.

What does the future hold for you?

I completed an internship with a medical device company and have retained a mentorship and network within the organization. After graduation, I plan on continuing a career in human factors engineering within the medical device space.

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MADISON HANSCOM

OCCUPATIONAL HEALTH PSYCHOLOGY

Tell us about your main project.

I am currently working on my dissertation, which examines how age-related factors might relate to safety motivation. It also examines a more comprehensive understanding of safety motivation than typically used in research and how this motivation is related to various aspects of safety performance.

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

An interesting discovery I've made is the impact of small changes. Depending on the project (e.g., budget, timeline, company), sometimes only small changes can be implemented. However, these can have great potential and lasting impact.

What impact has the ERC had on your training?

It would be difficult to point to an applied experience on my CV that is not directly associated with the MAP ERC or a connection I was fortunate enough to build with someone affiliated with the MAP ERC. The foundational skills I've learned and developed during my time as a MAP ERC trainee have opened doors for me in and outside of CSU.

How have you benefited from the interdisciplinary courses or relationships you've made in the ERC?

The MAP ERC interdisciplinary courses provided me with valuable supervised consulting experiences early in my graduate career. These relationships also provided opportunities to learn from other perspectives within the same field of occupational health and safety.

What does the future hold for you?

My long-term career goal is to positively impact the lives of working people. I will be graduating in May to start a full-time career in consulting to continue this effort.



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The foundational skills I've learned and developed during my time as a MAP ERC trainee have opened doors for me in and outside of CSU.

MADISON HANSCOM



CERTIFICATE *in* TOTAL WORKER HEALTH

When we started the 15-credit hour Total Worker Health (TWH) Certificate Program in 2017, our goal was to develop a program that would allow students and professionals to design, implement, and lead science-based TWH workplace interventions. Our students come from diverse backgrounds, including public health, medicine, human resources, industrial hygiene, nursing, and architecture. We continue to help broaden the reach of occupational health and safety as these trainees thoughtfully consider ways TWH can be applied and integrated into their fields. As of Spring 2019, four of our twelve students graduated and have gone into a variety of positions, including medical clinic administration, public health administration, graduate school for health promotion (with full scholarship), and landscape architecture.

While the backgrounds of our students are diverse, they all have a similar interest in gaining the TWH expertise they need without attending a full-time, in-person master's program. That is why, in the fall of 2019, we were the first in the nation to move our program fully online. We look forward to expanding the reach of TWH education to students and practicing professionals to grow the TWH workforce and promote the interdisciplinary nature of the field.

*...we are broadening the reach
of occupational health and safety
through TWH...*

PHOTO BY Tomàs Bernal ►





continuing education

Over the past year, 7,323 participants have completed over 16,500 hours of the Center's educational content, including live workshops, online courses, and conference presentations.

EXPANDED TRAINING FOR CHRONIC PAIN MANAGEMENT TO PREVENT PRESCRIPTION DRUG ABUSE

The impact of the opioid epidemic on workers and workplaces in the U.S. is serious. In 2012, through support from Pinnacol Assurance, the Center developed and launched a two-hour online training on new guidelines for appropriate use of opioids in the context of managing chronic, non-cancer pain. With the release of new prescriber and safe-use guidelines by the CDC in 2016, the Center updated and expanded the online training, including the addition of a module specifically addressing workers with chronic pain. The new three-hour course launched in July 2018 and has been endorsed by partners in the health and medical communities, including the Colorado Consortium for Prescription Drug Abuse Prevention, the Colorado Hospital Association, the Colorado Division of Regulatory Affairs, Pinnacol Assurance, the Colorado Nursing Association, and Colorado Medical Society. To date, over 3,000 providers have taken these courses.

NEW PARTNERSHIP WITH ECHO COLORADO

This past year, we partnered with ECHO (Extension for Community Health Outcomes) Colorado, based at the University of Colorado Anschutz Medical Campus, to develop a series for employers—a new, innovative use of the ECHO platform. ECHO sessions, which typically target health professionals, combine the interactive learning and case-based sharing aspects of an in-person training with the improved access and convenience of an online virtual experience focused on peer connection.

To launch ECHO's first employee-centric series, we planned and hosted a live event in August 2019. Over 50 participants attended and discussed mental health and workplace stigma, emerging employer approaches to employee mental health, and strategies for increasing and integrating mental health resources in the workplace. Attendees indicated a number of actions they planned to take as a result of attending the training, including creating or promoting employee assistance programs, providing more training to managers, and checking in with employees. The full online ECHO series, "Solutions for Workplace Behavior and Mental Health Challenges," was held in fall 2019. Participants learned how to create awareness in the workplace, reduce stigma around mental health, and have constructive and supportive conversations on signs of stressors. This first-of-its-kind ECHO series cohort was made up of 27 participants representing diverse backgrounds and industries across 13 counties in Colorado.

▲ PHOTO BY Tomás Bernal

Q What did you find the most valuable?

The engagement and interaction with other members during the webinars and break-outs and the base education for each topic.

Being able to learn and share interests and ideas about this important topic with other professionals.

The insight from guest speakers, the communication exercises, and identifying solutions.

ECHO SERIES PARTICIPANTS





▲ PHOTO BY Amanda Kujawa

PUTTING RESEARCH *to* WORK

NATALIE SCHWATKA, PHD, ASSISTANT PROFESSOR

We like to think of Dr. Natalie Schwatka as Center-born and raised. She began her journey as a Mountain & Plains Education and Research Center trainee in the Ergonomics Program at Colorado State University and, after graduating with her Ph.D. in occupational safety and ergonomics, joined the Center for Health, Work & Environment as an employee in June 2014. Natalie has contributed to many projects during her time here and is currently working as a co-investigator on the NIOSH Centers of Excellence for Total Worker Health (TWH) grant (contributing to the SSWell study), serving as the co-director of the TWH Certificate Program, and is a new NIOSH K01 mentored research scientist awardee.

The broad focus of Natalie's research is to help high-risk businesses develop and execute a TWH strategy. As part of her responsibilities as co-investigator for the SSWell study, Natalie co-leads the TWH Leadership Program, where she works alongside her colleagues and Center director and mentor, Dr. Lee Newman, to train small business owners and senior leaders on TWH leadership principles. As part of her NIOSH K01 grant, Natalie will be building the case for how TWH business practices influence worker health outcomes, while evaluating shared leadership practices within small businesses.

Her passion for this work stems from its universal application. "Pretty much everyone has or has had a job, making the workplace an opportune place to protect and promote health." But Natalie's passion for occupational health goes far beyond research. "I love research, but I also love working with people. I care deeply about making sure that research is actually applied in practice—you can publish all you

want, but what real impact did you have? The Center is a home for me because my co-workers share this passion for practice."

Natalie is optimistic about the future of TWH, both in terms of the new research that is being done, as well as the investment businesses are making in the total health of their workforce. Reflecting on her TWH leadership coaching for a SSWell business owner, Natalie recalls, "It was so exciting to hear about the many changes they had made to their businesses as a result of our training. One of the company's employees nominated the owner for a leadership award. It's rewarding to see that our training trickled down—while only the one leader was trained, the employees actually noticed and appreciated a difference in their business practices."

*It's so rewarding to
see that our training
trickled down...*

This passion for research put into practice is in Natalie's blood. She not only cares about practice for the sake of business owners' success, but also as it helps train students looking to join the field. For young researchers, Natalie recommends that, before all else, they identify what they are passionate about. "Once you've identified your passion, you need to find your 'tribe' of people with similar passion whom you enjoy working with," she says. "The quality of your co-workers can make or break the success of your research/practice. Remember that this work requires resiliency and persistence. Change is slow—see failures as learning opportunities and celebrate the small victories."

**...you can publish
all you want, but
what real impact
did you have?**

NATALIE SCHWATKA





WORKING LOCAL AND RURAL

KATHY JAMES, PHD, MSPH, MSCE, ASSISTANT PROFESSOR

Dr. Kathy James helps put the “environment” in the Center for Health, Work & Environment. When she is not in her office down the hall from the Center, you will most likely find her, long hair pulled back, testing air, soil, and water in Colorado’s San Luis Valley. In the home of Sand Dunes National Park and the headwaters of the Rio Grande, the local communities of the San Luis Valley are rural, isolated, and exposed to many materials of public health concern.

“My hope is that citizens are able to become better advocates for themselves through learning, shared resources, and increased health.”

As an assistant professor in the Department of Environmental and Occupational Health at the Colorado School of Public Health, Kathy’s research focuses on environmental exposures—primarily metals and pesticides. She studies the related adverse health outcomes from these exposures and the interaction climate may have on these relationships. Her work typically centers on vulnerable populations including children, workers, people in rural communities, and those of low socioeconomic status. As part of her acceptance this past year into the Superfund Center, in collaboration with Harvard University, Kathy looked at metal exposure in the San Luis Valley and tested innovative interventions to reduce exposure in pregnant women.

On top of her research, Kathy is also training future public health leaders from the students that work with her in the field. She loves

teaching and watching their excitement and dedication to public health grow. Their shared pursuit of learning something new every day, sometimes every hour, continuously motivates Kathy to put in the hard work.

But again, what is research without practice? Kathy wants to continue to put research to work. “I would love to do more ‘hands-on’ work,” she says, “especially work that empowers communities through knowledge, citizen science, and shared resources among community groups. I would like my research to include intervention components, so that participants can benefit from our gained knowledge.”

KATHY JAMES

As she looks toward the future, Kathy shares the interdisciplinary vision of the Center. One of her goals is to expand her network of colleagues, especially in fields outside her expertise. For her work, Kathy’s goal is to see exposure rates decrease in low-income, rural, pediatric populations, where exposure can have the most damage. She wants parents to gain new understanding of exposures and prevention, and see communities adopt an intervention and “own” it. “My hope is that citizens are able to become better advocates for themselves through learning, shared resources, and increased health.”

I would like my research to include intervention components so that participants get the benefits from our gained knowledge.”



▲ PHOTO BY Amanda Kujaawa

TRAINING *the* TRAINEES

TOM JOHNSON, PHD, CHP, HEALTH PHYSICS PROGRAM DIRECTOR

For Dr. Tom Johnson, it all started on a mission with the U.S. State Department. One of the Russian scientists Tom was collaborating with on the trip recommended that Tom study under Dr. Herman Cember. In the cafeteria at Northwestern University, Tom met with Dr. Cember to discuss health physics. Their scheduled lunch turned into a two-hour conversation, and Tom enrolled in the Health Physics Program not long after. From the onset, Tom had great interest in how the integration of multiple disciplines and health physics created such broad opportunities.

Tom is a professor of health physics at Colorado State

University, the program director for the MAP ERC Health Physics Program, and the legendary host of the Jeopardy game at the Center's Annual Research Day. Tom chose the MAP ERC as his home because "it is one of the only steady funding sources that exist for health physics and is the only program I know of that is truly interdisciplinary and leading the way in worker health."

In his own words, "The MAP ERC is the best program for helping students to understand how multiple disciplines are required for worker health. Typically, academic programs, even if they are in the same department, are siloed, with little to no interaction between the various disciplines. The MAP ERC goes beyond just having programs associate with each other—there is real teamwork, where both faculty and students work together to advance worker health. We are accomplishing the multidisciplinary goals that many universities aspire to but few achieve."

Tom sees the most concrete impact of the MAP ERC on occupational health during the annual student trips he leads to Los Alamos or Idaho National Labs. Upon first glance, most

students believe these facilities only apply to people working with radiation. It does not take long for them to realize how it takes a large, collaborative team of multiple disciplines to ensure occupational health in these complex work environments. Students see how their role in worker health impacts other specialties, and how they all fit together.

“We are accomplishing the multi-disciplinary goals that many universities aspire to but few achieve.”

TOM JOHNSON

As a professor, Tom prefers to teach using practical examples. When asked why interdisciplinary collaboration is so important in occupational health and safety, he provided the following scenario.

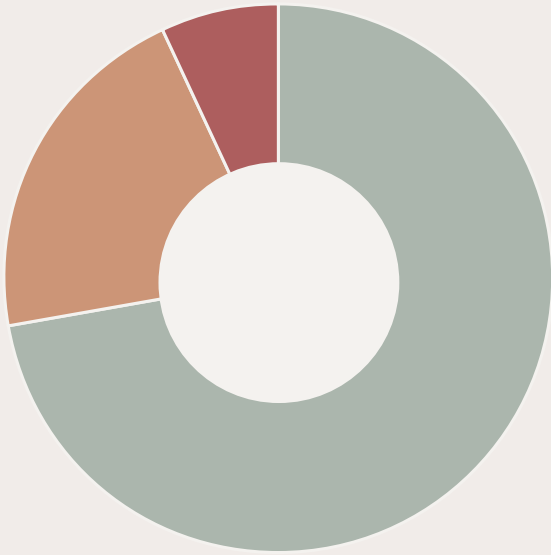
"When a worker enters a radiation field, it would be ideal for them to wear a thick, lead layer of protective clothing. This would result in a very heavy load on the person's body, reducing efficiency, and increasing their heat load, possibly to the point of incapacitation. So, while we may be protecting for one risk (radiation), we may be creating another (heat exhaustion), and knowledge of how all the risks impact workers is essential. By working together as a team, we can find solutions to reduce or eliminate worker risk, while accomplishing work goals."

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Thanks to the impact of his trips, teaching, and the MAP ERC program, Tom anticipates greater collaboration among professionals based on their greater awareness of multidisciplinary hazards, all with the goal of "students and alumni working together to improve worker health."

FINANCIALS

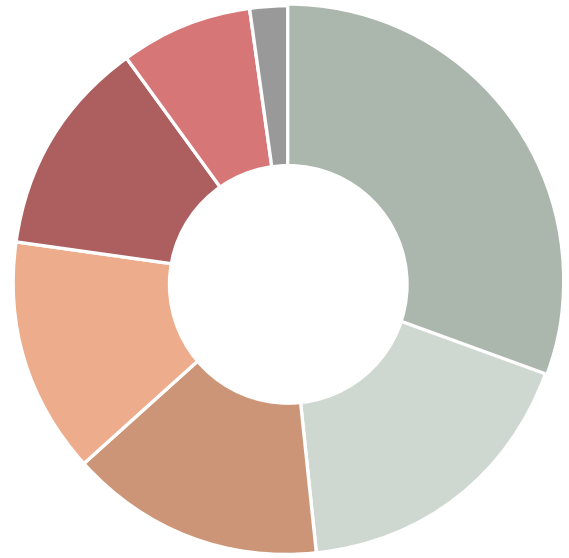
//////////////////// FY 2019



REVENUE

FY19 total / \$5,454,822

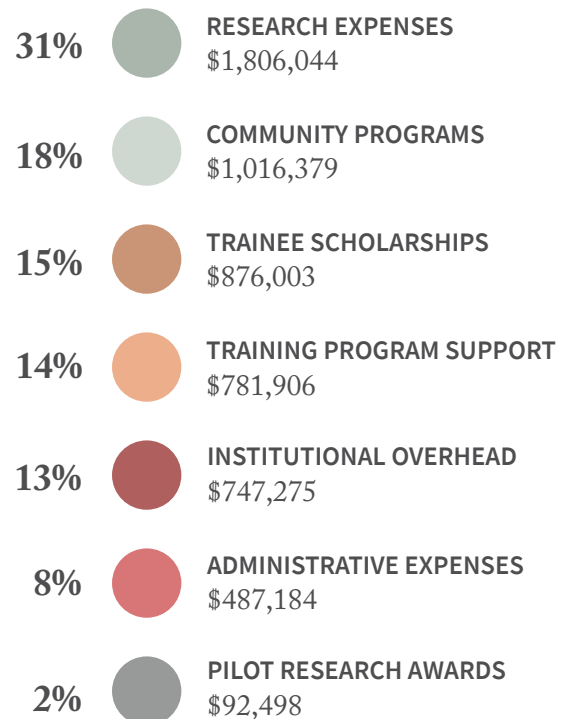
** FY19 runs July 2018-June 2019*



EXPENSES

FY19 total / \$5,807,289

** FY19 runs July 2018-June 2019*





Trey, Manager, The Preservery

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ABOUT *the* PHOTOS

PROJECT

THE HUMAN SIDE OF WORK

Through our research, education, and practice, we work hard to represent all workers. But who are the *people* behind the work? This year, we wanted to capture the faces, stories, and day-to-day lives of a diverse workforce through a project we call “The Human Side of Work.” Throughout this report, you get a glimpse of those faces. Their stories will be told in a future publication dedicated to telling relatable and heartfelt stories of generations, documenting natural work environments, and showing the human side of work.

COVER

WHITNEY ARISS, CO-OWNER, THE PRESERVED

“My husband and I decided to start the business about seven years ago. We had just gone through a really hard time—I had two miscarriages back to back, and we were floored by that. It was devastating. What would we do with all of this energy we had put towards this big dream, this goal that we had always had? It all came crashing down. We decided we needed to regroup and reconnect with our own personal vision.

Growing up, my family made everything from scratch. We grew a whole garden and had all sorts of fruit and nut trees. And when you have a fruit tree that’s been producing for a while, no matter how big your family is, there will always be an abundance. So my parents were really into canning and preserving. I thought anchoring that ethos by putting it in our name would help us stay true to our belief in looking to the seasons to dictate what we would purchase and to source from local vendors whenever possible. That’s where the name Preserved came from.

We didn’t want to just be another expensive, fancy restaurant. We wanted to be accessible and have food that a lot of different kinds of people could come and enjoy. It’s important for us to be meaningful to the community and to the people who have been in this neighborhood for a long time.”

PHOTOGRAPHER

TOMÀS BERNAL

Tomàs Bernal is a senior at the University of Colorado Denver studying visual media production and marketing. Working on building his portfolio, Tomàs seeks out projects that nurture his love for exploring the human condition.

Tomàs views photography as a way to engage in storytelling, drawing him to this year’s Center photo project. “This project embodies such storytelling. The juxtaposition of words and images remind us of the human within the labor, and the humanness that can be brought to one’s work,” says Tomàs. Throughout his work on this photo project, Tomàs focused on capturing the spirit of the workers and conveying the passion and purpose that connects people to their work.

After graduation, Tomàs plans to continue his work in storytelling by working for a publication that features the voices of marginalized people and populations.

*Together, we can build a brighter future
for all workers and our communities.*

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The images in this report reflect the real experiences of workers and do not necessarily reflect occupational health and safety regulations or best practices. We collaborate with employers to improve all health and safety conditions, striving to reach as many workers as possible.