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**Sunshine Education and Research Center
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Abstract

The Sunshine ERC at the University of South Florida, Tampa, Florida established a distinguished reputation in Florida, Region IV and nationally; it served as a regional resource for industry, labor, government and the public. The Sunshine ERC continued to follow its goal of promoting workplace safety, health and well-being through formal academic education, continuing education and outreach along with focused research. Its programs include (1) industrial hygiene (renamed Occupational Exposure Sciences); (2) Occupational Health Nursing; (3) Occupational Health Psychology; (4) Occupational Medicine Residency; (5) Occupational Safety; (6) Continuing Education; and (7) Pilot Project Research Training. Five strategic initiatives are (1) Research experiences to improve the training of our students; (2) Interdisciplinary activities to enhance the interaction of the disciplines; (3) Student recruitment to be more competitive in the national market for students; (4) Diversity recruitment to bring a broader cultural perspective to the professions in OS&H; and (5) Greater involvement of training programs in our region through outreach and collaboration. The Sunshine ERC graduated 78 trainees at the masters level and 16 at the doctoral level. There was strong interdisciplinary coordination and integration with outreach activities. Partnerships included the USF OSHA 21d consultation program, USF OSHA Training Institute Education Center, other ERCs and NIOSH. For the funding cycle 2014-2019, USF continued to cultivate partnerships and collaborative relationships with nearby TPGs and other OS&H programs; advance the needs of OS&H practitioners in the state and region; and continue to champion continuing education, outreach, training and research strategies that impacted the practitioner's environment and met their OS&H needs. A notable interdisciplinary and outreach activity over the last three years with the collaboration with the University of Puerto Rico and examining resilience among disaster recovery workers and hospitality workers after devastating storms.

Overall Description of the Sunshine Education and Research Center

The Sunshine Education and Research Center (SERC) at the University of South Florida (USF) in Tampa, Florida began in 1996 to focus on interdisciplinary training of occupational safety and health professionals, training in evidence-based practice and research, continuing education and outreach. The SERC was administered in the College of Public Health and offered programs collaboratively with the Colleges of Medicine, Nursing, and Arts and Sciences. Beginning with the new 5year cycle in 2019, the Sunshine ERC has grown to include Embry-Riddle Aeronautical University (ERAU) (Daytona Beach FL) and the University of Central Florida (UCF) (Orlando FL).

Mission. The mission of the SERC is to protect workers and promote safety and prevention through interdisciplinary academic education, research training, continuing education, outreach, and research.

Goals. The SERC goals are to: 1) provide quality academic programs in the core occupational health and safety disciplines; 2) provide quality continuing education and outreach to working OH&S professionals and workers; 3) provide strong interdisciplinary interaction; and 4) provide research training or research experience relevant to OH&S.

The Sunshine ERC was organized around center-wide activities including outreach and interdisciplinary activities, academic programs, research training and continuing education.

The interdisciplinary opportunities and outreach activities (ID/O) often overlapped and were combined in this progress report. The major efforts were in collaboration with the University of Puerto Rico TPG, and with other NIOSH-supported centers in the Southeast, which are SouthON, Workers Compensation Institute, and the Southeastern Research Symposium.

The Sunshine ERC had academic programs in Occupational Exposure Science (formerly called Industrial Hygiene), Occupational Health Nursing, Occupational Medicine Residency, Occupational Safety, and Occupational Health Psychology at USF.

In addition to a research experience for all of our trainees, the Sunshine ERC had a Pilot Project Research Training (PPRT) program.

Continuing education with outreach opportunities was a Sunshine ERC program with collaborative agreements with the USF OSHA Training Institute Education Center (OTIEC).

The following table summarizes the number of graduates by program for the past funding cycle.

Degree / Program	OES / IH	OHN	OHP	OMR	OS	Total
Masters / Certificate	28	22	n/a	11	17	78
Doctoral	6	n/a	10	n/a	n/a	16

Center-Wide Activities

Interdisciplinary and Outreach (ID/O)

Progress Report

For the Sunshine ERC, outreach activities are direct support of an extramural community. The Sunshine ERC practice was to use outreach as a platform for a mix with interdisciplinary experiences for Sunshine ERC trainees and or continuing education. For instance, the Sunshine ERC has helped organize and support the Southeastern Occupational Network (SouthON) beginning in the previous cycle of funding and continuing through the current cycle with plans to continue through the next cycle. (It should be noted that the three other ERCs in the southeast also provide support to SouthON during this last cycle for the Sunshine ERC.) SouthON started as an opportunity to share data, experiences and information among state health departments with an interest in occupational injury and illness. It has grown with NIOSH conference grant support to include professionals from the region and beyond. Sunshine ERC staff and students have made presentations at SouthON meetings. While support for the meeting in terms of planning and some expenses meets the narrow definition of outreach, the Sunshine ERC sends a contingent of trainees from all of our disciplines, and they have the opportunity to learn from the professionals on the ground as well as faculty and students from the other ERCs and other academic institutions. In the end, SouthON is both an outreach and an interdisciplinary event.

Another example of outreach is the regional ERC session that is part of the annual Workers Compensation Institute and Florida Health and Safety Conference held in Orlando every August. This started years ago as Sunshine ERC organized sessions and has evolved into one session that is jointly sponsored by the four regional ERCs. More importantly, the model has evolved from one or two presenters from each ERC into a nationally attractive theme. This year (August 2018) an all-day session on Total Worker Health was offered. The speakers represented most of the TWH centers and was designed to raise the level of awareness among health and safety professionals in the region, which was a need identified by the local ASSE. And again, the Sunshine ERC used it as an interdisciplinary event for our trainees across the disciplines (and many stayed for the whole conference).

For three years, the Sunshine ERC has sent an interdisciplinary group to visit the University of Puerto Rico, to meet with students from the UPR TPG, and to tour occupational settings. The first year was also marked by a shared continuing education program on heat stress. The second year saw another group led by a faculty from USF COPH's disaster response and humanitarian relief program. With combined workshops, field trips and problem definition sessions, the combined Sunshine ERC and UPR faculty and students accomplished both outreach and interdisciplinary goals. In the third year, the disaster response theme was continued with a focus on hospitality workers and the addition of UCF to the collaborative team. The two principal efforts with UPR are described below.

Puerto Rico Community Resilience Assessment

With support of the Sunshine Education and Research Center, an interdisciplinary team from USF (staff and students from the ERC and the department of Global Health) in collaboration with University of Puerto Rico (UPR) (staff and students including the NIOSH Training Project Grant) visited Puerto Rico on 6-10 May 2018 for a recce to examine post disaster conditions stemming from Hurricane Maria (2017). The interdisciplinary and inter-center teams captured data that will be used to develop a strategic research agenda to support Occupational Health and Safety through community resilience and disaster risk reduction planning.

Disaster risk reduction (DRR) is the concept and practice of reducing disaster risks through systematic efforts to analyze and reduce the causal factors of disasters. This includes understanding and reducing exposure to hazards, examining vulnerabilities resident in the

communities, and addressing mitigation and preparedness for adverse events. Fundamentally, DRR succeeds in first understanding the risks and in reducing risk by having a community-centric approach that builds the strengths, attributes and resources available within a community. Such disaster risk reduction strategies increase the resilience of people, communities, society and systems. Integrated within this is the occupational health and safety lens that provides a supporting perspective in understanding risks inherent in disaster scenarios.

The THIRA process employed during the site visits helps communities identify capability targets and resource requirements necessary to address anticipated and unanticipated risks. This method helped us to 1. Identify the Threats and Hazards of Concern; 2. Give the Threats and Hazards Context; 3. Establish Capability Targets; and 4. Apply the Results. In this project, visual ethnography was used to capture the threats, hazards and risks inherent in the community. The results demonstrated how visual methods generated etiologic insights regarding the production of urban/rural health and illness in post disaster conditions.

The immediate benefit to the interdisciplinary participants was clear. All of the students and staff from both institutions gained insight to how disaster planning and response can build resilience and provide context for healthy and safe responses. The tools and perspectives were novel to each member in their own way. Further, the three-day interdisciplinary experience built on an already established relationship between USF and UPR, but expanded it to include skill sets outside of the traditional occupational health and safety context. Further, the future strategic initiatives above provide a framework for future Sunshine ERC Outreach, which will further enhance the collaborative relationship and interdisciplinary experiences.

Impact on Hospitality Workers

Recent disasters (both man-made and natural) have shown the fragility and vulnerability of services provided by critical infrastructure systems. Weick and Sutcliffe (2007) argue that: 'Unexpected events often audit our resilience' everything that was left unprepared becomes a complex problem, and every weakness comes rushing to the forefront'.

Complex disasters are characterized by the existence of unforeseen and nonlinear processes that emerge at the seams of critical infrastructure services and community fragility. We ask '...Was the damage to Puerto Rico and parts of Florida due to Hurricane Maria and Irma, OR [our emphasis] was it some combination of hyper-risks that reified as social, political and technical factors that failed under the stress of the hurricane?'. This raises new questions regarding the interdependent relationship that characterizes the physical, social and economic domains and the complexity associated with critical infrastructure, its interdependent services and inherent resilience. One of our objectives will be to look at the desirable relationship between these hotel properties and the neighboring communities where they are located. Potential strengths that can be capitalized in response to a disaster. As well within the context of the impact of the hurricane on the hospitality industry are the effects on worker health and safety.

With this in mind, a service oriented complexity mapping of the hospitality industry (geolocated) can help identify inherent vulnerabilities that reside dormant in communities and within critical infrastructure interdependencies as well as identify potential worker health and safety challenges. Disruption to services in one location can emerge as disruption making them transborder and effecting 'just-in-time' economic models. This points to an inherent dynamic complex causality across the physical, human and informational domains and the requirement for better understanding of complex disaster etiology and the development of new tools and strategies to support predictive analytics, vulnerability analysis and resilience. This will be enabled through a targeted geomorphic, predictive, risk and vulnerability models to support the development of a resilience toolkit for the hospitality industry within a particular lens on worker health and safety.

It is envisioned that the 'resilience toolkit' will help inform the tourism industry regarding vulnerability analysis (linking tourism to community resilience), safety culture, worker health and safety. Hospitality sector (tourism) resilience requires more direct response to, and involvement of the communities in the area of a disaster, including public and private enterprises.

A visit to Puerto Rico was conducted in Nov 2018 by USF, UCF and UPR to scope out the region and identify hotels to support the analysis. Workshops were held in February 2019 to support our experimental design and data analysis methodology. IRB approval was received in March 2019. Teams from USF, UCF and UPR deployed to the identified hotels to conduct surveys and focus groups examining the worker health and safety issues following Hurricane Maria. We are currently consolidating and translating the interview data for analysis. Following completion of the analysis, research reports and publications will be forthcoming.

Core Programs

Program Name: Occupational Exposure Science (OES)

Degree: MSPH and PhD

Director: Yehia Y. Hammad

Deputy Director: Steve Mlynarek

Program Purpose and Objectives

The principal purpose of our program is to furnish working professionals and future researchers a high-quality educational experience in order to realize their career objectives in industrial hygiene (IH).

The objective of our MSPH program is to produce outstanding industrial hygiene professionals through a comprehensive and rigorous curriculum. We offer a practitioner-oriented program consisting of a high-quality curriculum, a value on having our students perform challenging field experience, a requirement for original research, and provision for interaction between our students and other professionals in industrial hygiene and other occupational health-related fields. In addition we emphasize written and oral communication skills throughout the training.

The objective of our PhD program is to produce top quality researchers in the field of industrial hygiene. The excellence of our doctorate program is based on the strengths of the MSPH program. In addition, there is course work specifically designed for research-oriented students, and the focal point of the PhD program is the research performed. Our students interact with epidemiologists, toxicologists, occupational physicians, and others in conducting multidisciplinary research related to occupational health. The development of the ability to design, execute, interpret, and communicate research is the foundation of our PhD program.

Description of Program

Both MSPH and PhD training occur within the milieu of a College of Public Health and are at the graduate-level only. The administration of the College of Public Health strongly supports the IH Program through the allocation of faculty time and salaries, financial resources for equipment, and dedicated space for laboratories and offices. The training is based on College of Public Health policies and complies with the College's accreditation requirements with CEPH. The MSPH degrees are awarded to students based on the completion of 45 - 51 credit hours. All students are required to take five core courses prescribed by the College to establish the overall understanding of public health as a means to improve human well-being. The required industrial hygiene courses provide a solid technical foundation, and are continually revised in accordance with our continuous improvement process. Our electives allow students to develop expertise in areas of interest to them. To improve students' communication skills, the seminar course is taken near the end of studies. In addition, written reports, oral presentations, and oral examinations are components of all the industrial hygiene courses. The plan of study for the MSPH degree provides the detailed technical and scientific knowledge necessary to become a competent practicing industrial hygienist. Our PhD program builds on this background and with further, higher-level required coursework, and courses selected based on the student's background and dissertation research. The training is based on the College of Public Health policies and complies with the College's IRB and CEPH accreditation requirements.

MSPH

The MSPH program in OES consists of 45 credit hours of course work, NORA and other seminars, field experience, an OES comprehensive examination, and a thesis. The MSPH program's major emphasis is the training of competent industrial hygienists to be effective professionals in order to satisfy national needs as well as the needs of Florida and the Southeast, as described earlier. As shown on NIOSH Table 1, since the beginning of the project period we have had 39 trainees total. (32 MSPH and 7 PhD).

Currently, all students of the College of Public Health are encouraged to pass the National CPH examination for graduation. The program's curriculum, with core competencies that will fully prepare trainees to be effective and successful in OSH. All students are required to take three foundation courses prescribed by the College to establish the overall understanding of public health as a means to improve human well-being. To improve students' communication skills, written reports, oral presentations, and oral examinations are components of all the OES courses. The plan of study for the MSPH degree provides the detailed technical and scientific knowledge necessary to become a competent practicing Industrial Hygienists. It should be noted that the OES Program requires approximately one additional semester of full time work as compared with other programs at the College, where the usual length of program for a full time student is 6 terms.

Thesis. The MSPH thesis deals with one aspect of industrial hygiene that matches a research interest of both the student and one of the faculty. The thesis effort is used to sharpen the student's research skills and ability to synthesize information. A minimum of six credit hours is required for the thesis. The student reviews literature, presents a research proposal to his or her committee, conducts the research, and writes and defends the thesis. If successful, the MSPH degree is awarded by the Graduate School. All MSPH students are required to present a poster of their thesis work at the USF Research Day event, Health Sciences Research Day, and the Florida AIHA meetings, or national AIHce.

Comprehensive Examination. The Occupational Exposure Science MSPH program requires a concentration-specific comprehensive examination. This comprehensive examination is a rigorous, four hour test, with a focus on the important technical, regulatory and management aspects of our field. Students are exempted from this examination if they have met the Certified Industrial Hygienist (CIH) requirements. A new requirement has been recently introduced by the College – all students must pass the CPH (certification in public health) exam in order for them to graduate.

Professional Interaction. There is an ever-increasing interaction between the OSHA 21(d) Program, the OTI, and the SERC. OSHA 21(d) Program professionals are participating in existing courses to enhance the industrial hygiene curriculum, and they also provide guest lectures in the continuing education offerings. As a result of this interaction, industrial hygiene safety students actually have developed courses for the OTI program. Both the OSHA 21(d). and OSHA OTI programs provide excellent opportunities for our students to engage in collaboration and outreach.

PhD

The PhD program's major emphasis is to train outstanding researchers in the field of industrial hygiene. The research training program is designed to strengthen the student's base in industrial hygiene and to allow specialization in an area of particular interest, such as nanoparticles, bio-aerosols, aerosol sampling to simulate pulmonary deposition, or retrospective and prospective human exposure evaluations. To be admitted, all PhD students must have completed the Master's curriculum described earlier, or an approved equivalent from another institution. These courses have been described above. 7000 level courses required for PhD students are designed to develop research skills, and also place greater emphasis on communication abilities both written and oral.

The PhD program in OES consists of 55 credit hours post-Master's degree (a minimum of 90 credit hours total) of course work beyond a Bachelor's degree including at least 19 hours for the doctoral dissertation. Potential students can apply through the College of Public Health Admissions Committee for acceptance, and they must meet the admission criteria required by the College. However, before acceptance into the doctoral program, each applicant identify a faculty member willing to accept him or her as a student. The selection criteria are: GPQ, GRE, letters of recommendation, personal statement, and work experience. This faculty member will serve as academic advisor and also may serve as dissertation research advisor. If the faculty member is willing to accept the applicant as a student, then the applicant, if otherwise qualified, is admitted and

a doctoral academic committee is formed. The academic committee meets at least once per term with the doctoral student, in order to gauge academic progress and provide advice regarding coursework. Students are required to take courses considered to be tools of research that do not count toward the hours of coursework required. The two important steps to completion of the degree are the initial qualification stage, which requires completion of necessary coursework and passage of a written and oral examination. The student then is admitted to candidacy for the doctoral degree. At this time a research advisory committee is formed, a research project defined, preferably related to the NORA agenda, and the student defends a research proposal and begins work. Membership of the research advisory committee may be the same or different from the membership of the academic advisory committee, but the research committee must include someone from outside of the Department of Environmental and Occupational Health, typically a statistician or epidemiologist. The final defense is advertised College-wide at least two weeks before it occurs and a senior faculty member from outside the Department is selected to supervise the entire defense process and chair the final defense. If the defense is successful, the PhD degree is awarded by the Graduate School. While the University requires a minimum of 3 years (one year of which must be as a full-time student) and a maximum of 7 years to complete a PhD program, the typical length of program for a PhD in industrial hygiene is 4 to 5 years.

As shown in OES NIOSH Table 2, since the beginning of this project period, 5 full time PhD trainees (4 NIOSH supported) and 2 part time PhD trainees (1 NIOSH supported) have graduated.

Accomplishments, Outputs and Outcomes

The name of the Industrial Hygiene Program has recently been changed to Occupational Exposure Science Program (OES) in order for the program to adapt to current trends and needs in the occupational health field and achieve better recognition with the general public. The OES program received notice of its continuation of ABET accreditation through September 2020.

In 2017, we had a program evaluation done by Mr. Bart Geyer of NASA. His important conclusions are:

- For many years the USF MSPH IH program has been very successful in producing capable and well-trained graduates in the field of Industrial Hygiene. Graduates who are able to find employment and become leaders in OH&S across the country.
- The faculty continues to be a program strength and is highly regarded by both professionals across the discipline and their students.
- The program has many strengths and only minor weaknesses as outlined in this report.
- The program is asking the right questions to succeed in the future and I believe is sincerely interested in ensuring the long term success of the MSPH in IH.
- Everyone connected with the program should take pride in the accomplishments of the program and the many outstanding graduates.
- Hopefully this report will provide some ideas on sustaining future excellence in the program as the world of higher education and the profession of Industrial Hygiene continues to evolve.

Dissertations

- Characterization of Nanoaerosols Using Scanning Mobility Particle Sizers
- Design, Construction, and Characterization of the University of South Florida Wind Tunnel
- Validation of a New Concept for Measuring Respirable Dusts
- Longitudinal Study of Adjustable Workstations and Other Interventions
- Expansion of the Performance Capabilities of the USF Inhalation Challenge Chamber
- Generation and Characterization of Nanoaerosols Using a Portable Scanning Mobility Particle Sizer and Electron Microscopy

Theses

- Determining Upper Musculoskeletal Disorders Using Hand Activity and Posture as Indicators
- Using Predicted Heat Strain to Evaluate Sustainable Exposures
- Effectiveness of Biocide Substitution and Management Plan Implementation for the Control of Legionella Pneumophila in Cooling Tower Waters
- Ability of the ISO Predicted Heat Strain Method to Predict a Limiting Heat Stress Exposure
- Analyzing Indoor and Outdoor Heat Index Measurements in Kitchens
- Particles in Welding Fumes
- Comparing Air Modeling Versus Measured Pesticide Exposures
- Validation of the Thermal Work Limit (TWL)
- Against Known Sustainable Heat Stress Exposures Against Known Sustainable Heat Stress Exposures
- An Exposure Assessment of Paper Dust in a Coupon Manufacturing Facility
- Occupational Noise Exposure Evaluation of a Group of Groundskeepers at a University Campus
- Reduction of Airborne Silica Concentration Using a Novel Sand Coating Technology
- Influence of Environmental Parameters on Mold Sampling Results
- Effects of Temperature on the Emission Rate of Formaldehyde from Medium Density Fiberboard in a Controlled Chamber
- The Ability of the U.S. Army Heat Strain Decision Aid (HSDA) to Predict a Limiting Heat Stress Exposure
- Predicting Hand Surface Area from a Two-Dimensional Hand Tracing
- Assessing Excessive Noise Exposure of Music-Oriented Nightclub Employee
- What Percentage of the Security Forces at MacDill AFB Experience Exposure to Noise in Excess of the OSHA PEL and the Air Force OEEL?
- Assessing Occupational Noise Exposure of Service Members in Aerospace Ground Equipment
- Hexamethylene Diisocyanate Homopolymer and Monomer Exposure Assessment and Characterization at an Automobile Manufacturer in the United States
- A Literature Review of Wipe Sampling Methods for Pesticides in Published Exposure Measurement Studies in the United States
- Sound Attenuation Performance of Fiber-reinforced Polymer Composite Circumaural Hearing Protection Devices
- Assessing the Occupational Noise Exposure of Bartenders
- Characterization of Noise Exposure for High-Volume Restaurant Workers
- The Effect of Fungal Growth on Phthalate Ester Exposures from Plasticized Polyvinyl Chloride
- Can the NWS Heat Index Substitute for Wet Bulb Globe Temperature for Heat Stress Exposure Assessment?
- Characterization of Waste Anesthetic Gas Exposures to Veterinary Workers in the Tampa Bay area
- Characterization of the Airborne Particulates Generated by a Spray Polyurethane Foam Insulation Kit Applicator Exposure to Glycol Derivatives and Total Volatile Organic Compounds during the Application of Spray Polyurethane Foam Insulation

Presentations

Garcia, J.S. 2017, University of South Florida – Design, Construction, and Characterization of the University of South Florida Wind Tunnel, at FL AIHA semi-annual meeting

Bones, Adel Marie, 2016. Effectiveness of Biocide Substitution and Management Plan Implementation for Control of Legionella, at FL-AIHA semi-annual meeting

Augustine, Steven. 2015. Sound Attenuation Performance of Fiber-reinforced Polymer Composite Circumaural Hearing Protection Devices, at FL-AIHA semi-annual meeting

Posters

Jason Garcia. 2018. Further Characterization of the USF Wind Tunnel using the Multi-Jet Blaustein Atomizer (BLAM), at Florida AIHA Spring meeting

Bones Adelmari. 2017. Carbon Monoxide Levels above the OSHA PEL in a Forklift Battery Charging Station, at USF Research Day, FL AIHA Spring Meeting, and AIHCE

Fink, Danny. 2017. An Exposure Assessment and Characterization of Paper Dust in a Coupon Manufacturing Facility, at USF Research Day, FL AIHA Spring Meeting, AIHCE, and Nora Seminar

Fishman, Benjamin. 2017. Influence of Environmental Parameters on Mold Sampling Results, at USF Research Day and AIHCE

Swankie, William. 2017. Effects of temperature on the rate of emission of formaldehyde from medium density fiberboard in a controlled chamber at AIHCE

Vallejo-Garcia, Monica. 2017. Occupational Noise Exposure Evaluation of a Group of Groundskeepers at a University Campus, at USF Research Day and AIHCE

Garcia, Jason. 2017. Performance Evaluation of the NIOSH Prototype Two-Stage Bioaerosol Personal Sampler under Moving Air Conditions, at USF Research Day, FL AIHA Spring Meeting, and AIHCE

Augustine, Steven. 2015. Sound Attenuation Performance of Fiber-reinforced Polymer Composite Circumaural Hearing Protection Devices, at USF Research Day

Woltman, Adrianna. 2015. Assessing the Occupational Noise Exposure of Bartenders in the Tampa Bay Area, at USF Research Day and AIHCE

Henderson, Michael. 2015. Characterization of Airborne Nanoparticles Using Four Different Methods, at USF Research Day and AIHCE

Awards

Garcia, Jason. Spring 2015 AIHCE 2015-2016 AIHF Scholarship Recipient (\$5000)

Garcia, Jason. Spring 2015 AIHCE 2015-2016 FL-AIHA Scholarship Recipient (\$1000)

Riley, Laura Spring 2014 AIHA Foundation Scholarship Recipient (\$1000.)

Current Employers of our Graduates

Air Analytics, LLC,
American Airlines
Arthrax, Inc.
ATC Group Services LLC
Atlanta Northside Hospital
Bureau Veritas
Bureau Veritas
Department of Industrial Hygiene at Camp
Camp Lejeune, Marine Corps
Intel Corporation

Lockheed Martin Mission Systems and
Training
OSHA 21.d. Consultation Program
Ramboll Environment & Health
Sandia National Laboratories
SCS Engineers
Sentry Insurance
US Navy
Walt Disney Parks & Resorts
Wyoming State OSHA

Program Name: Occupational Health Nursing (OHN)

Degree: MS and MS/MPH Concurrent Degrees

Director: Candace M. Burns

Deputy Director: Helen Conlon

Background

The Occupational Health Nursing (OHN) program was initiated in 1995 as a TPG master's level pre-doctoral Clinical Nurse Practitioner program offered collaboratively between the Colleges of Nursing (CON) and Public Health (COPH) offering the MS degree - Occupational Health / Adult-Gerontology Primary Care Nurse Practitioner (AGPCNP) with a specialty in Occupational Health Nursing and the MPH degree in Occupational Health. In 2008, a second track was initiated, in response to the need for an alternative to earning the two degrees concurrently and previous a NIOSH reviewer critique, MS only OHN Track in which students earn only the MS degree from the CON. It includes the completion of the same five specialty courses from COPH i.e., industrial hygiene, occupational safety, interdisciplinary plant operations field course, occupational medicine and the occupational health focused special project. These two tracks comprise the current master's level, pre-doctoral OHN program. Enrollment in the two tracks has been nearly equal, maintaining a total enrollment at 23-25 student trainees each year which demonstrates a need for each track in the OHN program, an adequate applicant pool and a job market of employers who readily employ the nurse practitioner graduates from both tracks.

Purpose and Objectives

The overall aim of the OHN training program is to prepare master's level pre-doctoral students as Occupational Health Nurse practitioners. Trainees are prepared to serve not only in leadership and educator roles in occupational health nursing and to provide direct patient / worker services in the innovative role of the OHN Nurse Practitioner (NP) and to serve as a resource nationally and to Region IV nurses and organizations. The **purpose** of the training program is to provide interdisciplinary training for registered nurses to obtain advanced practice preparation as OHN-NPs. **The objectives** of the OHN program are to: 1) plan, implement and evaluate the OHN program to prepare OHN professionals to practice in advanced practice roles in occupational health nursing; 2) recruit and retain qualified graduate students including minorities into the OHN program; 3) provide research training experiences to apply and utilize research findings while providing occupational health clinical services to workers, i.e., evidence-based practice, prepare for participation in the research process and identify new issues for further investigative development.

Accomplishments and Impact

The OHN program has numerous accomplishments for the past 5 years. **Graduates:** Twenty-two (22) students of which 9 are minority Hispanic and African American for a minority graduation rate of 40%. Review of Logic Model program goals 100% of the predoctoral master's student trainees graduated in compliance with their program plan of study and University and College of Nursing "time-to-graduation" requirements of five years, i.e., NO attrition or need to petition the University office of Graduate Studies to extend their time to graduation.

Additional significant Logic Model outcomes include of all OHN student trainee graduates, 100% are **employed** following graduation and become certified as AGPCNP and licensed as an Advanced Practice Registered Nurse (APRN). One Hundred percent (100%) of the program graduates pass their national nurse practitioner certification examination on the first attempt. Most students remain employed as OHN-NPs which is the expected outcome of this master's program. A few (NIOSH Table 2) have sought advanced graduate study in doctoral programs, both PhD, and DNP.

Both part-time and full-time enrollment is available which is consistent with CON and COPH policies. Ninety-five percent (95%) of CON and OHN master's level pre-doctoral students are part-time; most are working full-time, many are single parents or have responsibilities for elderly family

members. The demographic composition of the applicant pool and subsequent admitted student trainees is consistent with CON and state of Florida master's pre-doctoral nursing student demographic profiles.

Another accomplishment outcome is 100% of the student trainees in the MS/MPH concurrent degrees program earning the MPH degree passed the national Certified in Public Health (CPH) examination as required for graduation.

Another accomplishment outcome is that the diversity of the OHN program has ranged from 20%-50% with a mean of 28% diversity for the past five years. This exceeds the University and CON diversity statistics as well as the demographic representation within the USF Service area of approximately 18%.

One hundred percent (100%) of the OHN student trainees achieve the Logic Model Outcome by completing the CAOHC Hearing Conservation certification and Spirometry certification. This exceeds the expected outcome of 80%.

Furthermore, 100% of the OHN predoctoral student trainees presented an evidence-based practice poster during the annual Interdisciplinary Sunshine ERC Research Symposium prior to graduation. One hundred percent (100%/N=22) of the OHN master's level predoctoral students wrote and submitted evidence-based practice manuscripts to the professional peer reviewed AAOHN journal, *Workplace Health and Safety*. During the past 5 years, six were selected for publication. Topics include the aging workforce, cardiovascular risk factors of airline pilots, the use of diagnostic imaging for work related injuries, impact of language and cultural diversity in the in occupational safety and the Ebola Virus. Two of the student authors were selected to receive *the "Golden Pen Award" from AAOHN for Outstanding Scholarship by a Junior Author*. This Logic Model outcome of dissemination of evidence-based practice further demonstrates a national impact to occupational health nursing.

During the past five years, an additional program outcome was the graduation of four non-NIOSH supported post-master's DNP students who had previously completed the master's program and were working as OHN NPs, completed their DNP degree and project on topics including a clinical protocol for the management of human bites, a comparison of two different return-to work protocols, a decision tool for the management of rotator cuff shoulder injuries, and the evaluation of use of opioids for short-term pain management in occupational medical clinics.

During this five-year grant cycle, one predoctoral OHN student trainee (Kristin Gardner) was selected for a OSHA National Nurse Internship in Washington DC. She interned for 8-week at the OSHA Office of Medicine and Nursing, learning about OSH policy and working on projects. This high value interdisciplinary activity will continue to be encouraged for OHN trainees.

Interdisciplinary and Outreach Accomplishments and Activities

OHN student trainees have opportunities for interdisciplinary interaction with students in Occupational Exposure Science/IH, Safety Management, Occupational Health Psychology and Occupational Medicine via specialty didactic courses, required heat stress and industrial hygiene laboratories, required field experiences (*PHC 6364 Plant Operations*), research training experiences (required participation in research symposia at other ERCs, SOUTHON, Southeast ERC Regional Research Conference), required OSHA 21d Consultations, Occupational Training Institute (OTI) continuing education programs and non-course related activities such as the SERC Student Advisory Council. Evaluation feedback including a SWOT analysis conducted by the SERC Director of Evaluation, Dr. Jennifer Marshall, found that overall, interdisciplinary training activities provided highly valuable outcomes by preparing student trainees for their future roles in OSH. Thus, this high value activities will continue as a requirement of the OHN program.

Awards and Recognitions

Gardner, K. (2018). OSHA National Nurse Internship. (8- week internship as OSHA Office of Medicine and Nursing, Washington DC.)

Burns, C. (2018) Outstanding Poster – 3rd Place. AAOHN annual conference, April 17, 2018, Reno, NV.

Burns, C. (2017) Fellow, AAOHN Leadership in occupational and Environmental Health Nursing. Inducted April 26, 2017

Figurea-Delia, P. (2016) Elected, President, Florida West Coast Chapter, AAOHN to serve a 2-year term.

Armotrading Henderson, L. (2016) - Golden Pen Award – Outstanding Junior Author. AAOHN Annual Conference - 2016.

Nickerson, S. (2016) Elected, President Florida State Association of Occupational Health Nursing to serve a 2-year term.

Burns, C. (2015-2016) Team Leader, collaborative between NPPTL and AAOHN to develop a national curriculum for OHNs and other OS&H professionals regarding respiratory protection. This resulted in an online curriculum available for free on the AAOHN website for OS&H professionals

Burns, C. AAOHN Golden Pen Award. - 2016. AAOHN Annual Conference , 2016.

Burns, C. 2014 - present – Selected as Chairperson, Membership Committee. Florida West Coast Association of Occupational Health Nurses.

Presentations

Burns, C, (2017) Research and Evidence-based Practice in occupational Health Nursing and Safety. AAOHN Annual Conference – April 2017.

Burns, C. (2017). Posttraumatic Stress Disorder: Implications for Veterans in the Workplace. AAOHN Annual Conference. April 2017.

Burns, C. (2016). Occupational Health Nursing and Respiratory Protection Curriculum. IOM National Study Group. Atlanta, GA.

Publications

2017

Brown, L., Conlon, H., & Burns, C. (2017). Delivery workers: the impact of health stress on workers and a plan to quench the heat. *Workplace Health and Safety*.

Celendenin, B., Conlon, H., & Burns, C. (2017). Overuse of diagnostic imaging for work related injuries. *Workplace Health and Safety*. 65 (2) 24-27.

2016

DeJesus, M., & Burns, C. (2016). Impact of language and cultural diversity on occupational safety. *Workplace Health and Safety*. 64 (1), 24-27.

2015

Armotrading Henderson, L. & Burns, C. (2015). Posttraumatic Stress Disorder in Reserve Veterans: Important Reintegration Considerations for the Occupational Health Nurse. *Workplace Health and Safety*, 63(1), 27-32.

This article was selected to receive the American Association of Occupational Health Nurses (AAOHN) Golden Pen Award, April 2016. – national recognition and impact.

Campbell, K. & Burns, C. (2015). Total Worker Health: Implications for the Occupational Health Nurses. *Workplace Health and Safety*. 63 (7), 316-319.

DeJesus, M., Conlon, H., & Burns, C. (2015). Impact of Language and Cultural Diversity on Occupational Safety. (2016). *Workplace Health and Safety*, 64(1), 24-27.

Lurati, A. (2015). An ICU Nurse with History of Trauma. *Workplace Health and Safety*, 63(1), 6-8.

Lurati, A. (2015). Occupationally Related Chemical Injuries: A Review of Literature. *Workplace Health and Safety*. 63(7), 284-287.

Posters

2018

Alexander, S. Long Haul Truck Drivers and Metabolic syndrome: Implications for the Occupational Health Nurse. USF Health Research Symposium, February 22, 2018.

Butler, T. Substance Abuse Amongst the Food Industry. USF Health Research Symposium, February 22, 2018.

Craig, L. Stress and Burnout in the Workplace. USF Health Research Symposium, February 22, 2018.

Lore, H. The Health Effects of a Sedentary Desk Job. USF Health Research Symposium, February 22, 2018.

Luna, R. Effectiveness of Workplace Health and Wellness Programs. USF Health Research Symposium, February 22, 2018.

Muoh, J. Effects of Noise Exposure in the Construction Industry. USF Health Research Symposium, February 22, 2018.

Wallace, K. PTSD and First Responders. USF Health Research Symposium, February 22, 2018.

2017

Jacobs, V. Workplace Exposure to Dermatological Irritants. USF Health Research Symposium. February 21, 2017

James, L. Worksite Lifestyle Change Program to Reduce Risk for Cardiovascular Disease for Shift Workers. USF Health Research Symposium. February 21, 2017

Gardner, K. Zika Virus and the Threat of Exposure to Workers: Implications for the Occupational Health Nurse. USF Health Research Symposium. February 21, 2017
2016

Fordham, R. Lifting injuries om Landscaping and Horticultural Industries. USF Health Research Symposium, February 21, 2016.

Hunter, N. The impact of Hearing Impairment in Veterans. USF Health Research Symposium, February 21, 2016.

Rymsza, J. Zoonotic Disease Exposure Risk in Veterinary Personnel. USF Health Research Symposium, February 21, 2016.

White, M. African American Disparities Related to Sleep Deprivation in the Workplace. USF Health Research Symposium, February 21, 2016.

2015

Figura-Delia, P. (2015). Medical Marijuana and Impact on the Workplace. USF Health Research Symposium February 20, 2015

Foth, M. (2015) Agricultural Workers and occupational Risk for Cancer. USF Health Research Symposium February 20, 2015

Henderson, L. & Burns, C. (2015) Supporting Veterans in the Workplace. USF Health Research Symposium February 20, 2015

Johnson, T. (2015) Heat Stress: The American Worker and the OHN. USF Health Research Symposium February 20, 2015

Lawandales, J. (2015) Effects of Short vs Long Sleeve Shirts for Heat Stress Assessment. USF Health Research Symposium February 20, 2015

Lord, D. (2015) Diabetes management for the Night Shift Worker. USF Health Research Symposium February 20, 2015

Mixon, V. (2015). Assessing the Risk of Hearing Damage in Professional Musicians. USF Health Research Symposium February 20, 2015

Reesman, D. (2015). Stress and Obesity: The Effect on Police Officers. USF Health Research Symposium February 20, 2015

Rourk, L. (2015). The Dangers of Pesticide Exposure in Migrant Workers. USF Health Research Symposium February 20, 2015

Schon, J. (2015) Occupational Lung Disease in Returning Iraq and Afghanistan War Veterans. USF Health Research Symposium, February 20, 2015

Program Name: Occupational Health Psychology (OHP)

Degree: PhD

Director: Paul Spector (starting 1 July 2019, Tammy Allen)

Deputy Director: Tammy Allen (starting 1 July 2019, Kelsey Merlo)

Program Description and Activities

The OHP training program provides an in-depth interdisciplinary specialization for I-O doctoral students. Each trainee receives an individualized program of study that includes basic training in I-O, specialized training in OHP, and interdisciplinary training in occupational health science. The I-O psychology curriculum has flexibility to allow for customized programs of study, making it easy to integrate the interdisciplinary OHP training into the I-O curriculum without increasing the number of program requirements. OHP trainees take some of their OHP coursework in psychology, but they also take coursework in the College of Public Health (COPH), as well as other departments/colleges on campus outside of psychology. Trainees are required to take the OHP foundation sequence, which consists of two advanced seminars: An OHP survey course and either the Work and Family or the Stress and Coping Seminar. The OHP course covers the major areas of OHP, including psychological factors in workplace health, musculoskeletal disorders, occupational stress, safety, and work/family. It links OHP issues to the larger context of I-O psychology and occupational health and safety. The Work and Family course covers how work and family interaction affects health, safety, and well-being. Stress and Coping covers both physical and psychological factors in stress both inside and outside the workplace.

Trainee research including master's thesis and doctoral dissertation is in OHP areas with collaboration with both faculty and trainees in OHP and the broader ERC. Research topics are chosen by the trainee in close consultation with faculty (e.g., recent dissertation topics include work-family conflict and cardiovascular reactivity, the impact of traumatic event exposure on emergency medical technicians, and the effects of leader-member exchange on psychological and physiological strain). Trainees are encouraged to collaborate with faculty and students throughout the ERC, as well as with faculty and students of other universities. Trainees are required to be involved in research beyond the thesis/dissertation, which are considered minimum research requirements. They are required to participate in the annual ERC Research Day poster event and present at interdisciplinary conferences. Trainees also obtain experience with interdisciplinary research projects and practice experiences (e.g., Johnson & Johnson Health Fair). To further broaden our impact, during the report time period we developed an undergraduate course in *Occupational Health Psychology* that is taught by trainees. Trainees also participate in out-reach activities such as the *Great American Teach-In*.

Tammy Allen became the director of the OHP program effective July 1, 2019. Prior to taking on the director role, she served as the deputy director since the inception of the program. Kelsey Merlo has joined the program as the deputy director, bringing new energy to the OHP program and to the ERC. Allen and Merlo teach courses in the concentration and supervise trainees. The program also continues to be supported by Kristen Salomon, whose expertise is in cardiovascular responses to stress. She offers courses on Stress & Coping and Psychophysiology that are available to trainees. We met with our advisory board in Fall of 2017 and sought input on a variety of issues. Below is a summary of that report:

1. Issues/Topics Needing Attention (Research and/or Practice)

1. Indoor air quality. Dust and mold in schools that affect teachers and students, especially those with allergies/asthma. School districts often slow to respond; concerned about costs.
2. More interdisciplinary research—going beyond public health and psychology, e.g., neuroscience.
3. Research on economic trends and the changing nature of work, e.g. part-time work, temporary work, and the gig economy.

2. Getting Students More Involved in the Community

1. Develop list of services and then send to organizations.

3. Continuing Education Ideas
 1. Offering practical training on how to accomplish things important to organizations.
 2. Students could help organizations evaluate training they are currently doing.
 3. Workshops on wellness.
 4. Help with Healthy Workplace (e.g., APA program)
 5. Concern that some topics can be sensitive, and organizations might be resistant.
 6. In hospitality industry, approaching loss officer in smaller hotels might be place to build connections. Safety of guests and employees important.

4. Building Partnerships with Organizations
 1. Partner with unions; issue for schools is indoor air quality.
 2. Develop a newsletter (online) and distribute to community mailing list.

5. More Collaboration across Universities
 1. Activity at Research Day to promote joint projects across universities/disciplines. Can ERC fund cross-university projects as part of or in addition to Pilot Grants?

Accomplishments

The goals of the program over the reporting period were to maintain the outstanding development and success achieved by trainees. This includes completing program requirements in a timely fashion, participating in research and practice activities, and securing gainful employment post graduation. We also increased participation in, and leadership of, interdisciplinary activities. The faculty members associated with the OHP program have strong programs of research and records of achievement. Tammy Allen is current president of the *Society for Occupational Health Psychology* and was selected by the university as a Distinguished University Professor in 2018. Dr. Allen was also recognized as one of the top ten extraordinary contributors to the field of work and family at the biannual meeting of the Work-Family Researchers Network in 2018. Dr. Allen will be awarded an honorary doctorate degree by the *University of Neuchâtel* in November. In addition, she was the PI on a three year funded National Science Foundation (NSF) study and was recently another NSF grant as co-PI. Kelsey Merlo joined the faculty in 2019. Prior to joining the USF faculty, Dr. Merlo was a post-doctoral Research Fellow at the *U.S. Army Research Institute for the Behavioral and Social Science Research Unit*. She has also been the project manager for research funded by the *National Science Foundation*. She brings a strong background in affect research with a focus on better understanding the day-to-day experiences of working. Dr. Salomon continues to support the program through teaching and advising of trainees on stress, coping, and psychophysiology. Dr. Salomon was recently promoted to Full Professor and has a strong record of achievement with recently funded extramural grants and research awards.

Tammy Allen Awards During the Period

- Top Three Finalist, Personnel Psychology Best Paper Award (2019)
- Outstanding Faculty Award, University of South Florida (2019)
- Honorary Doctorate, University of Neuchatel (to be conferred November 2019)
- Erskine Fellow (2019)
- Distinguished University Professor, University of South Florida (2018)
- Listed as one of the Top Ten Extraordinary Contributors to Work and Family Research (2018)
- Editor's Commendation, Journal of Business and Psychology (2016)
- Top 5 Nominee for the Rosabeth Moss Kanter Award for Excellence in Work-Family Research (2016)
- Best Paper Award, Personnel Psychology (2015)
- Top 4 Finalist, Best Paper, Journal of Occupational Health Psychology (2015)
- Outstanding Faculty Award, University of South Florida (2014)

Recent graduates of the program continue to secure excellent positions upon graduation. Below is a list of students who have graduated since 2014 and their current employment positions.

Ryan Johnson 2014	Ohio University	Assistant Professor
Cristina Kawamoto Hudson 2014	Raymond James Financial	Senior Advisor, HR Talent Assessment
Zhiqing (Albert) Zhou 2014	Baruch College	Assistant Professor
Xinxuan (Alice) Che 2015	Florida Institute of Technology	Assistant Professor
Kaitlin Kiburz 2016	SPX Flow	HR Business Partner Global Functions
Michele Gazica 2016	Embry-Riddle University	Assistant Professor
Steph Andel 2017	Indiana University, Indianapolis	Assistant Professor
Kimberly French 2017	Georgia Tech	Assistant Professor
Keaton Fletcher 2018	Georgia Tech	Assistant Professor
Rachel Jang 2018	Penn State-Mont Alto	Assistant Professor
Maryana Arvan 2019	University of Central Florida	Post-doctoral Scholar

Below is a list of current students, the year they joined the program, and their recent accomplishments with regard to progress through the program.

Derek Hutchinson 2013	Dissertation defense scheduled for September, 2019
Tyler Henderson 2015	Medical leave of absence
David Howard 2015	Defended thesis and taking comprehensive exams September, 2019
Victor Mancini 2015	Completing thesis
Cheryl Gray 2016	Defended thesis and taking comprehensive exams September, 2019
Jerry Slutsky 2017	Working on thesis proposal
Joe Regina 2017	Thesis proposal scheduled for September, 2019
Aashna Waiwood 2018	Working on thesis proposal

Students continue to excel presenting and publishing their work. We have strong student representation at the *Work, Stress, and Health* conference. Five trainees presented their work there in June, 2017 and most are planning to attend and present later this year at the 2019 conference. We also have strong student representation at the annual *Society for Industrial and Organizational Psychology* conference each year, with most if not all trainees presenting. Collectively, the primary faculty, current, and former trainees have published or have in press 122 peer-reviewed journal articles and 32 book chapters. These publications appear in the Appendix

Graduates of the program have also been very involved in service to the profession. Below are examples of roles held by former trainees during the time period.

Eunae Cho: Member Editorial Board Journal of Vocational Behavior

Erin Eatough: Member SIOOP Visibility Committee

Keaton Fletcher: SIOOP Program Planning Committee; SIOOP Visibility Committee

Kimberly French: Member SIOOP Visibility Committee; Member Editorial Board Journal of Vocational Behavior and Journal of Business and Psychology

Joe Mazzola: Treasurer Society for Occupational Health Psychology

Kristen Shockley: Incoming Associate Editor, Journal of Applied Psychology; Chair SIOOP Awards Committee; Chair SIOOP Program Committee; Associate Editor Journal of Vocational Behavior

Liu-Qin Yang: Associate Editor Applied Psychology: An Internal Review; Chair Society for Occupational Health Psychology Education & Training Committee

Trainees have also received a variety of awards and recognition. Below are examples those who were trainees during the period.

- USF Outstanding Dissertation Award (Kimberly French) 2018
- Early Doctoral Consortium Invitee, Southern Management Association (Joseph Regina) 2018
- Walvoord Verizon Wireless Work-Family Research Endowment Award (Aashna Waiwood) 2018
- National Science Foundation, Graduate Research Fellow Program, Honorable Mention (Jerry Slutsky) 2017
- American Psychological Association Dissertation Research Award (Seulki “Rachel” Jang) 2017
- Work, Stress, and Health Travel Award (Kimberly French) 2017
- Work, Stress, and Health Finalist for Student Research Award (Steph Andel) 2017
- SIOP Foundation Lee Hakel Scholarship – recognizes achievement of a graduate student in I-O psychology; this award goes to the highest ranked student (Kimberly French) 2017
- Paul Spector Endowed Award (Aashna Waiwood) 2017
- SIOP Travel Award (Seulki “Rachel” Jang) 2017
- Human Factor and Ergonomics Society training technical group best student paper award (Keaton Fletcher) 2016
- American Psychological Association Dissertation Research Award (Kimberly French) 2016
- Editor Commendation, Journal of Business and Psychology (Kimberly French) 2016
- Pre-Doctoral Consortium Invitee, Southern Management Association (Joseph Regina) 2016

Goals Over the Next Time Period

- Continued student success
- Involvement in cutting edge research
- Recruitment of new trainees
- Regular team meetings between OHP students and faculty
- Community outreach
- Continued interdisciplinary experience and research
- Continued additional extramural funding by faculty
- Continued involvement in the occupational health science community

Peer Reviewed Journal Articles

Below peer-reviewed journal publications that involve faculty, current trainees, and former trainees. Current trainee names are bolded. Former trainee names are underlined.

Allen, T. D., French, K. A., Braun, M. T., & Fletcher, K. (2019). The passage of time in work-family research: Past, present, and future. *Journal of Vocational Behavior*, 110, 245-257.

Allen, T. D., French, K. A., Dumani, S., & Shockley, K. M. (2019, in press). A cross-national meta-analytic examination of predictors and outcomes associated with work-family conflict. *Journal of Applied Psychology*.

Andel, S. A., Kessler, S. R., Pindek, S., Kleinman, G., & Spector, P. E. (2019). Is cyberloafing more complex than we originally thought? Cyberloafing as a coping response to workplace aggression exposure. *Computers in Human Behavior*, 124-130.

Arvan, M. L., Pindek, S., Andel, S. A., & Spector, P. E. (2019). Too good for your job? Disentangling the relationships between objective overqualification, perceived overqualification, and job dissatisfaction. *Journal of Vocational Behavior*. Online advance

Bradley, E., Albright, G., McMillan, J., & Shockley, K. (2019). Impact of simulation on educator support of LGBTQ youth. *Journal of LGBT Youth*, 16, 317-339.

Chang, C.-H., Yang, L.-Q., & Lauricella, T. K. (2019). Social support exchange and nurses' musculoskeletal injuries in a team context: Anger as a mediator. *Work & Occupations*. Online advance

Cho, E., & Allen, T. D. (2019). The transnational family: A typology and implications for work-family balance. *Human Resource Management Review*, 29, 76-86.

Cho, E., & Chew, I. (2019, accepted). Work-life balance among self-initiated expatriates in Singapore: Definitions, challenges, and resources. *Current Psychology*.

Choo, C. E.-K., Kan, Z. X., & Cho, E. (accepted). A review of the literature on the school-work-life interface. *Journal of Career Development*.

Dalal, R.S., Bennett, R.J., Brummel, B.J., **Howard, D.J.**, Posey, M.C., Zaccaro, S.J., (Invited paper – estimated in press late 2019 / early 2020). Organizational Science Approaches to Cybersecurity. *Journal of Business and Psychology*

Eby, L. T., Allen, T. D., Conley, K. M., Williamson, R. L., **Henderson, T. G.**, & **Mancini, V. S.** (2019). Mindfulness-based training interventions for employees: A qualitative review of the literature. *Human Resource Management Review*, 29, 156-178,

French, K. A., Allen, T. D., & **Henderson, T.** (2019). Challenge and hindrance stressors and metabolic risk factors. *Journal of Occupational Health Psychology*, 24, 307-321.

French, K. A., Allen, T. D., & **Henderson, T.** (2019). Challenge and hindrance stressors in relation to sleep. *Social Science & Medicine*, 222, 145-153.

French, K. A., Barnett, C., & Allen, T. D. (2019, in press). Experience sampling response modes: Comparing voice and online surveys. *Journal of Business and Psychology*.

Hirschi, A., Shockley, K. M., & Zacher, H. (2019). Achieving work-family balance: An action regulation model. *Academy of Management Review*, 44, 150-171.

Kessler, S. R., Pindek, S., Kleinman, G., Andel, S. A., & Spector, P. E. (2019). Information security climate and the assessment of information security risk among healthcare employees. *Health Informatics Journal*.

Mazzola, J. J., & Disselhorst, R. (2019, in press). Should we be challenging employees?: A critical review and meta-analysis of the challenge-hindrance model. *Journal of Organizational Behavior*.

Mazzola, J. J., Jackson, A., & Thiele, A. (2019, in press). Obesity in the workplace: Physical, social, and environmental barriers and facilitators to healthy lifestyles. *Occupational Health Science*.

Meier, L. L., & Cho, E. (2019). Work stressors and partner social undermining: Comparing negative affect and psychological detachment as mechanisms. *Journal of Occupational Health Psychology*, 24(3), 359-372.

Merlo, K. L., Wiegand, K. E., Shaughnessy, S. P., Kuykendall, L. E., & Weiss, H. M. (2019). A qualitative study of mind wandering episodes at work. *Journal of Business and Psychology*.

Powell, G. N., Greenhaus, J. H., Allen, T. D., & Johnson, R. E. (2019). Advancing and expanding work-life theory from multiple perspectives. *Academy of Management Review*, 44, 54-71.

Yang, L.-Q., Zheng, X., Liu, X., Lu, C.-q., & Schaubroeck, J. M. (2019). Abusive supervision, thwarted belongingness, and workplace safety: A group engagement perspective. *Journal of Applied Psychology*. Advance online publication.

Andel, S. A., Pindek, S., & Spector, P. E. (2018). When antecedent becomes consequent: An examination of temporal order of job dissatisfaction and verbal aggression exposure. *Work & Stress*.

Bauer, J. A., Wright, N. A., Askew, K., & Spector, P. E. (2018). The relationship between OCB demands and extra-task behaviors. *The Psychologist-Manager Journal*, 21, 163-186.

Chin, B.C., **Slutsky, J.**, Raye, J., & Creswell, J.D. (2018). Mindfulness Training Increases Positive Affect and Reduces Stress At Work: A Randomized Controlled Trial. *Mindfulness*, 10(4), 627-638.

Cho, E., & Chen, T-Y. (2018). The effects of work-family experiences on health among older workers. *Psychology and Aging*, 33(7), 993-1006.

Choi, Y., Cho, E., Jung, H. J., & Sohn, Y. W. (2018). Calling as a predictor of life satisfaction: The roles of psychological capital, work-family enrichment, and boundary management strategy. *Journal of Career Assessment*, 26, 567-582.

Fletcher, K. A., Bedwell, W. L., Voeller, M., Coe, D., Morris, M. L., Marsh, B., & Zambroski, C. (2018). The art of critical thinking in nursing: A novel multi-modal humanities curriculum, *Medical Science Educator*, 28, 27-29.

Fletcher, K.A., Telford, B.N., Frick, S.E., & Bedwell, W.L. (2018). Enhancing training with well-designed checklists. *International Journal of Training and Development*, 22(4), 289-300.

French, K. A. & Agars, M. D. (2018). Work-family culture in low income environments: Can we generalize? *Journal of Career Development*, 45, 50-67.

French, K. A., Dumani, S., Allen, T. D., Shockley, K. M. (2018). A meta-analysis of work-family conflict and social support: Examining support source, support type, and national context. *Psychological Bulletin*, 144, 284-314.

Grand, J. A., Rogelberg, S. G., Allen, T. D., Landis, R. S., Reynolds, D. H., Scott, J. C., Tonidandel, S., & Truxillo, D. M. (2018). A systems-based approach to fostering a robust and reliable science in industrial-organizational psychology. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 11, 4-42.

Hutchinson, D. M., Andel, S. A., & Spector, P. E. (2018). Digging Deeper into the Shared Variance among Safety-Related Climates: The Need for a General Safety Climate Measure. *International journal of Occupational and Environmental Health*, 24, 38-46.

Jang, S., Shen, W., Allen, T. D., & Zhang, H. (2018). Societal individualism-collectivism and uncertainty avoidance as moderators of relationships between job resources and strain. *Journal of Organizational Behavior*, 39, 507-524.

Kayhan, V. O., Chen, Z. C., French, K. A., Allen, T. D., Salomon, K., & Watkins, A. (2018). How honest are the signals? A protocol for validating wearable sensors. *Behavioral Research Methods*, 50, 57-83.

- Liu, C., Nauta, M. M., Yang, L.-Q., & Spector, P. E. (2018). How do coworkers 'make the place'? Examining coworker conflict and the value of harmony in China and the United States. *Applied Psychology: An International Review*, 67, 30-60.
- Liu, W. Zhou, Z. E., & Che, X. X. (2018). Effect of workplace incivility on OCB through burnout: The moderating role of affective commitment. *Journal of Business and Psychology*.
- Long, M. W., Albright, G., McMillan, J., Shockley, K. M., & Price, O. A. (2018). Enhancing educator engagement in school mental health care through digital simulation professional development. *Journal of School Health*, 88, 651-659.
- Mangione, S., ... Fletcher, K. A., Kahn, M. J. (2018). Medical students' exposure to the humanities correlates with positive personal qualities and reduced burnout: A multi-institutional U.S. survey. *Journal of General Internal Medicine*, 33, 628-634.
- Page, K., Deuling, J., Mazzola, J. J., & Rospenda, K. M. (2018). Clusters of work-family conflict: An investigation of age, gender, and child age. *Occupational Health Science*, 2(2), 181-201.
- Page, K., Robles, Z., Rospenda, K., & Mazzola, J. J. (2018). Understanding the correlates between care-recipient age and caregiver burden, work-family conflict, job satisfaction, and turnover intentions. *Occupational Health Science*, 2(4), 409-435.
- Merlo, K. L., Shaughnessy, S. P., & Weiss, H. M. (2018). Affective influences on within-person changes in work performance as mediated by attentional focus. *European Journal of Work and Organizational Psychology*, 27(1), 126-139
- Morgan, W. B., Nelson, J., King E. B., & Mancini, V. S. (2018). Reactions to Men's and Women's Counterproductive Work Behavior. *Equality, diversity and inclusion: An international journal*.
- Nixon, A. E., Lanz, J., Manapragada, A., Bruk-Lee, V., Sanchez, A., & Rodriguez, R.J., (2018). Nurse safety: What does affect and attitude have to do with it? *Work & Stress*.
- Ng, T. W. H., & Allen, T. D. (2018). Organizational attachment and health: Integrating two literatures and examining the moderating effects of cultures. *Journal of Vocational Behavior*, 107, 1-14.
- Pindek, S., Arvan, M. L. & Spector, P. E. (2018). The stressor-strain relationship in diary studies: A meta-analysis of the within and between levels. *Work & Stress*.
- Pindek, S., Demircioglu, E., **Howard, D.J.**, Eatough, E., Spector, P.E. (2018). Illegitimate Tasks Were Not Created Equal: Examining the Effects of Attributions on Unreasonable and Unnecessary Tasks. *Work & Stress*
- Pindek, S., **Howard, D.J.**, Krajcevska, A., Spector, P. (2018). Organizational Constraints and Their Effect on Performance: A Mixed Methods Investigation *Journal of Managerial Psychology*
- Shockley, K. M., & Allen, T. D. (2018). It's not what I expected: The association between dual-earner couples' met expectations for the division of paid and family labor and well-being. *Journal of Vocational Behavior*, 104, 240-260.
- Slutsky, J.**, Chin, B.C., Raye, J., & Creswell, J.D. (2018). Mindfulness Training Improves Employee Well-Being: A Randomized Controlled Trial. *Journal of Occupational Health Psychology*, 24(1), 139-149.

Wepfer, A., Allen, T. D., Brauchli, R., Jenny, G. J., & Bauer, G. F. (2018). Work-life boundaries and well-being: Does work-to-life integration impair well-being through lack of recovery? *Journal of Business and Psychology*, 33, 727-740.

Zhou, Z. E., Eatough, E. M., & Wald, D. R. (2018). Feeling insulted? Examining end-of-work anger as a mediator in the relationship between daily illegitimate tasks and next-day CWB. *Journal of Organizational Behavior*, 1-11.

Allen, T. D., Eby, L. T., Bauer, T. N., & Chao, G. T. (2017). Taking stock of two relational aspects of organizational life: Tracing the history and shaping the future of socialization and mentoring research. *Journal of Applied Psychology*, 102, 324-337.

Allen, T. D., & Martin, A. (2017). Work-family: A retrospective look at 20 years of research in JOHP. *Journal of Occupational Health Psychology*, 22, 259-272.

Allen, T. D., **Henderson, T., Mancini, V., & French, K. A.** (2017). Mindfulness and meditation practice as moderators of the relationship between age and subjective wellbeing among working adults. *Mindfulness*, 8, 1055-1063.

Allen, T. D., & Weiss, H. M. (2017). Whither I-O psychology and legislative restrictions. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 10, 194-199.

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Program Name: Occupational Medicine Residency (OMR)

Degree: MSPH, MPH

Director: Rachel Williams, MD, MSPH

Deputy Director: Thomas Truncale, DO, MPH

Program Mission and Aims

The overall mission of the Occupational Medicine Residency (OMR) program is to train qualified Occupational Medicine physicians to improve the health and safety of workers in Florida and across the nation. Trainees are prepared to provide direct patient care services as board-certified Occupational Medicine physicians in public health and corporate settings, as well as to serve in leadership and educator roles in the field. The program aims are to: 1) educate residents to be excellent practitioners of Occupational Medicine in an interdisciplinary and interprofessional team model; 2) provide individualized curriculum options to meet residents' educational and career goals; 3) train individuals for expertise in population health and preventive medicine; and 4) add to the body of knowledge and research training in occupational health and safety.

Description of Program

The goal of our 2-year program is to provide training that leads to a Master in Public Health or Master of Science in Public Health degrees while simultaneously providing the clinical training skills that lead to board-certification in Preventive and Occupational Medicine. Clinical training skills are the focus of 4 of the 5 work days, with Mondays, Tuesdays, Thursdays and Fridays spent on rotations in clinical sites for 18 of the 24 months and non-clinical sites for 6 months. The public health courses take place at the College of Public Health on Wednesdays, after workday hours, or online. Wednesday didactic sessions consist of invited lectures, hands-on demonstrations, journal clubs, or board reviews.

USF OMR requires graduates to meet the core competencies established by ACGME. ACGME Core Competencies measure a physician's ability to administer a high level of care to diagnose and treat illness, offer and implement strategies to continuously improve patient health and wellness, offer advice and resources to prevent disease in patients, and provide not only physical treatment, but also emotional support as the physician cares for patients and interacts with patients' families and support systems. The six ACGME Core Competencies are as follows: 1) Patient Care and Procedural Skills, 2) Medical Knowledge, 3) Practice-based Learning and Improvement, 4) Interpersonal and Communication Skills, 5) Professionalism and 6) Systems-based Practice. Since 2015 we have been monitoring resident performance compared to milestones set by the RRC for Preventive/Occupational Medicine. There are 26 milestones that the residents are evaluated against and they are reviewed by a Clinical Competency Committee twice a year. The milestones cover topics such as: Toxicology, Emergency Preparedness, Community Health, Policies and Plans, OEM, Surveillance, Ethics, Biostatistics, Epidemiology, Coordinating Work Teams, and Communication.

Incoming residents have the choice of completing a MPH or MSPH in Environmental and Occupational Health. Both degree tracks require a minimum of 42 credit hours and focus on research design, data collection, analysis and application to public health and workplace problems intended to improve health and protect populations. For the MSPH degree the students take the required three foundation courses developed by the College of Public Health. Topics covered within those courses include: fundamentals of population assessment in public health including concepts and skills in systems thinking, public health biology, health behavior, environmental health, health policy, global health, epidemiology, and biostatistics. The additional coursework addresses the complex nature of workplace exposure and injury in courses such as Industrial Hygiene, Occupational Medicine for Health Professionals, Occupational Health Law, Ergonomics, Occupational Epidemiology, Toxicology and Risk Assessment, and Occupational Health and Safety Foundations. The MSPH degree culminates with an independent thesis requirement under the direction of a thesis committee, and a comprehensive concentration exam. The MPH degree

includes all the same courses in the MSPH, but instead of the thesis, students complete a detailed research project. MPH students also take an additional foundation course on translation to practice and complete the CPH exam.

Accomplishments, Outputs and Outcomes

The OMR program has graduated 11 physicians over the past 5 years. All of the students graduated in compliance with their program plan of study and there was no attrition. All graduates are currently practicing as full-time Occupational Medicine physicians and 5 are practicing in Florida. Seven of the 11 graduates have achieved board-certification in the specialty of Preventive Medicine as well as the subspecialty of Occupational Medicine; 2 will be taking their boards this year. Our program strives to recruit and train a diverse group and three of the 11 graduates (27%) are Hispanic and African American and three are women. Our OMRs participate in numerous interdisciplinary and community outreach activities including health fairs, flu shot drives, and research poster presentations.

Resident Awards

Jared Jeffries (2019) was awarded a USF GME Research Grant for \$4,255.00 to study genicular neurolysis for severe osteoarthritis knee pain to increase participation and benefit of cardiac rehabilitation.

David Almario (2019) won the 2018 USF Research Day College of Public Health Award for his poster entitled "The Ability of the US Military's WBGT-based Flag System to Recommend Sustainable Heat Stress Exposures in a Non-Military Population."

Kamal Patel (2018) won the 2018 USF Golden Bull award. This is one of USF's highest awards and he is the first resident to ever win this. The award recognizes those who show leadership within the community, engagement with the community and public service, success and academic achievement through research, pursuit of knowledge and critical thinking skills, enhanced global experience and understanding of cultural and ethnic diversity, development of personal and professional potential, and demonstrated commitment to respect, integrity, and civility. Dr. Patel engaged in research that was integral in helping expedite deployment of emergency personnel after Hurricanes Harvey and Maria. He was appointed by the Hillsborough County Board of County Commissioners to serve on the Diversity Advisory Council, where he helped devise a plan for community intervention prior to emergencies, and in his second year, Kamal was elected as Vice Chair of the Council.

Kourtnei Starkey (2018) was selected to be a part of Tampa ACTIVE CITY conference, a multidisciplinary exchange of ideas on how the intersection of health and urban design is shaping communities. Attended by designers, planners, business leaders and health professionals from around the country seeking to expand their knowledge about the impact of the built environment on health and wellness.

Dwayne Wilson (2017) was awarded 2nd place in the poster presentation for residents at the WOEMA conference in Las Vegas, NV in September 2016. His poster was titled "Ability of PST To Discriminate Sustainable and Non-Sustainable Heat Strain."

Dwayne Wilson (2017) received the American College of Occupational and Environmental Medicine (ACOEM) Public Safety Medicine Scholarship to attend the April 2016 American Occupational Health Conference (AOHC) in Chicago, IL.

Theodore Aquino (2016) received the Public Safety Medicine Scholarship to attend the April 2016 AOHC in Chicago, IL, where he won a Resident Research Presentation Award for his presentation "Comparison Of Urinary PAHs Among Firefighters And Asphalt Pavers."

Theodore Aquino (2016) received the Occupational Physicians Scholarship Fund award to attend the April 2015 AOHC in Baltimore, MD (10 residents selected nationally).

Resident MSPH Thesis Titles 2014-2019

Almario D [2019] The Ability of the U.S. Military's WBGT-based Flag System to Recommend Safe Heat Stress Exposures, MSPH Thesis, University of South Florida

Jeffries J [2019] Speeding Diagnosis and Saving Money Using Point of Care Ultrasound Rather than MRI for Work-Related MSK Injuries, MSPH Thesis, University of South Florida

Patel K [2018] Successful Reduction in Blood-borne Pathogens Exposure Rate, MSPH Thesis, University of South Florida

Starkey K [2018] Sharps Injuries in Medical Training: A Follow-up Study, MSPH Thesis, University of South Florida

Wilson D [2017] Ability of Physiological Strain Index to Discriminate Between Sustainable and Unsustainable Heat Stress, MSPH Thesis, University of South Florida

Figueredo R [2017] Back Muscle Endurance as Measure by Ito Test Duration, MSPH Thesis, University of South Florida

Aquino T [2016] Comparison of Urinary PAHs among Firefighters and Asphalt Pavers, MSPH Thesis, University of South Florida

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Post-training Employment Positions in Occupational Medicine

Jared Jeffries (2019) is a full-time Occupational Medicine physician at the James A. Haley Veterans' Hospital in Tampa, FL. He treats injured workers in the Employee Occupational Health clinic and veterans in the Orthopedics clinic, and teaches musculoskeletal ultrasound to medical students, residents and other faculty. He also serves as the facility Medical Review Officer.

David Almario (2019) is a full-time Occupational Medicine physician at Kaiser Permanente in San Diego, CA.

Kamal Patel (2018) is a full-time physician with NeuSpine Institute in Tampa, FL. He completed a fellowship in Pain Management at Deuk Spine Institute in 2019 in Melbourne, FL and is applying those skills to treat injured workers.

Kourtni Starkey (2018) is a Major in the US Air Force and is the Medical Element Flight Commander for the 12th Reconnaissance Squadron at Beale Air Force Base near Marysville, CA.

Dwayne Wilson (2017) is a full-time Occupational Medicine physician at Southeast Family Healthcare Center in Bradenton, FL.

Ronald Figueredo (2017) is a full-time Occupational Medicine physician at Advent Health in Tampa, FL.

Christopher Lee (2016) is a full-time Medical Director and Occupational Medicine Physician at BayCare Urgent Care in Tampa, FL. Dr. Lee has been responsible for the expansion of BayCare clinics in the Tampa Bay area. He serves as an OMR clinical preceptor and chair of the Residency Advisory Committee (RAC).

Brandon Dawkins (2016) is a full-time Occupational Medicine Physician at Caduceus Occupational Medicine in Atlanta, GA. He has developed a tele-medicine program in his practice that allows him to reach workers in multiple states.

Theodore Aquino (2016) is a full-time Occupational Medicine Physician at Minnesota Occupational Health in St. Paul, Minnesota. Dr. Aquino was selected to serve as the NFL on-site physician during the 2018 Super Bowl held in Minneapolis, MN. He gives a Wednesday conference on Commercial Driver Medical Examinations.

Pratiksha Vaghela (2015) Corporate Occupational Health solutions in Baltimore, MD. She is a clinical preceptor for Occupational Medicine residents at the Johns Hopkins Occupational Medicine program. She helped to establish MRSA protection for firefighters.

Khin Chit (2015) is a full-time Occupational Medicine physician with Kaiser Permanente in Stockton, CA.

Program Name: Occupational Safety (OS)

Degree: MPH

Director: Thomas E. Bernard

Deputy Director: P. G. Rentos (through June 2018)

Note: The Master of Public Health (MPH) in Occupational Safety at University of South Florida was terminated in August 2019 with the graduation of our last trainee. Beginning in July 2019, the Sunshine ERC offers a Master of Science in Occupational Safety Management (MSOSM) at Embry-Riddle Aeronautical University.

Program Purpose and Objectives

Occupational Safety was an academic program in the Sunshine ERC that offered a Master of Public Health (MPH) degree from USF College of Public Health, Department of Environmental and Occupational Health. The degree is accredited by CEPH and SACS, the college and university accrediting bodies, respectively. The Sunshine ERC also offered a Master of Science in Engineering Management (MSEM) with an occupational safety option in the Department of Industrial and Management Systems Engineering, USF College of Engineering. This is a SACS accredited degree.

The principal purpose of our Occupational Safety (OS) program is to furnish working professionals a high-quality educational experience to realize their career objectives in OS. The OS program met the nine ABET learning objectives specific to the safety training:

1. anticipate, recognize, evaluate, and develop control strategies for hazardous conditions and work practices;
2. demonstrate the application of business and risk management concepts;
3. demonstrate an understanding of the fundamental aspects of safety, industrial hygiene, environmental science, fire science, hazardous materials, emergency management, ergonomics and/or human factors;
4. design and evaluate safety, health, and/or environmental programs;
5. apply adult learning theory to safety training methodology;
6. identify and apply applicable standards, regulations, and codes;
7. conduct accident investigations and analyses;
8. apply principles of safety and health in a non-academic setting through an intern, cooperative, or supervised experience; and
9. have a significant research experience.

A tenth learning objective was to have a range of interdisciplinary experiences. Further, the program met the technical needs of trainees as described in Table 3.20a of the 2011 NIOSH *National Assessment of the Occupational Safety and Health Workforce*.

Description of Program

The MPH in Occupational Safety program is intended for students desiring a professional career in occupational safety with strong foundations in public health. In addition to core public health courses, MPH OS builds on a variety of courses enabling the student to recognize, evaluate and control existing and potential hazards. Students are trained to apply these safety principles in engineering controls, administrative practices, personal protective techniques, facility audits in the workplace and community, and to know when to consult with other environmental and occupational professionals to prevent or reduce work related injuries, illnesses or discomfort as well as property loss and environmental damage.

College of Public Health foundations classes (12 ch) were required to provide the fundamentals of public health. OS classes provided the profession-specific training. *Safety Management Principles and Practices* was designed to understand the value of properly designed, comprehensive occupational safety and health programs and the role of the safety and health professional in the

development, implementation, and management of these programs. *Introduction to Industrial Hygiene* introduced students to the concept of anticipation, recognition, evaluation and control of the health hazards present in the work. The objectives for *Environmental and Occupational Toxicology* include familiarization with basic toxicological principles; understanding the role and limitations of toxicity testing; and defining the conditions under which a potential chemical hazard becomes a risk to human health. *Safety and Health Administration* emphasized the ANSI Z10 Occupational Health and Safety Management Systems standard and included techniques and administrative practices that are instrumental in the initiation and maintenance of environmental health, occupational health, and safety programs. *Occupational Safety Engineering* was an introduction to the principles of designing, maintaining, and managing a workplace free from hazards, and covers mechanical hazards, fall and lifting hazards, climatic and environmental hazards, electrical hazards, fire and explosive hazards, and pressure hazards. *Engineering Systems Safety* objectives were to develop system safety skills and appreciate the range of methods along with the strengths and weaknesses of each method. *Occupational Health Law* provided the student with an understanding of the legal process at the federal and state levels concerning the development, promulgation, enforcement and litigation of laws and standards intended to ensure health and safety in the workplace. The objectives of *Industrial Ergonomics* were to understand the basic attributes and limitations of people to perform work and to recommend sound workplace designs. Occupational Safety students were required to take two electives. Most students took *Industrial Hygiene Aspects of Plant Operations* and *Construction Safety Engineering*. *Occupational Health Risk Assessment* was a follow-on toxicology course. As alternatives, a student could develop more expertise in environmental health or industrial hygiene with two or more of the environmental health or industrial hygiene offerings.

The MSEM in Occupational Safety program was intended for students desiring a professional career in occupational safety with strong foundations in engineering management. In the past 5 years, only one student was supported for this degree.

Accomplishments, Outputs and Outcomes

The Sunshine ERC OS program graduated 17 students in the past 5 years. The following table summarizes the distribution of graduates over the five years. Of the 17, 15 followed the usual MPH track. One student graduated from the MSEM track (2017-2018 year) and one graduated from a MSPH track in 2018-2019 so that he could take more course work in environmental health.

Academic Year	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Graduates	3	6	2	2	4

As part of their training, trainees attended at least one professional society meeting (usually the ASSP annual meeting) and/or participated in an internship. In many cases, the internship led to the special project effort so that the employer would have a direct benefit of the effort. In other cases, the trainee worked with a Sunshine ERC faculty member on a topic that was mutually interesting. The special projects are listed below.

Special Projects

- Evaluation of Respiratory Protection Program
- Prevention of Lifting - Manual Handling Injuries among Housekeeping Staff in Hospitals
- Heat Stress, Its Effect on Workers and Related Protective Measures
- Analytical Review of Laboratory Safety Procedures at USF in regards to different established programs based on the General Industry
- Occupational Injury Profiles
- Health and Safety for a Fleet Safety Program
- Benefit Analysis of a Comprehensive Safety Program

- The Effects of Ergonomics Program Implemented at Busch Gardens to Reduce Ergonomic Related Injuries
- Hazards in a Commercial Kitchen and the Creation of Standards of Practice
- Investigating Air Pollution and Equity Impacts of a Proposed Transportation Improvement Program for Tampa
- Identifying High Noise Areas in Industrial Laundry Facilities
- Exploring the relationship between workforce composition and employee injury incidence
- Determining if External Risk Factors Affect Accident Prevalence and Remediation
- Comparison of Fall Protection Regulations in the US and UK
- Reducing workplace injuries by using a job hazard analysis
- Safety Culture and Climate

For interdisciplinary experiences, the OS trainees would join other disciplines in the Plant Operations class and be encouraged to participate in Sunshine ERC-sponsored events. These included Research Day, The Johnson Controls Health Fair, and the collaboration with the University of Puerto Rico.

All MPH students were required to sit for the Certified in Public Health (CPH) exam with the College of Public Health paying the required fees. This helped them to appreciate the value of certification in general. The MPH OS program also required a comprehensive examination. Three of the NIOSH-supported MPH trainees sat for and passed the ASP exam offered by the Board of Certified Safety Professionals in lieu of the comprehensive exam. The training grant supported a review course of the ASP for two of the graduates. The support for the ASP exam and certification was again to encourage our trainees to value certification in their professional field.

While we have lost contact with some of our graduates, most of them work in the private sector in occupational safety.

Program Name: Continuing Education (CE)

Director: Catherine Batista da Silva

Deputy Director: Robert Nesbit

Background

The Sunshine Education and Research Center (SERC) Continuing Education (CE) program offers non-academic training to the public workforce in the areas of occupational safety, industrial hygiene, occupational health nursing, occupational medicine, and occupational health psychology.

Progress Report

During the 2018-2019 reporting period, 8,896 participants were trained in 355 classes both online and in-class. Training was provided through a variety of venues that included online classes (6,656 trainees), and 58 face-to-face in-class courses (2,240 trainees). The impact of this training is best described by stating that interested trainees can access the online classes (a total of 297 classes) any place in the US. The online courses were offered in collaboration with the OSHA Training Institute (OTI). This collaboration is one of the strengths of this ERC CE program because the CE Deputy Director (Mr. Robert Nesbit) is also the program manager of the OTI. The OTI is an educational institute that has local, state, regional, and national reach. Continuing education classes were offered in the areas of occupational medicine (133 attendees); occupational safety (7,497 attendees); industrial hygiene (348 attendees); occupational health nursing (512 attendees); occupational health psychology and allied professions (406 attendees).

The in-class training was offered at several locations throughout Florida. In-class on-site activities are held on the premises of the University of South Florida to benefit from the already existing infrastructure of staff support, classroom space that is provided at no cost to the ERC, the use of state of the art classroom technology (audio/visual equipment, internet access, built-in computers, microphones etc.), convenient parking for attendees, and other on campus amenities to ensure instructor and attendee comfort such as conveniently located eating establishments.

Collaboration with the regional ERCs has continued. In April 2018, the regional ERCs co-sponsored the 7th Annual Southeastern States Occupational Network (SouthON) meeting in Savannah, GA. The meeting convened in the regional catchment area of Savannah, GA in conjunction with the 1st Annual Southeast ERC Regional Research Symposium (SERRS). It was organized collaboratively with the Council for State and Territorial Epidemiologists (CSTE), University of Alabama Deep South ERC, the University of Kentucky Central Appalachian Regional ERC, the University of North Carolina Occupational Safety and Health ERC, the Southeastern Coastal Center for Agricultural Health and Safety (SCCAHS) at the University of Florida (UF) and the Southeast Center for Agricultural Health and Injury Prevention (SCAHIP) at the University of Kentucky (UKY). The pairing of the two events offered an innovative forum for discussion of pilot projects and student research. It also allowed for crossover of attendees. The joint event served an outreach function as well as an educational interdisciplinary activity. Continuing education was provided in the format of professional research presentations throughout both events. This collaboration continued in April 2019 and the meetings were held in conjunction in Tampa, FL at the University of South Florida. The 9th Annual SouthON meeting and 3rd Annual SERRS is scheduled to be held in February 2020 at the University of Alabama.

Off site in-class training is primarily offered in collaboration with community partners such as the Workers' Compensation Institute (WCI), the Florida Chapter of the American Industrial Hygiene Association (AIHA) and the Florida State Association of Occupational Health Nurses (FSA OHN). The SERC maximizes collaborative efforts with community partners and other NIOSH funded ERCs with the purpose of expanding its regional presence, and minimizing competition for the same target audience. The impact of this program is tangible in Region IV through collaborating with the ERCs and throughout the US through the online educational offerings.

To meet the NIOSH research to practice (R2P) initiative, the regional ERCs present an annual R2P course in August in conjunction with the Florida Workers' Compensation Educational Conference. In response to the collected needs assessments, the regional ERCs develop the program agenda, arrange for speakers, contribute faculty and presentations, and promote the annual event. In October 2017, the safety conference planning committee members that represented the national ASSP indicated that their constituents were interested in learning more about Total Worker Health®. This provided an opportunity for an innovative inter-center collaboration between the regional ERCs and the NIOSH Total Worker Health® Center of Excellence, The Center for Health, Work & Environment at the Colorado School of Public Health. A full day agenda was presented at the August 2018 conference that focused on TWH® worker compensation case studies, return on investment research, training and education needs and community partnerships. The offerings were eligible for continuing education credits for certification and licensure. The SERC worked with the Workers' Compensation Institute (WCI) (KK Educational Service, Provider No. 50-1163 Florida Board of Nursing), to approve the agenda for nursing continuing education contact hours. Continuing Education Units were also made available by WCI to a wide variety of professions including physician CME credit, CSP Continuance of Certification (COC) points, and CMP safety credits, etc.

In August 2019, the 4 ERCs and 2 Agricultural Safety and Health Centers in the Southeast collaborated to present a full day agenda on Opioids for the conference. SERC faculty, Dr. Anthony Masys, presented a 2-hour workshop titled, "Hacking the Opioid Crisis to Design Solutions." This interactive and solution-oriented workshop explored the complexities and dynamics of the opioid crisis, allowed participants to create a vision and design an intervention strategy. Other presentations included Substance Abuse and the Modern Workplace, Pain, Depression, and Opioid Use in the Workplace, Understanding the Opioid Crisis and its Intersections with Workers' Compensation Law, and Sober Safety.

In October 2018, the Sunshine ERC collaborated with the Southeastern Coastal Center for Agricultural Health and Safety on the Heat Related Illness State of the Science Meeting. SERC faculty, Dr. Thomas Bernard, presented a talk on "Occupational Heat Stress Exposure Assessment: Limits on Sustainable Exposures." Participation in this meeting was highly relevant due to the unique training needs of the region and the propensity of heat related illness in the southeast.

Accomplishments

In the past 5 years, the CE program has held 1,742 CE courses with 38,674 trainees. The number of trainees receiving professional development has steadily climbed from 5,789 trainees in 2014-2015 to 8,896 trainees in 2018-2019. Courses are provided in-person as well as on-line and through webinars.

Examples of courses that were offered are NIOSH Approved Spirometry, CAOHC Hearing Conservation in Industry, Workplace Psychological Mistreatment and Physical Violence, Preventing Prolonged Disability by Addressing Psychosocial Barriers, Back Injury Awareness Training, Occupational Heat Stress & Strain, Interventions to Reduce Work-Life Stress and Improve Health, Letting Go: Employee Recovery and Unwinding from Work, ACGIH TLV for Heat Stress and Strain in the Context of Heat Stress Management, Case Study: Effectiveness of Biocide Substitution and Management Plan Implementation for the Control of Legionella Pneumophila in Cooling Tower Waters, Healthier Work By Design: Exploring the Promise of Total Worker Health®, The Value and Approach of Total Worker Health® in Healthcare, Seafood Safety for Gulf Seafood Workers After Deepwater Horizon, Community Resilience: Exploring Social Vulnerability Index, Sleep Apnea and the Industrial Athlete: What Professional Sports Can Teach Us About Performance, Hazardous Waste Operations and Emergency Response (HAZWOPER) 40 hour, 24 hour, and 8 hour courses, OSHA Record-keeping, Ergonomics for General Industry, OSHA Blood-borne Pathogens, OSHA Confined Space for General Industry, OSHA Electrical for Construction, OSHA Fall Protection, OSHA Excavations for Construction, OSHA Fire Detection and Prevention for General Industry,

OSHA Health Hazards in Construction, OSHA Lockout and Tag-out for General Industry, OSHA Personal Protective Equipment, OSHA Rigging and Material Handling, OSHA Safety and Health Programs for General Industry, OSHA Safety Programs and Subpart C, OSHA Scaffolds Course, OSHA Stairways and Ladders Course, OSHA Walking and Working Surfaces for General Industry, OSHA Welding and Cutting for Construction, and OSHA Standards and Inspections. Courses are offered in the areas of Occupational Health Nursing, Occupational Medicine, Industrial Hygiene, Occupational Safety, and Occupational Health Psychology.

Examples of feedback provided by trainees on course evaluations are, "Class was well done and is convenient," "Excellent training - ranked among the best I've taken and the very best cost," "I needed this certification for my job and was able to get it quickly and your course helped me get it. Thanks," "I truly feel this course has helped me abundantly. The impact of my new found knowledge has already made big impacts," "Well informed about OSHA Regulations," "Will be using you in the future," "This was the best breakout," "The free trainings offered are very beneficial," "Sunshine ERC's impact goes beyond the State of Florida and the region, it allows myself to take classes online from Missouri and our crews to take classes when they're working on the road all over the Midwest region. I appreciate having quality OSHA courses available online," "This course was an economical way to meet the OSHA and PA State requirements," "Very useful and helpful training resource," "Offering these safety courses at reasonable fees certainly increases the safety of workers and minimizes the release of contaminants to the environment through accidental means or as the result of a catastrophic event. This is one of those times when we cannot measure the volume of what we have prevented entirely!! Kudos to this program and the instructor was experienced and interesting. Loved it."

Approach

The CE program partners with the USF OSHA Training Institute Education Center (OTIEC) in order to maximize resources. The USF OTIEC performs student evaluation/needs assessments for all students who complete the 10 and 30-hour OSHA outreach courses. The information that is collected in the 10 and 30-hour outreach classes is used to develop topics for the 9000 series of online classes. The 9000 series are designed to give students more detail about current OSHA safety and health policies, regulations, and workplace hazards. Topics are limited in the 9000 series of classes to those that are suitable for an online class. This demonstrates a process that is in place for continually improving outreach and continuing education.

The CE program faculty are comprised of a combination of University of South Florida (USF) academic faculty as well as community members who are occupational safety professionals and specialists. The CE program has continued to grow because of the conscious effort to minimize competition with other already existing continuing education programs and to maximize other community resources by collaborating instead of competing for the same target trainee population. The ERC contributes by having faculty regularly present on a variety of safety topics in state conferences to increase the visibility of the SERC not only in Florida, but throughout the region and nationally. One of the benefits of this collaboration is to maximize the benefits that trainees gain from attending educational offerings. Because the time and financial commitments that trainees must invest in meeting their continuing education needs and professional requirements (and their resources are usually quite limited), many prefer a one-stop annual educational activity that enables them to receive the continuing education units that they need to maintain their professional licenses and/or certifications. Attending one activity annually minimizes driving times, registration fees, and lodging accommodations for participants. The SERC CE program takes advantage of participants' desire to limit the number of educational offerings they participate in, by offering our programs in conjunction with already existing educational offerings that are organized by professional organizations. This coordination with others results in minimizing the financial and time burdens imposed on participants, and minimizes the potential financial liability risk for the SERC. In addition, collaborating with the various organizations allows the SERC to take advantage of speakers' talents that are contracting with the professional organizations, and elevates the quality of the educational

activities provided by the professional organizations by including the SERC faculty on their programs as speakers and trainers.

The ERC faculty provide direction and advice formally in SERC meetings as well as informally by participating as speakers and trainers in the ERC continuing education programs. At the Workers' Compensation Educational Conference in August 2018, Dr. René Salazar (IH faculty) and Dr. Paul Spector (OHP faculty) participated in a panel discussion during the talk, "Workplace Wellbeing Starts with Preparing the Workplace: The Role of Industrial Hygiene in Pursuit of Wellbeing." This innovative pairing of two different disciplines served to attract practitioners from both Occupational Safety and Health (OSH) fields. The talk explored ways that a risk manager can create a healthier work environment at a microbial level. Then interpersonal dynamics that can create workplace stress were discussed. The talk ended with a review of ergonomics in industrial risk management.

The CE program director collaborates with the outreach faculty in some activities. For example, in May 2018 an interdisciplinary team of staff and students from the ERC and the USF Department of Global Health in collaboration with the University of Puerto Rico visited Puerto Rico to examine post disaster conditions stemming from Hurricane Maria (2017). As part of the outreach activity, continuing education was presented in the areas of: Post-Maria conditions, health and safety implications stemming from generator noise, an overview of social vulnerability in Puerto Rico, understanding resilience, disaster risk reduction, the use of THIRA (Threat and Hazard Identification Risk Analysis), participative data analysis, visual thinking and design thinking methodologies, and visual ethnography as a data capture tool. This activity will be used to provide a framework for on-going Sunshine ERC Outreach planning coupled with delivery of continuing education professional development courses.

Visual thinking and visual ethnography were new training modalities for the SERC continuing education program. Participants of the USF/UPR workshop were taught strategies to help them immerse themselves in the communities visited. They were encouraged to take lots of pictures, speak to the local citizens, and document as much of the scenery and culture as they could as part of their data capture. Participants were asked to employ all of their senses (smell, touch, taste, sound, and visual) in order to really feel what it would have been like to be a member of those communities experiencing and then recovering from a natural disaster like Hurricane Maria. The next day, participants broke into groups and shared their photos and documentation to help stimulate discussion, analysis and learning. In groups, they drew pictures related to questions that the course director posed in order to analyze what necessities the communities were missing and what their needs were in order to improve their conditions. This new training modality was well received by participants and will continue to be used in future courses.

Collaborations with local and state professional organizations are an effective way for SERC trainees to network with existing professionals in the field so that they can build and expand their professional network. The SERC co-sponsored the Florida Local Section AIHA Fall Conference in September 2018 that was held in St. Petersburg, FL. For the first time, this meeting was jointly held with the Florida Chapter of The Health Physics Society and presented a new opportunity for partnership with a state association. The CE program plans to continue this co-sponsorship for the Fall 2019 meeting.

The SERC co-sponsored the Florida State Association of Occupational Health Nurses annual conference in September 2018. The theme of the conference was "Launching into the Future of Population Health." The two pre-conference tracks were: Track 1 OHN Essentials Core and Track 2 Florida Licensure Maintenance. Track 1 included a review course to help nurses prepare to take the COHN-S certification examination and was valuable for our current OHN trainees that attended the meeting.

The CAOHC Hearing Conservation in Industry course (initial and refresher) is held annually in December. The 40 Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) and 8 Hour HAZWOPER Refresher are offered quarterly. The NIOSH-Approved Spirometry course (initial and refresher) is held annually each year in May. All of these courses are open to the public and all NIOSH ERC trainees are strongly encouraged to attend.

The following is a list of the online courses that are offered on an ongoing basis in collaboration with the University of South Florida OTI training program: OSHA Certified Aggression Control Manager, USF 9031 - HAZWOPER 8-Hour Refresher, USF 9032 - 24-Hour HAZWOPER OSHA Training, USF 9040 - Introduction to OSHA, USF 9041 - OSHA Standards and Inspection Procedures, USF 9043 - OSHA Recordkeeping, USF 9044 - OSHA Health Hazards in Construction, USF 9045 - OSHA Confined Space Entry for General Industry, USF 9048 - OSHA Welding and Cutting for Construction, USF 9049 - OSHA Safety Programs and Subpart C, USF 9050 - OSHA Rigging and Material Handling, USF 9051 - OSHA Cranes, Derricks, Hoists, Elevators, and Conveyors for Construction, USF 9052 - OSHA Electrical for Construction, USF 9053 - OSHA Excavations for Construction, USF 9054 - OSHA Fire Prevention for Construction, USF 9055 - OSHA Scaffolds Course, USF 9056 - OSHA Personal Protective Equipment, USF 9057 - OSHA Fall Protection Course, USF 9058 - OSHA Stairways and Ladders Course, USF 9060 - OSHA Concrete and Masonry Construction for Construction, USF 9066 - Record Keeping Consultation Online, USF 9070 - Introduction to OSHA for General Industry, USF 9071 - Introduction to OSHA for General Industry, USF 9073 - Recordkeeping for General Industry, USF 9074 - OSHA Bloodborne Pathogens Course, USF 9075 - OSHA Confined Space Entry for General Industry, USF 9077 - Ergonomics for General Industry, USF 9079 - OSHA Safety and Health Programs for General Industry, USF 9081 - OSHA Machine Guarding for General Industry, USF 9083 - OSHA Lockout and Tagout for General Industry, USF 9085 - OSHA Walking and Working Surfaces for General Industry, USF 9086 - OSHA Personal Protective Equipment, USF 9087 - OSHA Fire Detection and Protection for General Industry, and USF 9089 - Hazard Communication for General Industry.

Future Plans

The challenges involved in assuring funding for the continuing education program of the Sunshine ERC motivate us to find innovative ways to collaborate with other entities that also offer continuing education to members of the workforce. Our professional affiliations with the various community organizations continue to help us serve the community by offering high quality affordable training and preparation for certification and/or licensure in various occupational safety and health areas. The Sunshine ERC external advisory board, faculty and staff monitor the educational needs of our community members and respond by providing the needed training. These are examples:

- In December 2019, the Sunshine ERC will collaborate with the USF College of Public Health to offer a State of the Science Meeting on the topic of being Pregnant at Work.
- The SERC plans to co-sponsor the Florida Local Section AIHA Fall 2019 conference that will be held in October 2019.
- An Active Threat Preparedness Training course is scheduled to be held November 2019 at the USF campus.
- The CAOHC Hearing Conservation certification courses (initial and refresher) are scheduled to be held in-class at the USF campus in December 2019.
- The regional ERCs and the Southeastern Coastal Center for Agricultural Health and Safety (UF) and the Southeast Center for Agricultural Health and Injury Prevention (UKY) will collaborate for the 3rd Annual Southeast ERC Regional Research Symposium and 9th annual SouthON meeting to be held in Birmingham, AL in February 2020.
- The NIOSH-Approved Spirometry courses (initial and refresher) are tentatively scheduled to be held on the USF campus in May 2020.
- Collaboration with the Northwest Center for Occupational Health and Safety (NWCOHS) CE Program is planned for an Online 101 Occupational Health Nursing Webinar series with a focus on Florida/National Workers Compensation. This webinar will be used as a

recruitment tool at the high school and undergraduate level in order to educate potential trainees on Occupational Health Nursing.

- A multitude of online safety courses are offered in collaboration with the OSHA Training Institute;
- We conduct needs assessments and course evaluations to continuously improve our courses, and we share the evaluations with the instructors to assure their quality improvement; and
- Finally, we routinely conduct impact assessments online using SurveyMonkey and Qualtrics technology to assess the effectiveness of our educational programs. Course development and improvements are ongoing.

Proposed topics for consideration and future development:

- Understanding Disasters: Reflecting Upon Safety Culture
- High Reliability Organizations (HRO)
- Hazard Mitigation: Integrating Best Practices into Planning
- Port Sustainability: Safety and Security
- Injury Prevention: Communicating Risk in Emergencies
- Health and Safety During Disaster Recovery
- Conducting Disaster Exercises to Improve Safety
- Disaster Resilience: Building a Culture of Preparedness
- Hurricanes and Floods: Preparing for Environmental Risks and Hazards
- Environmental and Occupational Health Training in Emergency Response
- Environmental Protection Agency Lead Renovation, Repair, and Painting (RRP) Course

The focus on future development of courses related to occupational safety and health and disaster preparedness is in response to the region's vulnerability to hurricanes and natural disasters.

Program Name: Pilot Project Research Training (PPRT)
Director: Yehia Y. Hammad

The Pilot Project Research Training (PPRT) program was devoted to promoting research among young investigators and rare cases of established investigators exploring a new field.

Progress

We solicited pilot project research grants through our website and announcements to colleagues. After almost 20 years, the Sunshine ERC PPRT program is known through the region, and beyond based on the applications received. The Table 1 lists the awards for the past five years in chronological order. Some summary statistics on the awards are:

- 37 awards, 9 were to USF and 28 to other institutions
- 24 of 35 awards were in Occupational Health Psychology
- 6 of 9 USF awards were in OHP
- 21 of 35 awards were to PhD students
- Average award was \$10,300
- Total awards \$381,000

Most of the applications came from students and faculty associated with OHP programs and this leads to a proportionate number of awards that are OHP. It is likely that the PPRT program was well known through the network of OHP programs. One award (Ashley in 2015-2016) was selected to develop pilot data for an R21 application, which was submitted but not funded. It is worth noting that in the last year (2018-2019) all of the awards were to investigators outside of USF with 3 of 9 to OHP.

Within USF, the awards tend to go to OHP for two reasons. First, OHP is doctoral program so all of the trainees are eligible. The other doctoral program is Occupational Exposure Sciences (i.e., industrial hygiene) and a few of the recent graduates have had PPRT support while others have been supported from other funds. One USF OMR was supported.

We did surveys of past recipients to assess research products. After Table 1 is a list of PPRT products that were reported, some of which resulted from PPRTs awarded prior to the current cycle. In summary,

- 23 presentations/posters
- 10 papers
- 3 awardees reported receiving subsequent funding based in part on the PPRT

Table 1. PPRT Awards for Current Funding Cycle (2014 – 2019)

2018-2019				Amount Awarded
INSTITUTION	STATE	RANK	TITLE OF PROJECT	
GA Tech	GA	Grad Assistant	Workplace Conflict, Emotions, and Well-being: A Process Approach	\$10,125.00
Louisiana PH Institute	LA	Epidemiologist	Characterizing Work-Related Opioid Use and Disorder Using Research Action for Health Network (REACHnet) clinical data	\$16,869.00
Auburn	AL	PhD Student	Impact of Rest and Aging on Tissue Microtrauma and Systemic Inflammation in a Rat Model	\$13,889.00
UCF	FL	PhD Student	Evoking Job Insecurity to Experimentally Test its Impact on Stress and Generosity	\$4,040.00
UCF	FL	Asst Prof - Post Doc	Work-Nonwork Interface & Health Behaviors	\$7,560.00

Univ Kentucky	KY	PhD Student	Addressing the Opioid Safety Concerns of Kentucky First Responders	\$15,000.00
Univ Kentucky	KY	PhD Student	Maternal Occupational Exposure to Noise: Prevalence, Maternal Effects, and Infant Outcomes	\$15,000.00
Murray State	KY	Asst Prof - Post Doc	Perceived Effectiveness of Popular Mobile Equipment Pedestrian Warning Devices	\$13,162.00
Univ Puerto Rico	PR	Asst Prof - Post Doc	Cross-Cultural Adaptation of the Survey on Working Conditions, Employment, and Health in the aftermath of Hurricanes Irma and Maria in Puerto Rico	\$7,471.00
				\$103,116.00

2017-2018

INSTITUTION	STATE	RANK	TITLE OF PROJECT	Amount Awarded
FIT	FL	PhD Student	Positive Effect of a Web-Based Mindfulness Training on Work and Wellbeing-Related Outcomes	\$10,750.00
Emory	GA	PhD Student	Targeted Heat-Adaptive Interventions for Florida Agricultural Workers: A Pilot Study	\$15,000.00
UGA	GA	PhD Student	Previous Combat Exposure and Counterproductive Work Behavior: The Role of Posttraumatic Stress and Protective Factors	\$8,000.00
USF	FL	PhD Student	Work Stressors, Sleep Hygiene and Sleep: A Daily Diary Study	\$15,000.00
FIU	FL	PhD Student	The Role of Access to Nature at Work in Reducing the Effects of Psychosocial Hazards	\$5,500.00
NC State	NC	Post Doc	Continuous Monitoring of Individual Exposure to Cold Work Environment: A Participatory Sensing Study	\$13,497.00
USF	FL	PhD Student	A Latent Profile Analysis of Benefactor and Beneficiary Organizational Citizenship Behaviors toward Individuals	\$8,800.00
				\$76,547.00

2016-2017

INSTITUTION	STATE	RANK	TITLE OF PROJECT	Amount Awarded
AUBURN	AL	PHD Student	Hand Speed and OSHA Machine Guarding	\$4,419.00
AUBURN	AL	PHD Student	Evaluating methods of estimating cumulative tissue damage in muscle	\$9,991.00
USF	FL	PHD Student	The Impact of Traumatic Event Exposure on EMTs	\$12,000.00
FLORIDA STATE	FL	PHD Student	Self-Regulation and the Enactment of Bullying Behaviors (E2)	\$12,000.00
FIT	FL	ASSIST PROF	Examine differential antecedents and outcomes of four types of work-family conflict	\$12,000.00
U GEORGIA	GA	PHD Student	Uncompensated Overtime Workers Motivation to Work: Physical and Psychological Health Outcomes	\$4,000.00
NC STATE U	NC	Research Associate	Continuous Monitoring of Individual Exposure to Cold Work Environment: A Participatory Sensing Study	\$13,497.00

CLEMSON U	SC	PHD Student	Stress as a Badge of Honor: Effects on Employee Performance, health and Well-Being	\$8,689.00
U UTAH	UT	Research Fellow	A Real Time Method for Evaluating and Monitoring Heat Stress Potential Using Wearable Biosensors	\$10,650.00
USF	FL	PHD Student	Episodic Work-Family Conflict and Health	\$4,500.00
				\$91,746.00
2015-2016				
INSTITUTION	STATE	RANK	TITLE OF PROJECT	Amount Awarded
USF	FL	PHD Student	Thermal Exposure Limit for Mine Refuge Chambers	\$14,410.00
FIT	FL	PHD Student	Depletion today keeps the apple away: Effects of Workplace Resource Processes on Daily Health Behavior and Recovery	\$10,700.00
USF	FL	PHD Student	Bi-directional Work-Family Affective Spillover: A Daily Diary Study	\$10,000.00
USF	FL	Research Fellow	The effects of Work Stress on Sleep: A Diary Study	\$10,948.50
FIT	FL	Research Fellow	Examine Differential Antecedents and Outcomes of Four Types of Work-Family	\$12,000.00
				\$58,058.00
2014-2015				
INSTITUTION	STATE	RANK	TITLE OF PROJECT	Amount Awarded
Clemson U	SC	PHD Student	Development of The Health Climate Scale	\$12,309.00
USF	FL	PHD Student	Engaging Overqualified Employees: The Role of Job and Non-work Crafting	\$8,813.00
USF	FL	Post Doc	Risk Factors Associated with Non-compliance with the Respiratory Protection Program Among Fire Fighters	\$14,609.60
FIU	FL	PHD Student	Validating the Safety Scale	\$4,000.00
Univ of GA	GA	PHD Student	Grandchild Caregiving and Health: A Survey of Grandparents and Their Adult Children	\$8,000.00
USF	FL	Post Doc	Polar Pod Cooling of Collegiate Football Athletes During Preseason Conditioning	\$7,925.00
				\$51,656.60

PPRT Products

Presentations from Pilot Project Research

Chicas R. (2019) Targeted Heat-Adaptive Interventions for Florida Agricultural Workers: A Pilot Study. Southeast Regional Research Symposium, Tampa FL, April 4-5

Thompson, R.A., Sanderson, W.T., Browning, S., Vanderpool, R., & Westneat, S. (2019) Addressing the Opioid Safety Concerns of Kentucky First Responders. Southeast Regional Research Symposium, Tampa FL, April 4-5.

Thompson, R.A., Sanderson, W.T., Westneat, S., Bunn, T.L., Lavender, A., Tran, A., Holsinger, C., Flammia, D., Zhang, L., He, Y, Browning, S., & Vanderpool, R. (2019) Assessing and addressing occupational opioid exposure. Georgetown College, Georgetown, Ky, April 12.

Wilbanks D, Kilpatrick R, Abulhassan Y. (2019) Industrial Workers \Perception of Reverse Motion Warning Devices on Forklifts. Human Factors and Ergonomic Society 63rd Annual Meeting, Seattle WA.

Andel, S. A. (2018). Investigating the Impact of Traumatic Event Exposure: Research to Enhance the Health and Wellness of Emergency Medical Professionals. Poster presentation at the 13th European Association for Occupational Health Psychology (EAOHP) Conference, Lisbon, PT.

Andel, S. A., Pindek, S., Crowe, R. P., Cash, R. E., & Spector, P. E. (2018). Examining the impact of traumatic event exposure in the emergency medical services. Oral presentation at the 32nd annual conference of the Society for Industrial and Organizational Psychology (SIOP), Chicago, IL.

Garnett, R.F., Davis, G.A., Sesek, R.F., Gallagher, Schall Jr. M.S., Chen, H. (2018). Evaluating an Inertial Measurement Unit Based System for After-Reach Speed Measurement in Power Press Applications. 9th International Conference on Applied Human Factors and Ergonomics- AHFE

Pindek, S., Zhou, Z.A., Kessler, S.R., Krajcevska, A., & Spector, P.E. (2018). Stress and Sleep: A Daily Diary Study Using FitBits. Presented at the Israeli Organizational Behavior Conference, Tel-Aviv, Israel.

Pindek, S., Zhou, Z.A., Kessler, S.R., Krajcevska, A., & Spector, P.E. (2018, September). Charging the Batteries” or the “Monday Blues?” A Daily Diary Study Examining Stress Experience Over the Work Week. To be presented at the European Academy of Occupational Health Psychology, Lisbon, Portugal.

Rong, H (2018, August). Evaluating the Effectiveness of Estimating Cumulative Loading Using Linear Integration Method, 20th Congress of the International Ergonomics. Florence Italy.

Rong, H (2018, October) Evaluating the Effectiveness of Estimating Cumulative Loading Using Linear Integration Method, Human Factors and Ergonomics International Annual Meeting. Philadelphia, PA.

Ashley CD, Lopez RM, Aguillar D, Bernard TE. (2017, May). Thermal exposure limit for mine refuge chambers: A pilot study. Presented at American College of Sports Medicine meeting in Denver CO. Zhou, Z. E., & Che, X. X. (2014). From experienced to instigated workplace incivility: Moderating effects of climates. Symposium Presented at 2014 Annual Conference of Society of Industrial and Organizational Psychology, Honolulu, HI.

Carson, J.E., Mackey, J.D., & McAllister, C.P. (2017). Abusive supervision and subordinate self-control: Implications for social exchange. Paper presented at the Academy of Management, 77th Annual Meeting. Atlanta, GA.

Martinez, V.†, Robertson, M., & Eby, L. (2017, April). The effects of grandchild caregiving on grandparent health behaviors. Poster presented at the 2017 Psi Chi Convention, Athens, GA.

Munc, A., Sinclair, R. R., & Cox, A. (2017, April). Understanding the connection between health climate perceptions and employee health. Poster presented at the 32nd annual Society for Industrial and Organizational Psychology (SIOP) Conference, Orlando, FL.

Munc, A., Cox, A., Sinclair, R. R., & Cheung, J. (2016, April). Unifying the climate literature within a Total Worker Health Framework. Poster presented at the 31st annual Society for Industrial and Organizational Psychology (SIOP) Conference, Anaheim, CA.

Sawhney, G., Sinclair, R. R., Cox, A. R., Sliter, M. T., & Munc, A. (June, 2017). Examining the structural distinctiveness of safety, stress prevention, and health climate measures. A validation study. Paper presented at the 12th International Conference on Occupational Safety and Health, Minneapolis, MN.

Dawkins, B (2016, May). Risk Factors Associated with Non-compliance with the Respiratory Protection Program Among Fire Fighters, American Occupation Health Conference; Chicago, IL.

Dawkins, B (2016, February). Risk Factors Associated with Non-compliance with the Respiratory Protection Program Among Fire Fighters, USF Health Research Day; Tampa, FL.

Mackey, J. D., & Perrewé, P. L. (2016). The next round is on me! The effects of workplace stress and strain on problem drinking. Manuscript presented at the Academy of Management annual meeting in Anaheim, California.

Mitchell, M. E., Eby, L. T., & Sanders, K.† (2016, August). I'll be there for you: The relative importance of supervisor, spouse, and parent support for predicting work-family conflict. In K. Wilson & P. Dahm (Co-Chairs), Family Matters: The Influence of Close Others on Employee Identity, Attitudes, and Well-Being. Symposium presented at the 2016 meeting of the Academy of Management, Anaheim, CA.

Mitchell, M. E., & Eby, L. T. (2016, April). Family matters: The effects of grandchild care on family-to-work conflict. In M. T. Ford (Chair), A Systems Approach to Work, Family, and Well-Being. Symposium presented at the 2016 meeting of the Society for Industrial and Organizational Psychology, Anaheim, CA.

Mackey, J. D., McAllister, C. P., & Brees, J. R. (2015). Oh behave! Perceptions of abusive supervision and OCB: A social exchange perspective. Manuscript presented at the Academy of Management annual meeting in Vancouver, Canada.

Publications from Pilot Project Research

Ashley CD, Lopez RM, Garzon-Villalba XP, Bernard TE. (in press 2019) Thermal exposure limit for mine refuge alternatives: A descriptive study. Metallurgy & Exploration.

Mackey, J. D., & Perrewé, P. L. (in press). The relationships between hindrance stressors, problem drinking, and somatic complaints at work. *Group & Organization Management*. doi: 10.1177/1059601117733900

Mackey, J. D., McAllister, C. P., Brees, J. R., Huang, L., & Carson, J. E. (in press). Perceived organizational obstruction: A mediator that addresses source-target misalignment between abusive supervision and OCBs. *Journal of Organizational Behavior*. doi: 10.1002/job.2293

Sawhney, G., Sinclair, R. R., Cox, A. R., Munc, A., & Sliter, M. T. (in press). One climate or many: Examining the structural distinctiveness of safety, health, and stress prevention climate measures. *Journal of Occupational and Environmental Medicine*.

Garnett, Richard F., Davis, Gerard A., Richard F. Sesek, Sean Gallagher, Mark C. Schall Jr., Rong Huangfu Evaluating the OSHA hand speed constant for stamping press applications. *Safety Science* 107 (2018) 1–8

Huangfu, R., Gallagher, S., Sesek, R., Schall, M., & Davis, G. (2018, August). Evaluating the Effectiveness of Estimating Cumulative Loading Using Linear Integration Method. In Congress of the International Ergonomics Association (pp. 283-288). Springer, Cham.

Martinko, M.J., Mackey, J.D., Harvey, P., Moss, S.E., McAllister, C.P., & Brees, J.R. (2018). An exploration of the role of subordinate affect in leader evaluations. *Journal of Applied Psychology*, 103(7), 738-752.

McAllister, C.P., & Perrewé, P.L. (In press). About to burst: How state self-regulation affects the enactment of bullying behaviors. *Journal of Business Ethics*.

Martinko, M.J., Mackey, J.D., Harvey, P., Moss, S.E., McAllister, C.P., & Brees, J.R. (2018). An exploration of the role of subordinate affect in leader evaluations. *Journal of Applied Psychology*, 103(7), 738-752. McAllister, C.P., & Perrewé, P.L. (In press). About to burst: How state self-regulation affects the enactment of bullying behaviors. *Journal of Business Ethics*.

McAllister, C.P., Mackey, J.D., & Perrewé, P.L. (2018). The role of self-regulation in the relationship between abusive supervision and job tension. *Journal of Organizational Behavior*, 39(4): 416-428.

Other Grants PPRT Awardees Received to Further Research

Melissa Mitchell received doctoral award from the Social Sciences and Humanities Research Council for \$60,000 (\$20,000 x 3 years) to study her topic: Grandchild Caregiving and Health: A Survey of Grandparents and Their Adult Children.

Charn McAllister received the Society of Human Resource Management (SHRM) Dissertation Grant to continue studies on: Self-Regulation and the Enactment of Bullying Behaviors.

Seulki Jang was awarded the APA Dissertation Research Award (\$1,000) to further her research on: A Latent Profile Analysis of Benefactor and Beneficiary Organizational Citizenship Behaviors toward Individuals.

Publications

Journals

Ashley CD, Lopez RM, Garzon-Villalba XP, Bernard TE: [2019] Thermal exposure limit for mine refuge alternatives: A descriptive study. *Journal of Mineral Processing and Extractive Metallurgy*. In press.

Allen TD, French KA, Braun MT, Fletcher K: [2019] The passage of time in work-family research: Past, present, and future. *Journal of Vocational Behavior*, 110, 245-257.

Allen TD, French KA, Dumani S, Shockley KM: [2019] A cross-national meta-analytic examination of predictors and outcomes associated with work-family conflict. *Journal of Applied Psychology*, in press.

Andel SA, Kessler SR, Pindek S, Kleinman G, Spector PE: [2019] Is cyberloafing more complex than we originally thought? Cyberloafing as a coping response to workplace aggression exposure. *Computers in Human Behavior*, 124-130.

Arvan ML, Pindek S, Andel, SA, Spector PE: [2019] Too good for your job? Disentangling the relationships between objective overqualification, perceived overqualification, and job dissatisfaction. *Journal of Vocational Behavior*. Online advance.

Bradley E, Albright G, McMillan J, Shockley K: [2019]. Impact of simulation on educator support of LGBTQ youth. *Journal of LGBT Youth*, 16, 317-339.

Chang CH, Yang LQ, Lauricella TK: [2019] Social support exchange and nurses' musculoskeletal injuries in a team context: Anger as a mediator. *Work & Occupations*. Online advance.

Cho E, Allen TD: [2019] The transnational family: A typology and implications for work-family balance. *Human Resource Management Review*, 29, 76-86.

Cho E, Chew I: [2019] Work-life balance among self-initiated expatriates in Singapore: Definitions, challenges, and resources. *Current Psychology*, accepted.

Choo CE-K., Kan ZX, Cho E: [accepted] A review of the literature on the school-work-life interface. *Journal of Career Development*.

Dalal RS, Bennett RJ, Brummel BJ, Howard DJ, Posey MC, Zaccaro SJ: [invited paper – estimated in press late 2019 / early 2020]. Organizational Science Approaches to Cybersecurity. *Journal of Business and Psychology*.

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French KA, Allen TD, Henderson T: [2019] Challenge and hindrance stressors in relation to sleep. *Social Science & Medicine*, 222, 145-153.

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Kessler SR, Pindek S, Kleinman G, Andel SA, Spector PE: [2019] Information security climate and the assessment of information security risk among healthcare employees. *Health Informatics Journal*.

Mazzola JJ, Disselhorst R: [2019] Should we be challenging employees?: A critical review and meta-analysis of the challenge-hindrance model. *Journal of Organizational Behavior*, in press

Mazzola JJ, Jackson A, Thiele A [2019] Obesity in the workplace: Physical, social, and environmental barriers and facilitators to healthy lifestyles. *Occupational Health Science*, in press.

Meier LL, Cho E: [2019] Work stressors and partner social undermining: Comparing negative affect and psychological detachment as mechanisms. *Journal of Occupational Health Psychology*, 24(3), 359-372.

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Choi Y, Cho E, Jung HJ, Sohn YW: [2018] Calling as a predictor of life satisfaction: The roles of psychological capital, work-family enrichment, and boundary management strategy. *Journal of Career Assessment*, 26, 567-582.

Fletcher KA, Bedwell WL, Voeller M, Coe D, Morris ML, Marsh B, Zambroski C: [2018] The art of critical thinking in nursing: A novel multi-modal humanities curriculum. *Medical Science Educator*, 28, 27-29.

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Jang S, Shen W, Allen TD, Zhang H: [2018] Societal individualism-collectivism and uncertainty avoidance as moderators of relationships between job resources and strain. *Journal of Organizational Behavior*, 39, 507-524.

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Tables 1, 2, and 3

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