



The University of Texas
Health Science Center at Houston

School of Public Health

Southwest Center for Occupational
and Environmental Health

**The University of Texas Health Science Center Houston
The Southwest Center for Occupational and Environmental
Health (SWCOEH)**

Annual Program Report

Reporting Period: July 1, 2015 – June 30, 2016

Principal Investigator: Elaine Symanski, PhD

Section I – The SWCOEH Education and Research Center

Summary

The overall goal of the SWCOEH Education and Research Center (ERC) at The University of Texas Health Science Center School of Public Health (UTHealth SPH) is to respond to the critical need for well-trained occupational and environmental health specialists by providing graduate level academic and research training and continuing education. The UTSPH has a unique, multi-campus system, with the main campus located in the Texas Medical Center in Houston and five regional campuses in Austin, Brownsville, Dallas, El Paso and San Antonio. The ERC programs, faculty and students are located in Houston and San Antonio primarily in the Department of Epidemiology, Human Genetics and Environmental Sciences with supporting faculty from other disciplines inside and outside of the UTHealth SPH. All campuses are linked electronically, facilitating quality teaching and research, expanded course offerings, interdisciplinary collaboration and access to regional stakeholders as well as expanding our reach to minority student populations. The ERC has been continuously funded since it was established in 1977. The ERC provides master level training in Industrial Hygiene (IH), doctoral level training in IH and Occupational Epidemiology, and postdoctoral residencies in Occupational Medicine. In addition to the academic degree programs, the ERC has active Continuing Education and Outreach Programs (CE) and a Pilot Projects Research Training Program that provide a full spectrum of training opportunities. SWCOEH faculty and trainees are involved in research spanning areas that include military health, ergonomics, farmworker health, workplace violence and air pollution epidemiology. An external advisory board comprised of members from industry, labor, government, NGOs, and academia provide guidance to the SWCOEH on current and future directions.

Center-wide, our specific objectives are to (1) facilitate occupational safety and health research and training; (2) continuously improve by conducting assessments in accordance with program-specific evaluation plans, and revising these plans, as necessary; (3) successfully manage academic and non-academic programs; (4) enhance the funding base of the SWCOEH; and (5) effectively communicate with stakeholders.

Relevance

The UTHealth SPH ERC provides advanced degree training in occupational health and safety to meet the critical need for trained professionals in Public Health Region (PHR) 6. A full spectrum of degree

programs, advanced research training, and continuing education courses help meet the needs in the Region for well-trained professionals to protect the health and safety of the nation's workforce.

Current Key Personnel

Elaine Symanski, PhD, Principal Investigator, SWCOEH Director and Interim CE Director

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Arch "Chip" Carson, MD, PhD, Director of Occupational and Environmental Medicine

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Lawrence Whitehead, PhD, Director of Industrial Hygiene

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ERC Web Link

Additional information about the SWCOEH is available at www.swcoeh.org.

Section II – High Impact Program Highlights

The SWCOEH welcomed two new faculty members during FY15. Dr. William "Brett" Perkison joined the Occupational Medicine faculty and plans to continue his research in the effectiveness of employer health care innovations for their employees, particularly in the areas of chronic disease management, disease education programs, targeted case management, and home intervention programs. The newest member of the Industrial Hygiene faculty, Dr. Wei-Chung Su's research interests are centered on the broad topic of aerosol related occupational and environmental health via laboratory experiments. His current studies are focused on investigating the deposition of airborne nanomaterials in the human respiratory tract, and evaluating the performance of newly developed personal aerosol samplers in a large wind tunnel facility.

At the conclusion of the 2015-16 award cycle, the annual PPRTP Symposium was held on June 3, 2016 on the UTHealth SPH campus in Houston, TX. **Dr. John Charles, Chief Scientist of the Human Research Program at the National Aeronautical Space Administration (NASA)**, provided a keynote presentation entitled "Astronaut Health and Performance Risks During Spaceflight and Beyond Low-Earth Orbit." This was followed by presentations by four 2015-16 PPRTP awardees. Over forty were in attendance at the

symposium which was comprised of both students and faculty. For the 2016-17 cycle, the PPRTF announced the awarding of five proposals (\$49,997 total), representing investigators from Texas, Oklahoma, Arkansas and Louisiana. As compared to prior award cycles, we observed increases in 1) number of letters of intent, 2) number of proposals, 3) number of represented academic institutions, and 4) number of represented states in service region.

Past awardees published or submitted research findings in fourteen peer-reviewed journals and presented at fourteen conferences. Past awardees also used their pilot data to support the generation of future grant proposals. For example, Dr. Sadie Conway, 2014-2015 awardee, used her pilot project findings to support a NIOSH R03 proposal in October 2015 entitled *Occupational Exposures to Long Work Hours: Thresholds of Effect and Influence of Exposure Patterns on Chronic Health Conditions*. Based on reviewer's comments, this grant was submitted again as an R21 and is currently in review. Dr. Kai Zhang, 2014-2015 awardee, used his pilot project findings to support a NIOSH-awarded RO3 proposal entitled *Assessing Heat-Related Morbidity among Migrant and Seasonal Farmworkers*; Dr. Sharon Cooper, former Deputy Director and in phased retirement is a co-investigator. Dr. David Douphrate, 2012-2013 awardee, used his pilot project findings to support a NIOSH-awarded proposal entitled *Safety Management and Leadership on Large Herd Dairy Farms*, which was submitted through the High Plains and Intermountain Center for Agricultural Health and Safety (HICAHS).

Industrial Hygiene

Directed by Dr. Lawrence Whitehead

During this year we funded six trainees (four MPH, one PhD and one DrPH). Two MPH students graduated. One is now employed at Shell Research and one with Phillips Petroleum. Students had internships in summer 2015 and summer 2016 at Anadarko Petroleum, Phillips Petroleum and Baker Hughes. Several students attended the AIHCE conference in Baltimore in May 2016, and some attended a national safety meeting in the fall of 2015.

Dr. Whitehead was selected as the American Industrial Hygiene Association representative to the ABET Board of Delegates. Dr. Dave Douphrate received the distinguished Certified Professional Ergonomist (CPE) credential from the Board of Certification in Professional Ergonomics. Dr. Inkyu Han is working with the Air Alliance-Houston on effects of expansion of the Port of Houston, stimulated by the widening of the Panama Canal.

Occupational and Environmental Medicine

Directed by Dr. Arch "Chip" Carson

During the past year, the Occupational and Environmental Medicine (OEM) Residency graduated four OEM physicians, all of whom completed the MPH degree and the ACGME-accredited OEM Residency. All of those graduates are now in clinical OEM practice; Dr. Matthew Altman is now Occupational Medicine Medical Director for Seton Medical Center, Harker Heights located in Killeen, TX and Dr. Parvaneh Ehsanzadeh is currently working as staff physician at U.S. Healthworks in Houston and preparing to continue her training in Medical Informatics. Dr. Rini Mathew is a practicing Occupational

Medicine Physician at Franciscan St. Francis Occupational Medicine Clinic in Greenwood, Indiana, a suburb of Indianapolis, and Dr. Jenny Amani is practicing occupational medicine at Group Health Cooperative in Seattle, Washington.

The program has matriculated its first Complementary Pathway OM Resident, Annamaria Macaluso, who is employed by the Memorial Hermann Health System. She is expected to achieve eligibility to sit for the ABPM Board Exam in July, 2016.

Occupational Epidemiology

Directed by Dr. David Gimeno

During this year we funded five trainees and, by the end of the period, one of them graduated; one remained at UHealth SPH as a post-doc and the other accepted a post-doctoral fellowship with the US Army Institute of Surgical research. During this year, our trainees presented their research at several scientific meetings and produced two peer-reviewed publications. In particular, Amanda Marshall, one of our trainees presented at the 2016 Epidemiology Congress of the Americas on June 21-24, 2016 in Miami and at the 2016 UHealth Student Research Day on March 31, 2016, in Houston. The topic of the presentation was on maternal residential proximity to unconventional gas development (UGD) and adverse birth outcomes in the Barnett Shale area, Texas.

Over the reporting period, AHC Media, one of the largest providers of medical education in the world Media, highlighted a couple of research publications from Dr. Lisa Pompeii, on workplace violence in healthcare settings. The first one, underscored healthcare violence as a public health issue. In this study, Dr. Pompeii and colleagues found out how frequently healthcare workers are exposed to both physical and verbal abuse. Further, they found that, in most workplaces, the threat of violence to workers is underreported, considered low priority and procedures to deal with it are not actively enforced. The second highlight was a summary of a unique study on healthcare sitters, an urgent need to understand and address the safety and well-being of hospital "sitters". Healthcare sitters are a working population that has apparently being forgotten by researchers as well as occupational health and patient safety professionals. This study was the first to document accounts of violence and abuse suffered by healthcare sitters who were determined to be at high risk of violence and physical threats.

Further, OE Program Director, Dr. David Gimeno, together with Dr. George Delclos, OE faculty, were funded by the United States Department of Labor (USDOL) Bureau of International Labor Affairs (ILAB), Office of Economic and Labor Research to develop a new interviewer-administered survey questionnaire module and focus groups protocol for collecting nationally representative data on the prevalence, nature, and consequences of adult work-related violence. These tools are aimed at formal and informal workers in both urban and rural areas in Spanish-speaking Central American countries (Panama, Honduras, Nicaragua, El Salvador, Guatemala, and Costa Rica). In the near future, these tools will be then used in ongoing research of working conditions and health in Central America intended to provide a description of the nature and calculation of prevalence rates of various working conditions and labor practices in these countries. The lack of systematic, reliable and accurate data in Latin America on

working conditions, particularly on work-related violence, and their health impact, there is a need to provide current data to making informed decisions to improve the health and wellbeing of this politically and economically important region of the world.

Continuing Education Program

Directed by Dr. Janelle Rios (July 1, 2015 – March 15, 2016)

Interim CE Director: Dr. Elaine Symanski, March 16, 2016-present

The Continuing Education Program trained 735 people in 25 educational events, representing a total of 4,851 person-hours. We delivered 11 occupational medicine events, 4 safety courses, 9 industrial hygiene events; and 1 event did not fall into these categories. Two notable events occurred this year:

The Texas College of Occupational and Environmental Medicine (TxCOEM) Annual Symposium, held in Dallas this year, is a unique and free educational experience in occupational and environmental medicine. This event attracted 58 attendees and provided education to enhance the physician's ability to prevent, diagnose and manage occupational and environmental illnesses and injuries by utilizing current techniques. Topics covered were heat stress in workers, mild-traumatic brain injuries in the work setting, occupational spine injuries and other current research and emerging issues in occupational and environmental medicine. This event was held in conjunction with the annual TexMed conference. Another notable event is the annual Orthopedics Workshop which an intense hands-on training session designed to provide Occupational and Environmental Medicine Residency Physicians and other participants with practical hands-on tools to effectively diagnose and manage the treatment of patients with work-related orthopedic injuries.