

**Sunshine Education and Research Center
for Occupational Safety and Health
at the University of South Florida**

Annual Report
July 1, 2006 – June 30, 2007

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ERC Annual Report
July 1, 2006 - June 30, 2007

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Introduction and Executive Summary

A. Major Accomplishments

The principal purpose of the Sunshine Education and Research Center is to train professionals for practice in many of the fields of occupational health and safety. During the past year, we have graduated

- Industrial Hygiene: 3 MSPH and 3 PhD
- Occupational Health Nursing: 1 MSN/MPH
- Occupational Health Psychology: 2 PhD
- Occupational Medicine Residency: 1 MSPH and 1 MPH
- Occupational Safety: 0

Overall, this was a low year and the numbers will be up considerably for the next reporting period. For instance, there were four graduates in OS in August and other programs have students whose graduations were delayed to finish their work.

Continuing Education/Outreach and Hazardous Substance Training continued to do well in providing health and safety training to active professionals.

B. Significant Changes since FY 2006 Annual Report

Chu-Hsiang (Daisy) Chang was appointed Assistant Professor (tenure earning) in the Occupational Safety program. She has training in industrial and organizational psychology and was a strategic hire to provide safety training and research into the behavioral aspects of occupational safety and health.

The Sunshine ERC has undergone a significant reorganization. Thomas Bernard and Candace Burns have taken on the roles of Director and Deputy Director respectively. In a strategic planning activity, the center has identified five strategic initiatives for the short-term; and these will be updated annually as the center strengthens itself and grows. The strategic initiatives are (1) organizational principles, (2) research experience, (3) interdisciplinary interaction, (4) trainee recruitment and (5) diversity recruitment. Each of the initiatives has a responsible manager who reports back to the executive committee regularly on activities.

C. ERC Website Addresses

The ERC website follows:

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

Center Wide

A. Program Title

Center Wide Activities

B. Program Directors

Stuart M. Brooks and Thomas E. Bernard

C. Program Description

Mission: The Sunshine ERC improves the health, safety, and well being of workers through developing diverse high quality trained OHS graduate professionals having interdisciplinary experience, conducting cutting edge research, and providing outreach services.

The Sunshine Education and Research Center has just finished its 10th year and is comprised of programs dedicated to workplace health, safety and well-being in the College of Public Health, the College of Medicine, the College of Nursing, and the College of Arts and Sciences with support from the College of Engineering. Realization of the mission will result in a healthier and safer workplace with an enhanced quality of life for the working population.

In the beginning, the training programs included Industrial Hygiene, Occupational Health Nursing and Occupational Medicine Residency. The continuing education and outreach program has grown steadily and creates high visibility for the center. Occupational Safety was added a few years later along with doctoral training in Industrial Hygiene, and Hazardous Substance Training. Occupational Health Psychology has recently joined the collaborative effort to train OSH professionals in Florida and the Southeast region. The faculty, staff and students are committed to training excellence and contributing to the profession. The University of South Florida supports these programs, but the NIOSH funding has played a key role in the growth and quality of the training and outreach.

Continuing education and outreach are central elements of any ERC and the Sunshine ERC subscribes to the importance. A schedule of one to three days classes are offered to address the basic OSH classes where there is faculty or local instructor support. The classes are coordinated with the USF OTI Education Center so that they do not overlap. Two major efforts of the CEO activities are direct responses to needs assessments and listening to our professional community. The first of these is the Soiree Series. During the Spring and Summer, one-half day sessions are provided on Wednesday afternoons. These are free and open to all interested parties. In any given term, the classes are given by ERC faculty or instructors from the local professional community with relevant knowledge and experience. These have proven themselves to be very successful. The other major effort is in co-sponsoring meetings and conferences. The synergy between the ERC and the conference organizers has resulted in full and stimulating agendas, which lead to positive evaluations from the attendees. The ERC also has an HST component. In what distinguishes itself from other vendors of required hazardous substance training, the Sunshine ERC provides the training at very low cost and thus reaches a great number of students. This is complemented by other training such as the for the certification as a hazardous materials manager (CHMM).

It is worth noting the Director of the Industrial Hygiene Program is also the Director of the USF Safety Florida, which is an OSHA 21d consultation program, and the USF OSHA Training Institute Education Center for Florida. This relationship provides the ERC with people in close touch with current issues in OSH to help direct the

continuing education and outreach, provide sponsors for field experiences and to suggest directions for projects and theses.

The Pilot Projects and NORA funding have provided important funding for Sunshine ERC initiatives. The Pilot Project funds are used to support student research and seed faculty investigators with pilot research. Request for applications goes to faculty and students of the ERC, USF, training program grantees in the region and others outside of the region. A notable feature of the outside funding is that at least two of the pilot projects have gone to institutions served by another ERC when the topic is interesting to the review panel and as a way to build bridges for future collaborations.

The NORA funding was used to invest in a strategic direction for the Sunshine ERC. In the broadest sense, selecting an area of human laboratory research complemented the already established Heat Stress Laboratory. That is, the ERC has made a commitment to human laboratory research. Recognizing the interests and skills of the faculty in the ERC for pulmonary disease and the need to take advantage of state-of-the-art methods, the leadership of the ERC decided to invest in the Breath Lab. The capital and labor support for this kind of direction setting research required a considerable investment that only the NORA funding of the ERCs could provide. A complementary commitment was made by the occupational medicine residency program faculty to develop their research areas under the Breath Lab umbrella and to require the OM residents to do their research in the lab. The laboratory has also been used by IH and nursing students as well as Pulmonary Fellows.

D. Program Activities

For interdisciplinary activities, the overlying intent and purpose of the plan is to promote faculty and student interaction across the Sunshine ERC disciplines. Such opportunities occur in the class room during scheduled seminars and conferences, in field and laboratory experiences, in clinical settings as well as at various social/educational events. The first tier of classes are the COPH core classes and offer a passive interdisciplinary opportunity. The second tier of classes are the didactic classes offered in association with the Sunshine ERC faculty who are interested in making more active interactions among the students. The final tier of opportunities have the highest value but largely depend on the willingness of the student to take advantage of the opportunity.

Both diversity recruitment and recruitment in general were identified two strategic initiatives during their July 2007 retreat. The diversity recruitment initiative is described further here. The Sunshine ERC Strategic Initiative for Diversity is to recruit and train a culturally diverse group of students in the Occupational Safety and Health (OS & H) professions, so they will in turn become the leaders and educators in an increasingly diverse workforce. The Sunshine ERC is aware of both the benefits and challenges associated with attracting and maintaining a diverse and qualified student body into its core education programs. Despite more than two decades of efforts to attract minority individuals into scientific, health and technical fields, minorities continue to be under-represented (George, Neale, Van Horne, Malcom, 2001). As suggested by Dumas-Hines, Cochran, and Williams (2001), universities must not only set diversity goals, but base recruitment and retention efforts on approaches that have already proven to be effective. Therefore, to recruit, retain and graduate minority students, the Sunshine ERC has developed a Strategic Plan for Diversity which addresses best practices mentioned in the literature and which capitalizes upon existing personnel and programmatic resources in the ERC, COPH, USF Health and the University. In order to dedicate sufficient time, resources and energy to this diversity initiative, the Sunshine ERC has identified a Diversity Initiative Manager (Thomas Truncale) and a Diversity Coordinator

(Ellen Kent). Dr. Truncale has been affiliated with the OM Residency program since 2003. While new to the ERC, Ms. Kent has been working with faculty, staff and students in the COPH, USF Health and USF since 1991. Ms. Kent is experienced in developing outreach education programs, print materials and web sites to recruit minority high school and college students into health careers. Dr. Truncale and Ms. Kent will work under the guidance of the ERC Director and will collaborate with the Executive Committee in the design, implementation and evaluation of this Strategic Plan for Diversity.

E. Program Products

Program products are provided in the individual program write-ups that follow.

F. Future Plans

Immediate Plans

Dr. Bernard is responsible for the relationship building with two TPGs [University of Puerto Rico (Jesus Gonzalez, Director) and the University of Miami (Tarek M. Khalil, Director)], and FIU (Deodutta Roy, Chair of EOH). We believe that their participation in Sunshine ERC activities is very important and it should be a strategic initiative in future years. For all three universities, the ERC plan is to encourage participation in one of the Research Poster programs and on the pilot project review committee. Some of the Outreach budget will be used to defray the travel costs for students and faculty in the partner institutions to attend the Research Poster program. In the future, we can rotate the site among Tampa, Miami and San Juan. For the pilot project program, we wish to encourage project applications from all three universities and to invite a representative from each to sit on the review committee. This should encourage submissions and makes the process transparent.

USF and UPR have invested time and resources in the development of a joint research effort dealing with workplace musculoskeletal disorders, and the efforts will continue. UPR received pilot project funding in the last cycle to perform pilot work. There is a bridge among Drs. Bernard and Spector with Sanchez-Anguiano (epidemiology) and Dr. Orta-Anes at UPR, this will be built on with Dr. Chang at USF and the occupational health psychology program at UPR. The Sunshine ERC funded a doctoral student at the University of Miami and she presented her results at USF. The experience was productive and we look forward to developing this farther.

Besides the partnership reflected in participation in the Research Poster program and the Pilot Project program, there is a desire to bring FIU into a full collaboration with the Sunshine ERC. This integration was considered in preparation for this renewal application but was delayed for fear that it could not be well articulated in the application at this time. The Stemple School of Public Health is accredited by CEPH. The Colleges cooperate on state-wide initiatives with the program at the University of Florida. Discussions between the two Departments of Environmental and Occupational have been ongoing for a couple of years. To promote the integration, Dr. Deodutta Roy will be asked to join meetings of the Executive Committee beginning with a meeting in the Fall and after that. He will also be invited to attend the full retreat in the Spring of 2008. At least two courses offered by FIU on the web will be available to our students and the credit hours will transfer to the program of study at USF. We hope to more fully coordinate offerings between both institutions in the future. To further strengthen the relationship, the Outreach budget includes student support money for one or more students at FIU for stipends, tuition and fees, and/or research support in the occupational hygiene and management program or a PhD student. The only requirements will be that student interest is related to occupational health and safety,

and that the student(s) benefiting will be in good standing and either a US citizen or permanent resident. If we are unable to make a full integration work, the Sunshine ERC will provide support to FIU for a TPG application.

Intermediate Plans

Some of our research products have been translated to practice. These include insights to the mechanisms of pulmonary disease, heat stress and strain, ergonomics, and evidenced-based practice. Some of the faculty in the Sunshine ERC have significant research assignments. While they have developed somewhat independent paths with a wide range of immediate applicability, there will be a time in the near future where some combined interdisciplinary initiatives must be undertaken. We recognize this as an asset in the center that is not fully used. A time to reflect on interdisciplinary research is also a time to consider the applications of the research effort in the workplace and how to assess its efficacy and effectiveness. It is delayed by a couple of years to first get our other priorities established. This does not mean that our individual research programs and collaboration are less important but rather that the ERC governance is focused first in other areas of importance.

A retreat planned for the Spring of 2009 will be the springboard for the collaborative effort. At this time, the current faculty and staff presumably including FIU along with students and the TPGs plus interested representatives of the Board of Advisors will set the direction and select an Initiative Manager to oversee the effort.

Industrial Hygiene

A. Program Title

Industrial Hygiene

B. Program Director

Yehia Y. Hammad

C. Program Description

The principal goal of the industrial hygiene training program is to furnish a high quality educational experience to working professionals and future researchers who have career objectives in the recognition, evaluation and control of workplace hazards. The program is intended to meet the critical growing need for this specialty in the State of Florida, the Southeastern United States, and the nation. This need is demonstrated by information published by the Bureau of Labor Statistics stating that during the 10 year period from 2004 to 2014 there is an expected 12% increase in the demand for these services nationwide, and a 19% increase for the State of Florida (Source: Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections; Florida Employment Projections). Looking to the future, globalization and outsourcing of traditional industrial jobs from the US and Europe to the developing countries has resulted in a growing international need for well-trained personnel in the field of occupational health and safety, and we will help fill that need. In addition, the production of goods and services in the US will continue to involve new or exotic technologies that will outpace the knowledge of current occupational safety and health professionals, for example, nanotechnology, biotechnology, and the semiconductor industry. We will continue to enhance our program to provide training in emerging areas. Moreover, the expansion of jobs nationally in the service sector will create new challenges to the industrial hygienist, resulting in the need for training in new focus areas. The Department's Industrial Hygiene faculty fosters interdisciplinary cooperation in both research and training within the Department and between the Colleges of Public Health, Nursing, Medicine, Arts and Sciences (Chemistry, Biology Psychology), Education (Physical Education) and Engineering. As a result, strong ties have been developed and exist now with these Colleges.

The objective of our MSPH program is to produce outstanding industrial hygiene professionals. 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 publishable original research, and provision of interaction between our students and other professionals in industrial hygiene and other occupational health-related fields, emphasizing written and oral communication skills throughout.

The objective of our PhD program is to produce top quality researchers in the field of industrial hygiene. The high quality 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 in the fields of occupational hygiene and occupational health, and greater emphasis is placed on the research performed. Our graduates are expected to interact with epidemiologists, toxicologists, occupational physicians, and others in conducting multidisciplinary research related to occupational health.

The PhD dissertation topic is selected by the student who then prepares a research proposal. This proposal is presented to the research advisory committee for approval. The final defense is advertised 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 about 4 years.

There are three venues for training in the responsible conduct of research. The first is during student orientation when all students in the College of Public Health receive IRB training for IRB certification, including investigator responsibilities, and also HIPAA training. All students are also required to maintain their IRB certification with annual training and recertification. The second opportunity is in the core epidemiology course in which the first lecture is devoted to ethical research. The lecture is provided by a representative of the IRB and the students are given the Belmont report to read. The third opportunity is for those students who work on a research project involving human subjects and for those who have human subjects as part of their project effort. While this third opportunity is not taken by all students, those who do, get first hand experience in the proper methods to obtain informed consent, interaction with human subjects and/or handle sensitive data. In the Spring, the College offers Advanced Seminar on Public Health Research Ethics. Students who have special interest in the subject are encouraged to attend.

D. Program Activities and Accomplishments

The industrial hygiene curriculum has evolved over the last five years. While the required concentration courses did not change, modifications to these courses to address current issues. New elective courses were added and certain elective courses were dropped based on student interest and availability of instructors. Copies of the MSPH and PhD curricula are presented in Appendix A.

Trainee Candidates

The program follows the policies and standards for admission of USF, the College, and the Department with respect to student qualifications. The students are required to have a GRE of 1000 for the MSPH, 1100 for the PhD, and a minimum of a 3.0 grade point average. In the Department, we emphasize a technical degree and students are required to have least 60 hours of science. We evaluate our prospective students on GRE scores, GPA, references, work experience, and interviews, and value each of these, particularly interviews, as indicators of admittance into and future performance in the program. If a student does not meet our expectations, the student is discouraged from applying to our program; consequently, a large proportion of applicants are admitted. Those admitted satisfy the requirements for both ABET and CEPH accreditation.

Thesis and Dissertations

- Dunn, S. (2006). Vibration level characterization from a needle gun used on U.S. naval vessels. Environmental and Occupational Health. Tampa, University of South Florida. **MSPH**.
- Luecke, C. (2006). Gender differences during heat strain at WBGT_{crit}. Environmental and Occupational Health. Tampa, University of South Florida. **Ph.D.**
- Marty, A. (2007). Ethyl methacrylate and methyl methacrylate exposure among fingernail sculptors. Environmental and Occupational Health. Tampa, University of South Florida. **MSPH**.
- Smyth, J. (2006). A novel air sampling and analytical method for determination of airborne bronopol. Environmental and Occupational Health. Tampa, University of South Florida. **Ph.D.**

- Wan, M. (2006). Assessment of Occupational Heat Strain, Environmental and Occupational Health. Tampa, University of South Florida. **Ph.D.**
- Whilhite, C. (2007). Pneumatic tool hand-arm vibration and posture characterization involving U.S. navy shipboard personnel. Environmental and Occupational Health. Tampa, University of South Florida. **MSPH.**

Enrollment and Marketing Plan

Increasing enrollment in Industrial Hygiene and Occupational Safety is a priority. Our goal is to attain at least 12 applications per school year. We expect that 75% of these would attain admission. In addition to relying on and participation in the enrollment and marketing plan of the University of Florida College of Public Health, we will implement the marketing strategy that we developed.

Minority Recruitment and Retention Plan

Diversity Recruitment is a Sunshine ERC strategic initiative designed to benefit all the programs. As with all of our strategic initiatives, there is an Imitative Manger (Truncale) who has responsibility for the program and he has the assistance of a coordinator (Kent). Key elements of the plan are (1) asking diversity officers in USF Health and at USF to help distribute information on the training programs; (2) meet with minority student organizations on the USF campus; (3) work with established summer programs for minority students; (4) gain the cooperation of recruiters in the Colleges of Engineering, Arts and Sciences, Nursing, Public Health and Nursing; (5) build on relationships with the University of Puerto Rico and Florida International University; and (6) market the programs to historically black colleges and universities and Latino center universities.

Diversity programs are active at USF in general as well as the Health Science Center. With regard to retention, we make every effort to retain any student that has matriculated into the program through peer support systems, faculty advising and mentoring, academic support and tutoring, and financial support. The Industrial Hygiene Program is committed to, and will fully participate in, the new and comprehensive ERC minority recruitment and retention plan.

E. Program Products

Presentations

- Bernard, T. E. (2007a). Heat stress and strain update, *Nuclear Industry Safety and Health Association Meeting*. Crystal River, FL
- Bernard, T. E. (2007b). PPE for infrared radiation environments, *American Industrial Hygiene Conference*. Philadelphia, PA
- Bernard, T. E., Schwartz, & Ashley, S. W. (2007). Short-term heat stress exposure limits based on WBGT, *American Industrial Hygiene Conference*. Philadelphia, PA

Papers

- Gonzalez, N. W.**, Bernard, T. E., Carroll, N. L., Bryner, M. A., & Zeigler, J. P. (2006). Maximum sustainable work rate for five protective clothing ensembles with respect to moisture vapor transmission rate and air permeability. *Journal of Occupational and Environmental Hygiene*, 3, 80-86.
- Krause, J. D.**, & Hammad, Y. (In review). Mobilization of the Flame Retardant Antimony Trioxide by Fungal Decomposition of Fiberglass Duct-board. *Building and Environment*.

F. Future Plans

We intend to facilitate even greater interdisciplinary activities among the programs of the ERC by reviewing courses, seminar, projects, and research for further opportunity in this area. We will implement our new policy to induce students to publish their research. We have contracted with the USF College of Business for a marketing analysis of our program and Department, and the results will be used to enhance the current marketing plan for student recruitment. We will also emphasize the potential aspects of R2P when advising students regarding selection of thesis and dissertation topics.

Occupational Health Nursing

A. Program Title

Occupational Health Nursing

B. Program Director

Candace M. Burns

C. Program Description

The overall goal of the Occupational Health Nursing (OHN) program is to prepare master's level predoctoral nurses as occupational health nurse practitioners. Trainees are prepared to serve in leadership, practice and educator roles in occupational health nursing. The program awards the graduate a M.S. (Adult and Occupational Nurse Practitioner) and M.P.H. (Occupational Health).

The objectives of the OHN program are to: 1.) plan, implement and evaluate the Interdisciplinary dual degree (MS/MPH) program of prepare occupational health nurse practitioner professionals to practice in advanced practice roles in occupational health nursing; 2.) recruit and retain qualified graduate students including minorities and individuals from underserved areas into the OHN program; and 3.) provide research training experiences to apply and utilize research findings while providing occupational health services to workers, prepare for participation in the research process and identify new issues for further investigation.

The OHN curriculum is comprised of 65 credit hours including 37 credits in Nursing (Theory, Research, Pathophysiology, Advanced Health Assessment, Occupational Health Nursing specialty courses, Adult Nurse Practitioner specialty courses, and clinical and field experiences in occupational health totaling 630 hours, and 28 credits in Public Health (Occupational and Environmental Health, Epidemiology, Biostatistics, Health Policy Management, Occupational Safety and health Administration, Industrial Hygiene, Safety, Plant Operations Field Experience, Occupational Medicine, Occupational Health Law, Special Project, and a comprehensive examination). Students also have the option of completing a thesis. Both part-time and full-time study is available.

There is a large cadre' of appropriately prepared preceptors, both certified occupational health nurses and board certified occupational medicine physicians, who mentor trainees in clinical and field settings. Students have opportunities for experiences in a wide variety of settings, (e.g., CF Industries[phosphate mining], Home Shopping Network, US Postal Service, Lakeside Occupational Medical Clinics [which contracts with approximately 15,000 industries] thus providing students experiences with workers from many types of industries.

Instruction in the responsible conduct of research is included in NGR 6800 Nursing Research for Advanced Practice, a required course. Content includes ethical treatment of human and nonhuman participants, authorship issues, confidentiality of data, conflict of interest, data sharing, dissemination of results, misconduct and scientific inquiry. Students and faculty are required to maintain eligibility with the University IRB. Student trainees must also complete NIH and USF investigator online training modules and submit their certificates of completion as part of the course requirements.

D. Program Activities

The program addresses the critical nursing shortage for nurse practitioners in all specialties of nursing. Graduates pass the national certifications examinations and are fully employed after graduation. Graduates also successfully pursue doctoral study and

assume leadership roles within the profession, in nursing education and advance practice.

Minority recruitment and retention has successfully maintained minority enrollment between 35% and 38% annually.

To date, all graduates have successfully passed national certification examinations to practice as Adult Nurse Practitioners and Occupational Health Nurse Practitioners. Graduates are employed in occupational health nursing positions, thus successfully addressing the shortage of nurse practitioners in the state, region and nation. They readily obtain jobs in-fact, most have a new job in occupational health nursing prior to graduation.

Three graduates are practicing out-of state (Georgia, North Carolina, and Tennessee), including positions at the CDC and the Tennessee Valley Authority Brown's Ferry Nuclear Plant.

Three graduates have entered doctoral study (2-PhD, 1-Doctorate in Nursing Practice [DNP] and are non-NIOSH supported). One graduate has entered medical school and plans to enter a medical residency in occupational medicine after graduation. One program graduate has completed doctoral study (non-NIOSH supported) in the College of Public Health, and has three publications, three presentations and obtained a faculty position.

Program graduates are also in leadership positions in occupational health nursing serving as Editor of the Florida State Association of Occupational Health Nursing newsletter, CUE and Editor of the Nurse Practitioner Section of the Journal of the American Association of Occupational Health Nursing.

Student and faculty continue to have an impact on occupational health and safety at the national, state and local levels. Dr. Burns was selected to serve as an expert on a national level White House Expert Panel and Work Group to develop a national initiative, "Pesticides and National Strategies for Health Care Providers" from 2002-2005. The outcome and work product of the initiative was the peer reviewed National Pesticide Competency Guidelines for Medical and Nursing Education. The final product was made available in 2006.

Dr. Burns was also invited to serve on Governor Bush's expert panel and workgroup 2005-2006, "Homeland Security: Avian Influenza Epidemic Table Top Exercise for the State of Florida". Health care services and quarantine issues were addressed including second and third order effects, especially the impact on businesses and employers (due to the significant loss of a workforce due to illness and death) and the potential resulting economic impact on the state.

Ms. Acree's Doctorate in Nursing Practice (DNP) ongoing project work has resulted in a publication "Human Bites in the Classroom: Incidence, Treatment and Implications", in the peer reviewed Journal of School Nursing and has brought excellent recognition of this underreported safety hazard for teachers and other school workers at all levels of education. It was accepted for publication January 2007 and published in August 2007.

Kellie Collins' NGR 6977 Special Project paper (a requirement for graduation) was peer reviewed and selected for a podium presentation at the American Association of Occupational Health Nursing Annual conference April 2007.

Dr. Burns also serves in leadership positions on the Florida State Association of Occupational Health Nursing – Florida Westcoast Chapter as Chairperson, Membership Committee which has received national and state awards and recognition. She also serves on the University of South Florida Safety Committee which addresses prevention and management of occupational illness and injury in the University workforce and the

University of South Florida Security Committee with addresses prevention and response to natural and man-made disasters and violence on campus.

Dr. Burns and the ERC developed a very successful partnership with the Florida State Association of Occupational Health Nursing (FSAOHN) to co-sponsor their annual conference each year, provide several speakers for the conference, and conduct the annual "Continuing Education Needs Assessment" to query the occupational health nurses throughout the state regarding topics, formats and venues for future continuing nursing education programs. The ERC analyzes the data and provides a summary to the FSAOHN Board of Directors and the Director of Continuing Education for the ERC. This partnership and the high quality of speakers from the ERC have resulted in both increased attendance at the annual state conference and an enhanced quality of continuing education to occupational health nurses throughout the state.

E. Program Products

Publications

- Acree, H. (2007). Human bites in the classroom: Incidence, treatment and complication. *Journal of School Nursing* (August).
- Bouchard, C. (2007). Literacy and hazard communication: Ensuring workers understand the information they receive. *Journal of the American Association of Occupational Health Nursing*, 55(1), 18-25.
- Brak-Lee, V. (2006). *Measuring social stressors in organizations: The development of the interpersonal conflict in organizations scale (ICOS)*. Unpublished Ph.D., University of South Florida, Tampa.
- Donald, C. (2007). A Review of norovirus. *Florida State Association of Occupational Health Nursing CUE*.
- Eby, L. T., Allen, T. D., Evans, S. C., Ng, T., & DuBois, D. (In press). Does mentoring matter? A multidisciplinary meta-analysis comparing mentored and nonmentored individuals. *Journal of Vocational Behavior*.
- Groer, M., Beckie, T., Brieter, D., & Burns, C. Allostasis: A model for women's health. In K. Kendal-Tacket (Ed.), *Inflammation, mental health and chronic illness*.
- Groer, M., & Burns, C. (In press). Military women and stress. *Journal of Rehabilitation Nursing*.
- King, L. (2006). Are lifting devices the way? *Florida State Association of Occupational Health Nursing CUE*(Spring).

National Presentation: Student

- Collins, K. (2007). Occupational hazards of health care workers, *American Association of Occupational Health Nursing*.

Publications/Posters/Presentations: Program Graduates

- Clem, A. (2001). The potential of plague as a biological weapon. *The Indian Practitioner*, 54(12), 878-887.
- Clem, A. (2006). Bacteriophage for the elimination of methicillin-resistant staphylococcus aureus (MRSA) colonization and infection (poster), *The American Society of Microbiology 106th General Meeting*
- Clem, A. (2007). Effects of environmental stress on selected foodborne pathogens, *Florida Department of Business and Professional Regulation's Division of Hotels and Restaurants*.
- Clem, A., & Galwankar, S. (2006). Avian influenza: Preparing for a pandemic. *JAPI*, 54, 563-570.

Clem, A., Galwanker, S., & Buck, G. (2003). Health implication of cyber-terrorism. *Prehosp Diast Med*, 18(3), 272-275.

Conference Sponsored

The annual Florida State Association of Occupational Health Nurses is co-sponsored by the ERC. Occupational health nurses from throughout the state of Florida and neighboring states attend this annual continuing education conference. ERC faculty provide podium presentations, OHN program faculty conduct a Continuing Education Needs Assessment survey questionnaire and data analysis, and OHN students and faculty are available to provide information about the program and recruitment.

F. Future Plans

Future plans include enhanced recruitment of minority students and increased emphasis on student research experiences. The College of Nursing has employed Marcia Parker, Marketing Coordinator, who will be focusing on recruitment of minority students to the College of Nursing. Dr. Burns met with her to provide recruitment materials and orient her to the OHN program. She will be conducting recruitment activities at predominately minority venues such as the Hispanic Nurses Association national and state conferences, Bethune-Cookman (Traditional Black University). In addition, Ellen Kent, College of Public Health and ERC faculty (including Dr. Burns) will make recruitment visits and presentations to area high schools and community colleges to provide information about the ERC and careers in occupational health and safety.

The second major emphasis for the future is on the research experiences of occupational health nursing students. The guideline for PHC 6977 Special Project was revised to require a research focused project. The required course NGR 6650 Occupational Health Nursing I was revised to require students prepare and present a research focused poster during the biannual ERC Student Poster Session. The requirement to write and submit a short manuscript to the Florida State Association of Occupational Health Nursing Newsletter, CUE, remains a course requirement. NGR 6651 Occupational Health Nursing II was revised to include a requirement for students to write and submit a research focused manuscript to the Journal of the Association of Occupational Health Nursing. Students also continue in required research courses in Epidemiology, Biostatistics, and Advanced Nursing Research. Lastly, students continue to have the option of completing a master's thesis.

Occupational Health Psychology

A. Program Title

Occupational Health Psychology (OHP)

B. Program Director

Paul E. Spector

C. Program Description

The USF OHP program provides specialized training in this interdisciplinary area to doctoral students in the industrial/organizational (I/O) program. OHP trainees receive both classroom and nonclassroom instruction in the Psychology Department and in the College of Public Health. All are involved in OHP research, working with faculty across departments/colleges. The goals and objectives for the first year of funding (2006-07) were to recruit trainees, establish stronger interdisciplinary ties between Psychology and Public Health, have trainees become engaged in OHP research by conducting studies, presenting at conferences, and submitting papers to journals, organize the advisory board, and complete an internal site visit by a prominent person in the OHP field. The program includes extensive training in responsible conduct of science. This is a topic that is covered in several classes, including the course on ethics and an entire week of the Organizational Research Methods course. All trainees are required to complete USF's annual IRB training, and to submit IRB applications for research projects, under supervision of faculty.

The program director (Spector) and deputy director (Tammy Allen) have primary responsibility for overseeing the program. Trainees take coursework from both of them, and they are the advisors for 5 of 6 trainees. Other ERC faculty are also involved as course instructors and research collaborators, most notably Tom Bernard, Stuart Brooks, Chu-Hsiang Chang, Yehia Hammad, and Pete Rentos from the Department of Environmental and Occupational Health, and Kristen Salomon from the Department of Psychology who is the advisor for one of the trainees who studies cardiovascular response to stress.

The curriculum consists of 21 courses, including 3 psychology foundation (Cognitive, Personality and Social), 3 I/O foundation (Personnel, Organizational, and Ethics), 6 methods (ANOVA-Regression, Psychometrics, Research in I/O, and Organizational Research Methods and 2 electives), OHP foundation seminars (OHP and Work-Family or Stress and Coping), and 7 additional electives with at least 4 from Public Health. In addition to coursework, there is a required comprehensive examination, internship, master's thesis and doctoral dissertation. Students are also expected to participate in research activities, including attending and presenting at brownbag events, poster events, professional conferences, and submitting papers to journals.

D. Program Activities and Accomplishments

NIOSH funding for OHP began in August 2006. Five funded and one nonfunded trainees were recruited during this academic year. Stipends supported one trainee in fall semester, 3 in spring semester, and 5 in summer semester. All five trainees received travel support to attend one or more conferences, including Academy of Management in Atlanta (2006) and Philadelphia (2007), Southern Management Association in Clearwater Beach, FL, Society for Industrial and Organizational Psychology in New York City, American Society of Safety Engineers in Orlando, FL, and Society of Psychophysiological Research in Vancouver. (see details below). Progress was made in strengthening ties between Psychology and Public Health in several ways. OHP formally

joined the ERC, which increased interaction among faculty. Spector became part of the ERC executive committee, and both he and Allen began regular attendance at ERC meetings. Spector was a member of the 2006 Pilot Grant panel and the EOH faculty recruitment committee. Allen and Spector guest lectured in the safety administration course in EOH. Bernard guest lectured in the Research in I/O course in Psychology. EOH hired I/O psychologist Chu-Chiang Chang who was given a joint appointment in Psychology. She began working with Psychology faculty and students on research, including work with Spector on workplace violence. Trainees took coursework in Public Health, and 4 of the 6 began working on interdisciplinary research projects in Public Health. One of the nursing students began working on a research project with Spector and one of the OHP trainees in the area of workplace violence. Trainees have attended ERC colloquia in Public Health.

All six trainees were involved in OHP-related research. Four of the six trainees completed their MA theses, one completed her comprehensive examination, and one proposed his thesis and began data collection. Two students who were part of the prior OHP concentration were awarded their PhDs. One is working for PreVisor in Atlanta and the other for Verizon Wireless in Tampa.

In fall 2006 the OHP advisory board was organized and had its first meeting. The five-member board are Dr. Jonathan Canger and Dr. Dennis Michael who are I/O psychologists working with corporations, Dr. Lois Tetrick from George Mason University who is the editor of the *Journal of Occupational Health Psychology*, Stephen Sarnoff, president of a local labor union, and Mary Matz, VA Patient Care Ergonomics Consultant. Since the initial meeting, John Sabourin, who has a background in safety, has been added to the board.

In spring 2007 Dr. Leslie Hammer from Portland State University completed a site visit. Dr. Hammer is the founding president of the Society of Occupational Health Psychology, and is the program director for the first NIOSH-funded OHP training program at Portland State University. She made several recommendations concerning the curriculum that were implemented, most notably having fewer specific requirements and allowing more elective courses to provide flexibility.

Dissertations/Theses

- Bruk-Lee, V. (2006). Measuring social stressors in organizations: The development of the interpersonal conflict in organizations scale (ICOS). Psychology. Tampa, University of South Florida. **Ph.D.**
- Jaguszyn, N. (2007). Internalized racism as a moderator for stereotype threat: Effects on self-handicapping, performance, and cardiovascular activity. Psychology. Tampa, University of South Florida. **MS.**
- Mazzola, J. J. (2006). Moderating effect of negative affectivity on the job satisfaction-turnover intentions and justice-turnover intentions relationship. Psychology. Tampa, University of South Florida. **MS.**
- Nixon, A. (2006). The impact of fidelity and innovations on Health Family America Programs. Psychology. Tampa, University of South Florida. **MS.**
- Shockley, K. M. (2007). Uncovering the missing link in flexible work arrangement utilization: An individual difference perspective. Psychology. Tampa, University of South Florida. **MS.**
- Shoemaker, A. (2007). Construct validity of situational judgment tests: An examination of the effects of agreeableness, perceived leadership culture, and experience on SJT responses. . Psychology. Tampa, University of South Florida. **Ph.D.**

E. Program Products

Collectively, in 2006-2007 the faculty and students of the OHP program published 25 journal articles, 2 books, and 6 book chapters. The trainees had 2 first-authored journal articles accepted (Shockley & Allen, *Journal of Vocational Behavior*; Yang, Che & Spector, *Journal of Occupational and Organizational Psychology*) and they submitted 6 articles to journals. They were coauthors of 12 conference papers. Our trainees are currently involved in a number of research projects as shown in Table 1.

Table 1

Trainee	Research Project
Nichole Jagusztyn	Cardiovascular response to workplace mistreatment (with Salomon, Psychology)
Joseph Mazzola	Organizational climate for health (with Spector) Job stressors for graduate assistant (with Shockley, Spector) Eye protection for grove workers (with Bryant, COPH) Qualitative approaches to studying job stress (with Spector)
Ashley Nixon	Meta-analysis of job stressors and physical symptoms (with Mazzola, Spector)
Raymond Ottinot	Civility climate of organizations (with Spector)
Kristen Shockley	Work-family benefit use (with Allen)
Liu-qin Yang	Cross-cultural study of job stressors and strains (with Spector) Chinese study of incivility and strain (with Spector) Nurse exposure to injury and violence (with Gallant-Roman, nursing & Spector) Mentoring relationships within a stressor-strain framework (with Allen)

Peer-Reviewed Journal Articles

- Allen, T. D. (2006). Rewarding good citizens: The relationship between citizenship behavior, gender, and organizational rewards. *Journal of Applied Social Psychology, 36*, 120-143.
- Allen, T. D., & **Armstrong, J.** (2006). Further examination of the link between work-family conflict and physical health: The role of health-related behaviors. *American Behavioral Scientist, 49*, 1204-1221.
- Allen, T. D., Eby, L. T., & Lentz, E. (2006). Mentor and protégé outcomes associated with formal mentoring programs: Closing the gap between research and practice. *Journal of Applied Psychology, 91*, 567-578.
- Allen, T. D., Eby, L. T., & **Lentz, E.** (2006). The relationship between formal mentoring program characteristics and perceived program effectiveness. *Personnel Psychology, 59*, 125-153.
- Allen, T. D., Eby, L. T., **O'Brien, K. E., & Lentz, E.** (In press). The state of mentoring research: A qualitative review and future research implications. *Journal of Vocational Behavior*.

- Allen, T. D., **Lentz, E., & Day, R.** (2006). Career success outcomes associated with mentoring others: A comparison of mentors and nonmentors. *Journal of Career Development, 32*, 272-285.
- Allen, T. D., & **O'Brien, K.** (2006). Formal mentoring programs and organizational attraction. *Human Resource Development Quarterly, 17*, 43-58.
- Bruk-Lee, V.,** & Spector, P. E. (2006). The social stressors-counterproductive work behaviors link: Are conflicts with supervisors and coworkers the same? *Journal of Occupational Health Psychology, 11*, 145-156.
- Eby, L. T., Allen, T. D., Evans, S. C., Ng, T., & DuBois, D. (in press). Does mentoring matter? A multidisciplinary meta-analysis comparing mentored and nonmentored individuals. *Journal of Vocational Behavior.*
- Fox, S., Spector, P. E., **Goh, A., & Bruursema, K.** (2007). Does your coworker know what you're doing? Convergence of self- and peer-reports of counterproductive work behavior. *International Journal of Stress Management, 14*, 41-60.
- Johnson, H. M.** & Spector P. E. (In press). Service with a smile: How gender and autonomy moderate the emotional labor process? *Journal of Occupational Health Psychology.*
- Lapierre, L. M. & Allen, T. D. (2006). Work-supportive family, family-supportive supervision, use of organizational benefits, and problem-focused coping: Implications for work-family conflict and employee well-being. *Journal of Occupational Health Psychology, 11*, 169-181.
- Lentz, E.,** & Allen, T. D. (in press). The role of mentoring others in the career plateauing phenomenon. *Group & Organization Management.*
- Liu, C.,** Spector, P. E., & Shi, L. (2007). Cross-national job stress: A quantitative and qualitative study. *Journal of Organizational Behavior, 28*, 209-239.
- O'Brien, K. O.,** & Allen, T. D. (in press). The relative importance of correlates of organizational citizenship behavior and counterproductive work behavior. *Human Performance.*
- O'Brien, K. E., Biga, A., Kessler, S. R.,** & Allen, T. D. (in press). A meta-analytic investigation of gender differences in mentoring. *Journal of Management.*
- Rank, J.,** Carsten, J. M., Unger, J. M., & Spector, P. E. (In press). Proactive customer service performance: Relationships with individual, task and leadership variables. *Human Performance.*
- Shockley, K. M.,** & Allen, T. D. (in press). When flexibility helps: Another look at the availability of flexible work arrangements and work-family conflict. *Journal of Vocational Behavior.*
- Siu, O. L., Lu, C. Q., & Spector, P. E. (2007). Employees' well-being in Greater China: The direct and moderating effects of general self-efficacy. *Applied Psychology: An International Review, 56*, 288-301.
- Siu, O. L., Spector, P. E., & Cooper, C. L. (2006). A three-phase study to develop and validate a Chinese coping strategies scale in Greater China. *Personality and Individual Differences, 41*, 537-548.
- Spector, P. E. (2006). Method variance in organizational research: Truth or urban legend? *Organizational Research Methods, 9*, 221-232.
- Spector, P. E., Allen, T. D., Poelmans, S. A. Y., Lapierre, L. M., Cooper, C. L., O'Driscoll, M., Sanchez, J. I., Abarca, N., Alexandrova, M., Beham, B., Brough, P., Ferreira, P., Fraile, G., Lu, C. Q., Lu, L., Moreno-Velázquez, I., Pagon, M., Pitariu, H., Salamatov, V., Shima, S., Suarez, Simoni, A., Siu, O. L., & Widerszal-Bazyl, M. (In press). Cross-national differences in relationships of work demands, job satisfaction and turnover intentions with work-family conflict. *Personnel Psychology.*

- Spector, P. E., Coulter, M. L., Stockwell, H. G., & Matz, M. W. (2007). Relationships of workplace physical violence and verbal aggression with perceived safety, perceived violence climate, and strains in a healthcare setting. *Work & Stress*, 21, 117-130.
- Spector, P. E., Fox, S., **Penney, L. M., Bruursema, K., Goh, A., & Kessler, S.** (2006). The dimensionality of counterproductivity: Are all counterproductive behaviors created equal? *Journal of Vocational Behavior*, 68, 446-460.
- Yang, L.**, Che, H., & Spector, P. E. (In press). Job stress and well-being: An examination from the view of person-environment fit. *Journal of Occupational and Organizational Psychology*.

Books

- Allen, T. D., & Eby, L. T. (Editors) (2007). *Blackwell handbook of mentoring: A multiple perspectives approach*. London: Blackwell.
- Spector, P. E. (2006). *Industrial/Organizational Psychology: Research and Practice*, 4th ed. New York: John Wiley.

Book Chapters

- Fox, S., & Spector, P. E. (2006). The many roles of control in a stressor-emotion theory of counterproductive work behavior. In P. L. Perrewé & D. C. Ganster (Eds.). *Research in Occupational Stress and Well-Being, Vol 5* (pp. 171-201). Greenwich, CT: JAI.
- Greenhaus, J. H., Allen, T. D., & Spector, P. E. (2006). Health consequences of work-family conflict: The dark side of the work-family interface. In P. L. Perrewé & D. C. Ganster (Eds.). *Research in Occupational Stress and Well-Being, Vol. 5* (pp. 61-98). Greenwich, CT: JAI.
- Spector, P. E., Fox, S., & Domagalski, T. (2006). Emotions, violence and counterproductive work behavior. In E. K. Kelloway, J. Barling, & J. Hurrell (Eds.). *Handbook of workplace violence* (pp. 29-46). Thousand Oaks, CA: Sage.
- Spector, P. E., & **Johnson, H. M.** (2006). Improving the definition, measurement and application of emotional intelligence. In K. R. Murphy (Ed.) *A Critique of Emotional Intelligence: What Are the Problems and How Can They Be Fixed* (pp. 325-344). Mahwah, NJ: Erlbaum.
- Sanchez, J. I., Spector, P. E., & Cooper, C. L. (2006). Frequently ignored methodological issues in cross-cultural stress research. In P. T. P. Wong & L. C. J. Wong (Eds.). *Handbook of multicultural perspectives on stress and coping* (pp. 187-202). New York: Springer.
- Spector, P. E., & **Rodopman, O. B.** (In press). Methodological issues in studying insidious workplace behavior. In J. Greenberg (Ed.). *Insidious workplace behavior*, Mahwah, NJ: Lawrence Erlbaum.

Proceedings

- Spector, P. E., **Fox, S. Goh, A., & Bruursema, K.** (2006). *Five dimensions of counterproductive work behavior related to job stressors and strains*. Southern Management Association Proceedings, Clearwater, FL.
- Yang, L. Q.**, Levine, E. L., & **Xu, X.** (2006). Affect, Job Satisfaction and Counterproductive Work Behavior. Southern Management Association Proceedings, Clearwater, FL.

F. Future Plans

The OHP program has two particular plans for the 2007-08 academic year. First, one or two new students will be recruited to begin the program by fall 2008. Four of the current first year I/O psychology students have expressed some interest in the program and are likely candidates. Second, trainee interdisciplinary interaction will be increased outside of classroom activities. This will include participation in ERC-wide events, such as the poster sessions to be held in 2007-08, attendance at ERC talks, and involvement in more research projects with trainees from other departments. In addition Allen and Spector will continue to promote the OHP program to prospective applicants to the I/O psychology doctoral program, and will continue to encourage student publication.

Occupational Medicine Residency

A. Program Title

Occupational Medicine Residency (OMR)

B. Program Director

Stuart M. Brooks

C. Program Description

The USF OMR program is a 2-year concurrent academic and practicum program. Residents take courses in the College of Public Health (COPH) at the same time they attend clinical activities. The academic program leads to an MSPH degree since all residents are required to complete a thesis project. The 2-year clinical program leads to certification in advanced subspecialty resident training in Occupational and Preventive Medicine accredited by the ACGME.

The goals for the OMR program are to 1) graduate board-eligible OM physicians who have mastered a broad-range of OM competencies and who will pass the OM boards; 2) to graduate capable OM physicians with sufficient skills, acquired through research training, to solve complex workplace problems 3) to educate residents with the knowledge, skills and attitudes to practice evidence-based occupational medicine.

The OMR program addresses the responsible conduct of science training by requiring residents to complete USF's annual IRB, safety and human subjects training. All of residents are asked to submit their thesis project to the IRB under the direction of faculty. The topic of responsible conduct of science is also discussed in several courses including research seminar, epidemiology and the occupational epidemiology course.

Dr. Stuart Brooks remains the residency director and has served in this capacity since inception of the OMR program in 1991. Dr Eve Hanna has recently been appointed as the director of clinical activities. Dr. Thomas Truncala has taken over the research aspect of the residency. Faculty involved with the OMR fall predominantly into 2 categories: Academic/Research and Clinical/Preceptor. Some notable ERC/COPH faculty who serve as course instructors, advisors, clinical preceptors and research collaborators include, Rony Francois, Joan Watkins, Edward Demi, Paul Spector, Yehia Hammad, Karen Olson, Rosemary Szollas, Pete Rentos, and Tom Bernard.

The USF OMR two-year training program consists of academic and practicum phases. The academic course work consists of four components, 1) five College core courses which teach many of the basic principles and skills of preventive medicine (15 CH), 2) nine core courses in Occupational Safety and Health (22 CH), 3) six credit hours of thesis research and 4) three hours of Occupational Epidemiology. Residents are encouraged to participate in ERC poster events, submit papers to professional journals and attend/present at professional conferences. The two-year practicum portion of the OMR includes 24 months of practicum rotations at various clinical sites. At the end of their training there is a required comprehensive examination and a thesis presentation.

D. Program Activities and Accomplishments

Important progress was made towards reaching the goals of the OMR during the last year. The administrative structure of the program was changed so that the responsibilities for clinical and research activities were separated. Successfully document of the residents' achievement of core OM competencies during both the practicum and academic phases of the residency are now tracked by a computer based program (New Innovations). Implementation of the program during the fall of 2007 allows the faculty to monitor the benchmarks necessary to verify the student' progression from

resident to attending physician. The lack of a regularly offered course in Occupational Epidemiology was addressed by adding it to the curriculum. We have completed resident competencies for each clinical and academic rotation. Since the last progress report, the OMR program was awarded 5-year accreditation by the ACGME. The number and scope of practicum sites available for resident training has been expanded. Two new weekly conferences, a basic science and research conference have been added to the Wednesday resident schedule, which already included journal club, case conferences, topic reviews and board review.

All of the 5 NIOSH funded residents were involved in research related to Occupational Medicine. Two of the six completed their MPH or MSPH thesis and comprehensive examination, one was a practicum year only and the other two are planning to complete their projects before graduation next year. One of the residents is employed in an Occupational Medicine clinic in Pennsylvania, another Arkansas and the last in Florida.

In the fall of 2006 Dr Brooks was recognized by the American College of Chest Physicians and was presented with the presidential award and asked to lecture at the annual conference. Dr Rony Francois joined the faculty in the OMR after serving as the Secretary of Health for the State of Florida under Governor Jeb Bush. In the spring of 2007, Dr Truncale received approval from a major US pharmaceutical company for his research project "The of Tiotropium on the cough reflex".

Dissertation/Thesis

- Williamson, S. (2006). A new questionnaire to determine the frequency and severity of symptoms caused by inhaled odors, chemicals and irritants in normal subjects and their relation to health-related quality of life. Environmental and Occupational Health. Tampa, University of South Florida. **MSPH**.
- Sotolongo, J. (2006). The impact of the University of South Florida Occupational Medicine residency on graduates' professional careers. Environmental and Occupational Health. Tampa, University of South Florida. **MSPH**.

E. Program Products

There have been three journal articles submitted in 2006-2007 by faculty. One of the articles was a position paper from the ACOEM on the medical surveillance of workers exposed to silica. There were two book chapters in Occupational Medicine texts on Workplace Asthma. Two of the graduating residents completed their thesis projects. One utilized a questionnaire to determine the frequency and severity of symptoms caused by inhaled odors, chemicals and irritants. The other studied the impact of the USF OMR on graduate's professional careers.

Dr Brooks served as director and Dr Truncale as faculty of the Sunshine ERC NIOSH spirometry course during the spring of 2007. Our current residents are also involved in research projects. One is working with Dr Truncale measuring the cough reflex in subjects with COPD after treatment with a bronchodilator. The other is working with Dr Olson evaluating the effectiveness of epidural steroid injections for acute back pain.

Journal Articles

- Brooks, S. M. (In print). Inhalation airway injury: A spectrum of changes. *Clinical Pulmonary Medicine*.
- Raymond, L., Wintermeyer, S., Brooks, S., Truncale, T., McCluskey, J., & et al. (2006). ACOEM position statement: Medical surveillance of workers exposed to

crystalline silica. *Journal of Occupational and Environmental Medicine*, 48, 95-101.

Gordon, R., Haight, R., & Brooks, S. M. (2006). Role of age on exhaled breath nitric oxide. *Lung*, 184(2), 113-119.

Books

Brooks, S., Truncale, T., & McCluskey, J. (2007). Occupational and environmental asthma. In W. N. Rom (Ed.), *Environmental and occupational medicine* (Fourth ed., pp. 418-463). Philadelphia: Lippincott-Raven Publishers.

Gautrin, D., Bernstein, I. L., Brooks, S. M., & Henneberger, P. (2006). Asthma in the workplace: Reactive airways dysfunction syndrome, or irritant induced asthma? In I. L. Bernstein, C. Y. M., L.-M. J. & D. I. Bernstein (Eds.): Marcel Dekker.

F. Future Plans

The OMR has several goals for the 2007-2008 academic year. First we plan to work closely with the Sunshine ERC to increase our pool of resident candidates. By participating in local, regional and national events 4-5 new residents will be recruited. Second, under the direction of Dr Hanna, we are working to develop a wellness program at one of our teaching hospitals. Finally, by participating in ERC-wide research events with other programs, we will increase the interdisciplinary interaction among our residents.

Occupational Safety

A. Program Title

Occupational Safety

B. Program Director

Thomas E. Bernard

C. Program Description

Occupational safety is the prevention of injury, illness, and unexpected death in the workplace as well as loss of property and environmental contamination. To this end, occupational safety systematically applies principles drawn from disciplines ranging from engineering and physical sciences to the social sciences. In contrast to industrial hygiene, the primary focus of the safety program is prevention of acute injury, property loss and environmental damage. To prevent accidents, the safety professional must not only establish hazard-specific and statutory programs (Control of Hazardous Energy; Confined Spaces; S & H Management of Highly Hazardous Chemicals; Bloodborne Pathogens, etc.), but must anticipate and recognize hazards, evaluate them and control them. Following the ABET/ASSE criteria, a masters level graduate must: (1) anticipate, recognize, and evaluate hazardous conditions and practices affecting people, property and the environment; (2) develop and evaluate appropriate strategies designed to mitigate risk; (3) apply principles of safety and health; and (4) exhibit a high level of communications skills. The MPH in Occupational Safety Program has always held these as core values and they are the starting point for the proposed training in the next project period.

The College of Public Health and the Department of Environmental and Occupational Health (EOH) are committed to the growth of the occupational safety program. We have hired a new faculty member, Dr. Chu-Hsiang (Daisy) Chang, who obtained her degree in industrial and organizational psychology and specializes in psychosocial and organizational factors that influence employee safety attitudes and behaviors. This is to serve a two-fold strategic purpose. One is to broaden the foundation of the training program to be more inclusive of social science theories in safety. The other is to advance an interdisciplinary research program with the Florida Prevention Research Center funded by the CDC and with the USF Department of Psychology program in industrial and organizational psychology, which has recently been awarded NIOSH training support at the doctoral level. In the end, this extends considerably the interdisciplinary base on which the program was started.

The Occupational Safety program is intended for students desiring a professional career in occupational safety. In addition to core public health courses, it 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.

There are three venues for training in the responsible conduct of research. The first is during student orientation when all students in the College of Public Health receive IRB training for IRB certification including investigator responsibilities and HIPAA training. The students are required to maintain their IRB certification with annual training and recertification. The second opportunity is in the core epidemiology course which has a lecture (first lecture) and learning objective (#3) on ethical research. The lecture is

provided by a representative of the IRB and the students are given the Belmont report to read. In addition, there is a 1 credit doctoral seminar on ethics in research that an interested student can take. The third opportunity is for those students who work on a research project involving human subjects and for those who have human subjects as part of their project effort. While this third opportunity is not taken by all students, those who do get first hand experience in the proper methods to obtain informed consent, interact with human subjects and/or handle sensitive data.

D. Program Activities

Increasing enrollment in Industrial Hygiene and Occupational Safety is a priority. While this issue affects Schools of Public Health throughout the nation, we believe that steps can be taken to increase the pool of qualified applicants to our program. Our goal is to attain at least 12 applications per school year. We expect that 75% of these would attain admission. To address the enrollment issue in the industrial hygiene and safety programs we will implement the marketing strategy described under Center-Wide Activities.

E. Program Products

Presentations

- Bernard, T. E. (2007a). Heat stress and strain update, *Nuclear Industry Safety and Health Association Meeting*. Crystal River, FL
- Bernard, T. E. (2007b). PPE for infrared radiation environments, *American Industrial Hygiene Conference*. Philadelphia, PA
- Bernard, T. E., Schwartz, & Ashley, S. W. (2007). Short-term heat stress exposure limits based on WBGT, *American Industrial Hygiene Conference*. Philadelphia, PA

Papers

- Gonzalez, N. W.**, Bernard, T. E., Carroll, N. L., Bryner, M. A., & Zeigler, J. P. (2006). Maximum sustainable work rate for five protective clothing ensembles with respect to moisture vapor transmission rate and air permeability. *Journal of Occupational and Environmental Hygiene*, 3, 80-86.

F. Future Plans

The new direction for our Occupational Safety program also incorporates major principles of behavioral science, particularly psychology to build on the existing paradigm of safety management. The new model expands the current thinking of workplace safety. Traditionally, workplace safety focuses on understanding how the physical work environment and job demands can present risk for workers, which in turn lead to accidents and potential worker impairments and disabilities. This model furthers our knowledge of the process by considering it within the psychosocial environment of the workplace, and by integrating workers' individual variability into the different parts of the process. In terms of the psychosocial environment, recent literature has highlighted the importance of safety climate, conceptualized as the shared perceptions among members of a group or organization regarding the safety policies, procedures, and practices, in influencing workers' safety behaviors and injuries (Cooper & Phillips, 2004; Huang, Ho, Smith, & Chen, 2006). Research indicates that these shared perceptions of the actual policies and procedures not only work as the mechanism underlying the effects of safety training on worker compliance (McDiarmid & Condon, 2005), but safety climate also changes the safety knowledge-safety behavior relationship (Hofmann, Morgeson, & Gerras, 2003). Other psychosocial factors, such as leadership and workers' perceived organizational support, are also receiving more attention. In addition to psychosocial

factors, individual variability is also an important factor for occupational safety. Personality factors such as conscientiousness (Wallace & Chen, 2006; Wallace & Vodanovich, 2003) and positive affect are related to reduced worker injuries and increased safety performance, while negative affect appears to have the opposite effect (Iverson & Erwin, 1997). Also, it is well-documented that employee self-efficacy (belief about their ability to successfully engage in safety performance or achieve a safety goal) contributes positively to workers' utilization of hearing protection devices (Arezes & Miguel, 2006; Melamed, Rabinowitz, Feiner, Weisberg, & Ribak, 1996).

An MSPH degree in occupational safety is being developed and put forward to the Graduate School in the Fall, 2007. The program is designed to cover the same OS-related material as the MPH program and to provide deeper training and a substantial research experience in either OS psychology or ergonomics. The student will take only three of the five college core classes, will have an additional course in biostatistics and take two electives (one related to the specific area of interest and injury epidemiology from FIU). The capstone effort is a thesis.

Continuing Education

A. Program Title

Continuing Education

B. Program Director

Hana Osman, effective August 7, 2007.

C. Program Description

Since the initiation of funding of the continuing education program, the focus has been on offering high quality, comprehensive, low cost training programs for industrial hygienists, safety professionals, physicians, nurses and other professionals that work in the field of occupational safety and health (OS&H). Throughout the year, completed needs assessments are collected from participants in the ERC's educational activities, a summary of their needs is prepared and future educational activities are developed to meet the needs. In addition, faculty members, the advisory board, the annual CE Directors meetings all contribute to the development of future continuing education offerings. Annually, ERC faculty and /or staff members attend the Florida Workers' Compensation Institute, and the Florida State Association of Occupational Health Nurses where needs assessments are distributed, collected, analyzed and collated.

Needs assessments, advisory board input, and faculty advice shape the continuing education program to ensure appropriate response to the identified needs.

D. Program Activities and Accomplishments

During this reporting period, courses were offered in the areas of: hearing conservation (certification and recertification); spirometry, OSHA recordkeeping, and risk communication. In addition to regularly scheduled continuing education courses that are offered on the University of South Florida campus, the Sunshine ERC co-sponsors and presentations are made in the Workers' Compensation and the Florida Occupational Health Nursing conferences that address other topics such as: Linking exposure, dose, and disease; Challenging expert medical and toxicology testimony: The role of the expert medical advisor; What happens at trial? The plaintiff and defense have their day in mock court; Industrial hygiene 101 – What should I know? Why should I care?; The art and the science of detecting symptom exaggeration in the musculoskeletal system; and The new OSHA hexavalent chromium standard.

E. Program Products

Plans to join efforts with Alabama and North Carolina Education and Research Centers are well on their way. The first annual regional seminar will be held in Pensacola, Florida on April 17 and 18, 2008. Every year, each of the three ERCs will take the lead (with collaboration from the remaining two ERCs) to plan, organize, and market the regional seminar. The Deep South ERC at the University of Alabama, Birmingham is taking the lead for the 2008 seminar, followed by the Sunshine ERC in 2009, and the North Carolina ERC in 2010. The first program in Pensacola includes a presentation by Dr. Osman (Sunshine ERC) titled: "Ethics, law, and employee safety: Whose responsibility is it to keep employees safe?" The second day of the 2008 seminar is dedicated to the NIOSH initiative "Research-to-Practice (R2P)" featuring Dr. Delon Hull (NIOSH) as a keynote speaker. In addition, speakers from the University of South Florida CDC funded Prevention Research Center (PRC) will focus on the use of social marketing techniques to translate research into practice through behavior change. A social marketing workshop led by Dr. Carol Bryant, Co-Director of the PRC at the

University of South Florida, will be followed by presentations made by three researchers (from North Carolina and Deep South ERCs) with the aim of applying the social marketing techniques demonstrated in the workshop.

In addition to the regional conference, investigating innovative means of delivering continuing education through the internet is underway. Needs assessments will also be administered via the internet to ensure that participants have every means possible to assist Dr. Osman in identifying CE needs and to plan for new educational opportunities in response to the identified needs. Plans to offer regular continuing education and workshops outside of the Tampa Bay area are also being explored. This will be accomplished in collaboration with Florida International University or the University of Miami.

F. Future Plans

The continuing education program will continue to function in the manner that has been so successful over the last few years. In addition, the collaboration with the North Carolina ERC and the Deep South ERC (UAB, Birmingham) will add a new dimension to the current programming because it will enhance collaboration and reduce competition and duplication of effort among the three regional ERCs.

Hazardous Substance Training

A. Program Title

Hazardous Substance Training (HST)

B. Program Director

Hana Osman, effective August 7, 2007.

C. Program Description

Since the initiation of funding of the HST program in 2001, the focus has been on offering high quality, comprehensive, low cost training programs in the areas of management and control of hazardous materials and waste sites. HST for the period of July 2006 – June 2007 focused on offering courses in Hazardous Waste Operations and Emergency Response (HAZWOPER) 40-hour course; HAZWOPER 8-hour refresher course; HAZWOPER 8-hour supervisor course; and the Certified Hazardous Materials Manager (CHMM) training courses.

Needs assessments, advisory board input, and faculty advice shape the HST program to ensure appropriate response to the identified needs.

D. Program Activities and Accomplishments

During this reporting period, 15 HST courses were taught (1,660 person days), and a total of 808 individuals were trained. One-hundred-and-seven individuals received scholarships to attend the training courses with a total scholarship amount of \$10,660. Offering these courses meets the mandatory requirements outlined in 29 CFR Part 1910.120 to meet the training needs in the community.

E. Program Products

<None>

F. Future Plans

The mandatory required courses will continue to be offered on a frequent regular basis. In addition, plans to join efforts with Alabama and North Carolina Education and Research Centers are well on their way. The first annual regional seminar will be held in Pensacola, Florida on April 17 and 18, 2008. Every year, each of the three ERCs will take the lead (with collaboration from the remaining two ERCs) to plan, organize, and market the regional seminar. The Deep South ERC at the University of Alabama, Birmingham is taking the lead for the 2008 seminar, followed by the Sunshine ERC in 2009, and the North Carolina ERC in 2010. The first program in Pensacola includes a presentation by Dr. Osman (Sunshine ERC) titled: "Ethics, Law, and Employee Safety: Whose Responsibility is it to keep employees safe?" The second day of the 2008 seminar is dedicated to the NIOSH initiative "Research-to-Practice (R2P)" featuring Dr. Delon Hull (NIOSH) as a keynote speaker. In addition, speakers from the University of South Florida CDC funded Prevention Research Center (PRC) will focus on the use of social marketing techniques to translate research into practice through behavior change. A social marketing workshop led by Dr. Carol Bryant, Co-Director of the PRC at the University of South Florida, will be followed by presentations made by three researchers (from North Carolina and Deep South ERCs) with the aim of applying the social marketing techniques demonstrated in the workshop.

In addition to the regional conference, investigating innovative means of delivering HST training through the internet is underway. Needs assessments will also be administered via the internet to ensure that participants have every means possible to

assist Dr. Osman in identifying HST needs and to plan for new educational opportunities in response to the identified needs. Plans to offer regular HST training and workshops outside of the Tampa Bay area are also being explored. This will be accomplished in collaboration with Florida International University or the University of Miami.

APPENDIX A
Industrial Hygiene -- MSPH

Curriculum for the MSPH in Industrial Hygiene

	Credits	Course Number
<i>Core Courses (15 credits required)</i>	15	
Epidemiology	3	PHC 6000
Biostatistics I	3	PHC 6050
Health Policy and Management	3	PHC 6102
Social and Behavioral Science	3	PHC 6410
Environmental and Occupational Health	3	PHC 6357
<i>Concentration Area (21 credits required)</i>	21	
Environmental and Occupational Toxicology	3	PHC 6934
Principles of Industrial Hygiene	2	PHC 6356
Industrial Hygiene - Physical Agents	2	PHC 6358C
Safety Management Principles and Practices	2	PHC 6360
Industrial Ergonomics	2	PHC 6361
Industrial Ventilation	2	PHC 6362
Analytical Methods in Industrial Hygiene I	2	PHC 6365C
Analytical Methods in Industrial Hygiene II	2	PHC 6366C
Occupational Health Law	2	PHC 6422
Control Aspects of Industrial Hygiene	2	PHC 6367
<i>Electives (5 credits required)</i>	5	
Community Air Pollution	3	PHC 6303
Radiation Health Principles	2	PHC 6306
Occupational Health Risk Assessment	2	PHC 6934
Occupational Medicine for Health Professionals	3	PHC 6351
Industrial Hygiene Aspects of Plant Operations	2	PHC 6364
Indoor Air Quality	2	PHC 6934
Biological and Surface Monitoring	2	PHC 6317
Aerosol Technology	2	PHC 7935
Risk Communication	2	PHC 7317
Safety and Health Administration	2	PHC 6354
Occupational Safety Engineering	3	EIN 6216
Engineering System Safety	3	EIN 6215
<i>Other Requirements</i>	8-11	
Public Health Seminar	1	PHC 6930
Thesis	6	PHC 6971
Field Experience	1 - 3	PHC 6945
Comprehensive Examination		
Required Credit Hours:	48 - 51	

Industrial Hygiene -- PhD

Curriculum for the PhD in Industrial Hygiene

	Credits	Course Number
Core Courses		
<i>(3 of 5 courses, 9 credits required)</i>	9	
Epidemiology	3	PHC 6000
Biostatistics I	3	PHC 6050
Health Policy and Management	3	PHC 6102
Social and Behavioral Science	3	PHC 6410
Environmental and Occupational Health	3	PHC 6357
Concentration Area (21 credits required)	21	
Environmental and Occupational Toxicology	3	PHC 6934
Principles of Industrial Hygiene	2	PHC 6356
Industrial Hygiene - Physical Agents	2	PHC 6358C
Safety Management Principles and Practices	2	PHC 6360
Industrial Ergonomics	2	PHC 6361
Industrial Ventilation	2	PHC 6362
Analytical Methods in Industrial Hygiene I	2	PHC 6365C
Analytical Methods in Industrial Hygiene II	2	PHC 6366C
Occupational Health Law	2	PHC 6422
Control Aspects of Industrial Hygiene	2	PHC 6367
Interdisciplinary Courses (11 credits required)	12	
Occupational Medicine for Health Professionals	3	PHC 6351
Industrial Toxicology	2	PHC 7935
Occupational Health Risk Assessment	2	PHC 6350
Risk Management	2	PHC 6934
Doctoral Seminar	3	PHC 7931
Research and Analytical Skills		
<i>(9 credits required)</i>	9	
Occupational Epidemiology	3	PHC 7019
Research Methods in Epidemiology	3	PHC 7703
Biostatistics II	3	PHC 6051
Advanced Industrial Hygiene Courses		
<i>(8 credits required)</i>	8	
Aerosol Technology	2	PHC 7935
Biological and Surface Monitoring	2	PHC 6317
Environmental and Work Physiology	2	PHC 7935
Risk Communication	2	PHC 7317
Courses Relevant to Student's Research		
<i>(13 credits required)</i>	13	various
Doctoral Dissertation (19 credits minimum)	19	PHC 7980
Required Teaching Experience (No Credit)	0	
Qualifying Exams (No Credit)	0	
Minimum Total Credit Hours		
Required Beyond B.S.:	91	

Occupational Health Nursing

Interdisciplinary Dual Degree (MS/MPH) Program in Occupational Health Nursing

The following courses in the College of Nursing and College of Public Health comprise the 65 credit dual degree program.

College of Nursing Courses - 37 credits

- NGR 6121 - Theoretical Basis of Advanced Practice Nursing (3)
- NGR 6140 - Pathophysiology for Advanced Practice (3)
- NGR 6199 - Pharmacology for Advanced Practice (3)
- NGR 6800 - Nursing Research (3)
- NGR 6001 - *Health Assessment in Advanced Practice (3)
- NGR 6650 - Occupational Health Nursing I (2)
- NGR 6651 - Occupational Health Nursing II (2)
- NGR 6205 - Primary Care: Adolescents (2)
- NGR 6843 - Primary Care: Women's Health (2)
- NGR 6207 - Primary Care: Adults (3)
- NGR 6271 - Adult Health Management (3)
- NGR 6700 - Advance Practice Nursing Transition (2)
- NGR 6205L - * Practicum: Adolescent and Young Adults / Occupational Health (2)
- NGR 6207L - * Practicum: Adults / Occupational Health (2)
- NGR 6700L - *Advance Practice Transition / Occupational Health Practicum (2)

College of Public Health Courses - 28 credits

- PHC 6357 - Environmental and Occupational Health (3)
 - PHC 6000 - Epidemiology (3)
 - PHC 6050 - Biostatistics I (3)
 - PHC 6102 - Principles of Health Policy Management (3)
 - PHC 6423 - Occupational Health Law (2)
 - PHC 6360 - Safety Principles and Practices (2)
 - PHC 6364 - Plant Operations Interdisciplinary Field Experience (2)
 - PHC 6356 - Industrial Hygiene (2)
 - PHC 6351 - Occupational Medicine (3)
 - PHC 6354 - Occupational Health and Safety Administration (2)
 - PHC 6977 - Special Project (3)
- Comprehensive Examinations

Occupational Health Psychology

Table 2 is an overview of the courses showing both required and possible elective courses. As shown, at least 4 courses are taken at the COPH with students in various occupational health and safety programs of the ERC. The suggested 5-year curriculum begins in the first year with a core of three basic psychology courses (cognitive psychology, personality, and social psychology), and the I/O foundation sequence (personnel psychology and organizational psychology). The personnel course gives an understanding of the human resource function and many issues having to do with employee hiring, management, and training. The organizational psychology course covers the psychology of people at work, and includes an overview of OHP and how it fits with other aspects of organizational psychology. A course on ethics and professional issues covers how psychologists can and should operate in doing their work in organizational settings. Research methodology is an important element of training, and students are required to take a minimum of 6 courses, and generally take one methods course per semester for at least the first 6 semesters. Psychometrics, ANOVA/Regression, Research in I/O Psychology, and Organizational Research Methods are offered in psychology and are specifically required. The Research in I/O Psychology course is 3 hours spread over 2 semesters, giving the students an introduction to the research process. During the first semester faculty from Departments of Psychology and the ERC provide overviews of their research to the students to familiarize them with potential research areas available to them. Epidemiology and Categorical Data Analysis, as well as other methods courses, are available in the COPH Department of Epidemiology and Biostatistics. Additional methods courses are available elsewhere on campus, such as the Department of Educational Measurement.

Trainees are required to take the OHP foundation sequence, which consists of two advanced seminars: An OHP survey course and either Work and Family or Stress and Coping Seminar. The OHP course covers the major areas of OHP, including psychological factors in workplace health, occupational stress, and safety. It links OHP issues to the larger context of I/O psychology and occupational health and safety. For example, it discusses how selection and training affect health and safety, and how job performance and employee well-being are connected. The Work and Family course covers how work and family interaction affects health, safety, and well-being. Work and family issues have become important areas of research within the OHP field, with papers on the topic appearing often in the major journals, including *Journal of Occupational Health Psychology*. Stress and Coping covers both physical and psychological factors in stress both inside and outside the workplace.

Students also take at least four courses in the COPH, and can choose from both content and method courses. Possibilities include, but are not limited to Engineering System Safety, Industrial Ergonomics, Safety and Health Administration, Epidemiology and Categorical Data Analysis. Electives are chosen depending upon student interest. At least one of the four courses must be methodological.

In addition to coursework, trainees are required to complete a master's thesis and doctoral dissertation, pass a comprehensive exam, and fulfill an internship/practicum requirement. There are additional requirements to participate in the ERC interdisciplinary seminar series and the I/O Brownbag series. Trainees also are required to participate in interdisciplinary research projects within the ERC. Students in the psychology department are required to complete an MA degree that includes the first year course curriculum plus a master's thesis. Completing the MA makes I/O students more competitive for good internships, and the faculty feel that the thesis is an integral part of the research training of students. The MA thesis and doctoral dissertation are in

OHP areas, such as occupational stress, occupational health, safety, or work-family. Faculty from psychology and the ERC will direct and serve on thesis/dissertation committees. Considering the current research interests of the faculty, students have the opportunity to work in the following areas: Occupational stress (Spector-psychology; Chang-EOH, COPH), burnout (Dr. Stuart Brooks-EOH, COPH), workplace violence (Dr. Martha Coulter-Community and Family Health, COPH; Spector-psychology), workplace bullying (Spector-psychology), work-family issues (Allen-psychology), ergonomics (Bernard-EOH, COPH), musculoskeletal injuries (Bernard-EOH, COPH), accidents (Dr. Yehia Hammad, Dr. Pete Rentos-EOH, COPH).

Table 2: OHP Program Required and Elective Courses

	Place taught	Course number	Course name
Psychology foundation	Psychology	EXP 6608	Cognitive Psychology
	Psychology	SOP 6669	Personality
	Psychology	SOP 6058	Social Psychology
I/O psychology foundation	Psychology	INP 6935	Personnel Psychology
	Psychology	INP 6935	Organizational Psychology
	Psychology	PSY 7931	Ethics and Professional Problems
Research methodology	Psychology	INP 7097	Research in I/O Psychology
	Psychology	SOP 6669	Psychometrics
	Psychology	PSY 6217	ANOVA – Multiple Regression
	Psychology	SOP 6669	Organizational Research Methods
OHP foundation	Psychology	INP 7097	Seminar in OHP
	Psychology	INP 7097 SOP 6266	Seminar in Work and Family or Stress and Coping
COPH (at least 1 course in Epidemiology + 3 more)	EOH	EIN 6216	Occupational Safety Engineering
	Epidemiology	PHC 6000	Epidemiology
	Epidemiology	PHC 6053	Categorical Data Analysis
	EOH	PHC 6354	Safety and Health Administration
	EOH	PHC 6360	Safety Management
	EOH	PHC 6361	Industrial Ergonomics
	EOH	PHC 6357	Environmental and Occupational Health
	EOH	PHC 6410	Social/Behavioral Science Applied to Health
	Epidemiology*	PHC 7019	Occupational Epidemiology

*Taught via the web at Florida International University

The internship requirement can be met with 1 semester full-time or 2 semesters part-time experience. The purpose is to provide applied, practical experience outside of the classroom. In addition I/O psychology students will experience interdisciplinary work with professionals who are not psychologists. Trainees might be placed in a number of situations provided through the COPH, along with other ERC graduate students. They might be assigned to one of the OSHA 21(d) Program consultants or placed in a local company in the safety area. Examples of companies providing such experiences are: Bausch & Lomb, Florida Power Company, Tampa Electric Company, and Tropicana.

Each student will be assigned an internship field supervisor in the work setting, as well as a faculty supervisor. The field supervisor will be asked to complete an evaluation of the student's performance at the end of each semester. The faculty supervisor might come from Psychology or the COPH. These activities will begin 2007-08.

Teaching experience is required as either a teaching assistant or course instructor for two or three semesters. Trainees are required to spend a large proportion of their time conducting OHP-related research, to be presented at relevant conferences and submitted to journals. Participation in brown-bag presentations and colloquia are also required in both Psychology and the COPH. This includes the I/O Psychology monthly brown-bag series, and the monthly ERC interdisciplinary NORA seminars. Each of the ERC programs rotate responsibility for providing the topic and speakers for the interdisciplinary seminars. Students are also required to participate in the ERC poster sessions.

A comprehensive exam is required of all PhD students. This is a 16-hour examination (2 hours for each of 8 questions). Four of the question areas are specified (industrial psychology, organizational psychology, research methods, and ethics), and four are chosen by the student. OHP students would choose areas relevant to OHP.

Occupational Medicine Residency

The USF OMR is typically a two-year training program with concurrent academic and practicum phases. Residents who have an existing Master’s degree that meets the American Board of Preventive Medicine’s requirement for board eligibility may elect only a practicum year in the USF OMR. The residency generally prefers 2-year applicants. Nevertheless, practicum-only residents usually take additional coursework while at USF to expand their interdisciplinary exposure and breadth of knowledge. The concurrent program is possible because all coursework for the MSPH degree is offered in the late afternoon or early evening. The practicum activities are scheduled for normal office hours between 8 A.M. – 4 P.M., Monday through Friday, while the academic classes take place on several evenings of each week. The concurrent academic class work and practicum rotations provide a direct link between learning and applying knowledge in a real-world of work setting. We believe that classroom learning is enhanced and reinforced by application in real patients and on-going workplace problem solving. Academic coursework and practicum rotations are scheduled to optimize learning and application opportunities. For instance, the core Occupational Medicine course is taken in the first academic semester along with basic skills coursework such as Industrial Hygiene and Safety. This sets the groundwork for maximizing the resident experience at clinical and workplace practicum settings. In addition, basic skills courses such as Epidemiology and Biostatistics are completed prior to the second year so that residents have exposure to research methods and tools prior to starting their own research projects. Nevertheless, there is sufficient flexibility in the residency practicum and academic phases to accommodate each resident’s personal career goals and interests. Completion of the OMR prepares graduates to enter the occupational medicine physician workforce, pursue further graduate work (e.g., PhD degree) or work in an academic setting. The **TABLE** below provides an estimate of the total number of hours spent in the various categories of the residency over a 2-year period.

Classroom	Homework	Practicum	Teaching Conferences	Research Conference	Research Training	Vacation
632	1896	2432	140	84	480	240

Academic Phase

The current program, recently revised, consists of a minimum of 46 hours of coursework at the College of Public Health and leads to a Masters of Science in Public Health (MSPH) degree. The academic course work consists of four components, including 1) five College core courses which teach many of the basic principles and skills of preventive medicine (15 CH), 2) nine core courses in Occupational Safety and Health (22 CH), 3) six credit hours of thesis research and 4) three hours of Epidemiologic Methods and one hour of Occupational Epidemiology. **TABLE A** presents the COPH check list (curriculum) for the MSPH program.

Table A: Academic Curriculum

College Core Courses			Total Needed	15
PHC	6000	Epidemiology		3
PHC	6050	Biostatistics I		3
PHC	6102	Principles of health Policy and Management		3
PHC	6357	Environmental and Occupational Health		3
PHC	6410	Social and Behavioral Sciences Applied to Health		3
Required Concentration Courses			Total Needed	29
PHC	6356	Principals of Industrial Hygiene		2
PHC	6351	Occupational Medicine for Health Professionals		2
PHC	6364	Industrial Hygiene Aspects of Plant Operations		2
PHC	6360	Safety Management Principles and Practices (or other approved safety course)		2
PHC	6930	Seminar in Occupational and Environmental Research		1 (4)
PHC	6423	Occupational Health Law		2
PHC	6354	Safety and Health Administration		2
PHC	6310; 6934	Environmental/Occupational Toxicology or Occ Hlth Risk Assessment		3
PHC	6051	Biostatistics II		3
PHC	6934	Epidemiologic Methods		3
PHC	7019	Occupational Epidemiology		1
		Elective		
				Culminating Experiences
PHC		Thesis		3-6
Comprehensive Concentration Exam (2 credit Hour Enrollment Required)				
Total Hours				47-50

Practicum Component

The two-year OMR that leads to an MSPH degree includes 24 months of practicum rotations, 3 months of Thesis-related research, 2 weeks of attendance at professional conferences and six weeks vacation time. OM residents are not required to take night call due to the outpatient nature of OM and their rigorous practicum and academic schedules. In addition to their regularly scheduled practicum rotations, residents have an assigned continuity clinic with a number of preceptors throughout their two year program. This experience is critical to developing and documenting increasing resident responsibility in the care of patients. Although some of our past residents have practiced in the community prior to attending the USF OMR, it is imperative that each resident is ready to assume the full, independent care of their patients upon graduation. We use the continuity clinic experience to gauge resident progress towards this goal. The resident's time commitment to the practicum phase is usually four days per week (32 hours); one whole day each week (Wednesday) is reserved for conferences, continuity clinic, personal development, studying for classes and library work. In total, the combination of classes, practicum rotations and professional development comprise approximately 72-78 hours of work per week.

Real-World-of-Work

Over the 24 months of practicum rotations, the average resident spends 8 months in what can best be describes as the "**Real World of Work**" (RWW) experiences. The

focus of RWW is to provide an opportunity for the resident to demonstrate progressively increasing responsibility over time. In addition, RWW provides an opportunity for residents to interact with assorted important components and personnel indigenous to the practice of occupational medicine in the 21st century: nurses, administrators, insurance personnel, safety professionals, union representatives, human resource specialists, etc. The remaining practicum months are intended to give residents a broad medical knowledge base, increase interdisciplinary teaching and expose residents to health and safety, legal, ethical and social issues involved in Occupational Medicine practice. The **TABLE** below lists practicum sites/rotations that are available to OM residents. The practicum locations are primarily located in the Tampa Bay area. When a rotation site is further away, residents are provided a travel stipend to cover gas and/or lodging. This is only possible because of the NIOSH ERC funding.

LOCATION/NAME	ROTATION LENGTH (MONTHS)
Medero Occupational Medical Clinic	2
Heritage-Summit Insurance Company – Insurance/Disability/return to work	1
Occupational Safety & Health Administration (OSHA) – regulatory/OSHA site visits and workplace issues	1
Kennedy Space Center (KSC) – Occupational Medicine, Industrial Hygiene and Safety	1
James A. Haley VA Medical Center (JHVA) -Occupational Medicine (Dr. Hanna)	2
Bay Pines VA Medical Center (BPVA)-Medical Administration,	1
James A. Haley VA Medical Center-(JHVA) Allergy, Cardiology, Infection Control, Ophthalmology, Pain Management and Safety]	4-5
Bay Pines VA Medical Center (BPVA)- Audiology, Dermatology, Pulmonary, Medical Education, Radiology and Neurology	
USF Safety-OSHA 21-D Consultation Program – Small Business Health & Safety Issues	½-1
US Healthworks – Occupational Medicine	½
LoPresto Ophthalmology - Ophthalmology	½-1
Tampa General Hospital (TGH)- Emergency Room, Orthopedics, Poison Control and Pulmonary	2-4
Dr. Howard Schuele – General Orthopedics	½-1
Tampa Bay Hand Center – Dr. Cecil Aird-Hand Surgery and Orthopedics	½-1
JAHVA, Bay Pines – Plastic Surgery	½-1
Specialty Rotations and Clinics (e.g. Occupational Medicine rotations: Dr. Johnson, Dr. Jenkins, Dr. Gupta	2-4
New rotations sites that will begin in January 2007:	
Florida Orthopedic Institute – Return to work and non-surgical orthopedic care	½-1
Tampa General Hospital 30 th Street Clinic – Patient wellness	1

Occupational Safety

Degree Requirements for an MPH in Occupational Safety

Public Health

Core Courses

PHC 6000	Epidemiology	3
PHC 6050	Biostatistics	3
PHC 6102	Principles of Health Policy and Management	3
PHC 6357	Environmental and Occupational Health	3
PHC 6410	Social and Behavioral Sciences Applied to Public Health	3
	Subtotal	15

Concentration

Area

PHC 6360	Safety Management Principles and Practices	2
PHC 6354	Safety and Health Administration	2
EIN 6216	Occupational Safety Engineering	3
EIN 6215	Engineering Systems Safety	3
PHC 6423	Occupational Health Law	2
PHC 6361	Industrial Ergonomics	2
PHC 6356	Introduction to Industrial Hygiene	2
PHC 6310	Environmental and Occupational Toxicology	3
	Subtotal	19

(2 Required from the following or other approved
electives)

Electives		
PHC 6364	Industrial Hygiene Aspects of Plant Operations	2
EIN 6934	Construction Safety Engineering	3
PHC 6350	Occupational Health Risk Assessment	3
PHC 6351	Occupational Medicine for Health Professionals	3
PHC 6422	Environmental Health Law	2
ENV 5345	Solid Waste Control	3
PHC 6303	Community Air Pollution	3
PHC 6301	Analysis of Water and Wastewater	3
PHC 6934		
(Spec Topics)	Public Health Capstone Course	3
	Subtotal	4 - 6

Other

Requirements

PHC 6930	Public Health Seminar	1
PHC 6977	Special Project	3
PHC 6945	Supervised Field Experience	1 - 3
	Comprehensive Examination	---
	Subtotal	5 - 7

42 -
Total 47