

The Rocky Mountain Center

Volume 8, Issue 1

National Institute for Occupational Safety & Health ERC Funding

Dear RMCOEH Supporter:
 The RMCOEH has survived the FY2011 budget debate! NIOSH will incur a \$49M cut in a World Trade Center fund. The NIOSH-sponsored Education and Research Centers as well as the Agricultural Centers will both be funded. Because academic fiscal years start in July, NIOSH is providing funding for the coming year (July 1 through June 30, 2012). So, we now have funding for students during the 2011-12 academic year.

We much appreciate all who wrote letters or made phone calls on our behalf during this difficult process. As the White House has kept us on the elimination list for 2012, we will continue to work to preserve funding in the FY2012 budget. This will require doubling our efforts, but we have made significant progress. (See our website: <http://medicine.utah.edu/rmcoeh> for more details on the rebuttal to the information provided from the WH, such as NIOSH and OSHA duplicating each other.)

We are now turning our attention toward another 5-year renewal of the RMCOEH. We will not be up for renewal this year, as originally scheduled, because NIOSH does not desire so many Centers reviewed this coming year and the RMCOEH had the best score nationally last time in 2007(!). So, we will be up for renewal in 2013 instead of 2012. For those who are RMCOEH graduates, please be sure you have completed our electronic questionnaire (see <http://www.surveymonkey.com/s/D75SBJG>) as data on our graduates are important for both the renewal as well as for informing those who are making federal budget funding decisions on NIOSH and the ERC's. For those who attend conferences, completing evaluation forms is equally important.

Again, Thank you so much for all your wonderful support



Kurt Hegmann, MD, MPH
 Professor & Center Director

Gateway to OSH

Occupational Safety and Health

RMCOEH Establishes New Hazardous Waste Worker Training Program With New NIEHS Training Grant

In partnership with the Southwest Center for Occupational and Environmental Health at the University of Texas, RMCOEH was recently awarded a 5-year training grant from the National Institute for Environmental Health Sciences (NIEHS) to create a training center for Hazardous Waste Workers across the 11 states of Federal Regions VI and VIII. This new center, called the Texas-Utah Consortium for Hazardous Waste Worker Training, will offer courses in hazardous materials worker training, refresher courses, and supervisor training courses.

The first class was held in December 2010. "We are very proud to have been chosen to create this new hazardous waste worker training program, which fills a large gap in NIEHS sponsored training across nearly 20% of the country", explained Dr. Matthew Hughes, the Utah Principal Investigator for the project. "Our goal is to provide the best training available to protect those workers who respond to hazardous material situations." Additional courses in the near term are scheduled for Salt Lake City, St. George, UT, Bismarck ND, Houston TX and Baton Rouge LA.

In addition to hazardous materials training courses, a new curriculum designed for current or aspiring managers and leaders called the **HazMat Leadership Academy** has been developed. This course addresses the skills commonly identified as lacking among individuals wishing to ascend to leadership positions, focusing on management, leadership, data collection and analysis, presentation development, and hazard communication.

According to Dr. Hughes, in addition to serving regional training needs, this consortium will place special emphasis on supporting current, returning and disabled Veterans, underserved minorities and tribal nations, and workers in the maritime, petrochemical, and mining industries. For many in these groups, limited tuition assistance is available.

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RMCOEH ADVISORY BOARD MEMBERS

Taz is in his 18th year as the Executive Vice President of the Utah Home Builders Association. In that capacity, he represents the housing industry before the legislative and executive branches of Utah state government. He has initiated and assisted in drafting numerous pieces of legislation that have significantly impacted the housing and construction industry. He also served as the publisher for approximately ten years of the Home Builders Association's publishing company that published approximately 75 different industry magazines and books each year.

Taz is and has been on numerous advisory boards and has been a guest lecturer at several trade schools and universities. He has also been a guest columnist for the Salt Lake Tribune and the Deseret News.

Prior to working for the HBA, Taz was the managing partner of a local law firm in Salt Lake City for 5 years. He has a Juris Doctorate degree from the University of Utah, as well as a Bachelors degree in Political Science and International Relations from the University of Utah. Taz and his wife, Anne, have been married almost 30 years and they have five children. Taz admits to favoring the Boston Red Sox. He enjoys golf and fly fishing, but as is typical of his humor, he claims to not be very good at either one.



RMCOEH RESEARCH TEAM COMPLETES MONUMENTAL EVIDENCE BASED TREATMENT GUIDELINES

Faculty and research staff of the RMCOEH are pleased to announce the completion and release of the American College of Occupational and Environmental Medicine (ACOEM) Occupational Medicine Practice Guidelines, 3rd edition. A colossal effort, the Third Edition contains more than 12,650 references and 2,500 recommendations – the most comprehensive collection of evidence-based musculoskeletal medical recommendations available. The new edition covers disorders of the Hand, Wrist and Forearm, Elbow, Shoulder, Neck, Back, Hip and Groin, Knee, Ankle and Foot. In addition, there is a chapter dealing with management of Chronic Pain disorders. “This release represents the completion of years of effort by ACOEM, its primary research partner, the Rocky Mountain Center for Occupational and Environmental Health, its Editor-in-Chief, Kurt Hegmann MD, MPH, FACOEM, and scores of volunteer

panelists, reviewers and other contributors,” said ACOEM Immediate Past President Natalie Hartenbaum, MD.

Drs. Hegmann, Hughes and Biggs have challenged over 1,000 providers to carefully examine their practices in comparison with quality evidence. To date, no one (including the Editors!) has failed to find significant means to improve practices for treating injured workers.

These guidelines are becoming widely adopted as the presumptively correct guideline by insurers, by states such as California, New York, Montana, and by other professional and government organizations to assist in the medical management of injured workers. A big thank you goes out to the many involved in this landmark achievement, and a special recognition to the many family members that endured the many nights and weekends spent by RMCOEH faculty in this pursuit.

9th Annual Regional National Occupational Research Agenda (NORA)

The 9th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium was held on the University of Utah campus on April 14-15, 2011 and was a great success. This annual symposium is intended to assemble interested students (undergraduate and graduate) and young/new investigators from the region and other interested parties in a forum where NORA-related research can be presented. The symposium provides a unique opportunity for young/new investigators and students to meet and exchange ideas.

This year's symposium had over 80 participants and included presenters from 6 different universities and 5 states. One highlight of the symposium was the keynote presentation by Brett Besser, Senior Scientist at OSHA's

Salt Lake Technical Center, who discussed OSHA's policies and practices relating to ergonomics.

Another was the Annual Paul S. Richards, MD, Endowed Distinguished Visiting Lectureship in Occupational Medicine presented by Dr. Carol Rice, Director of the NIOSH Education and Research Center at The University of Cincinnati, who presented her experience in health evaluations in the agate industry in India. Other symposium presentation topics included ergonomics, industrial hygiene, occupational medicine, epidemiology and rehabilitation engineering. One special session included presentations by interdisciplinary teams of RMCOEH students who discussed the results of their capstone course projects. Mark your calendars for April 19-20, 2012, next year's symposium, which will mark the 10th anniversary of this event.

HRSA Grant Brings New Equipment to RMCOEH

In 2010 The RMCOEH was awarded a substantial training grant from the Health Resources and Services Administration (HRSA) to provide equipment to better train occupational medicine residents. This grant allowed the purchase of several systems used to measure physical and aerobic function, which will allow us to provide training and services (for example in determining job demands and functional capacity testing). This equipment includes:

- Functional capacity testing with BTE Technologies System.
- Integrated 3-D motion capture video system (Vicon Nexus System)
- Star Trac P-TR Treadmill
- Electronic and upper body ergometer
- Weight machines and free weights

According to Dr. Eric Wood, the Principal Investigator, "This generous award provides the foundation for performing state-of-the-art functional and aerobic testing, key components to measuring worker ability and matching objective job physical requirements." He added, "We are eager to advance the science of identifying worker capabilities and preventing injuries with this sophisticated equipment.

The residents have all received training on

the equipment and have started developing research protocols to evaluate precision and validity of the test. We are excited about the future research and clinical applications the faculty and resident will be able to provide with this equipment in our Occupational Medicine and Injury Prevention Laboratory.

Appointments for employee testing are available by contacting Janet Torkelson at 801-581-5056.



Star Trace E-Tri Treadmill

RMCOEH Publications

Thiese, Matthew S. PhD, MSPH; Hegmann, Kurt T. MD, MPH; Garg, Arun PhD, CPE; Porucznik, Christina PhD, MSPH; Behrens, Timothy PhD. The Predictive Relationship of Physical Activity on the Incidence of Low Back Pain in an Occupational Cohort, *J Occup Env Med* 2011;53(4):364-371.

Objective: Quantify the relationship between physical activity and development of low back pain (LBP).

Methods: This nested prospective cohort study utilized an objective measure of physical activity in 68 participants with 30 incident cases of LBP. Physical activity was divided into tertiles and quartiles. Univariate and multivariate relative risks and hazard ratios were calculated.

Results: Comparing highest to middle tertile of light activity demonstrated a statistically significant relative risk of 3.68 for developing incident LBP. Lowest and highest tertile of minutes of moderate/vigorous activity yielded statistically significant relative risks of 4.60 and 6.14, respectively. Multivariate analyses demonstrated similar associations.

Conclusions: Moderate amounts of physical activity were protective for the development of LBP in this cohort, after adjustment for risk factors. This nonlinear relationship suggests higher levels of activity do not confer increased LBP prevention.

Rodney R. Larson, Scott G. Story and Kurt T. Hegmann; *Assessing the Solubility of Silicon Dioxide Particles Using Simulated Lung Fluid*, *The Open Toxicology Journal* 2010;4:51-55.

Abstract: Occupational exposure to respirable crystalline silica has the ability to cause silicosis. Silica is also suspected of being associated with an increased risk of lung cancer, kidney disease, rheumatoid arthritis, and other diseases. The specific mechanism(s) of pathogenesis for silicosis and these other potential health concerns remains unclear. This investigation measured dissolution rates of silicon dioxide (SiO₂) particles in simulated lung fluid to determine the residence times of such particles within the intracellular or extracellular spaces. Silicon dioxide dissolution rates were determined as a function of fluid pH, particle size, and SiO₂ concentration and mass. Gamble's solution was used to simulate intracellular and extracellular lung fluids at pH 6.0, pH 6.5, and pH 7.5. Test samples were paired by pH, particle size, and SiO₂ concentration/mass. Sample aliquots of filtered solution were collected over a 28-day test period. Results revealed SiO₂ became soluble and the dissolution rate increased with increasing pH and decreasing particle size. SiO₂ concentration and mass also appeared to have some effect on the rate of dissolution. These solubility characteristics appear likely to impact the residence times of particles within biological systems, suggesting a model for exposure and subsequent pathogenesis for systemic silica-related diseases.

Upcoming Continuing Education Classes and Events

May Courses

- OSHA 502, 510, and 500 Occupational Safety & Health for the Construction Industry
- 8 and 40-hour HAZWOPER Refresher/Training
- Lead Safety for Renovation, Repair and Painting (RRP) Training Course
- Asbestos Project Designer, Contractor/Supervisor and Inspector/Management Planner Refreshers
- Chemical Compatibility & Storage

June Courses

- OSHA 503, 511, and 501 Occupational Safety & Health Standards for General Industry
- Hazard Communication Compliance
- Air Monitoring for Toxic Substances
- DOT Hazardous Materials Transportation Training and Refresher
- Hazardous Materials Leadership Academy
- International Air Transportation Association (IATA) Refresher Training

July Courses

- OSHA 502, 510 and 500 Occupational Safety & Health Standards for the Construction Industry
- Joint Health & Safety Conference
- Asbestos Inspector Training
- 8 and 40-hour HAZWOPER Refresher/Training

August Courses

- OSHA 503, 511, and 501 Occupational Safety & Health Standards for General Industry
- Asbestos Project Designer, Contractor/Supervisor, and Inspector/Management Planner Refreshers

- OSHA 2225: Respiratory Protection
- Comprehensive Review of Industrial Hygiene

September Courses

- OSHA 502, 510, and 500 Occupational Safety & Health Standards for the Construction Industry
- Asbestos Contractor/Supervisor & Inspector/Management Planner Refresher (Pocatello, ID)
- Pulmonary Function Testing
- CAOHC—Approved Occupational Hearing Conservation & Refresher
- Lead Safety for Renovation, Repair and Painting (RRP) Training Course

October Courses

- OSHA 503, 511, and 501 Occupational Safety & Health Standards for General Industry
- Utah Council for Worksite Health Promotion
- 28th Annual Utah Conference on Safety and Industrial Hygiene
- 28th Annual Utah Conference of Safety & Industrial Hygiene

Online Courses

- Hazardous Waste & Environmental Courses
- OSHA Construction (does not include OSHA 500)
- OSHA General Industry (does not include OSHA 501)
- Professional Ethics and the Practice of Industrial Hygiene

For additional information on CE classes, please visit the continuing education section of the RMCOEH website: <http://medicine.utah.edu/rmcoeh/>

Graduate Survey Documents Success!



One hundred fifty graduates from 26 states who graduated from RMCOEH between 1980 and 2010 completed the Graduate Survey. Graduates report high levels of satisfaction with their training and have felt well prepared for their job. Many hold professional certifications in Occupational Medicine, Industrial Hygiene or Safety. Graduates most commonly work in industrial facilities, clinics or hospitals, government agencies or educational facilities with nearly 70% of their time spent in activities related to occupational and environmental health. Their estimated impacts with reductions in injuries at workplaces at a mean of 19.2% and a median of 10%. A third of the graduates reported that occupational health and safety services provide annual savings of more than \$500,000 per year.

All who responded to the continuing education question indicated that they would enthusiastically recommend the training pro-

grams offered through the RMCOEH. In-person classes and conferences (46.9%) were the most favored form of continuing education. On-line courses were also a preferred form of continuing education (41.4%). Online lessons (1-2 hrs) and webcasts were additional formats desired by at least a quarter of the respondents. The vast majority (88.7%) of respondents prefer to get the newsletter via email. Almost a third indicated that the website would be a good way to receive it. Only 10% indicated that they would prefer paper newsletters.

Thanks to those of you who completed the survey, the feedback and comments inform us as we implement changes and apply for renewal of Center funding. If you did not receive a survey by email or traditional mail, please send your current contact information to Toni Chambers (Toni.Chambers@hsc.utah.edu) or 801-581-4800.

RMCOEH News Corner

The Board of Directors of the American College of Occupational and Environmental Medicine (ACOEM) voted to present Dr. Hegmann with the College's 2011 Meritorious Service Award for his leadership in the field of occupational and environmental medicine.

In quoting Dr. Natalie Hartenbaum, President of ACOEM: "It is entirely fitting that you receive this award, which is bestowed upon a member who has provided long-term laudatory service to the College, as you have tirelessly worked to expand the visibility of ACOEM and OEM. Your exceptional work as editor of the ACOEM *Occupational Medicine Practice Guidelines* has resulted in major revisions to all of its chapters. As editor-in-chief, you have been responsi-

ble for maintaining the highest scientific standards for reviewing evidence-based literature, thus ensuring the most rigorous, reproducible, and transparent occupational health guidelines available. In addition, you have always been willing to generously donate your time and expertise in helping ACOEM advance its mission."

The award was presented on March 26, 2011 in conjunction with the Opening Session of the 96th annual American Occupational Health Conference (AOHC) in Washington, DC, where Dr. Hegmann thanked the 100+ MD/DO, PhD's and 25 RMCOEH faculty and staff who assisted on the Guidelines.

Congratulations to the Center Director for this outstanding achievement!

Industrial Hygiene Student Works on BP Spill

Jason Kraft, OSHA Salt Lake Technical Center.

The Health Response Team (HRT) is OSHA's primary resource for providing technical expertise nationwide for major emergency events and routine inspections. In my internship with OSHA, I have had the opportunity to work along side industrial hygienists with a vast amount of skill, knowledge and experience during both emergency events and routine inspections. As part of the HRT, I spent several days in the Gulf during the BP oil spill to ensure workers were not being over exposed to chemicals during the clean

up, I have had the opportunity to investigate possible heavy metal exposures in response to a metal refiner's complaint and have performed noise level evaluations in an office location. Working with OSHA has allowed me the opportunity to familiarize myself with all manner of equipment commonly used by industrial hygienists in the field as well as cutting edge instruments and technologies that are just coming into production. The experiences during this internship have been priceless in helping to understand the role of industrial hygiene in the health and safety of workers.

A Rotation at the Washington, DC OSHA Headquarters

Eryn Stansfield, MD, MOH, Occ. Med. Resident

I had the unique opportunity of spending two months this past January and February working for the Department of Labor in Washington, DC. The experience was eye opening, and from the moment I arrived there was never a dull moment. I was assigned to the Office of Occupational Medicine, which is run by a team of six physicians. My assignments allowed me the opportunity to work with various attending physicians and more broadly within different sections, or Directorates, of OSHA. My responsibilities included working on medical aspects of open and closed occupational exposure and fatality investigations, fielding regulatory questions from the general public and industry, assisting in writing regulatory standards, attending public meetings, and participating in site visits with OSHA inspectors.

My experience in DC became even more unique due of the

timing of my rotation in such a charged political season. Because of proposed cutbacks to the OSHA budget, I had the opportunity to attend several congressional hearings dealing with OSHA funding issues. I also had the opportunity to meet with one of the Assistant Secretaries of the Department of Labor and many other Directorate Chiefs. It was a fascinating experience to learn about the intricacies of the political process and its influence on regulations and ultimately how this applies to industry and workers. Beyond my immediate work responsibilities at OSHA, I had the opportunity to meet with the staff of Senator Hatch's office, and I took advantage of the close proximity to visit the White House and various Museums on weekends. I enjoyed the rotation immensely, learned a tremendous amount, and made some amazing connections with senior leaders in the occupational health and safety community. This is a rotation I would highly recommend.

Industrial Hygiene Student Reports on Chevron Oil Spill

William Newkirk, Industrial Hygiene Student

On June 12, 2010, crude oil was discovered in Red Butte Creek in Salt Lake City, Utah. It originated from a leak in a pipeline in Red Butte Canyon. A preliminary review indicates that an electrical arc created a less than 1-inch hole in the top of the pipe. As a result, approximately 800 barrels of crude oil were released, traveling down Red Butte Creek and collecting in Liberty Park Pond with some sheen escaping into the Jordan River. On July 6, 2010 I was asked to work on a community air monitoring project for the release. The air monitoring was in re-

sponse to complaints about odors and possible exposures of raw petroleum products during cleanup activities (pressure washing the creek bed) to the surrounding private residences and public parks (eg. Some residents had headaches and slept nearby with open windows). The air monitoring was conducted three times a day at twelve sites along Red Butte Creek. I used two real-time photoionization detectors (PIDs), an UltraRAE 3000 to measure benzene and a ppbRAE 1000 to measure total volatile organic compounds. I also deployed 3M passive organic vapor monitors (POVMs) over 24-hour for background levels. It was a great learning experience.

Rotation at the National Institute for Occupational Safety and Health (NIOSH) Anchorage Office

Kelli Graziano, MD, MOH, Occ. Med. Resident

I had the opportunity to rotate with the National Institute for Occupational Safety and Health (NIOSH) Anchorage office. Alaska's vast territory is home to some of the most dangerous occupations in the United States including fishing, gas and oil, and bush pilots. The programs at the NIOSH Anchorage office aim to prevent fatalities and injuries in these high-risk occupations.

My work entailed researching and writing a paper detailing occupational drowning fatalities. There has been much prior research

regarding drowning deaths in the fishing industry, however little research is available about drowning deaths in other occupations. Our research helped demonstrate that occupational drowning is a hazard faced not only by fisherman but by many workers.

During my month, I was also able to enjoy Alaskan culture. My stay coincided with the start of the Iditarod, and I was able to get up close to Mount McKinley during an air-taxi tour. Overall, my rotation was filled with valuable occupational safety and health learning opportunities and a unique view of the Alaskan way of life.

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More RMCOEH News ~ Alumni

RMCOEH now has over 450 graduates and we would love to know where you are. Please send a photo of yourself either alone or in front of the sign of your employment and a brief description of your job. We plan to highlight 3-4 alumni in every newsletter.

Former Occupational Medicine Resident gives Scholarship

J former Occupational Medicine Resident R. Jessica Hanford, MD, MPH, (class of 2009) is now in private practice in Bellingham, WA, and has established a new scholarship. When the Center requested support for the ERC's, she wrote her letters to senators and representatives stating "Money talks, so I am using some of mine to demonstrate my support." The scholarship will be for \$500 and the winner will be chosen by random drawing. She also requests an additional requirement, that the winner of the drawing be awarded the prize only upon submission and acceptance of an original poem on the subject of occupational safety. Her hope is that by her small contribution it will inspire other RMOCEH alumni to help the Center financially.

THANK YOU Dr. Hanford!

SOMETHING TO CONSIDER

Please consider supporting the **Rocky Mountain Center for Occupational & Environmental Health** by making a scholarship donation today! You can give to our general scholarship fund or to one of our two established endowment funds; *The Royce Moser Jr. and Lois H. Moser Endowed Scholarship* or the *Dr. Richard E. Johns Endowed Scholarship*. You may also choose to give to the *Jeff Lee Memorial Fund*. For questions about giving to the Rocky Mountain Center for Occupational & Environmental Health or to mail a gift, contact:

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