

**MOUNTAIN AND PLAINS EDUCATION AND
RESEARCH CENTER
FOR OCCUPATIONAL HEALTH AND SAFETY**

**SUMMARY ANNUAL REPORT
July 1, 2007 – June 30, 2008**

**NIOSH Training Grant
No. T42 OH 009229-01**

**SUBMITTED BY:
LEE S. NEWMAN, MD
CENTER DIRECTOR
UNIVERSITY OF COLORADO DENVER
DENVER, COLORADO 80262**

OCTOBER 2008

Overview

On July 1, 2007, we launched the new Mountain and Plains Education and Research Center (MAP ERC), which is housed in the new Colorado School of Public Health (CSPH). In Year 01, this enabled us to expand enrollment, with 40 trainees in five occupational health programs. Twenty received support from the ERC.

The MAP ERC is the joint effort of the University of Colorado Denver (UCD) (Lee Newman, MD, MA, Director), Colorado State University (CSU) (Stephen Reynolds PhD, CIH, Deputy Director), National Jewish Health, Denver Health and Hospital Authority, and the University of New Mexico Health Sciences Center. We provide training in Occupational and Environmental Medicine, Industrial Hygiene, Ergonomics, Occupational Health Psychology, and Health Physics. Center wide activities include a Continuing Education Program, Outreach Program, Pilot/Small Projects Research Program, and a Diversity Recruitment Program. Our mission is to improve occupational and environmental health and safety through education, research, and community partnerships. Forty core faculty members and nearly 100 support faculty have united as a single Center to help fill an important regional need in the West (Colorado, New Mexico, Arizona, Wyoming, Montana, North Dakota and South Dakota), including collaboration with neighboring ERCs.

Core Training Programs

- **Occupational and Environmental Medicine Residency** (E. Brigitte Gottschall MD, MSPH, Director; Cecile Rose, MD, MPH, Co-Director; Lee Newman, MD, MA, Co-Director)

This two-year residency program provides ACGME-accredited training, including a Masters of Public Health degree. It is a joint endeavor of UCD, National Jewish Health, and Denver Health and Hospital Authority. Fifteen core faculty members and more than 20 supporting faculty trained 3 residents in Year 01, two of whom received NIOSH support. Two more residents were accepted for next year, bringing the cohort to five. In Year 01, faculty developed 12 new credit hours of courses and restructured the curriculum to enhance the occupational health training experience. Importantly, for the first time, courses at UCD and CSU are now cross-listed, enabling trainees to register for classes at Denver and Fort Collins, CO campuses.

- **Industrial Hygiene Training Program** (Stephen Reynolds, PhD, CIH, Director; William Brazile, PhD, CIH, Co-Director)

In Year 01, the 11 core faculty and 23 supporting faculty trained 12 Masters of Science and 3 PhD students. Seven of the MS students received NIOSH support. As part of an in-depth curriculum review, industrial hygiene faculty developed program objectives/outcomes mapped to the curriculum and collaborated with UCD in launching the CSPH. Progress was made in promoting increasing interaction between industrial hygiene students and the other trainees on the CSU and UCD campus, through shared courses, seminars, and industrial site visits. Student involvement in multidisciplinary research was also enhanced. Forty-five lectures were video-recorded, and are being used to develop on-line offerings for continuing education. The industrial hygiene program has been re-accredited by ABET to 2014.

Allied Training Programs

- **Ergonomics Training Program** (John Rosecrance, PhD, PT, CPE, Director; David Gilkey PhD, DC, CPE, Co-Director; Peter Chen, PhD, Co-Director)

Ergonomics (CSU) is a highly interdisciplinary program. Masters of Science and doctoral degrees are offered by three core and six supporting faculty members. In Year 01, one MS and two doctoral students received ERC support. The program is structured to provide competency toward the goal of helping graduates become Certified Professional Ergonomists or Certified Ergonomics Associates. By design, the program has strong linkages with occupational health psychology, health physics and industrial hygiene, through shared course work, seminars, site visits, and research. In Year 01, this program made major strides in distance learning, creating on-line (synchronous and asynchronous) ergonomics courses that are available to students on either campus and in the community.

- **Occupational Health Psychology Training Program** (Peter Chen, PhD, Director; Lorann Stallones, MPH, PhD, Co-Director; John Rosecrance, PhD, PT, CPE, Co-Director)

The field of Occupational Health Psychology concerns itself with applying psychology to improving the quality of work life and to protecting and promoting the safety, health and well being of workers. This new training program is one of only two such programs offered by NIOSH ERCs. It provides graduate education in a highly interdisciplinary model, offering education not only in psychology, but also in ergonomics, industrial hygiene, and epidemiology. Three core faculty and eight supporting faculty trained 3 Masters of Science and 4 doctoral students in Year 01. Of them, 5 received either full or partial NIOSH support. Of 4 PhD students, two obtained doctoral degrees in Year 01. Two additional OHP trainees will attend in Year 02. OHP students conduct research in which they work directly with students from the other programs. They coordinate a monthly “brown-bag” conference for the entire MAP ERC. These student activities, like the faculty, show a high level of interdisciplinary cooperation and innovation.

- **Health Physics Training Program** (Thomas Borak, PhD, Director; Thomas Johnson, PhD, Co-Director)

Facing a critical shortage in the supply of qualified radiation safety professionals, especially in our region, the Health Physics training program at CSU has been able to increase its number of funded positions because of MAP ERC support. The Health Physics program is the only such program offered by a NIOSH ERC. Last year, the six core faculty members in this ABET-accredited program trained 10 Masters of Science and three doctoral students, three of whom received MAP ERC support. Progress was made in Year 01 in promoting increasing interaction between health physics students and the other trainees, through shared courses, seminars, and industrial site visits, including to Los Alamos National Laboratory and a uranium mine in Wyoming.

Continuing Education

(Karen Mulloy, DO, MSCH, Director; David Gilkey, PhD, DC, CPE, Assoc. Director)

In Year 01, our CE program established a multi-institutional administrative team that delivered needs-based CE to nearly 800 occupational health professionals. Through our close working relationship with the Rocky Mountain Center (Utah), we conducted a major, multi-state needs assessment to help target future offerings and shape how we deliver CE through traditional conference and distance learning formats. The MAP ERC established a relationship with the Region 8 OSHA Training Institute (OTI) housed at the Rocky Mountain Education Center at Red Rocks Community College. Logic Model methodology has been implemented for CE program planning and evaluation. We developed key technical capabilities and began producing our first educational modules for delivery as web-based distance learning modules. These offerings draw from more than 280 occupational, environmental, health and safety related topics in the inventory of lectures provided by core and supporting faculty, plus seminars presented by visiting professors. We sponsored or co-sponsored five major events in Year 01, including: the Rocky Mountain Section-AIHA and ASSE Annual Fall Conference – October 2007, Denver, CO; Rocky Mountain Academy of Occupational and Environmental Medicine Winter Conference – January 2008, Denver, CO; University of New Mexico School of Medicine – NM Association of Occupational Health Nurses Regional Conference – February 2008, Albuquerque, NM; and the NIOSH NORA Symposium – July 2008, Denver, CO. Of special note, we teamed with the Central Rocky Mountain Chapter of the Health Physics Society in presenting the “2008 Uranium Symposium and Workshop”, February 2008, Fort Collins, CO. This multidisciplinary, one-day CE program stemmed from a need recognized by our Outreach Program. Based on NORA objectives (the uranium mining industry), it was attended by 250 occupational health professionals from the region. A recurring-format seminar on worker health and safety in the energy sector (e.g. oil and gas, renewable energy, nuclear energy, mining) is being developed in collaboration with the NIOSH Denver Regional Office and key stakeholders in the region.

Pilot/Small Projects Research Program

(John Reif, PhD, Program Director)

In its first year, we established the necessary infrastructure and marketing materials to announce, review and approve five pilot/small projects. In keeping with our goal to encourage community-based projects, we funded researchers in environmental engineering, orthopedic surgery, the Wyoming Department of Employment as well as university investigators. Topics included the use of Geographic information systems to assess the risk for large truck rollover crashes; *in vivo* assessment of spinal neuromuscular neutral zones in humans; post-injury wage loss; improved cookstove interventions to assess changes in wood smoke exposures and health status; and assessment of asthma prevalence and risk factors among underserved and primarily Latino children.

Center Wide Activities

(Lee Newman, MD, MA, Director; Stephen Reynolds, PhD, CIH, Deputy Director; Cindy Becnel, MS, Outreach Director, Diversity Co-Director; William Brazile PhD, CIH, Diversity Co-Director)

- **Administrative core built to promote interdisciplinary Coordination.** A successful ERC is more than the sum of its training programs. As a new center, we had the rare opportunity to set center-wide goals, including high expectations for interdisciplinary coordination. Year 01 highlights included: establishing a fully staffed, operational administrative core; launch of our website (www.coloradosph/MAPERCC/); an e-newsletter, called “RoadMAP” distributed weekly; coordination of our first all-Center retreat, external advisory committee meeting, and central scheduling of industrial site visits; creation of videoconferencing facilities with dedicated conference space at both universities; hosting of interdisciplinary activities such as the Visiting Scholar Lecture Series, Brown bag, and Journal Club; coordination with the CSPH to create integrated curricular offerings accessible for credit at UCD and CSU.

- **Diversity Recruitment.** In Year 01, 13% of our trainees reported minority status. Main events to increase the diversity of the student body included: Formation of a Diversity Committee; inclusion of Dominic Martinez, Director of the CU Office of Diversity on our Executive Committee to provide guidance and support in engaging minority post-graduates in recruitment process, creating awareness partnering with educational institutions (undergraduate programs, community colleges, high schools), participating in diversity career fairs, internship programs and related activities. We have been counseled to focus on the process, and not solely the numbers, in building, implementing and nurturing this aspect of our program.

- **Outreach.** Our Year 01 goals included: to identify occupational health and safety groups, determine partnership/participation opportunities, support CE and R2P activities. We met with more than 50 representatives of stakeholder professional associations, educational institutions, industry, labor and government and established a Community Partnership Committee. A resource database was compiled and local, short term needs identified. Outreach materials were developed. We participated or partnered in 15 major outreach events. In particular, we have laid important foundations for working closely with two underserved populations in our region: Tribal and Hispanic communities. Based on regional need, the Outreach Program and Administrative core prioritized efforts in two major arenas: Energy workers and Occupational Health Surveillance. We established strong collaborations (NIOSH Denver Regional Office, oil and gas industry representatives, community environmental groups and other stakeholders) to address worker and community health issues in the energy sector. Recognizing the shortcomings of occupational health surveillance at the State level in much of the West, the MAP ERC staff teamed with the NIOSH Regional Office, Colorado Department of Health and the Environment, and the Council of State of Territorial Epidemiologists. MAP ERC staff completed collection, tabulation and the first level of longitudinal analysis of Occupational Health Indicators for Colorado; prepared longitudinal data for three major indicators for those western states for which this has not been done, and co-organized the first meeting of Western States Occupational Network (WestON) to help promote Western states’ efforts to conduct occupational health surveillance.