



Sunshine Education and Research Center at the University of South Florida

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<http://health.usf.edu/publichealth/erc/>

Annual Report

July 1, 2015 - June 30, 2016

Summary

The Sunshine ERC at the University of South Florida is a regional resource for industry, labor, government and the public in the areas of occupational health and safety. The ERC continues to follow its goal of promoting workplace safety, health and wellbeing through education, research, continuing education and outreach. Its academic programs include (1) industrial hygiene, (2) occupational health nursing, (3) occupational medicine residency, (4) occupational safety, and (5) occupational health psychology. For students, there is strong interdisciplinary coordination and a research experience. The Sunshine ERC has many partnerships including the OSHA 21d consultation and training institute programs at USF, other ERCs, and NIOSH.

Our highlights below illustrate our commitment to the trainee research experience, interdisciplinary activities and the collaboration with other institutions to promote workplace health and safety.

Next year, USF will continue to cultivate partnerships and collaborative relationships with regional OH&S programs; and continue to champion continuing education, outreach, training and research strategies that improve the practitioner's environment and meet their OS&H needs.

Relevance

To meet the needs of Florida and the southeast, the Sunshine ERC at the University of South Florida continues to train OS&H professionals in industrial hygiene, occupational health nursing, occupational health psychology, occupational medicine residency, and occupational safety to provide an array of services based on best practices using current evidence and research ultimately promoting workplace safety, health and well being. The SERC also provides continuing education outreach and hazardous substance training to workers and OS&H professionals in the community.

Contacts

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Highlights

Research Experience: Many of our trainees published papers as well as made presentations at national and statewide professional meetings. Interdisciplinary research experiences are encouraged. Once again, the ERC trainees highlighted their research experiences through the 2016 Research Day activities and to network with other OHS students in the region. The activities included a reception on Thursday night with our guests from the University of Puerto Rico, Florida International University, Florida Institute of Technology, Colorado State University, University of Georgia, Clemson University, and Baruch College, City University of New York. There were 31 poster presentations on Friday morning, followed by lunch and then a safety-oriented tour of Busch Gardens. Finally, there was a networking picnic on Saturday morning. (http://health.usf.edu/publichealth/erc/Research_Day_2016.htm)

Regional Activities: Along with sister ERCs in Alabama (Deep South Center) and North Carolina (North Carolina ERC) and with NIOSH, the Sunshine ERC organized a symposium at the Workers Compensation Institute and Florida Safety Conference in Orlando.

In response to a NIOSH concern about the capacity of states to collect work-related injury and illness data, in 2011, the Southeastern Occupational Network (SouthON) was formed to focus on occupational health and safety in the southeastern US including ten state health departments (Kentucky, North Carolina, South Carolina, Virginia, West Virginia, Georgia, Florida, Mississippi, Alabama, and Louisiana) and the four Education and Research Centers (Florida, North Carolina, Alabama, and Kentucky), CSTE, and OSHA. The annual SouthON covers topics related to injuries and fatalities in the southeastern regions and how the partners can work together. The major goals of SouthON are to: 1.) build relationships with occupational health partners, 2) provide tools to build capacity in states in the SE, 3) promote collaboration, and 4) foster research and worksite interventions. SERC trainees attended these high value interdisciplinary annual meetings. (<http://health.usf.edu/publichealth/erc/SouthON.htm>)

Our trainees attended the Rocky Mountain ERC Young Investigators NORA meeting, a joint trip to the Pensacola Naval Air Station for an overview of the programs in aerospace and occupational medicine, and a training opportunity in heat stress as a combined SERC and Deep South ERC offering.

Outreach: The SERC lead by Dr. Candace Burns and the SERC Student Advisory Committee initiated a partnership with Johnson Controls (lead battery plant) and local professional organizations (e.g., American Heart Association, American Lung Association, American Diabetic Association) to provide *Total Worker Health* (TWH) health promotion education and screenings for employees during a one-day health fair. Student trainees from each of the five SERC disciplines (i.e., industrial hygiene, occupational health nursing, occupational health psychology, occupational medicine residents and occupational safety) worked side-by-side with volunteers from the community to provide the education and screenings. The screenings identified numerous high risk individuals (e.g., high blood

pressure) that the onsite OHN followed via their primary care providers. Overall, the workers evaluated the experience very positively and the onsite OHN reported that the employees have become much more health conscious and initiated several health promotion activities throughout the subsequent year. Lastly, the SERC student trainees evaluated the interdisciplinary training experience very positively and it is now an annual event. See photo album at [Johnson Controls health fair](#) as well as the website of all interdisciplinary activities at http://health.usf.edu/publichealth/erc/SERC_Inter_Init_2013-14.htm

Recruitment: We had 21 other recruitment activities that included laboratory tours and information sessions. Moreover, our SERC faculty and staff participated in recruitment activities at regional and national conferences.

Program Activities and Highlights

Industrial Hygiene

The Industrial Hygiene Program continues ABET accreditation. The quality surveys, interviews, the self-study, and the feedback loops we employ as part of our ABET process assist with meeting NIOSH goals and maintaining the excellence of our program.

The following student stories talk about the variety of students and how the industrial hygiene program facilitated student success, even for non-traditional students.

- **Desiree' Gladieux.** Desiree' Gladieux was an English teacher in the school district of Orlando, Florida for twelve years. She felt unchallenged by this career and entered the MSPH in industrial hygiene program. We admitted her in spite of the fact that she did not have sufficient science background, based on her strong motivation and obvious intelligence. She worked hard, and upon graduation, accepted a position at Disney World as their industrial hygienist.
- **Adrianna Woltman.** Adrianna Woltman entered the MSPH in industrial hygiene program and struggled her first year. This was due to personal issues – her exceptional abilities in our field were always evident. Her second and final year in the program were completely different. She was focused, self-motivated, and possessed relentless energy. She sought out and completed a three month internship at Boeing in Washington. Upon graduation, she took a position as an industrial hygienist with Sandia National Laboratories and is doing well there.
- **Karthik Sivaraman.** Karthik Sivaraman entered the MSPH in industrial hygiene program in 2014. He applied himself to his studies, assisted in setting up and running our laboratory courses, and provided tutoring to other students. He sought out and completed a three month internship with Honda USA in Indiana. After graduation he took a position as an industrial hygienist for Sentry Insurance in Dallas.
- **Aiyanna Fitzgerald – Julian Krusely – Brandon Lavender.** Aiyanna Fitzgerald, Julian Krusely, and Brandon Lavender entered our MSPH in industrial hygiene program as members of the US Navy. Our industrial hygiene program has a long history of training members of the Navy, the other armed services, and the Coast Guard. The Navy requirements are stringent - 59 total credit hours, 10 more than our MPSH program.

They all had to focus and work very hard to graduate within the time allotted by the Navy. They all succeeded, and have now entered the Navy officer's candidate school.

- **Jason Garcia.** Jason Garcia entered the PhD program in industrial hygiene in 2011, and is currently working on his dissertation research involving assessment of the performance characteristics of a prototype NIOSH personal sampler for bioaerosols. To accomplish this, he has constructed a wind tunnel under the direction of Dr. Hammad. In 2015, Jason was awarded scholarships from the American Industrial Hygiene Association and the Florida Section of the AIHA, totaling \$6,600. In 2016, Jason again was awarded two scholarships, one from Florida Section of the AIHA, and also the Fred S. Venable Deep South Local Section Scholarship, totaling \$2400.

Our current research continues on nanoparticles; in addition, and we are underway in a project to assess the performance of the personal bioaerosol sampler developed by NIOSH in a wind tunnel of our own design and construction. We continue our emphasis on aerosol sampling methods to simulate pulmonary deposition, and have expanded the performance of our human exposure chamber to include the delivery of particles in the thoracic range.

In addition, the heat stress laboratory is assessing the heat stress associated with clothing/fabrics used by firefighters, and in protection from exposure to particulates, as well as investigating the special characteristics of the garments of health care personnel dealing with the Ebola virus, particularly in the hot and humid African environment.

Occupational Health Nursing

A former master's and PhD program graduate and a former master's program and DNP program graduate each obtained new full-time faculty positions in California and Florida, and continue their Occupational Health Nurse Practitioner Practice part-time at occupational health clinics.

Two former graduates are in their second year in Doctorate in Nursing Practice (DNP) programs with a focus on occupational health nursing in Florida and Georgia, and one graduate is in her third year of a PhD program at the University of Washington to pursue advanced specialty practice and research in occupational health nursing.

Seven OHN students graduated and subsequently passed their nurse practitioner certification examination on the first attempt and are working in occupational safety and health positions in Florida. All (100%) passed on first time attempt both the national certification examination for adult-gerontology nurse practitioners and the national certification examination in public health, i.e., Certified in Public Health (CPH). Six (6) OHN trainees are on track to graduate December 2016 and one student will graduate May 2017

Six OHN students participated in the annual Total Worker Health (TWH) interdisciplinary health fair at Johnson Controls providing health promotion and health protection education and screenings to employees for both the day and evening shift workers.

A current OHN student serves as President of the Florida West Coast Association of Occupational Health Nursing and editor of the newsletter.

Students and faculty continue to co-author manuscripts focusing on the translation of occupational health and safety research to evidence-based advanced practice with four publications in 2015-2016. One manuscript was awarded continuing education status. One manuscript received an Outstanding Publication Award from the American Association of Occupational Health Nursing (AAOHN) – April 2016.

Lastly, Dr. Candace Burns received the 1st Place AAOHN Poster Award during the Annual Conference – April 2016.

Occupational Health Psychology

The OHP program began the period with 12 trainees and ended with nine. Two of the three graduates took academic jobs and one took a job in industry. They are spread throughout the country (Arizona, Florida, and North Carolina).

OHP trainee graduates, Ryan Johnson, Kaitlin Kiburz, and Kristen Shockley, along with ERC faculty member Tammy Allen received a best paper award from *Personnel Psychology* for their research entitled, "Work-family conflict and flexible work arrangements: Deconstructing flexibility."

OHP trainee graduate Kristen Shockley and ERC faculty member Tammy Allen were also one of the top 5 finalists for the annual Rosabeth Moss Kanter Award for Excellence in Work-Family Research for their work entitled, "Deciding between work and family: An episodic approach." The research upon which the paper was based was funded by a SERC Pilot Project Grant.

OHP trainee graduate Erin Eatough was invited to speak at the 2016 Qualtrics Insight Summit to present results of research she did with OHP trainee graduate Zhiqing Zhou on the link between stress and alcohol use. Her talk was selected as the "most fascinating research insight" at the conference. This work follows from her dissertation that was funded by a SERC Pilot Project Grant (published in *Journal of Organizational Behavior* in 2015). The *Qualtrics* Summit is an exclusive 4-day event hosted by the research company, *Qualtrics*. They bring in innovators, adventurers, and business luminaries from nearly every industry to host expert panels, keynotes, and breakout sessions.

Occupational Medicine Residency

We have been a steady supplier of well-trained Occupational Medicine Physicians to the region, state and nationally in a specialty that has a limited number of board certified physicians. All of our graduates easily find jobs in their field of interest and location of their choice. Within the last five years graduates have found jobs in the Tampa area as well as California, Pennsylvania,

Georgia, Kentucky, Maryland, Missouri, Indiana and Minnesota. They are working as Occupational Health physicians, Medical Directors and clinical teaching. Industries include Occupational Health clinics such as Concentra, Kaiser Permanente, Guthrie Clinics and Minnesota Occupational Health, as well as Hospital based Occupational Health Clinics at Johns Hopkins, Baltimore VA, Baptist Community Health, Madison Medical Center and Temple University. Those clinics associated with University hospitals also provide clinical rotations for residents of other specialties. One graduate entered the pharmaceutical world as a Wellness and Occupational Medical Director.

We provide a series of education programs in patient simulation that broaden the scope of OM training. Residents are exposed to simulation scenarios involving Emergency Disaster Management and Triage. Residents are given a variety of case scenarios using mannequins and they have to critically evaluate how best to triage the patients, prioritize them and handle the patient flow. This simulation exercise was provided by the James Haley VA Hospital and included chemical exposure disaster management as well. For the first time, all of our residents completed training and received certification in BASIC DISASTER LIFE SUPPORT (BDLS) through CAMLS (Center for Advanced Medical Learning and Simulation). This past spring, ADVANCED DISASTER LIFE SUPPORT training was added for all second year residents. This level of training included patient simulation. The program now includes a hands-on Suturing class at CAMLS for all residents. All residents receive training in MRO, Board Review prep, DOT, Spirometry, Hearing Conservation and Hazwopper training.

All residents have an opportunity each year to showcase their research at local and national meetings participating in the American College of Occupational and Environmental Medicine Annual American Occupational Health Conference. This past year it was held in Chicago. In addition, Christopher Lee presented at the Western Occupational Health Conference in Tucson September 2015 and Theodore Aquino presented at the Society of Toxicology Annual Meeting in New Orleans March 2016. The thesis projects for each resident who presented were as follows:

- Aquino T, Harbison RD, Johnson GT, Truncala T: (2016) Comparison of Urinary PAHs among Firefighters and Asphalt Pavers, MSPH, University of South Florida
- Dawkins B, Harbison RD, Truncala T, Xu P: (2016) Risk Factors associated with the non-compliance with the respiratory program among firefighters, MSPH, University of South Florida
- Lee C, Bernard T, Mbah A, Truncala T: (2016) Critical Heat Stress Evaluation in Two Ebola Ensembles, MSPH, University of South Florida

USF OMR residents have a unique opportunity to work at FOX news with the Physician Medical Reporter and USF Occupational Medicine Residency alumna, Dr. Joette Giovinco. Here they assist in providing public health updates to the community that are broadcast on live television. They work closely with local and state officials developing protocols and policy on cutting edge health care issues that affect the public. Some examples include the Influenza vaccine, educating the public on the need for blood donations following the Orlando shootings and most

recently working with Governor Rick Scott on Zika virus prevention.

Occupational Safety

The Occupational Safety program has completed an external review of the curriculum and is beginning the process of revising its course offerings. Recently, our students' special projects have been looking at injury rates and rate ratios for different profiles of employees and environments. For instance, the reduction in injuries with age and experience was found in one light manufacturing operation; and grounds keepers at a hospital had the same risk for slip and fall as the nursing staff (although there were far fewer incidents).

One paper was accepted for publication that found a relationship between acute injury and heat stress level.

Continuing Education

The most noteworthy accomplishment of the continuing education (CE) program is in its wide reach to members of the workforce in all NIOSH/ERC funded programs (Industrial Hygiene, Occupational Medicine, Occupational Health Nursing, Occupational Safety, and Occupational Health Psychology). A total of 6,274 individuals received training through the CE program in online as well as in-person training programs. The Sunshine ERC CE program collaborated with professional organizations as well as with the OSHA Training Institute throughout the year to reach the maximum number of the target populations. In addition, the Sunshine ERC CE program collaborated with the Deep South ERC and the North Carolina ERC to minimize competition with other ERCs in Region IV.