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“Protecting workers and their environment through interdisciplinary education, research, and service.”

A Message from the Center Director

Since the Rocky Mountain Center’s founding in 1977, occupational and environmental health and safety has continually evolved. The growth of shift work and the gig economy, the challenges of the opioid epidemic and legalization of medical marijuana, the addition of new technologies, and the increasingly complex understandings of exposures—all of these have demanded that we adapt in order to fulfill our mission of keeping every worker in America safe. And while the Rocky Mountain Center is no stranger to evolution, these past few months have been specially marked by change.

We have welcomed two new faculty members to the Center: Dr. Joseph Allen (pg. 5) and Dr. Rachael Jones (pg. 6), as well as a new Continuing Education Director, Dr. Diane Johnson (pg. 14). We are excited to see what innovations each of them will contribute to the Center. And, of course, this August we welcomed a new cohort of trainees, including master's students in our Industrial Hygiene program, new doctoral trainees in a variety of emphases, and new doctors in our Occupational Medicine Residency. Our returning trainees, faculty, and researchers at the Center are doing pioneering work as well. We were delighted that MPHOnline ranked our Industrial Hygiene program as #3 in the nation. Our research agenda continues to grow in breadth and complexity both, encompassing developments in longstanding research and exploratory investigations into new workers, problems, exposures, and communities. At any moment in the Center, a visitor might find us collecting preliminary data for upcoming grants, holding team meetings to put together a new project, or working on manuscripts to share what valuable findings we have uncovered. But this work does not take place in isolation.

We are grateful, as always, for the partnership of local organizations as we seek to improve the health of every worker in America, whether these organizations have helped us obtain data, offered us a chance to train their workers, or helped us offer important services. We have partnered with WCF Insurance in some groundbreaking new studies (pg. 2), and have been building our relationship with the Mexican Consulate of Salt Lake City (pg. 8) to help support the workers who utilize services there. Other collaborations are ongoing or in process, and we look forward to sharing our results as they become available. As we always have, the Rocky Mountain Center is pleased to extend an open invitation to any stakeholders in occupational and environmental health and safety. Ensuring the health of every worker may well seem to be a Sisyphean task at times, but with each day, we reaffirm our commitment and make measureable progress as we seek to protect workers and their environment.

Kurt T. Hegmann, MD, MPH
RMCOEH Director
Dr. Paul S. Richards Endowed Chair in Occupational Safety and Health
Research Update: The Impact of Guidelines

Low back pain (LBP) is a common injury with treatment including time off for rest and healthcare, which has led to a third of all workers’ compensation costs going to LBP alone. In the past, opioid prescriptions have been commonly used to treat LBP, but the recent opioid epidemic and an increase in the clinical understanding of LBP have led to the development of evidence-based medical guidelines.

According to new research performed at the Workers’ Compensation Fund (WCF) Mutual Insurance Company led by investigators at the Rocky Mountain Center for Occupational and Environmental Health, adherence to these guidelines is associated with faster resolution of symptoms and decreased worker’s compensation costs for LBP. Guideline adherence decreased medical costs by $353 and total costs by $586 per unit of compliance.

Conventional treatments for LBP in the past have included bed rest and the prescription of opioids and/or muscle relaxants. The American College of Occupational and Environmental Medicine (ACOEM) has published evidence-based guidelines that recommend against these treatments in favor of “stay active” protocols that include progressive walking and specific types of stretches. Studies have revealed that these alternatives not only decrease time away from work, but also help combat the recurring pain and disability associated with LBP.

In the new study published in the Journal of Occupational and Environmental Medicine, first author James D. Owens, DO, MOH and colleagues found that adherence to ACOEM guidelines are strongly associated with lowered worker’s compensation costs. Kurt Hegmann, MD, MPH stated that “This is the first powerful evidence of efficacy of evidence-based guidelines for the treatment of low back pain, and the strength of the relationships were stronger than expected.” Drs. Owens, Hegmann, and others from the Center collected and analyzed data from the Workers’ Compensation Fund (WCF) Insurance of Utah. WCF’s comprehensive databases allowed the researchers to examine medical records, treatment instructions, duration of claims, and claims/indemnity costs. Researchers calculated the relationships between adherence to evidence-based medicine and costs.

The researchers also found that many low back pain treatment plans do not adhere to these evidence-based recommendations. In the future, the researchers hope to see this incorporated into a tool for healthcare quality improvement projects. This should not only lead to lower costs, but to a more comprehensive understanding of how to treat LBP.

“Impacts of Adherence to Evidence-Based Medicine Guidelines for the Management of Acute Low Back Pain on Costs of Worker’s Compensation Claims” was published in the Journal of Occupational and Environmental Medicine.
What is ACOEM?

The American College of Occupational and Environmental Medicine. “ACOEM is the pre-eminent physician-led organization that champions the health of workers, safety of workplaces, and quality of environments. ACOEM provides leadership to promote optimal health and safety of workers, workplaces, and environments by educating health professionals and the public, stimulating research, enhancing the quality of practice, guiding workplace and public policy, and advancing the field of occupational and environmental medicine.” Source: ACOEM Vision and Mission Statements

A New Opioids Guideline Program Reduces Risk, Number of Prescriptions, and Associations with Fatalities

An evidence-based opioids guidelines-based program based on the ACOEM guidelines was implemented at the largest worker's compensation program in Utah. University of Utah researchers at the Rocky Mountain Center for Occupational and Environmental Health found that the program led to significant reductions in opioid use, the length of opioid prescriptions, refill frequency, and the morphine equivalent dose (MED), all of which are key risk factors for long-term opioid use and misuse.

Over 115 people per day die in the United States from overdosing on opioids, and Utah is an astonishing seventh in the nation for drug poisoning deaths. In spite of this, nearly one-third of all Utah adults were prescribed opioids in 2014. Early opioid use is associated with higher overall medical costs, prolonged disability, higher surgery risk, and continued opioid use. Researchers at the Rocky Mountain Center for Occupational and Environmental Health have responded to this epidemic by implementing educational programs, conducting research, and helping to guide physicians on the safest and most effective ways to prescribe opioids when needed.

WCF Insurance recently implemented a program relying on the guidance of the ACOEM Opioid Guidelines Criteria (edited by Dr. Kurt Hegmann, Center Director). RMCOEH Drs. Andrew Phillips, Matthew Thiese, and Kurt Hegmann collaborated with other researchers to examine the efficacy of this program. The WCF protocol required prescribers to follow the guidelines, which required that the injury be severe enough to warrant opioid use, that the morphine equivalent dosage (MED) remained at 50 mg or below for acute injuries, and that all prescriptions be limited to 14 days-supply or less.

This study, published in the Journal of Occupational and Environmental Medicine, found that the program had incredible impact. Acute claims with an opioid prescription were reduced by 50.2%, and the refill rate of opioid prescriptions were reduced by 60.4%. In total, 13,258 fewer opioid pills were prescribed as a result of this program.
Pathogens, PPE, and Post-Falls: Publication Highlights from the Center

Selected Faculty Publications

Role of Biomechanical Factors in Resolution of Carpal Tunnel Syndrome among a Population of Workers

High biomechanical exposures paradoxically predicted faster improvement in CTS and light duty did not result in symptom resolution.


Evaluation of a 25-mm disposable sampler relative to the inhalable aerosol convention.

Results indicated that the new sampler were more efficient on smaller particles, but the efficiency was significantly lower for particle sizes about 60 µm.


Prevalence of Low Back Pain, Seeking Medical Care, and Lost Time due to Low Back Pain among Manual Material Handling Workers in the United States

The least severe low back pain health effect had the highest prevalence and lost time among those studied.


Modeling the Effect of the 2018 Revised ACGIH Hand Activity Threshold Limit Value® (TLV) at Reducing Risk for Carpal Tunnel Syndrome

The 2018 revision of the TLV better protects workers from CTS, a recognized occupational health indicator important to public health.


Potential for occupational exposures to pathogens during bronchoscopy procedures.

Bronchoscopy procedures were associated with short-term increased ultrafine or respirable aerosol concentrations, and there were opportunities for contact transmission.


The impact of post-fall huddles on repeat fall rates and perceptions of safety culture: a quasi-experimental evaluation of a patient safety demonstration project

Staff who participate in post-fall huddles are likely to have positive perceptions of teamwork support for fall-risk reduction and safety culture.


Personal protective equipment doffing practices of healthcare workers.

Overall, 90% of observed doffing was incorrect, with respect to the doffing sequence, doffing technique, or use of appropriate PPE. There is a clear need to change the approach used to training HCWs in PPE doffing practices.


Coping with emotional labor: an intervention study

These findings suggest that a brief, 60 min, intervention was effective in reducing the strength of the relationship between emotional labor and burnout.

For more publications, don't forget to follow us on social media!
Professor Joe Allen Has Big Plans

... and may hold a few meetings along the way.

Who is he?
When it comes to occupational safety and health, the mind tends to turn towards physical dangers: contaminants in the air, missing protective equipment, a disastrous accident or injury. Dr. Joseph Allen's work demonstrates that when it comes to OSH, how we think about safety is as critical as the actions we take to ensure it. He comes to the RMCOEH with an extensive background in industrial/organizational psychology, beginning with a degree that's close to home (a B.S. in Psychology from Brigham Young University). Dr. Allen's graduate work focused on organizational science and psychology, with a M.A. and Ph.D. from the University of North Carolina at Charlotte. He has most recently been a Professor in Industrial/Organizational Psychology at the University of Nebraska Omaha. He has experience in researching safety for vulnerable occupational populations, including fire-based emergency responders and healthcare workers. He looks forward to continuing his collaborations at the RMCOEH.

What does he research?
His research consists of three interrelated areas: workplace meetings, occupational safety and health, and community engagement. He is an active reviewer, contributor, and consultant in each of those areas. Dr. Allen has an impressive CV of publications as well, having 100 publications in academic outlets, another 20 under review, and many works in progress for a number of journals. And the topic of many of those publications is something that is not important only for OSH, but is applicable to nearly every manager and worker in the world: meetings. While many people might hear the word meetings and flinch, Dr. Allen's unique perspective and enthusiasm about meetings just may well change their minds. He sees well-conducted meetings as a way to increase engagement, enthusiasm, and retention among CEOs, managers, and workers. A number of his publications, as well as much of his consulting work, focus on how to bring such successful meetings into the boardrooms and workplaces.

What are his plans for the RMCOEH?
In his own words: “First, my major plans for the next year are to get the Center for Meeting Effectiveness and my research lab up and running. This includes both the physical setup of the lab and networking with local, regional, and national businesses to start engaging in service contracts related to both meeting effectiveness and safety/well-being improvements therefrom. I plan to launch some new research related to decision-making and PPE use in the fire service, build upon a new collaboration with Matt Thiese related to lawyer well-being, and stay on the forefront of meeting science with new work based on the biological indicators of effective and ineffective meetings. These efforts will include a series of grant applications to NSF, FEMA/DHS, NIH, and NIOSH, as well as contracts with businesses.

Second, personally, I have high hopes for OEH and all the RMCOEH is doing. Specifically, I hope to add my own unique set of skills and expertise to the great work that's already occurring. I see amazing opportunities for growth in the programs, from CE to IH to OIP, and so on. I hope to attract additional students into the programs by offering opportunities in the Occupational Health Psychology domain. In addition, I see quite a few collaborative opportunities with faculty in OEH that could be realized in the coming months and years. Thus, my hope is that we can accomplish more together, grow the proverbial pie, and enjoy the successes by identifying and climbing the next mountain.”
Starting out in IH
Dr. Rachael Jones, like many Industrial Hygienists before her, can pinpoint the exact moment that she became interested in her field. She was working as a laboratory technician in Equilon (now Shell) refinery in Anacortes, WA, when a problem with personal protective equipment (PPE) caught her attention. She noted that the facial characteristics of a worker made fit-testing a respirator difficult—and with that moment, Dr. Jones embarked on a career that would focus on preventing exposures to workplace and environmental stressors. Soon after that experience, she began her graduate studies at the University of California Berkeley where she earned her MPH in Public Health and then her PhD in Environmental Health Sciences. She took a postdoctoral position at the University of Illinois-Chicago before joining the faculty there, earning her Certified Industrial Hygienist (CIH) along the way.

Innovative, Rigorous Research
Much of Dr. Jones’s research has focused on the transmission of infectious diseases among healthcare workers. Her investigations have found distressing trends in the use of personal protective equipment (PPE) among health workers—one study observed that as many as 90% of the participants did not correctly don or doff their PPE! Dr. Jones has utilized some fascinating methods to study these problems, including developing a machine and recipe for simulated vomitus and modeling exposure patterns with mathematics. She was Principal Investigator (PI) on a larger federally-funded research study (UIC Epicenter for Prevention of Healthcare Associated Infections, CDC 1U54CK000445-01), a study that worked to characterize healthcare workers’ exposures to infectious bodily fluids. This study has resulted in twelve peer-reviewed publications (with several more planned). She is also (since 2010) a member of the Editorial Board of the Journal of Occupational and Environmental Hygiene (JOEH).

New Roles to Play
At the RMCOEH, Dr. Jones plans to further her research, develop new lines of inquiry, and mentor graduate trainees in their path towards graduation and work in the field. She has taken on the roles of Director of the Industrial Hygiene Program as well as Director of OEH Graduate Studies. Many trainees have already benefitted from Dr. Jones’s wisdom, experience, and approach to academics.

Dr. Jones in her own words:
“I am interested in research questions about how people - workers and communities - come into contact with stressors in their environment, and how those stressors can be mitigated or eliminated if they pose a threat to health. A lot of my work has used mathematical models to describe these contacts or exposures, but in recent years I have expanded my research methodologies to include: 1) statistical methods to characterize exposures and their determinants, such as for epidemiologic studies, 2) qualitative methods, 3) simulation experiments and 4) field-based studies. One of the stressors of great interest to me is infectious agents, such as encountered by healthcare workers providing care to patients with infectious diseases. I have sought to explore the processes by which infectious diseases are transmitted from person to person, the risk of infection (including the burden of occupationally-acquired infections among healthcare workers), and strategies for managing and preventing disease transmission. In addition, I am increasingly interested in structural problems that create and sustain unhealthy work, particularly among low-wage workers. I am always interested in building research collaborations to explore questions and areas that are new to me.”

Exposures, Infections, & Mathematics: Introducing Professor Rachael Jones
The Rocky Mountain Center for Occupational and Environmental Health: A National Treasure

Results from our 2019 External & Internal Graduate Reviews

In early 2019, the RMCOEH underwent two comprehensive reviews of our graduate program from both external and internal reviewers. After touring our labs and classrooms, reviewers spoke with students, faculty, and staff; reviewed curriculum, policies, and procedures; attended events, lunches, and meetings. The feedback from these reviews was overwhelmingly positive, and the minor recommendations that the reviewers made have already been taken into consideration. We are delighted to share some of the reviewers’ observations below!

“The academic programs and the model of interdisciplinary work and collaboration with a bonafide OSH team is an example to the nation.”

“Unparalleled collaborative relationships with businesses, trade groups, employee groups, government units, healthcare organizations, workers’ compensation insurers, and community groups.”

“OSTH issues in industry and beyond require multidisciplinary attention; but, to convene all the disciplines (Medicine, industrial hygiene, safety, injury prevention and ergonomics) together, as one cohesive team and accessible at the same time is innovative and critical to problem solving. RMCOEH gets a Gold Star in this space.”

“100% student retention.”

“RMCOEH is a valuable but somewhat hidden jewel at the University. . .The Center has all the expertise of a full service, multidisciplinary OSH program.”

“Amazing faculty availability.”

“Students... are able to interact regularly with peers and professors to exchange ideas and acquire academic and social support. The students highlighted this interaction as one of the great advantages of being in their respective program. This cross-pollination of faculty, trainees and ideas is an important center feature, embedded in the design, to which many programs aspire, and which NIOSH requires ERCs to integrate in their programs.”

“RMCOEH is a national treasure.”
The Utah Coalition for Opioid Overdose Prevention (UCO-OP) has a valuable mission statement: “empowering families with resources to help prevent future crises, find quality treatment options, and support recovery of their loved ones.” That mission encompasses advocacy, access to treatment, and provider training and patient education. Dr. Melissa Cheng, OM faculty, co-led the UCO-OP Provider Training & Patient Education Subcommittee, contributing her expertise in provider education (Screening, Brief Intervention, and Referral to Treatment, or SBIRT) to the project.

UCO-OP’s Provider Training & Patient Education Subcommittee was awarded the “2019 Team Award for Innovation” from the Utah Health Improvement Plan. This award exemplifies the spirit of partnership between expert faculty at the RMCOEH and the needs of the community as a whole. Congratulations!

Recently RMCOEH researchers and staff have partnered with another critical community organization, the Mexican Consulate of Salt Lake City. The Consulate works to support workers who need advice on the recovery of wages or workers’ compensation for occupational hazards. Recently, they held a ceremony in celebration of their inaugural Labor Rights Week, and the RMCOEH was recognized as a valuable partner to the Consulate. Among other pillars in the community, Utah Senator Karen Mayne (5th District) was in attendance. Rachel Brown, Hazardous Waste Coordinator, accepted on behalf of the RMCOEH. We look forward to continued collaboration with the Consulate!
This past spring, the Department of Family and Preventive Medicine at the University of Utah started the inaugural Education, Research, and Community Engagement Summit: a chance for students, trainees, and residents to share their research with their peers and faculty, and a chance for onlookers to get a glimpse at the breadth of research being conducted at the U. Trainees from the RMCOEH set about preparing their research to be displayed in a poster form—no small task when trying to represent complex research, results, and context!

On April 15, 2019, students, faculty, and staff crowded the halls of the University of Utah Alumni House to take a look at the range of research currently being conducted by students, residents, and postdocs. Presenters stood by their posters, ready to explain and entertain questions on their methods. RMCOEH trainees discussed research as varying as body core temperatures in hot workplaces to environmental assessments in a frontier community. Prizes were awarded for best presentations, with the Student Choice Award going to Lauren Haggerty, MSOH-IH student (and now graduate!), for her “How Ventilation Influences Indoor Air Pollution in Developing Countries Where Traditional Cooking Practices Are Used.”

Word quickly spread around campus regarding the summit, and visitors from different departments and colleges came to see what our trainees are contributing to the future of occupational health, as well as the work being done by their colleagues in other divisions. The Summit was declared an unequivocal success by all who attended, and we look forward to supporting our students in the next year. Keep an eye on our social media for announcements regarding the next Summit!
A NORA Success Story: The 17th Annual NORA Symposium

The National Occupational Research Agenda (NORA) New/Young Investigators Symposium is a time-honored tradition here at the RMCOEH (2019 saw our seventeenth annual symposium!). Held in mid-April, NORA offers trainees and other new/young investigators the chance to share their research, connect with others in their fields, and hear speakers share their valuable experience in the fields of occupational safety and health. This year, RMCOEH trainees presented or displayed posters on inhalation concerns in a manufacturing company, an experimental transfer sheet used in lieu of a traditional gurney, pre- and post-calibration equations for an air quality instrument, and more (at left, see Dr. Yudi Wibisono and MSOH-IH student Lauren Haggerty examine her poster).

Another of the highlights of the NORA Symposium is the chance for students from our Occupational Solutions Course (team-taught by three RMCOEH faculty: Dr. Wood, Dr. D’Entremont, and Dr. Pahler) to share their projects (see one of those presentations in action on the right). Students in this course work in multidisciplinary teams to solve “real-world” problems at various companies across the Salt Lake Valley. This experience offers trainees a chance to see what it’s like to work in the field of occupational safety and health, which is in turn shared with the other attendees of the symposium.

“The goal of this conference is to assemble interested students (undergraduate and graduate) and young/new investigators from the region, as well as other interested parties, in a forum where NORA-related research can be presented and discussed in a non-threatening atmosphere.”
“Exclusion of all other explanations does not necessarily establish exposure as the cause.” Donald Sinclair, J.D., was the Dr. Paul S. Richards Endowed Distinguished Visiting Lecturer in Occupational Medicine. At NORA New/Young Investigators Symposium, he offered a different view of occupational health: one from the courtroom. Mr. Sinclair described how evidence-based medicine was sorely needed in the legal setting. He offered a real-life example “war story” from the courtroom to demonstrate how critical careful methodology and strong science was needed in law. His example was a reminder that what happens in science does not occur in isolation alone: it has potent, critical real-world effects.

Mr. Sinclair noted the importance of recognizing the actual (or potential) rate of error in cases, as well as looking at an expert witness’s view in terms of the wider scientific community. It is not enough, Mr. Sinclair explained, to extrapolate from opinion evidence: experts must establish evidence of causation, recognize that some diseases are idiopathic, and, of course, the golden rule of science: correlation is not causation.

What’s next for NIOSH?

Expanding the Definitions of Occupational Health

Dr. Sarah Felknor, the Associate Director for Research Integration and Extramural Performance at NIOSH, spoke to a curious audience at the NORA New/Young Investigators Symposium about the future needs of occupational safety and health. Dr. Felknor noted a need to expand and develop the traditional view of concepts like burden and exposure. This will require increasing sophistication on the part of OSH workers to consider the five domains of worker well-being: physical environment, workplace culture, health status, work evaluation, and home, community, and society. Dr. Felknor also noted the need to look at OSH from different perspectives. With the changing workforce, she explained, long-understood ideas, such as work absenteeism, have been replaced with modifications such as presenteeism, or when a worker is physically at work but cognitively absent (e.g., on Facebook). If OSH is to continue to thrive and develop, it must adapt in response to the evolution of the workforce.

“Protecting the workforce of the future requires a holistic view of the hazards they experience and the range of adverse effects that result.”
Solving Wicked Problems: A RMCOEH Alumnus Returns

David T. Dyjack, DrPh, CIH holds, among his many other degrees, a MSPH from the University of Utah. When he attended the Rocky Mountain Center for Occupational and Environmental Health, faculty members like Jeff Lee and Charles Hughes were helping the center grow into the institution it is today. Although Dr. Dyjack considered remaining to further his education in the then-burgeoning PhD program, his mentor, Jeff Lee, suggested that he leave Salt Lake City. Dr. Lee’s advice—“go to a different place to get different perceptions”—became part of Dr. Dyjack’s life philosophy. At the RMCOEH Grand Rounds on April 22, 2019, Dr. Dyjack explained how this advice continues to serve him today. “We get into echo chambers,” he noted, evoking the circular conversations possible on social media, “and begin to accept the prevailing wisdom as truth.” Far better, Dyjack explained, to challenge our own assumptions and to face each new issue on its own merit.

These insights have taken Dyjack to a multitude of different places. While at the RMCOEH, he completed an internship at Exxon for one simple reason. “I hated them,” he confessed. Following the Exxon Valdez oil spill, Dyjack called the company to request an internship and ended up speaking directly to the medical director. His views began to change as he became a fan of Exxon’s occupational health and safety policies and personnel. He continued to widen his worldview by measuring exposures at work, at home, and in Ethiopia, where he saw case after case of onchocerciasis (also known as river blindness). This experience helped lead him to his current position as the CEO of the 5,700-member National Environmental Health Association (NEHA).

During his time as CEO, Dr. Dyjack has observed another thinking trap: ecological fallacies, or when group data are used to draw conclusions about individuals. He described many of the fallacies he has seen regarding environmental health: assumptions about the public health workforce “crisis,” and the myth that men dominate the sphere of public health (women actually outnumber men among new graduates). Contrary to what many believe, Dyjack explained, the bedrock of public health is environmental health and the nursing professions. And areas commonly assumed to not be the purview of environmental health—opioids and emergency response—are actually deeply rooted in environmental health. After all, he argues, it is environmental health professionals who determine when people could return to fire or flood-decimated towns.

So what is it that supports these myths? In no small part, Dyjack said, it is because Environmental Health professionals don’t speak a common language. “Environmental Health is,” he went on to emphasize, “a profoundly local discipline.” He pointed out that on the national level, the “wicked problems” that encompass environmental health include fracking, air pollution, disease, and agriculture. However, in California, the wicked problems include assisted living, cannabis, home restaurants, groundwater, and organics measurements. And within each of those issues, Dyjack adds, there are layers and layers of story. And the story is what matters most.

Dyjack’s last claim may have been his most controversial one, at least in a room of data-driven research scientists and physicians. He noted that we have irrefutable data on some of today’s most controversial claims. Take vaccines, he explained, a field in which we have an impossible amount of data. However, that hasn’t stopped a rising population of parents opting out of vaccinations for their children’s health. That is, Dyjack added, until a measles outbreak rose up in response. Empathy, he

“People make decisions on values and beliefs,” he explained. “Not data.”
emphasized, is important when trying to convince people to make lifestyle changes. "People make decisions on values and beliefs," he explains. "Not data."

That's another twist to the story of data, however. With new apps and websites, citizens are beginning to collect their own data. Dyjack cited Tick Tracker, an app that lets people record tick bites, and iwaspoisoned.com, a repository of citizen complaints about food poisoning. Today these initiatives, which provide real-time updates, are regarded with increasing respect.

While of course these citizen-scientists can't replace environmental health professionals, Dyjack suggested that the field can learn from these phenomena. This, he added, is a sign that EH professionals need to think differently in their profession. The time has come to break out of the echo chamber, to take risks, and to embrace change.

"Work in a culture of curiosity," Dyjack said in closing, "in a place that allows you to experiment."

Dr. Dyjack was excited to mention that NEHA is partnering with Head Start in Puerto Rico to assess health and safety of early childhood education (ECE). They are working with owners and operators of ECE to develop rapid assessment tools (RAP) with the end goals of ensuring that children have safe places to attend school.

Their overall goal is to build the capacity of the environmental health workforce so that every visitor to the U.S. Virgin Islands and Puerto Rico can enjoy those beautiful spaces.
Changes to Continuing Education:
A New Director Makes New Plans

Who is Dr. Diane Johnson?
Diane Longhurst Johnson, PhD has joined RMCOEH as the Director of Continuing Education. Dr. Johnson brings a wealth of experience in both traditional and non-traditional forms of education. An experienced educational executive, Dr. Johnson looks forward to contributing her expertise to assist RMCOEH make continuing education more flexible and accessible. Plans for the future of CE include increasing the number of continuing education courses on topics such as opioids in the workplace, safety issues related to medical marijuana, and other relevant issues. To increase active learning for students, Dr. Johnson has already begun efforts to include virtual reality experiences in CE training. She is also working to leverage the wealth of expertise possessed by RMCOEH faculty as Key Opinion Leader Influencers. Dr. Johnson is leading efforts to expand the center’s positive impact in Utah, Region VIII, and across the country.

Dr. Johnson holds a PhD in Education from Utah State University; a Graduate Certificate in Higher Education Assessment from James Madison University; an MS in Special Education Leadership from Brigham Young University, and a BS in Special Education from Utah State University. She has spent more than 25 years as a professional educator in Higher Education, corporate training, and K-12 environments in the US and internationally. She specializes in competency-based education, blended learning models, technology-facilitated classes, supporting at-risk populations, and managing remote workforces.

Recent Continuing Education Achievements
While the rest of RMCOEH hums along in a busy hum of achievement, our Continuing Education program continues to make leaps and bounds as well. They recently transformed their registration system to allow for immediate, online registration, a long-awaited and invaluable addition. They also launched a social media marketing blitz and distributed a survey to occupational health and safety professionals nationwide to conduct a needs assessment. They also just held the 37th Annual Conference on Safety and Industrial Hygiene. This conferences is an incredible event each year, featuring seminars, short courses, a vendor hall, and a chance to vote in the WISH awards to celebrate Women in Industrial Safety & Hygiene. The Conference is held in partnership with a multitude of organizations, including the local AIHA section and the Utah ASSP Section, and is sponsored by Big-D Construction, Okland Construction, SWC Healthworks, Wasatch Safety Group, and WCF Insurance.

Upcoming Courses & Events
Asbestos Constructor/Supervisor Refresher
Asbestos Inspector/Management Planner Refresher
8-Hour Hazardous Waste Refresher
Asbestos Inspector Refresher
Asbestos Inspector/Management Planner Refresher
Asbestos Management Planner Training
OSHA #500 Trainer Course in Occupational Safety and Health Standards for the Construction Industry
OSHA #502 Update for Construction Industry Outreach Trainers
OSHA #2045 Machinery and Machine Guarding Standards

Our Continuing Education program also offers outreach training and private training. For more information, visit http://medicine.utah.edu/rmcoeh/continuing-education
Occupational Safety for a New Generation: An OSH Minor

In 2012 the National Institute for Occupational Safety & Health (NIOSH), part of the Centers for Disease Control (CDC) published a landmark study predicting the current shortage of professionals with OSH training. Since that time the retirement of health and safety professionals has confirmed that we will face a shortage estimated at 25,000 jobs. As part of the RMCOEH’s response to the upcoming shortage, we created and implemented a minor in Occupational Safety & Health.

Dan Hair, MSS, CSP, and lead instructor of the Occupational Safety & Health Minor explained that the minor was approved by the University in the summer of 2018 and is run under Les Chatelain in Health Promotion and Education. “Since that point,” Mr. Hair continued, “19 students have taken the introductory course, with backgrounds that include recreation; health management and education; chemical engineering; business. Most of those students have continued from that point to enter the minor.”

The OSH minor has thrived since that 2018 approval. The first scholarships for the minor (thanks to WCF Insurance) were awarded in Spring of 2019, and students from the first cohort will graduate in Summer 2020. Mr. Hair noted that the minor offers students a solid background in OSH and is a great companion to any major. “It has been a delight to me to teach in the program,” Mr. Hair stated.

“We were also able to add an outstanding new instructor, Dean Lillquist (the Director of the Salt Lake City OSHA Technical Center) to teach the Workplace Health Hazards (industrial hygiene) class as well.” Matthew Cutler, undergraduate student, added “The program at the University of Utah that offers a Minor in Occupational Safety and Health has been very influential in my life. I have learned why it is so important to be safe, as well as strategies to become more safe - especially in the workplace. The program also gave me the confidence to start working as a safety professional at an engineering company here in Salt Lake City!”

We look forward to welcoming new undergraduate students to the minor, as well as working towards developing this program into an undergraduate major in occupational safety and health.

Forces at work in the new OSH minor. Photo credit: Dan Hair
Darkness, Bison, and Bugs

Reprinted with permission from Pulse (University of Utah Health News). Article by Katie Cummock.

Every July, cycling enthusiasts gather at Antelope Island State Park for the annual Antelope by Moonlight bike ride. 2019 marks 26 years of this fun, non-competitive nighttime ride. Kicking off at 10 pm and ending around midnight makes for a fun night of cycling for novice and experts alike.

Laura Anderson, MD, an urgent care doctor for University of Utah Health, has been participating in this ride with friends and colleagues for the past five years. This year was no different. She and two of her colleagues, Eric Wood, MD, MPH an occupational medicine doctor and Rosie Ludlow, a program assistant in the same department, decided to do the ride together.

With the biggest drama of the night usually being gnats, flies and the occasional buffalo, the three started the ride, ready to race each other to the finish in a bit of friendly competition.

After a few miles the group was separated. Anderson and Wood made it to the turnaround point first and started to head back. About halfway back, they noticed a bit of commotion on the road in front of them.

“We saw a gentleman – likely in his 60’s – laying in the road,” said Anderson. “We weren’t the first people on the scene but were told that he was riding on his own and fell over suddenly.”

Not sure how long he had been down, Wood and Anderson approached the man to check on him.

“Since he had apparently been riding on his own, we didn’t know anything about him,” said Anderson, “but the other handful of bystanders indicated he appeared to just keel over on his bike—due to a medical reason and not an accident. One thing was clear, he wasn’t breathing or responsive, so we quickly went to work.”

Anderson and others took turns doing chest compressions while waiting for additional medical support to arrive. Wood worked to maintain his airway.

“Since 4-5 of us took turns performing chest compressions monitoring the quality of the chest compressions was really all we could do, making sure they were deep and rapid enough,” said Anderson. “We had some great help from the other cyclists who had seen the man fall.”

After receiving oxygen from the park ranger, but no other advanced medical supplies, the physicians did their best to keep the man stable while waiting for more medical support. “When the ambulance finally arrived, we were able to start providing more advanced care with the equipment and experience of the medics,” said Anderson.

After multiple failed attempts at peripheral IV lines in his arm, they were able to get one into the external jugular vein of his neck.

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Eventually, they inserted an intraosseous cannulation into his shin bone, for more secure vascular access to get him the fluids he needed. Anderson worked on the airway. After an oral airway appliance was inserted, she provided ventilations with a bag valve mask. The others on the scene – including Wood – worked to restart the man's heart.

"It looked like he had pulseless electrical activity," said Anderson. "This is when there's electrical activity in the heart, but no effective heart pumping." He was given a shock by an Automated External Defibrillator (AED) and compressions continued. Eventually his pulse returned, and he had a measurable blood pressure. To further manage his airway, the medics were able to intubate him so ventilations with the bag would be more efficient.

When Airmed arrived, it meant further delay for the cyclists on the trail, as everyone was stopped to ensure a safe landing for the helicopter and Airmed crew. By this time, Wood and Anderson had spent nearly an hour providing medical care and doing their best to keep their patient stable. It was nearly 12:30 am when the man was air lifted out of the area.

"We worked on the man at the turnaround point of the 24-mile course, so after he was taken by Airmed we rode another 8 miles back to the finish of the race to get back to our cars," said Wood. "Needless to say, we were exhausted by then, but so glad we were there when it happened and were able to help."

Ludlow, the third colleague in the U of U Health cycling crew, experienced the race from her own spot on the trail. "I started the ride with Dr. Anderson and Dr. Wood, but we separated a few miles into the race," said Ludlow, who rode the late night ride for the third time this year. "When the race was stopped and I was waiting on the trail, all I could do was wonder what was going on." Ludlow soon learned the reason for the delay, and later discovered that it was her two colleagues who had stopped to provide medical support to the fallen rider.

"It's amazing the care our U of U Health providers gave this stranger in the middle of a bike race, in the middle of the night," said Ludlow. "It feels good knowing I work with such amazing providers who take the time outside of the clinic to help a complete stranger. Darkness, bison, bugs - not the best clinic setting but they stepped up anyway."

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**Announcing the Work Wellness Resident Scholarship (2019-2020)**

Thanks to the generosity of Sarang Yoon, DO, MOH, a new scholarship will be offered to the Occupational Medicine residents here at the Rocky Mountain Center for Occupational and Environmental Health. This scholarship is providing financial support to qualified residents interested in creating work wellness events or programs for the Occupational Medicine residency and/or the surrounding community. The scholarship committee will determine designation of funds. It can be used to assist residency physicians with professional educational expenses such as conferences (registration, transportation, lodging, meals), certification courses and exams (i.e. DOT, MRO), activities related to out-of-state rotations (transportation, lodging, meals), textbooks, professional membership dues and to be used for other educational purposes.

We here at RMCOEH extend a resounding thank you to Dr. Yoon!