FINAL PROGRESS REPORT
Sunshine Education and Research Center

University of South Florida

Project Period: July 1, 1997 – June 30, 2002

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ABSTRACT

This final report summarizes the impressive accomplishments of the Sunshine Education and Research Center (SERC) at the University of South Florida for the funding period July 1, 1997 to June 30, 2002.

Initially, four programs were funded in 1997: [1] industrial hygiene (IH); [2] occupational health nursing (OHN); [3] occupational medicine (OM) and [4] continuing education/outreach (CE/OR). SERC's programs have grown steadily 1997. In 1999, SERC was awarded a [5] pilot grant research (PRG) initiative. Three other programs were funded in 2001: [6] occupational safety; [7] hazardous substance academic training (HSAT) (with industrial hygiene); and [8] hazardous substance continuing education & outreach (HST) (with CE/OR).

SERC has evolved a strong student and faculty research program consistent with NORA initiative. USF's special research focus takes place because faculty interests/expertise: [1] Prevention of occupational asthma; [2] Repetitive motion injuries of the upper extremity and back with emphasis on preventive measures utilizing ergonomic controls; [3] Reduction of heat stress through the use of effective protective clothing; [4] Control of poor indoor air quality, a prevalent issue in the southeastern United States; [5] Research to better understand how work organization is influenced by the changing economy and workplace and what the potential effects are on worker safety and health, including the cost and quality issues pertaining to managed care for the workers' compensation program as it relates to Florida and other states; [6] Newly emerging occupational infectious diseases from blood-borne pathogens; and, [7] Development of tools to determine personal exposures

Some special efforts by the programs of SERC include: [1] Strong Interdisciplinary activities; [2] Use of distance learning for educational programs; [3] Programs addressing the under representation of minorities; [4] Research prominence of NORA priorities; [5] Plans to satisfy regional workforce needs; [6] Prominent role of Board of Advisors to guide ERC; [7] Recognition as a state and regional resource in Occupational Safety and Health; and, [8] Encouragement of strong internal/institution support. The high level of interdisciplinary interaction at the Sunshine ERC is one of its strengths.

During the project period, the Sunshine ERC graduated 18 Industrial Hygiene masters level trainees, 18 Occupational Health Nursing masters level trainees, 13 Occupational Medicine masters level trainees, 8 Safety Management masters level trainees and 5 Industrial Hygiene Ph.D. level trainees. In addition, 22 residents completed the occupational medicine residency. Over the project period, the total number of courses offered in the Continuing Education and Outreach program for each discipline are as follows: 63 Industrial Hygiene, 33 Occupational Health Nursing, 23 Occupational Medicine, 11 Safety Management and 42 Hazardous Substance Training Courses, totaling 172 courses offered. I n the project period, 3,741 individuals were trained in the Continuing Education and Outreach Program. The breakdown by trainee group of attendees is as follows: 566 in Industrial Hygiene, 643 in Occupational Health Nursing, 593 in Occupational Medicine, 595 in Safety and 1344 in Other. 27 Pilot Research Projects have been done since notification of funding for this program was received in 1999 and until 2002.

SIGNIFICANT FINDINGS

The Sunshine Education and Research Center was awarded funding July 1, 1997, the first year of this project period. In year one, the center changed from being two Training Project Grants in Industrial Hygiene and Occupational Nursing to a fully funded center comprised of the following program areas: Industrial Hygiene (IH), Occupational Health Nursing (OHN), Occupational Medicine (OM) and Continuing Education/Outreach (CE/O). Clearly, the funding provided by NIOSH to support this center, have allowed the University of South Florida programs to thrive and work together as an interdisciplinary team. Over the five year period, the center has grown dramatically; something that could not have happened without the support of NIOSH. As mentioned above, July 1, 1997, there were four program areas funded. By 1999, a new program area Pilot Research Projects (PRP) was added to the center, followed by Safety Management (SM), Hazardous Substance Academic Training (HSAT) and Hazardous Substance Training (HST) in July of 2001. Recently, the area of NORA Research Training was added in July of 2002 - a program area which will be discussed in the next close out report of the next cycle for this center.

The rapid growth of this center has made the ERC team closer and more interdisciplinary in approach. Academic advising teams for masters and Ph.D. students are not limited to the discipline that the student is pursuing; experts from multiple disciplines will often form these teams. Research efforts by the faculty members frequently benefit by utilizing student involvement from multiple disciplines. For example, Dr. Thomas Bernard, Deputy Director of the Industrial Hygiene Program conducted a long-term study for United Autoworkers at the Ford Plant in Michigan. For his study team, he utilized a minimum of two occupational health nursing students, one-two occupational medicine students or research faculty, two industrial hygienists and other students and faculty members as appropriate. Through this team effort, numerous students from multiple disciplines had the opportunity to complete his or her research for his or her masters or Ph.D. on one large research study, but each from a different perspective and on a different area.

Location of an ERC in Florida was very appropriate because of the fact that Florida is the fourth largest state and has one of the highest workers compensation costs. Furthermore, the type of key industries in Florida (i.e. construction, mining, agriculture) are associated with dangerous work activities and the type that causes an excess of occupationally-related injuries, accidents and diseases.

The Sunshine ERC external advisory committee has played an important role in guiding the center as new programs were added; the NORA priority areas were announced by the NIOSH Director, Linda Rosenstock; and as programs which began with some difficulty blossomed into areas of strength for the center. Members of this team treat the center as if it was their own, due to the fact that they have played a key role to the center since its beginning in 1997. With the addition of the Pilot Research Projects in 1999, faculty members of the center came together even more to approach the research component of all ERCs. The NORA priority areas provide direction and guidance and a team effort has worked to take research in the field of Occupational Health to the next level.

The mission of the Sunshine ERC is to promote health and well being in the workplace through education and research. The aim is to accomplish this through interdisciplinary, collaborative programs among the College of Public Health, the College of Medicine, and the College of Nursing. Realization of the mission statement will result in a healthier and safer workplace with an enhanced quality of life for the working population. With increased safety there will be a reduction in the number of work-related accidents, injuries, deaths, and toxic exposures. The final outcome of the Center's training and research initiatives is a healthier and more productive workforce with an enhanced quality of life.

Two important goals of the Sunshine ERC are to: [1] train professionals in the various disciplines of occupational safety and health and to [2] educate professionals to conduct research with relevance to the recognition, management and prevention of occupational disease and injury.

All eight of the ERCs programs address the above goals at a fundamental level and encourages the application of scientific methodology when approaching occupational safety and health problems. The Sunshine ERC fosters and promotes the development of new research activities, while at the same time, strengthening existing research projects. The presence and activities of the ERC help to stimulate pilot research efforts in both students and faculty. As such, it institutionalizes occupational safety and health disciplines within the academic structure of USF. Through the beginning years of the ERC, this mission was the beacon guiding the programs. As the center begins a new project period of five years, the mission will continue leading the center through changes, new program areas and continued growth and expansion.

NOTEWORTHY ACCOMPLISHMENTS/EVENTS

Year 1 – 1997-98

- The Sunshine Education and Research Center was awarded funding from the National Institute for Occupational Safety and Health.
- NIOSH funded training support for Occupational Medicine Residents began. Training support covered the cost of tuition for the residents, training expenses and a stipend.
- In the Industrial Hygiene Program, trainee statistics were as follows:
  - 3 full time masters trainees and 4 full time doctoral trainees
  - 2 full time NIOSH supported masters trainees and 2 full time NIOSH supported doctoral trainees
  - 15 part time masters trainees and 3 part time doctoral trainees
  - 3 trainees graduated from the Industrial Hygiene program with their MSPH in May of 1998
- In the Occupational Health Nursing Program, trainee statistics were as follows:
  - 12 full time masters trainees
  - 12 NIOSH supported full time trainees
  - 6 part time masters trainees
  - 2 trainees graduated from the Occupational Health Nursing Program with their MS/MPH
- In the Occupational Medicine Program, trainee statistics were as follows:
  - 8 full time masters trainees and 9 occupational medicine residents
  - 7 NIOSH supported full time masters trainees and 1 full time NIOSH supported Occupational Medicine Resident
  - 2 trainees graduated from the Occupational Medicine Masters Program and 5 Occupational Medicine Residents graduated from the Residency
- In the Continuing Education and Outreach Program, trainee statistics were as follows:
  - 10 Industrial Hygiene Courses were offered with 182 total trainees. Trainees by discipline breakdown were as follows: 0 physicians, 3 nurses, 131 industrial hygienists, 21 safety professionals and 27 other. Trainees by employer were as follows: 170 private industry and 12 federal government.
  - 5 Occupational Health Nursing Courses were offered with 112 total trainees. Trainees by discipline breakdown were as follows: 0 physicians, 92 nurses, 4 industrial hygienists, 2 safety professionals and 14 other. Trainees by employer were as follows: 102 private industry, 8 federal government, 1 state government and 1 academic.
  - 1 Occupational Medicine Course was offered with 84 total trainees. Trainees by discipline breakdown were as follows: 68 physicians, 2 nurses, 4 industrial hygienists, 0 safety professionals and 10 other. Trainees by employer were as follows: 77 private industry, 2 federal government and 5 academic.
  - 1 Occupational Safety Course was offered with 25 total trainees. Trainees by discipline breakdown were as follows: 0 physicians, 0 nurses, 0 industrial hygienists, 25 safety professionals and 0 other. Trainees by employer were as follows: 22 private industry and 3 local government.
- As a result of the NIOSH funding, the Occupational Health Nursing program was able to work with a consultant to revise and update all of the courses in the primary care concentrations of the program, including Adult Health.

- Occupational Health Nursing content was added to the following primary care concentrations including: Primary Care of the Adolescent, Primary Care of the Young and Middle Aged Adult and Primary Care of the Older Adult.
- The College of Nursing core course Advanced Health Assessment was revised to include instruction in obtaining an occupational health history for all adults.
- A requirement of all students being prepared to become nurse practitioners to obtain an occupational history as part of the health history on all patients, including patients seen in their clinical practicums was added to the College of Nursing requirements.
- As a result of the NIOSH funding, the Occupational Medicine was able to support Dr. Pascual Bidot, a former endocrinology faculty member making a career change in Occupational Medicine.
- Occupational Medicine Residents were able to travel to attend relevant conferences and training programs in the field of occupational medicine.
- Dr. Joette Barbas, a graduate of the Occupational Medicine Residency, became the Deputy Director of the Residency.
- A search began for a second Occupational Medicine Faculty member – scheduled start date of this individual July 1, 1998.
- The Occupational Medicine Residency was enhanced through interaction with specialty faculty including: Drs. Prokop and Gold in Occupational Neurology, Drs. Holt and Sinnott in Infectious Diseases, Dr. Lockey in Occupational Asthma and Allergic Disorders and Drs. Alberts and Goldman in Occupational Asthma and Occupational Lung Disease.
- Interdisciplinary interaction in the center during year one was strong and activities were numerous including: Interdisciplinary clinic, interdisciplinary research, interdisciplinary projects in courses, field courses, interdisciplinary conferences and an interdisciplinary study hall.
- In June, 1998, Dr. James McCluskey became the Deputy Director of the Continuing Education and Outreach Program.
- During October, 1997, Ms. Diana McCluskey became the ERC Center Coordinator.
- A web site detailing each of the Sunshine ERC programs was developed.
- Program area specific brochures were developed for the Industrial Hygiene Program, Occupational Health Nursing Program and Occupational Medicine Program.
- The Continuing Education and Outreach Program developed a comprehensive listing of "bread and butter" courses to be offered on a regular basis, addressing the training needs of Industrial Hygienists, Occupational Health Nurses and Occupational Medicine Physicians. Brochures and marketing materials for these programs were developed as well.
- Both the Industrial Hygiene Program and the Occupational Medicine Program received notification that the programs were accredited by their respective accrediting boards.

Year 2 - 1998-99

- In the Industrial Hygiene Program, trainee statistics were as follows:
    - 4 full time masters trainees and 5 full time doctoral trainees
    - 1 full time NIOSH supported masters trainees and 2 full time NIOSH supported doctoral trainees

- 16 part time masters trainees and 3 part time doctoral trainees
- 1 trainee graduated from the Industrial Hygiene program with their MSPH in December of 1998, 1 trainee graduated from the Industrial Hygiene Program with their MPH in August of 1999 and 1 trainee graduated from the Industrial Hygiene Program with their MSPH in August of 1999.

- In the Occupational Health Nursing Program, trainee statistics were as follows:
  - 8 NIOSH supported full time masters trainees
  - 8 part time masters trainees
  - Additional statistical data for this program in this year is unavailable.
- In the Occupational Medicine Program, trainee statistics were as follows:
  - 4 full time masters trainees and 6 occupational medicine residents
  - 4 NIOSH supported full time masters trainees and 1 full time NIOSH supported Occupational Medicine Residents.
  - 3 NIOSH supported part time masters trainees.
  - 3 trainees graduated from the Occupational Medicine Masters Program and 2 Occupational Medicine Residents graduated from the Residency
  - 1 3rd year research fellow was supported by NIOSH in the residency program.
- In the Continuing Education and Outreach Program, trainee statistics were as follows:
  - 10 Industrial Hygiene Courses were offered with 239 total trainees. Trainees by discipline breakdown were as follows: 2 physicians, 4 nurses, 129 industrial hygienists, 47 safety professionals and 56 other. Trainees by employer were as follows: 163 private industry, 53 federal government, 8 state government and 15 local government.
  - 7 Occupational Health Nursing Courses were offered with 164 total trainees. Trainees by discipline breakdown were as follows: 0 physicians, 154 nurses, 1 industrial hygienists, 1 safety professionals and 8 other. Trainees by employer were as follows: 156 private industry, 3 state government, 2 local government and 1 academic.
  - 4 Occupational Medicine Courses were offered with 223 total trainees. Trainees by discipline breakdown were as follows: 67 physicians, 61 nurses, 7 industrial hygienists, 8 safety professionals and 80 other. Trainees by employer were as follows: 75 private industry, 75 federal government, 2 state government, 19 local government, 4 foreign and 48 academic.
  - 1 Occupational Safety Course was offered with 21 total trainees. Trainees by discipline breakdown were as follows: 0 physicians, 0 nurses, 0 industrial hygienists, 21 safety professionals and 0 other. Trainees by employer were as follows: 18 private industry, 1 state government and 2 local government
- The Occupational Medicine Research Funding provided support for Dr. Rony Francois, as he pursued his Ph.D. in Toxicology full time.
- Dr. Francois was the recipient of the Minority Faculty Fellowship in Occupational Medicine and Toxicology (MiX). Without the NIOSH Support and the MiX support, Dr. Francois would not have been able to continue his studies full time.
- Dr. Richard McCluskey joined the Occupational Medicine Faculty to lead up the research efforts and to take on some of the administrative duty from Dr. Brooks.
- In June of 1999, Ms. Diana McCluskey took over the Continuing Education and Outreach Program as the Deputy Director.

- Susan Elliott, an OHN Student who conducted her internship at the OSHA office in Washington DC, received notification that her publication "Safer Needle Devices" was awarded the Secretary's Exceptional Achievement Award.
- Erin Gwyn and Christine Bouchard, both Occupational Health Nursing Students were selected for the 8-week OSHA Internship in Washington DC.
- The Occupational Medicine Residency completed its first year of NIOSH funded and approved research training; the research fellow was Rony Francois.

Year 3 – 1999-00

- In the Industrial Hygiene Program, trainee statistics were as follows:
  - 3 full time masters trainees and 2 full time doctoral trainees
  - 2 full time NIOSH supported masters trainees and 1 full time NIOSH supported doctoral trainees
  - 10 part time masters trainees and 5 part time doctoral trainees
  - 2 other students taking occupational safety and health courses at the doctoral level
  - 3 trainees graduated from the Industrial Hygiene program with their MSPH: 2 in December 1999 and 1 in May 2000. 1 trainee graduated from the Industrial Hygiene Program with their MPH in May 2000. 1 trainee graduated from the Industrial Hygiene Program with their Ph.D. in August 2000.
- In the Occupational Health Nursing Program, trainee statistics were as follows:
  - 15 full time masters trainees
  - 15 NIOSH supported full time masters trainees
  - 4 part time masters trainees
  - 29 other students taking bachelors level occupational safety and health courses
  - 0 trainees graduated from the Occupational Health Nursing Program with their MS/MPH
- In the Occupational Medicine Program, trainee statistics were as follows:
  - 5 full time masters trainees and 6 occupational medicine residents
  - 1 NIOSH supported full time Ph.D. trainee
  - 5 NIOSH supported full time masters trainees and 1 full time NIOSH supported Occupational Medicine Resident
  - 2 part time masters trainees
  - 2 NIOSH supported part time masters trainees
  - 4 Occupational Medicine Residents graduated from the Residency
  - 2 3rd year research fellows were supported by NIOSH in the residency program.
- In the Continuing Education and Outreach Program, trainee statistics were as follows:
  - 17 Industrial Hygiene Courses were offered with 293 total trainees. Trainees by discipline breakdown were as follows: 47 physicians, 50 nurses, 94 industrial hygienists, 47 safety professionals and 55 other. Trainees by employer were as follows: 103 private industry, 108 federal government, 1 state government, 9 local government and 72 academic.
  - 6 Occupational Health Nursing Courses were offered with 74 total trainees. Trainees by discipline breakdown were as follows: 13 physicians, 37 nurses, 0 industrial hygienists, 2 safety professionals and 22 other. Trainees by

employer were as follows: 44 private industry, 4 federal government, 2 local government and 26 academic.

- 8 Occupational Medicine Courses were offered with 195 total trainees. Trainees by discipline breakdown were as follows: 98 physicians, 52 nurses, 0 industrial hygienists, 2 safety professionals and 43 other. Trainees by employer were as follows: 66 private industry, 60 federal government, 1 state government and 68 academic.
- 2 Occupational Safety Courses were offered with 18 total trainees. Trainees by discipline breakdown were as follows: 0 physicians, 2 nurses, 0 industrial hygienists, 11 safety professionals and 5 other. Trainees by employer were as follows: 17 private industry and 1 academic.
- 8 Hazardous Substance Training Courses were offered with 184 total trainees. Trainees by discipline breakdown were as follows: 0 physicians, 2 nurses, 2 industrial hygienists, 15 safety professionals and 165 other. Trainees by employer were as follows: 163 private industry, 6 federal government, 3 state government, 11 local government and 1 foreign government.

- The Sunshine ERC submitted applications in June of 2001 to fund 3 new program areas: Hazardous Substance Training, Hazardous Substance Academic Training and Safety Management. In addition, a competing renewal application for the Pilot Research Projects was submitted.
- The Sunshine ERC received notification that Pilot Research Projects would be supported for junior faculty and trainees. 11 projects were funded – 8 went to trainees and 3 went to junior faculty members.

Year 4 – 2000-01

- In the Industrial Hygiene Program, trainee statistics were as follows:
  - 10 full time masters trainees and 3 full time doctoral trainees
  - 3 full time NIOSH supported masters trainees and 3 full time NIOSH supported doctoral trainees
  - 16 part time masters trainees and 4 part time doctoral trainees
  - 2 other students taking occupational safety and health courses at the doctoral level
  - 5 trainees graduated from the Industrial Hygiene program with their MSPH: 3 in December 2000 and 2 in May 2001. 1 trainee graduated from the Industrial Hygiene Program with their Ph.D. in August 2001.
- In the Occupational Health Nursing Program, trainee statistics were as follows:
  - 12 full time masters trainees
  - 12 NIOSH supported full time masters trainees
  - 3 part time masters trainees
  - 35 other students taking bachelors level occupational safety and health courses
  - 9 trainees graduated from the Occupational Health Nursing Program with their MS/MPH
- In the Occupational Medicine Program, trainee statistics were as follows:
  - 5 full time masters trainees and 6 occupational medicine residents
  - 5 NIOSH supported full time masters trainees and 1 full time NIOSH supported Occupational Medicine Resident

- 1 NIOSH supported full time Ph.D. trainee
- 0 part time masters trainees
- 1 NIOSH supported part time masters trainees
- 1 Occupational Medicine Resident graduated from the masters program and 4 Occupational Medicine Residents graduated from the Residency

- In the Safety Management Program, trainee statistics were as follows:
  - 5 full time masters trainees
  - 0 NIOSH full time masters trainees
  - 10 part time masters trainees
  - 0 NIOSH part time masters trainees
  - 3 other students taking occupational safety and health courses
  - 3 safety management trainees graduated from the program
- In the Continuing Education and Outreach Program, trainee statistics were as follows:
  - 17 Industrial Hygiene Courses were offered with 323 total trainees. Trainees by discipline breakdown were as follows: 115 physicians, 13 nurses, 96 industrial hygienists, 46 safety professionals and 53 other. Trainees by employer were as follows: 27 private industry, 135 federal government and 161 academic.
  - 7 Occupational Health Nursing Courses were offered with 101 total trainees. Trainees by discipline breakdown were as follows: 9 physicians, 66 nurses, 3 industrial hygienists, 12 safety professionals and 9 other. Trainees by employer were as follows: 73 private industry, 4 federal government, 2 state government, 1 local government and 21 academic.
  - 5 Occupational Medicine Courses were offered with 148 total trainees. Trainees by discipline breakdown were as follows: 75 physicians, 25 nurses, 13 industrial hygienists, 22 safety professionals and 15 other. Trainees by employer were as follows: 89 private industry, 4 federal government, 1 local government and 68 academic.
  - 3 Occupational Safety Courses were offered with 49 total trainees. Trainees by discipline breakdown were as follows: 5 physicians, 5 nurses, 0 industrial hygienists, 31 safety professionals and 8 other. Trainees by employer were as follows: 41 private industry, 2 local government and 6 academic.
  - 13 Hazardous Substance Training Courses were offered with 375 total trainees. Trainees by discipline breakdown were as follows: 2 physicians, 2 nurses, 15 industrial hygienists, 103 safety professionals and 253 other. Trainees by employer were as follows: 295 private industry, 7 federal government, 8 state government, 50 local government, 1 foreign country and 14 academic.
- The Sunshine ERC as a whole (all programs except for Pilot Research Projects, Hazardous Substance Training and Hazardous Substances Academic Training were up for competing renewal. The Grant application was submitted and the team was site visited on September 24-25 in 2001.
- The Industrial Hygiene program submitted a renewal application to ABET to continue the accreditation status.
- The Occupational Medicine Residency submitted a renewal application to the ACGME to renew accreditation for the residency.

- Both the Residency Program and the Industrial Hygiene Program were approved for reaccredidation for a 5 year period.
- Notification of approval for a five year project period was provided to the Sunshine ERC for the new project period.
- 10 pilot research projects were funded: 8 went to trainees and 2 went to junior faculty members.
- Dr. Steven Mlynarek joined the Industrial Hygiene team from Johns Hopkins University.

Year 5 – 2001-02

- In the Industrial Hygiene Program, trainee statistics were as follows:
  - 3 full time masters trainees and 5 full time doctoral trainees
  - 2 full time NIOSH supported masters trainees and 3 full time NIOSH supported doctoral trainees
  - 7 part time masters trainees and 3 part time doctoral trainees
  - 1 NIOSH supported part time masters trainee and 1 NIOSH supported part time doctoral trainee
  - 2 trainees graduated from the Industrial Hygiene program with their MSPH: 1 in December 2001 and 1 in May 2002. 2 trainees graduated from the Industrial Hygiene Program with their Ph.D. – 1 in January 2002 and 1 in August 2002.
- In the Occupational Health Nursing Program, trainee statistics were unavailable at the completion of the final report. Data will be available in November of 2002.
- In the Occupational Medicine Program, trainee statistics were as follows:
  - 5 full time masters trainees and 6 occupational medicine residents
  - 5 NIOSH supported full time masters trainees and 1 full time NIOSH supported Occupational Medicine Resident
  - 1 NIOSH supported full time Ph.D. trainee
  - 3 part time masters trainees
  - 0 NIOSH supported part time masters trainees
  - 4 Occupational Medicine Resident graduated from the masters program and 5 Occupational Medicine Residents graduated from the Residency
- In the Safety Management Program, trainee statistics were as follows:
  - 4 full time masters trainees
  - 2 NIOSH supported full time masters trainees
  - 9 part time masters trainees
  - 5 NIOSH supported part time masters trainees
  - 3 trainees graduated with their MPH in Safety Management
- In the Continuing Education and Outreach Program, trainee statistics were as follows:
  - 9 Industrial Hygiene Courses were offered with 160 total trainees. Trainees by discipline breakdown were as follows: 7 physicians, 16 nurses, 23 industrial hygienists, 54 safety professionals and 60 other. Trainees by employer were as follows: 103 private industry, 1 federal government, 1 state government, 47 local government and 8 academic.
  - 8 Occupational Health Nursing Courses were offered with 102 total trainees. Trainees by discipline breakdown were as follows: 10 physicians, 33 nurses, 4

industrial hygienists, 3 safety professionals and 52 other. Trainees by employer were as follows: 61 private industry, 2 federal government, 2 local government, 23 foreign and 14 academic.

- 5 Occupational Medicine Courses were offered with 148 total trainees. Trainees by discipline breakdown were as follows: 75 physicians, 25 nurses, 13 industrial hygienists, 22 safety professionals and 15 other. Trainees by employer were as follows: 89 private industry, 4 federal government, 1 local government and 68 academic.
- 4 Occupational Safety Courses were offered with 72 total trainees. Trainees by discipline breakdown were as follows: 0 physicians, 1 nurse, 5 industrial hygienists, 52 safety professionals and 14 other. Trainees by employer were as follows: 49 private industry, 3 state government, 6 local government and 14 academic.
- 21 Hazardous Substance Training Courses were offered with 449 total trainees. Trainees by discipline breakdown were as follows: 3 physicians, 1 nurses, 12 industrial hygienists, 51 safety professionals and 382 other. Trainees by employer were as follows: 255 private industry, 7 federal government, 8 state government, 50 local government, 1 foreign country and 14 academic.

- The ERC received notification of a new funding area to support research efforts in the center, the new is called NORA.
- Two new faculty members joined the Occupational Medicine Team: James McCluskey, MD and Robert Haight. Dr. McCluskey is the Deputy Director of Occupational Medicine and Dr. Haight is research faculty.
- Drs. Brooks, Hammad, McCluskey and Haight began a new laboratory called the Inhalation Laboratory. The purpose of the laboratory is to study human airway defenses and responses to inhalation challenge.
- Dr. Thomas Bernard was honored to be selected as the Endowed Chair at the Utah ERC in the Department of Engineering for the fall, 2002 semester. Dr. Bernard took a sabbatical for the fall semester.

BODY OF REPORT WITH CONCLUSIONS

Organizational Structure

When first established on July 1, 1997, the University of South Florida Sunshine Education and Research Center (SERC) began with four disciplines/programs: Industrial Hygiene (IH), Occupational Health Nursing (OHN), Occupational Medicine (OM) and Continuing Education/Outreach (CE/O). Since funding began in 1997, additional programs have been funded (see table below). The multidisciplinary ERC maintains participation from the Colleges of Public Health (COPH), Nursing (CON) and Medicine (COM). Administratively, the Center is located at the College of Public Health, and in the Department of Environmental and Occupational Health. The Health Sciences Center, which administers the COPH, CON, and COM, is located within the University of South Florida, the second largest University in the State University System and the 32nd largest in the United States. A diagrammatic organizational structure of SERC is included in the appendices.

The following table lists the current SERC programs, program directors and key faculty:

Program Name	***Program Director***	***Key Faculty***
Industrial Hygiene	Yehia Hammad, Sc.D.	Thomas Bernard, Ph.D., CIH
		Steve Mlynarek, Ph.D., CIH
		Phil Roets, Sc.D., CIH
		P.G. Rentos, Ph.D.
		Eugene Szonntagh, Ph.D.
Occupational Health Nursing	Candace Burns, Ph.D.	Christine Bouchard, ARNP, COHN-S, MS, MPH
Occupational Medicine	Stuart Brooks, MD	James McCluskey, MD
		Robert Haight, MD, MSPH
		Matt Vuskovich, MD, MSPH
		Pascual Bidot, MD, MSPH
Safety Management	Phil Roets, Sc.D., CIH	P.G. Rentos, Ph.D.
Pilot Research Projects	Yehia Hammad, Sc.D.	
NORA	P.G. Rentos, Ph.D.	Matt Vuskovich, MD, MSPH
Continuing Education and Outreach	Diana McCluskey, MPH	Kimberly Fink
Hazardous Substance Training	Diana McCluskey, MPH	Robin DeHate, MPH, CHMM
Hazardous Substance Academic Training	Yehia Hammad, Sc.D.	Ira Richards, Ph.D.
		Thomas Bernard, Ph.D., CIH

Each Program Director, Program Faculty and Program Staff makes up the Internal Executive Committee of the ERC and meets at least yearly. The Center is advised by an External Advisory Committee, which also meets at least annually. The External Advisory Committee is sub-divided into program area; some program area meet more often than once per year. For example, the Occupational Medicine advisory committee meets twice a year. A table identifying the External Advisory Committee and subcommittee members of SERC is provided in the appendices of this document. Also in the appendices is a chart that summarizes the interaction of the External Advisory Committees/Subcommittee.

The Internal Executive Committee (IEC) worked as a team to establish a strategic plan for the Center. The IEC members identified identify goals and objectives for SERC and for individual program areas; Members, also discussed research efforts of faculty members and the Center as a whole. For example, Dr. Stuart Brooks, the Center Director is responsible for the overall operation of the Center. Dr. Yehia Hammad, Center Deputy Director is responsible for the day to day operations of the Center including all financial operations. Dr. Hammad is also the Director of Research for the Center. As Director of Research, Dr. Hammad is responsible for overseeing the Pilot Research Projects and NORA-related research projects. In addition, Dr. Hammad serves an essential role in providing guidance and input to ERC trainees regarding their research (often regardless of the trainee's discipline). Each Program Director is responsible for the successful operation of his/her program and provides periodic updates to Drs. Brooks and Hammad. Ms. Diana McCluskey and Ms. Kimberly Fink work directly with Drs. Brooks and Hammad to ensure that all SERC activities are done in a timely and accurate manner.

The External Advisory Committee (EAC) has been influential in providing non-academic expertise and a third party perspective about programs and activities of the Center. For example, when the Center Internal Executive Committee decided to expand the number of SERC programs and apply for funding to support new program areas, the EAC provided important input in writing the applications and crystallizing concepts about the program areas. The EAC also helps provide real world perspectives to trainees; the EAC members also provide opportunities for off campus internship for trainees.

Faculty

Dr. Stuart M. Brooks has more than 25 years of experience, scholarly achievement and leadership in occupational safety and health education and research. Dr. Hammad and well other team members are full-time faculty at USF; each has the qualifications and skills to plan, establish and carryout programs/projects. In addition, the faculty and staff have outstanding training, research credentials and expertise. The Sunshine ERC Faculty key faculty members are listed in the previous table shown above. In the following table, these faculty members are again listed with their research areas identified. In addition the table identifies other important faculty members who provided expertise, advising, research and training contribution to the ERC.

Core and Supporting Faculty	
Faculty	**Area of Competence**
Stuart M. Brooks, MD; W.M. Alberts, MD	Occupational Asthma, Indoor Environment
Richard Lockey, MD, Roger Fox, MD	Allergic Disorders and Occupational Asthma
David Solomon, MD, Mack Anderson, MD,	Pulmonology
Leon Prockop, MD	Neurology, Neurobehavioral
Heidi Stephens, MD	Musculoskeletal, Ergonomics, Orthopedics
Phillip Schenefeld, MD	Contact Dermatitis
John Sinnott, MD, Douglas Holt, MD, Daniel Kasprzyk, MD	Infectious Diseases
Steven Field, MD, MPH	Ergonomics, Occupational Medicine
Thomas Bernard, Ph.D., CIH	Ergonomics, Industrial Hygiene
Audrey Nelson, Ph.D., Francis Dukes-Dobos, MD; Uwe Reichl, MD, PhD	Ergonomics
James McCluskey, MD; Robert Haight, MD, MSPH; Rony Francois, MD, MSPH	Toxicology, Occupational Medicine
James McCluskey, MD; Matt Vuskovich, MD, MSPH; Kathy Jenkins, MD; Joan Watkins, DO; Jeanne McGregor, MD, MPH	Occupational/Preventive Medicine
Theophil Sutton, MD	Occupational and Addiction Medicine
Raymond Harbison, Ph.D., Arun Kulkarni, Ph.D., Ira S. Richards, Ph.D.	Toxicology/Risk Assessment

Eugene Szonntagh, Ph.D.; Heidi Kay, Ph.D.	Industrial Chemistry
Robert Pavlik, Ph.D., James Cook, MS.	Construction Safety
Jay Wolfson, Dr. P.H., JD,	Ethics, Occupational Health Law, Managed Care
K. Phillips, MD, MPH; R. Johnson, MD, MPH	Managed Care/Health Services Administration
Yehia Hammad, Sc.D.; Steve Mlynarek, Ph.D., CIH	Industrial Hygiene, IAQ, Bioaerosols
Phil Roets, Sc.D.; P.G. Rentos, Ph.D.	Safety Management
Phil Roets, Sc.D.	Industrial Hygiene, Biological Monitoring, Administration
Candace Burns, Ph.D.; Christine Bouchard, ARNP, COHN-S, MPH, MS	Occupational Health Nursing and Adult Health Nursing

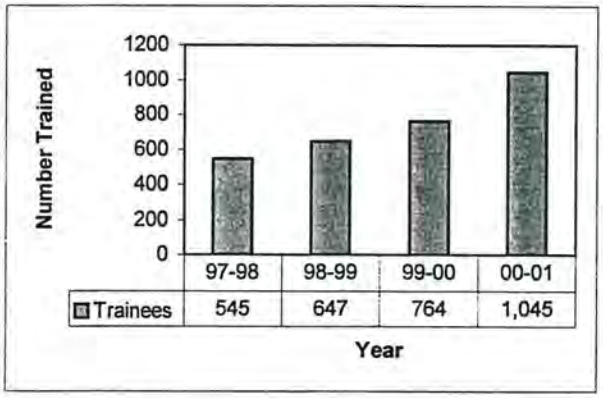
Meeting Regional Needs

The placement of an ERC in Florida is appropriate because Florida is the fourth largest state and has one of the highest workers compensation rates per worker. Furthermore, key industries within the state (e.g., construction, mining, agriculture) are associated with dangerous work activities and an excess of occupationally related injuries, accidents and diseases. The Sunshine ERC is an excellent vehicle for fulfilling the mission of the Occupational Safety and Health Act of 1970, which identified training of professionals in the specialty fields relevant to occupational health as a priority. The training and research efforts of the Sunshine ERC reaches an ever-expanding audience of physician practitioners, nurses, industrial hygienists and occupational safety professionals in the region. Particular emphasis is placed on recruiting, training and placing individuals in four, prominent regional industries: construction, agriculture, transportation and mining. The NORA priority areas of research provide guidance for the development of academic and research programs and serve as an incentive to establish collaborative relationships with other colleges, programs and organizations in the state and region.

Region IV is in the heart of the Sun Belt. Population growth has produced a profound effect on the economies of the states in the area with a particular impact on the growth of service industries. The population growth has been met by an increase in residential and industrial construction, an employee group that is historically at high risk for work-related injuries. The industry and population growth has led a surge in service industries, including transportation systems and related transportation services. Throughout the Southeast, traditional agricultural industries continue to flourish. In addition, innumerable recreation venues and golf courses that require aggressive cultivation and extensive chemical maintenance have sprung up across the state. The mining industry in the region, particularly phosphate mining, continues to be a major force in the agricultural and service economy. Florida is the most populated state in the southeastern part of the country (in Region IV) and the fourth most populace state in the United States. New industries and major construction continue to escalate and continued growth is predicted for the future. Companies of small to medium size employ approximately 80% of Florida workers. Hillsborough County (Tampa and environs) has approximately 21,000 businesses and 400,000 workers. For Hillsborough County, the major categories sighted for workers' compensation payments were construction, manufacturing, trade, services and government. In 1999, there were almost 57,000 annual disabling injuries (lost-time from work) and several weekly workplace fatalities in Florida; there were 11,358 back injuries alone (19.9% of total). Cumulative trauma disorders represent the majority of the State's annual disabling injuries. Asthma from various occupational sources and inhalation injuries from irritant gas releases cause significant annual mortality and morbidity. Construction, agriculture and phosphate mining are three of Florida's major industries and are also the industries reported to have the highest rates of work-related injuries and fatalities. In Florida, total workers compensation payments made to claimants for fiscal year 1999 were almost $1.5 billion. Florida's 1997 requirement that all workers' compensation health care be accomplished through managed care arrangements requires

development of a substantial number of occupational medicine educational courses for nonspecialists and training programs for specialists.

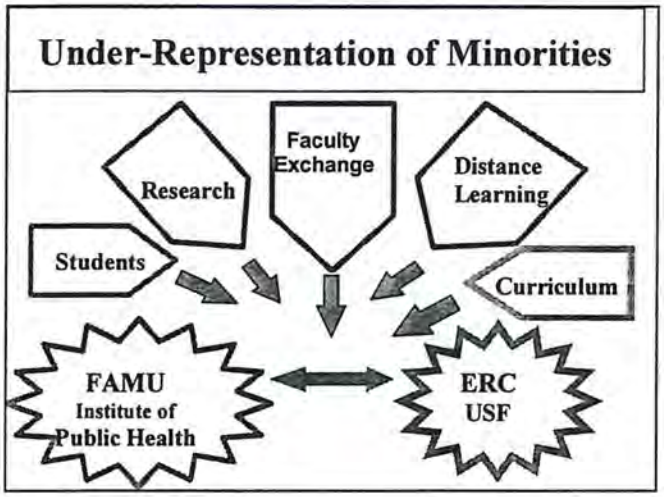
The creation of the ERC substantially enhanced OS&H education in Florida and Region.



Before 1997, there was little CE/O activity in Florida. About 3000 persons have been ERC-trained since 1997. Compared to 1997, twice as many persons were trained in 2000. In 1997, there were 545 persons trained; by 2000-01, 1,045 were trained. The total number of courses offered tripled with 18 given in 1997-98 and 54 courses presented in 2000-01. Most our trained physicians, nurses and industrial hygienists remained in Florida.

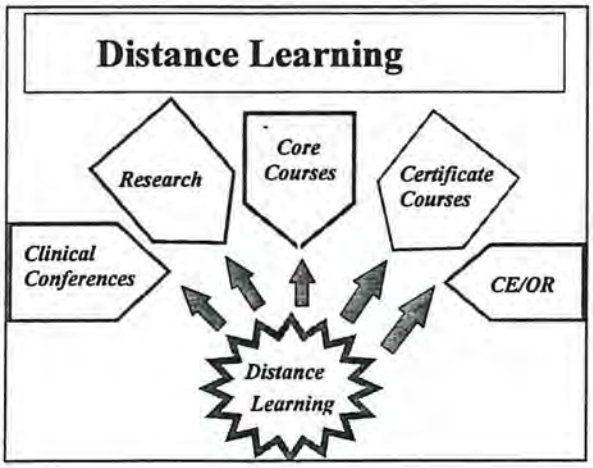
The creation of the ERC influenced other professionals and institutions. Clearly, SERC enhanced OS&H expertise, education and research at USF; additionally, other educational institutions in Florida and in region IV were positively influenced. For example, a number of occupational medicine sub-specialties in allergy/immunology (Drs. Lockey and Fox), pulmonary (Drs. Goldman, Alberts, Truncale), orthopedics (Dr. Stephens), neurology (Dr. Prokop) and dermatology (Dr. Schenefeld) developed at USF. There were enhancements at the College of Engineering as the result of interactions with the industrial hygiene and safety programs. Undergraduate College of Nursing programs now include discussions in OS&H. College of Public Health core courses emphasized important issues in OS&H. The Department of Anthropology had students undertaking research projects involving occupational health and they are collaborating with ERC faculty. The Veterans Hospitals expanded not only support for occupational medicine, but also support for in-house OS&H personnel; the ERC helped the VA to train their professionals to perform surveillance and assisted in their research. Pilot Project Grants supported efforts at other institutions including the University of Miami (UM) and the University of Florida. There has also been support for projects in North and South Carolina. Interaction with the ERC and UM (Dr. Lora Fleming) has enhanced collaborative research. Research efforts have also been promoted at The Veterans Hospitals (Dr. Audrey Nelson, Pascual Bidot). Research has involved interactions with the Moffitt Cancer Center. Research collaboration has occurred with Florida Agriculture and Mechanics University (FAMU). There was some collaboration with other ERCs in the region. Importantly, the ERC promoted and spearheaded minority initiatives at FAMU, Bethune-Cookman, Florida International University and others institutions. There are other examples that can be stated but the point is clear that the ERC has substantially enhanced expertise, emphasis and scope of OS&H education, research and application in the state and the region.

An example of how the ERC is addressing the under representation of minorities, is illustrated by the ERC's outreach program with Florida A & M (FAMU) Institute of Public Health using distance learning, faculty exchanges, focusing on NORA priorities and working together on curriculum issues. This interaction is shown in the figure below.



The ERC began a cooperative partnership with FAMU (Institute of Public Health in the College of Pharmacy - Dr. Cynthia Harris, Director) in 1999 with provision of several lectures in OS&H by ERC faculty. In 2001, a formal letter of agreement was signed to expand this relationship. FAMU students were assigned field study projects at USF. In addition, there were collaborative research efforts. For example, Dr Bigelow (FAMU) and Dr. Brooks submitted a research application (Dr. Brooks was co-investigator. Further research is planned. Additionally, the ERC intends to assist Dr. Bigelow in developing curriculum and help with teaching efforts. The ERC will continue to be a source for FAMU student field study. In May 2001, Dr. Bigelow was invited to USF for a teaching seminar and introduction to faculty. We are exploring the possibility of distance learning courses in the future.

We plan to continue expanding our use of web-based courses. We have partnered with USF computer support and have consulted experts in the field. The figure below presents some concepts diagrammatically.



The use of distance learning may include presenting not only essential core courses but also certificate courses and clinical conferences. Furthermore, exchange of research ideas may be promoted through distance learning.

Interdisciplinary Activities

The high level of interdisciplinary interaction at the Sunshine ERC has been and continues to be one of our primary strengths. The following table summarizes examples of past and on-going interdisciplinary activities. It is evident that the Colleges of Public Health, Medicine and Nursing are closely tied together by these activities. The high level of interaction has been accomplished over a period of years and the ties are well established.

Interdisciplinary Clinic
Interdisciplinary Research
Interdisciplinary Projects in Courses
Field Visits
Non-OM Courses
Interdisciplinary Conferences
Students in same office -OM, OHN, IH

Some more specific examples of interdisciplinary efforts include:

[1] Requiring occupational medicine (OM) residents to take more courses with industrial hygiene (IH) students (safety, ergonomics and industrial hygiene courses;

[2] Fostering interdisciplinary activity between OM physicians and safety personnel at Kennedy Space Center, the VA hospitals, TGH and TECO;

[3] USF interdisciplinary occupational medicine clinic which allows OM physician, occupational health nurse (OHN), toxicologist and IH students to evaluate patients with complicated occupational medical problems. Each discipline speaks with the patient and evaluates the problem from their point of view: the toxicologist examines the exposure in regards to its effects and dose; the industrial hygienist assesses the problem as to the recognition and quantification of the exposure; the nurse deals with psychosocial issues of the workplace; and the physician addresses the clinical and medical aspects of the case;

[4] OM residents work with an occupational research nurse at the James Haley VAH;

[5] An interdisciplinary toxicology group has been organized and holds regular meeting that the residents attend;

[6] Weekly clinical conferences where all disciplines meet to discuss the case and examine the problem;

[7] Students have opportunities for interdisciplinary interaction during the five College of Public Health core courses;

[8] IH students participate in field visits to public health and safety agencies, the OSHA regional office in Tampa, and labor-management health and safety groups in the State;

[9] OHN students interact with OM residents in clinical rotations at Occupational Health Care provider settings;

[10] OHN students interact with IH and OM students during worksite evaluations, surveillance, individual worker screening and counseling, worker aggregate health promotion programs;

[11] Practicum sites for OHN trainees at Tampa General Occupational Health Services, Tampa General Hospital Employee Health Clinic and Ruskin Migrant Health Clinic allow joint rotations with OM residents;

[12] OM residents and IH students are housed in the same office which encourages interaction and collaborative exchanges;

[13] IH, OM and OHN students attend a departmental seminar class in which they hear about research projects by other students;

[14] OM physicians attend the plant walk-through in the Industrial Hygiene Aspects of Plant Operations course;

[15] Students from all the disciplines accompany faculty during local consultations with industry;

[16] Partnering with other centers/programs such as OSHA 21(D) and Center for Bioterrorism and Center for Risk Assessment. There is also industrial partnering via letters of agreement (practicum sites; field placement sites, etc.).

Furthermore, trainees in the Industrial Hygiene Program, Occupational Medicine Program, Occupational Health Nursing Program and Safety Management are permitted into the continuing education and outreach courses for free. Each student is provided a copy of the CE/O schedule and invited to attend the program. They must attend the full course and must register just as an outside attendee would. These

courses provide the trainees with many opportunities to interact with each other outside of the academic classroom and clinical setting. Often they are enrolled in courses taught by faculty from different disciplines. During the past two years, the Occupational Health Nursing Students and Occupational Medicine Residents have been the most active trainees to take advantage of this opportunity. For example, all of the occupational medicine residents attended the Introduction to Heat Stress Course in the spring of 2001. The attendees from the outside were predominantly Industrial Hygienists and Safety Managers.

Finally, students from all the disciplines may accompany faculty during local consultations with industry. Drs. Hammad, McCluskey, Wolfson and Richards hold joint appointments in the College of Medicine and collaborate with faculty in internal medicine, physiology, surgery and cardiology. Faculty members in the industrial hygiene program also interact with the College of Engineering. For example, Dr. Hammad and Dr. Ronald H. Howell, Professor and Chair of Mechanical Engineering, worked on a project to evaluate the indoor air quality in Florida schools, and this project supported an industrial hygiene student. Dr. Bernard is collaborating with Drs. Anita Callahan and Paul McCright of Industrial Engineering on three projects. In addition, Dr. Bernard has supported a doctoral student in industrial engineering for 6 years. Dr. A. Zayed of Material Sciences served on a master's thesis committee. Drs. Okogba and Mcright participated in the development of the industrial safety program and they will teach two new safety courses.

Students and Graduates

Two Occupational Medicine Residents/Trainees were the recipients of the prestigious Occupational Physicians Scholarship Award: John Scharf and James McCluskey. One Industrial Hygiene MSPH Trainee made the decision to stay on and pursue a Ph.D. in Industrial Hygiene: Christina Preston. Two MPH Safety graduates have elected to stay on pursuing a Ph.D. in Toxicology: Robin DeHate and Kelly Wagoner. One Occupational Health Nursing Graduate has come back to join the Occupational Health Nursing program as the Deputy Director and is concurrently pursuing a Ph.D. in Nursing as well. Pilot Research Project awards began in 1999. Trainee awards for research from these pilot research projects have been as follows: 1999-00 – 8 trainee awards out of 11 funded projects; 2000-01 – 8 trainee awards out of 11 funded projects; and 2001-02 – 3 trainee awards out of 6 funded projects.

All Industrial Hygiene trainees are provided with funding to attend the Annual Industrial Hygiene Association Meeting that takes place nationally. Occupational Medicine Residents are also provided with funding to support travel to the annual American College of Occupational and Environmental Medicine meeting. Nursing students are provided with support to attend the annual Occupational Health Nurses meeting in Florida. In 2002, 3 Safety Management students were sent to the annual Safety Conference. In the appendices, the listing of graduates by program area is provided.

The OHN program graduated its first student (Susan Elliott) August 1997. She applied for and was accepted as an OSHA Intern in Washington D.C. under the direction of Ms. Elise Handleman for fall 1997. She completed the *Safer Needle Devices* training manual for compliance officers as her major OSHA project while an intern. This manual received the Secretary's "Exceptional Achievement Award" in 1999. Since that time, each year one of the USF OHN program graduates has applied for and been selected as an OSHA Intern. Christine Bouchard worked on Blood Borne Pathogens and Heat Stress. This is an excellent reflection on the quality overall quality of the OHN program graduates.

Curricula

Sample curriculum and any changes to the curricula during the project period for the programs are addressed in each program area below.

Industrial Hygiene:

SAMPLE CURRICULUM
COURSE SEQUENCE OF THE INDUSTRIAL HYGIENE MSPH PROGRAM

FALL SEMESTER: YEAR 1		
PHC 6357	Environmental and Occupational Health (Core)	3
PHC 6050	Biostatistics (Core)	3
PHC 6356	Industrial Hygiene	2
PHC 6425	Legal and Regulatory Aspects of Occup. Health	2
SPRING SEMESTER: YEAR 1		
PHC 6358	Physical Agents	2
PHC 6310	Environmental & Occupational Toxicology	3
PHC 6365	Analytical Methods in Industrial Hygiene I	2
Core (Elective)		3
SUMMER SEMESTER: YEAR 1		
PHC6930	Public Health Seminar	1
PHC 6363	Industrial Noise and Vibration	2
Elective		2
PHC 6945	Supervised Field Experience	1-12
FALL SEMESTER: YEAR 2		
PHC 6360	Safety Management Principles and Practices	2
PHC 6362	Industrial Ventilation	2
PHC 6366	Analytical Methods in Industrial Hygiene II	2
Elective		3
SPRING SEMESTER: YEAR 2		
PHC 6977	Thesis Research Project	6
PHC 6361	Ergonomics	2
PHC 6360	Safety Management Principles and Practices	2

Industrial Hygiene Ph.D. Sample Curriculum

MSPH program	**42-52 Hours**
Interdisciplinary Courses	**11 Hours**
Occupational Health	2 Hours
Industrial Toxicology	2 Hours
Occupat. Health Risk Assessment	3 Hours
Risk Management	2 Hours
Doctoral Seminar	2 Hours
Research and analytical skills	**9 Hours**
Occupational Epidemiology	3 Hours
Research Methods in Epidemiology	3 Hours
Biostatistics II	3 Hours
Advanced Industrial Hygiene Courses	**6 Hours**
Aerosol Technology in Ind. Hyg.	2 Hour

Biological Monitoring in Env. & Occup Health	2 Hour
Env. & Occup Work Physiology	2 Hours
Risk Communication	2 Hours
Courses relevant to students research	**6 Hours**
Doctoral Dissertation	**17 Hours**

Occupational Health Nursing:
The primary foci of the program during the past five years has been to stabilize the occupational health nursing faculty and administrative support for the program and continue to develop and refine the program curriculum based on the AAOHN *Core Curriculum for Occupational and Environmental Health Nursing* (1997; 2000), recommendations from OHN consultants, input from the OHN Advisory Committee, and student and faculty evaluation data. In addition, the identification and development of additional clinical sites and preceptors to assure breadth and depth of appropriate OHN clinical and field/worksite experiences has been a high priority.

The OHN program has grown in number of students and regional influence in the past five years. Despite the length and rigor of the dual degree (MS/MPH) curriculum, students are attracted by the prospect of receiving two degrees, job opportunities, enthusiastic faculty, and interdisciplinary clinical/field experiences and admissions have remained steady. Program attrition is small and when it occurs it is usually very early in the student's program of study with the student changing to a primary care (e.g. ANP, FNP nursing track). Diverse clinical / field experiences include: a workers' compensation managed care insurer (Summit/Travelers), a company with extensive on-site wellness and ergonomic programs (USAA Insurance), a mining company (IMC-Agrico), a fertilizer manufacturer (CF Industries), the Kennedy Space Center, Tropicana Foods, and OSHA, as well as numerous occupational health clinics, including Dr. Stuart Brooks' Independent Medical Evaluation (IME) clinic. Many of these sites are used as training for the occupational resident physicians as well.

OHN Courses The syllabi for the three OHN courses (two graduates and one undergraduate) were revised at the end of the three year grant period to include evolutions in the field of occupational health nursing and to meet student needs. Input and recommendation from the consultant, Advisory Committee, the site reviewer's 1997 report, and yearly student and faculty evaluation data were used to refine the OHN courses and clinical/field experiences and requirements. Much of the management content was moved from OHN II to the interdisciplinary course PHC 6354 - Health and Safety Administration.

Field and population-based/aggregate experiences and requirements in OHN are incorporated into both Occupational Health Nursing courses. In NGR 6651-Occupational Health Nursing I, all students have a required field experience at CF Industries so they have experience with "heavy industry" with an OHN present and Tampa Erecting Steel for a view of industrial hazards in a setting without an OHN present. Students compare and contrast hazard abatement and health protection programs. Students also write a "consulting report" to the owner of TSE, recommending the initiation of certain programs such as EAP or ergonomics. In NGR 6651-Occupational Health Nursing II, an interdisciplinary team visit comprised of students from OHN and students from Dr. Bernard's ergonomics class (primarily OM residents, safety engineers, and industrial hygienists), under the guidance of a consultant from the 21d program, visit a company and assess a job with musculoskeletal hazards and recommend ergonomic improvements in a joint paper and class presentation.

Occupational health administration content that had been included in the OHN II course was deleted primarily because it was redundant to the PHC 6354 Safety and Occupational Health Administration course. This course is now planned and taught as an interdisciplinary course by Ms. Menzel, COHN-S (OHN), Dr. Brooks (Occupational Medicine) and Dr. Roets (Safety). This enabled strengthening the ergonomics content in the OHN II course. After each course offering, student evaluation data are used to revise the courses.

The College of Nursing core course, NGR 6001 Advanced Health Assessment, was revised to include instruction in obtaining an occupational health history for all adults. It is now a requirement of all students prepared as nurse practitioners to obtain an occupational history as part of the health history on all patients, including patients seen in their clinical practicums.

Substance abuse in the workplace with a specific attention to nurses is a focus of Dr. Burns teaching and research. Content relative to early recognition and intervention as well as return-to-work issues have been incorporated into the core course NGR 6001 and NGR 6207 respectively. Integration of appropriate occupational health and illness and injury recognition, diagnosis and treatment is expected to continue, as they are significant etiologies.

To better meet the post-graduation needs of trainees, the College of Public Health course, PHC 6354 Safety and Health Administration, was revised as an interdisciplinary management course with Ms. Menzel co-teaching it. The course has afforded an opportunity for nurses, physicians, and industrial hygienists to work cooperatively on group projects and gain an understanding of the contributions of each discipline. Projects from spring 2000 and 2001 included writing a mock ergonomics compliance program and writing a strategic plan for a hypothetical company.

Dr. Burns and Ms. Menzel wrote and received a training grant from the Association of Schools of Public Health / HRSA (August 15, 2000 – August 14, 2001) to integrate occupational and environmental health nursing clinical / field experiences into the unlicensed and licensed baccalaureate student curriculum. Ms. Menzel developed field placements for these students. Over 200 students have been placed in a variety of agencies in five counties. Clinical sites for the graduate students have change during the past project period due to staff turnover and company mergers. Adequate number and sufficient variety of sites have been maintained to provide a variety of experiences for these students.

In addition, in 1997-1998, Ms. Menzel developed and offered an undergraduate elective in occupational health nursing (NUR 4965 – Introduction to Occupational Health Nursing) via video teleconferencing to USF's Sarasota and St. Petersburg campus sites Fall Semester (August – December) 1999. This elective attracted 43 undergraduate students at the three campuses and resulted in recruiting a full-time student to the graduate program. It brought excellent visibility of the OHN program into the communities as well as introduced undergraduate nursing students to a subspecialty within nursing that was familiar to very few. Due to its successful enrollment and very positive student evaluations, the OHN undergraduate elective course was reviewed and approved as a New Course in the University April 1999. This is a significant accomplishment for a new faculty member to achieve. Ms. Menzel has developed it into a web-based course and fall 2000 had an enrollment of 35 undergraduate nursing students. Clearly, students in the College of Nursing are receiving excellent exposure to the specialty of occupational health nursing that was not available prior to the initiation of the OHN program.

Occupational Medicine:
During the two-year residency, the academic and practicum phases are completed concurrently. This arrangement is viable because all applicable coursework for the MSPH degree (See *Appendix 2*) is offered in the late afternoon or early evening. The practicum activities are scheduled for normal office hours between 8 A.M. – 5 P.M. We believe that the two-year concurrent program provides the maximum opportunity to attain competency in the two respective components. In addition, we have built sufficient flexibility into the residency to accommodate each resident's personal career goals and interests. The residency focuses on the worker, the workplace, information management and administration. Particular attention is given to protective and preventive strategies that are important in every occupational health services program. The program also stresses the importance of social, legal, and ethical concerns. Throughout his or her time in the residency, each resident has ample opportunity to propose and conduct research with appropriate faculty advisement. We anticipate that by completion of the residency, the major educational outcome will be achieved. Residents are sufficiently prepared to pursue further graduate work (e.g., PhD degree) or pursue a career in academic medicine.

ERC (NIOSH) monies provide the funding for all OM resident tuition to the College of Public Health. In addition, some NIOSH funding is used for travel to professional meetings and a resident salary. Pilot Project Grants have been awarded in the past to residents based upon scientific merit. The Deep South Center for Agricultural Safety & Health has also awarded resident research funding, as well as, provided learning experiences in agricultural safety and health. The OSHA 21(D) program is a new practicum site for real world of work experiences and research topics.

The **Academic Phase** of the program includes a minimum of 42 hours of course work 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:

ACGME Core
OS&H Concentration
Research
Electives

1. Five courses of basics in preventive medicine as required by the ACGME & American Board of Preventive Medicine (15 CH) (See *Appendix 3*)
2. Seven courses in OS&H concentration (15 CH)
3. Research credit (6 CH)
4. Electives (6 CH) (See *Appendix 4*)

These ACGME basics of Preventive Medicine are incorporated in five core courses (*Appendix 3*).

- PHC6357-Environmental and Occupational Health (3 CH)
- PHC6410-Social and Behavioral Influences on Health (3 CH)
- PHC6000-Epidemiology (3 CH)
- PHC6050-Biostatistics (3 CH)
- PHC6102-Health Services Organization and Administration (3 CH)

There are seven courses that address essential Principles of Occupational Safety & Health (15 CH).

- PHC6355-Occupational Medicine (2 CH)
- PHC6356-Introduction to Industrial Hygiene (2 CH)
- PHC6360-Safety Management Principles and Management (2 CH)
- PHC6355-Occupational Safety & Health Administration (2 CH)
- PHC6310-Toxicology (3 CH)
- PHC6361-Industrial Ergonomics (2 CH)
- PHC6425-Legal & Regulatory Aspects of Occupational Health (2 CH)

The concurrent scheduling provides an opportunity for effectively combining elements of theory and application of practice in a real time sequence. What is taught in the classroom during the academic phase is applied in the field ("real world") during the practicum phase. Vice-versa, what is observed in the practicum underlines and enhances knowledge gained in the classroom. The course work of the academic phase is scheduled to enhance learning opportunities in the practicum. For example, we now recommend taking the Epidemiology and Biostatistics core courses, as well as the Occupational Medicine course, in the first six months of the residency. By combining the academic course work and the practicum rotations, residents actively see and do all aspects of occupational medicine practice. *Appendix 5* provides a typical sequence of courses.

Safety Management:
The Safety Management Program was notified that it would be funded by NIOSH in July of 2001. The curriculum for the Safety Program is identified in the table below:

- ❑ *Four Public Health Core Courses (15)*
- ❑ *Concentration Area (19-20)*

PHC 6356	Industrial Hygiene (2)
PHC 6361	Industrial Ergonomics (2) Or
EIN 5245	Work Physiology and Biomechanics (3)
PHC 6360	Safety Management Principles and Practices (2)
PHC 6310	Environmental Occupational Toxicology (3)
PHC 6423	Occupational Health Law (2)
PHC 6354	Safety and Health Administration (2)
EIN 6215	Engineering Systems Safety (3)
EIN6216	Occupational Safety Engineering (3)

- ❑ *Electives (4-6)*

ENV 5345	Solid & Hazardous Waste Control (3)
PHC6364	Industrial Hygiene Aspects of Plant Operations (2)
PHC 6350	Occupational Health Risk Assessment (3)
PHC 6303	Community Air Pollution (3)
PHC 6312	Environmental Fate of Chemical Releases (3)
PHC 6422	Environmental Health Law (2)

- ❑ *Or Other Approved Electives*

PHC 6930	Occupational Safety Seminar (1)
PHC 6977	Special Project (3)
PHC 6945	Supervised Field Experience (1-12)

- ❑ *Comprehensive Examination*

Total 43-57 Credit Hours

No significant changes to the Safety Management Program have been made due to the fact that the program only received funding from NIOSH in 2001.

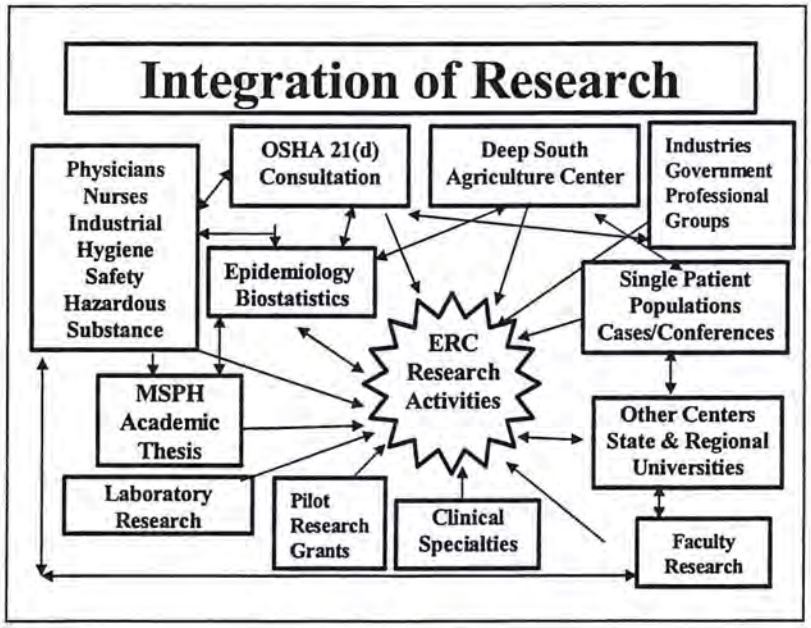
Research Training

All eight of the ERC's programs encourage the application of scientific methodology when approaching occupational safety and health problems. The Sunshine ERC fosters and promotes the development of new research activities, while at the same time, strengthening existing research projects. The presence and activities of the ERC help to stimulate pilot research efforts in both students and faculty. As such, it institutionalizes occupational safety and health disciplines within the academic structure of USF.

Key research directions of the Sunshine ERC are shown in the following table.

1.	Prevention of occupational asthma
2.	Repetitive motion injuries of the upper extremity and back with emphasis on preventive measures utilizing ergonomic controls
3.	Reduction of heat stress through the use of effective protective clothing
4.	Control of poor indoor air quality, a prevalent issue in the southeastern United States
5.	Research to better understand how work organization is influenced by the changing economy and workplace and what the potential effects are on worker safety and health, including the cost and quality issues pertaining to managed care for the workers' compensation program as it relates to Florida and other states
6.	Newly emerging occupational infectious diseases from blood-borne pathogens
7.	Development of tools to determine personal exposures

The figure shown below presents a schematic depiction of how the Sunshine ERC's faculty and student research efforts are integrated into a various Center activities.



During the project period, there has been a wide range of active research activity including: faculty efforts with medical residents, individual resident projects related to the College thesis requirement, partners in industry, and various other programs such as the OSHA 21D program, the Deep South Agriculture Center and the Center for Biodefense Studies. The other departments at the College also play a part in research efforts. In addition to formalized research projects there is also research gleaned from patient cases and worker populations.

The establishment of the ERC in 1997 has enabled USF to attract other research and training support. This has been primarily due to the presence of a critical mass of professionals with a diverse range of OS&H expertise, institutional support and the creation of the right milieu. Many were senior and experienced professionals (Drs. Brooks, Hammad, Rentos, Roets, Bernard, and Harbison). In 1999, USF became a recipient of a NIOSH Agricultural Center, the Deep South Agricultural Safety and Health Center. In 2000, we added an OSHA 21(D) consultative program for small, private businesses in the State of Florida. USF is now the only educational institution having all three of these programs. Funding for the OS&H programs has increased about 7-fold in 5 years, from an initial $400,000 to a current level of $3 million annually. In addition, there has been expansion of research funding in OS&H as a result of greater emphasis, evolution of programs, and recruitment of new research faculty.

Commensurate with the increased funding for training, there has been increased funding for research in OS&H; consequently, there has been promotion of the NORA agenda. From the initial limited OS&H research conducted at the College of Public Health, there has been significant growth in research activities at USF and throughout the state. OS&H research is now being conducted at the Veterans Hospitals (establishment of an ergonomic laboratory and other efforts), Moffitt Cancer Research Institute, Colleges of Nursing and Engineering, College of Physical Therapy, Department of Psychiatry, College of Medicine, and other USF programs. There has been enhancement in research at other universities and colleges including UM, FAMU, UF, and FIU. Research efforts have been funded in North and South Carolina with ERC Pilot Projects Grants.

Pilot Research Projects funded during the project period are as follows:

1999-2000

Project Title	PI Last Name	PI First Name	PI Institution	Amount Awarded	PI is Faculty Member or PI is Research Trainee?	If PI is Trainee, identify the faculty mentor	Primary NORA Research Topic
Halocarbon-Inflicted Tissue Injury and Induction of Repair Pathways: Growth - Arrest and DNA Damage-Inducible Genes, Stress Response Proteins and Base Excision Repair Enzymes.	McCluskey, MD	James D.	University of South Florida - Occupational Medicine Program	$3,300.00	Research Trainee	Raymond Harbison, Ph.D.	Exposure Assessment Methods
Evaluation of Abrasive Blasting Respirator Performance: A Study of Workplace Protection Factors	Poole, MS	Jamie L.	University of South Florida - Industrial Hygiene Program	$5,000.00	Research Trainee	Yehia Hammad, Sc.D.	Control Technology and Personal Protective Equipment
Organ-Specific Repair Capacity of Nucleotide-Excision Repair, Base-Excision Repair, and Stress-Response Proteins Following Acute Treatment with Benzo[a]pyrene.	Price, M.Ed.	Debra J.	University of South Florida - Toxicology Program	$3,300.00	Research Trainee	Raymond Harbison, Ph.D.	Special Populations at Risk
The Effect of Vibration on Endothelial Cell Function	Oluwole, MD	Babalola	University of South Florida - Occupational Medicine Program	$5,000.00	Research Trainee	Stuart Brooks, MD	Musculoskeletal Disorders of the Upper Extremities
The Effects of Mixed Pesticide Exposure on DNA Damage and DNA Repair Capacity in a Neuronal Cell Line.	Stedeford, MS	Todd James	University of South Florida - Toxicology Program	$3,300.00	Research Trainee	Raymond Harbison, Ph.D.	Mixed Exposures
Investigation of an Air Sampling and Analytical Method for Bronopol	Smyth, CIH, MSPH	John C.	University of South Florida - Industrial Hygiene Program	$3,300.00	Research Trainee	Yehia Hammad, Sc.D.	Exposure Assessment Methods
Validity and Reliability of an Exposure	Vuskovich, MD	Matthew A.	University of South	$3,300.00	Research Trainee	Stuart Brooks, MD	Exposure Assessment

Project Title	PI Last Name	PI First Name	PI Institution	Amount Awarded	PI is Faculty Member or PI is Research Trainee?	If PI is Trainee, identify the faculty mentor	Primary NORA Research Topic
Assessment Questionnaire			Florida - Occupational Medicine Program				Methods
Organization of the Work of the Physical Therapist	Page, Ph.D., PT	Catherine	University of South Florida - College of Physical Therapy	$2,500.00	Faculty Member	N/a	Low Back Disorders
Pediatric Pesticide Poisoning: Occupational & Environmental Associations	Fleming, Ph.D., MD, MPH	Lora	University of Miami	$5,000.00	Faculty Member	N/a	Special Populations at Risk
Identification of Populations with High-Risk for Occupational Injuries and With Disproportionate Minority Membership.	Robertson, Ph.D.	Janeen	North Carolina A & T State University	$2,500.00	Faculty Member	N/a	Special Populations at Risk
Improvement of Exposure Assessment by Investigating Physical Factors	Lee	Eungyoung	University of South Carolina	$2,500.00	External to University – research trainee	Charles E. Feigley, Ph.D., CIH	Exposure assessment methods

2000-01

Project Title	PI Last Name	PI First Name	PI Institution	Funding Approved	PI is Faculty Member or PI is Research Trainee?	If PI is Trainee, identify the faculty mentor	Primary NORA Research Topic
The Radiation Work Permit (RWP) Exposure Model	Barclay, MS	Hazel	University of South Florida -Industrial Hygiene Program	$2,000	Research Trainee	Tom Bernard, Ph.D.	Exposure assessment methods/Control Technology and Personal Protective Equipment
Dermal Absorption of a Dilute Aqueous Solution of Malathion	Scharf, MS	John	University of South Florida - Occupational Medicine Program	$2,500	Research Trainee	Raymond Harbison, Ph.D.	Exposure Assessment Methods
Adrenergic Modulation	Silver, MS	David	University of	$3,500.	Research	Raymond	Risk

Project Title	PI Last Name	PI First Name	PI Institution	Funding Approved	PI is Faculty Member or PI is Research Trainee?	If PI is Trainee, identify the faculty mentor	Primary NORA Research Topic
of Organophosphate-Induced Acetyl cholinesterase Inhibition			South Florida - Toxicology Program		Trainee	Harbison, Ph.D.	Assessment Methods
Evaluation of Abrasive Blasting Respirator Performance: A Study of Workplace Protection Factors	Poole, MSPH	James	University of South Florida -Industrial Hygiene Program	$5,000	Research Trainee	Yehia Hammad, Sc.D.	Control Technology and Personal Protective Equipment
Manual Handling of Workload Model	Menzel, MA, MS, COHN-S	Nancy	University of South Florida College of Nursing	$2,500	Faculty Member	N/a	Low back disorders
A Case-Control Survey of Nursing Back Injuries in a Veteran's Hospital	Tiesman, MSPH	Hope	James A. Haley VA Hospital	$5,000	Faculty Member	N/a	Low back disorders.
Investigation of an Air Sampling and Analytical Method for Bronopol	Smyth, CIH, MSPH	John	University of South Florida -Industrial Hygiene Program	$5,000	Research Trainee	Yehia Hammad, Sc.D.	Exposure Assessment Methods
Is pyridoxine and effective treatment for carpal tunnel syndrome?	Holm, MS, ARNP	Gregory	University of South Florida - College of Nursing	$3,700	Research Trainee	Linda Moody, Ph.D., ARNP, FAAN	Musculoskeletal Disorders of the Upper Extremities
Improvement of Exposure Assessment by Investigating Physical Factors -- Non-isothermal Conditions (Year II)	Lee	Eungyoung	University of South Carolina	$5,000	External to the university – research trainee	Charles E. Feigley, Ph.D., CIH	Exposure Assessment Methods
Functional Requirements of Hazardous Materials Workers	Preston	Christina	University of South Florida -Industrial Hygiene Program	$1,000	Research Trainee	Tom Bernard, Ph.D., CIH	Control Technology and Personal Protective Equipment

2001-02

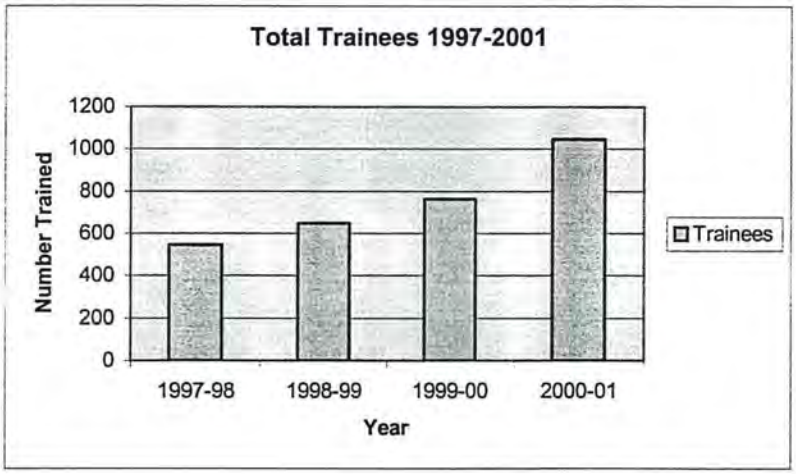
Project Title	PI Last Name	PI First Name	PI Institution	Amount Awarded	PI is Faculty Member or PI is Research Trainee?	If PI is Trainee, identify the faculty mentor	Primary NORA Research Topic
Cadmium interactions with Human Epithelial Cells	Hellermann, MD	Gary	University of South Florida - College of Medicine	$15,724.00	Faculty Member	N/a	Asthma & Chronic Obstructive Pulmonary Disease
The Guanajuato-Florida Connection	Unterberger, MA	Alayne	University of Florida	$9,450.00	External to the university – Research trainee	Allan Burns, Ph.D.	Social and Economic Consequences of Workplace Injury and Illness/Special Populations at Risk
A Reliability study of the USF College of Public Health Environmental Assessment Questionnaire	Haight, MD	Robert	University of South Florida, Occupational Medicine Program	$1,850.00	Research Trainee	Stuart Brooks, MD	Exposure Assessment Methods
Measuring the Efficacy of Mold Remediation Intervention in Indoor Environments	Krause, MSPH	David	University of South Florida - Environmental and Occupational Health	$9,611.00	Research Trainee	Yehia Hammad, Sc.D. and Noreen Poor, Ph.D.	Intervention Effectiveness Research
Development of Bilingual Ergonomic Surveillance Measurements	Belendez, ND	Zaidia	University of Kentucky	$13,512.00	Faculty Member	N/a	Surveillance Research Methods
Work-Related Factors and Back Pain in CNA's	Kraemer, Ph.D.	Theresa	University of South Florida - College of Physical Therapy	$15,724.00	Faculty Member	N/a	Low Back Disorders

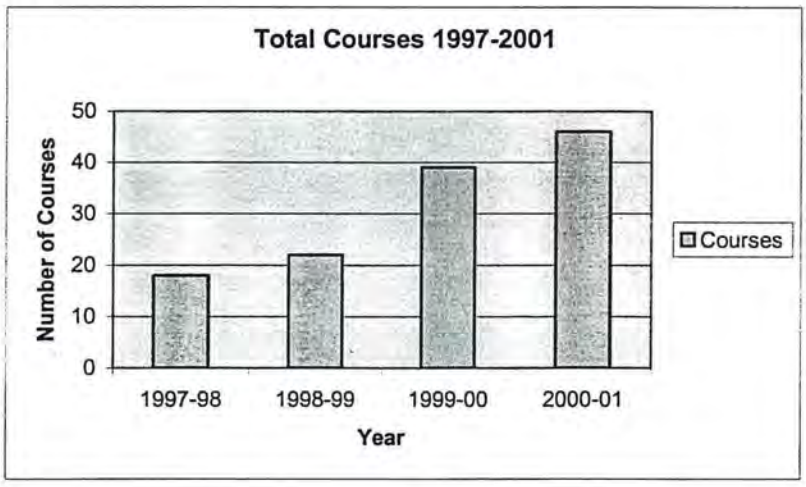
Continuing Education/Outreach

The *Sunshine ERC* at the University of South Florida (USF) Health Sciences Center (HSC) was established in 1997. There is an interdisciplinary interaction with each of three colleges of the HSC; Medicine (COM), Nursing (CON) and Public Health (COPH) contribute a unique interdisciplinary flavor to the ERC's education and research programs, with each college providing faculty and student expertise and enthusiasm. Each of the core disciplines of the ERC (occupational medicine, occupational health nursing, safety management and industrial hygiene) contribute significantly to the ERC's program of Continuing Education and Outreach (CE/O). With the addition of the OSHA 21-D Consultation program

in June 2000, additional faculty members were added to the pool of potential CE/O Instructors. The continuation of the core programs and the new OSHA 21(d) program offer fantastic opportunities for CE/O and will result in a terrific offering of training courses. There are also CE/O programs with the Deep South Agriculture Safety and Health Center; the Center was established at USF in 1999.

Over the past funding period (1997-2001), there has been progressive and continued growth and productivity in CE/O. The number of courses offered and the number of attendees trained grow yearly as depicted in the charts below.





The table below identifies the percent changes (%) in the CE/O attendees and CE/O courses offered from July 1, 1997 – June 30, 2001. The table documents that the total number of courses offered each year and the total number of attendees trained continues to increase each year.

Total Trainees – 1997 - 2001 Percent Change	
Year	*Percent Change*
Year 2 – 1998-1999	19% increase from year 1
Year 3 – 1999-2000	18% increase from year 2
Year 4 – 2000-2001	37% increase from year 3
Year 1-4	92% increase from year 1 to year 4

Total Courses – 1997 – 2001 Percent Change	
Year	*Percent Change*
Year 2 – 1998-1999	22% increase from year 1
Year 3 – 1999-2000	77% increase from year 2
Year 4 – 2000-2001	18% increase from year 3
Year 1-4	156% increase from year 1 to year 4

The Sunshine ERC CE/O Program had somewhat of a rocky beginning, however during the five years of the last project period; dramatic changes have been made to the administration, organization and strategic plan of this program. Needs assessments evaluations are performed on a regular basis (at the end of courses, during outreach programs, when professors lecture at conferences, etc.); about 4000 needs-assessment questionnaires are mailed out every couple of years. A mailed out needs assessment of this type was mailed out at least 2 times during the project period. Information collected in the needs assessment will be utilized to plan future programs and to ensure quality continues to be it's best and that no changes need to be made. Drs. Brooks and Hammad take an active roll in this program and work with the Program Director to provide guidance in the programs.

Hazardous Substance Training and Hazardous Substance Academic Program

The Hazardous Substance Training and Hazardous Substance Academic Training Programs were started in July of 2001. The objectives of the Hazardous Substance Training Program (HST) are to provide training about the identification and management of the physical-chemical and health and safety risks associated with hazardous substances releases and spills. The personnel completing the training would be expected to be capable of developing emergency response contingency plans and health and safety standard operating procedures for personal protection and protection of public health and the environment. The trained personnel would have practical knowledge of the chemical, physical and health risks associated with relevant hazardous substances transported, stored or used in their communities. Didactic presentations, field exercises, and workshops will be used to perpetuate the response skills needed for protection of public health and the environment.

Ms. McCluskey, the Program Director for the HST program works with government agencies, key individuals in the target audience, as well as numerous other individuals who utilize this type of training or will need to utilize it in the future. Time and effort is dedicated to attending Local Emergency Planning Committee Meetings and working directly with the DEP, Fire Personnel, EMS workers and Law Enforcement to determine what the training needs and to establish training programs to address these needs. This time and effort is beginning to pay off with a large increase in the number of telephone calls received about the program, collaborative efforts to apply for additional training funds for programs and direct feedback about training needs of the abovementioned groups.

Ms. Robin DeHate was brought on as a trainer for this program in July 2001. Since that time, she has become the Deputy Director of the Program and her teaching duties continue to grow. Ms. DeHate also brings a large network of contacts to which marketing efforts are directed. In addition, Ms. DeHate and Dr. James McCluskey have together worked as a team to obtain donated equipment for the training programs. As a result, the equipment closet for this program has expanded to be a room housing all of the donated equipment. All equipment that has been donated is new and in perfect condition.

The following is a listing of trainees and courses in the HST program for 2000-01. Data for the 2001-02 year is not yet available.

2000-01 HST Offerings			
Course Title	*Dates Offered*	*Number of Trainees*	*Location*
8-Hour HAZWOPER Refresher Training	07/17/00 – 8 Hours	24	Tampa USF Campus
	10/23/00 – 8 Hours	38	Tampa USF Campus
	01/29/01 – 8 Hours	27	Tampa USF Campus
	05/07/01 – 8 Hours	39	Tampa USF Campus
40-Hour HAZWOPER Training	07/17/-07/20/00 – 40 Hours	20	Tampa USF Campus
	10/23-10/26/00 – 40 Hours	49	Tampa USF Campus
	01/29-02/01/01 – 40 Hours	42	Tampa USF Campus
	05/07-05/10/01 – 40 Hours	41	Tampa USF Campus
8-Hour HAZWOPER Supervisor Training	10/27/00 – 8 Hours	15	Tampa USF Campus
	05/11/01 – 8 Hours	50	Tampa USF Campus
DOT Hazardous Material Transportation Regulations	10/05/00 – 8 Hours	18	Tampa USF Campus
Certified Hazardous Materials Manager Review Course	11/06-11/09/00 – 24 Hours	6	Tampa USF Campus
	03/27-03/30/01 – 24 Hours	6	Tampa USF Campus

The HSAT Program was designed to prepare professionals to safely carry out their responsibilities in the hazardous substance response and site remediation activities authorized by SARA. An important goal of the HSAT program is to furnish a high quality educational experience to students. A major objective is to train students for employment in small to medium sized companies common to the state and the southeast. Thus, an original and continuing purpose of the HSAT training is to meet the needs of the region and especially the State of Florida. The targeted student population includes state and local health and environmental agency personnel and other professionals engaged in the management of hazardous substances. The interested professionals may represent federal, state and local health and environmental agency personnel and other professionals engaged in the handling of hazardous substances, in the management of facilities and/or in the evaluation of hazards to health presented by these facilities. The persons may hold jobs on generator sites, transporters, or work on disposal sites; some potential students may be engaged in the investigation and remediation of hazardous waste sites. Due to difficulties related to recruiting, the trainees from the HSAT program will begin during the fall of 2002.

Appendix A: Listing of Project Period Graduates by Program

Industrial Hygiene

NAME	DEGREE AWARDED	DATE DEGREE AWARDED
Kim Anderson	MSPH	12/96
Don Barker	MSPH	12/96
Meid Pourmoghone	MSPH	04/97
Arash Behravash	MSPH	08/97
Rene Salazar	Ph.D.	08/97
David O'Connor	MPH	04/97
Michael Alexander	MPH	08/97
Dennis Milak	MSPH	08/93
Roland Garipay	MSPH	05/98
Theresa Lyons	MSPH	05/98
Nancy Gonzalez	MSPH	12/98
Joseph Schneider	MPH	08/99
Mary Matz	MSPH	08/99
Thomas Brislin	MSPH	12/99
John Boucher	MSPH	12/99
Robert Maglievaz	MSPH	05/00
Carol Thoma	MPH	05/00
Robert Walton	Ph.D.	08/00
Christina Barrow	MSPH	12/00
William Judge	MSPH	12/00
Brian Sexton	MSPH	12/00
Christina Preston	MSPH	05/01
Scott Walter	MSPH	05/01
Jamie Poole	Ph.D.	08/01
Hazel Barclay	Ph.D.	01/02
Christopher Courtney	MSPH	12/01
Pedro Fernandes	MSPH	05/02
Richard Hartman	Ph.D.	08/02

Occupational Health Nursing

NAME	DEGREE AWARDED	DATE DEGREE AWARDED
Joann Rechtine	05/96	MS/MPH
Susan Elliott	08/97	MS/MPH
Erin Gwyn	05/98	MS/MPH
Karen Greenawald	12/98	MS/MPH
Christine Bouchard	05/99	MS/MPH
Barbara Kennedy	05/99	MS/MPH
Patrick Kuritz	05/99	MS/MPH
Joseph Bertulfo	05/00	MS/MPH
Margaret Wyatt	12/99	MS/MPH
Helen Acree	12/00	MS/MPH
Carolyn Clark	12/00	MS/MPH
Angela Clem	12/00	MS/MPH
Linda Munday	12/99	MS/MPH
Jennifer Palmiero	12/00	MS/MPH
Denise Pelletier	12/00	MS/MPH
Tracey Wertheim	12/00	MS/MPH
Andrea Beale	05/02	MS/MPH
Joseph Garrett	08/02	MS/MPH
Jeanne Mulvihill	05/02	MS/MPH

Occupational Medicine

NAME	MO/YR GRADUATED FROM ACADEMIC PROGRAM	DEGREE	DATE OF GRADUATION FROM RESIDENCY
Robert Shefsky	08/97	MPH	06/97
Mary Eberhardt	08/98	MSPH	06/98
M. Rony Francois	05/98	MSPH	06/98
John Scharf	Completing research for MSPH	Completing research for MSPH	Elected to complete practicum at a later date.
Steven Field	12/98	MSPH	06/98
Mary Fogarty	Practicum year only.	Practicum year only.	06/99
Patricia David	05/99	MSPH	06/99
Wasif Alam	08/99	MSPH	06/99
Pascual Bidot	08/99	MSPH	06/99
Pedro Ojeda	05/99	MPH	06/99
Raymond Osbourne	Practicum year only.	Practicum year only.	06/99
Fathy Saad	Had an MPH.	Had an MPH.	06/98
Frederico Kallmann	Currently working on MSPH Part time.	Currently working on MSPH Part time.	06/00
Matt Vuskovich	05/01	MSPH	06/00
Roger Arumugam	05/02	MSPH	06/00
Carol Lemeh	Practicum year only.	Practicum year only.	06/00
Toni Belisle	Currently completing research for MSPH.	Currently completing research for MSPH.	06/01
Sola Oluwole	Currently completing research for MSPH.	Currently completing research for MSPH.	06/01
Deli Wang	Practicum year only.	Practicum year only.	06/01
Matt Vuskovich	08/01	MSPH	06/00
Robert Haight	05/02	MSPH	06/02
Kevin Mason	05/02	MPH	06/02
Bhupendra Gupta	08/02	MSPH	06/02
James McCluskey	Currently completing research for Ph.D.	Currently completing research for Ph.D.	06/02

Safety Management

NAME	DEGREE AWARDED	DATE DEGREE AWARDED
Timothy Bennett	MPH	06/01
Deidra Lovich	MPH	06/01
Robert Scott	MPH	08/01
Jeffery Veuleman	MPH	12/01
Kelly Wagoner	MPH	05/02
Robynne Swanson	MPH	05/02
Robin DeHate	MPH	05/02
David Valleri	MPH	08/02

Appendix B: Listing of Faculty/Student Publications by Program

Industrial Hygiene

Salazar R., Y. Hammad and PM Sherblom, Collection of Airborne Mycotoxin on Membrane Filters and Analysis Using HPLC with Ultraviolet Absorbance Detection. Presented at the American Industrial Hygiene Conference, Dallas Texas, May 17-23, 1997.

Bernard, T. E. and D. J. O'Connor. Continuing the search for WBGT adjustment factors. American Industrial Hygiene Conference, 1997.

Barker, D. W., S. Kini and T. E. Bernard. Thermal characteristics of clothing ensembles for use in heat stress analysis. American Industrial Hygiene Conference, 1997.

Bernard, T. E. and K. Y. Anderson. A look at evaluation tools for short-cycle tasks. Managing Ergonomics in the 1990s, Cincinnati, June 1997.

Salazar R., P. Sherblom and Y. Hammad, Ochratoxin A Production by Aspergillus ochraceus on Nutrient Media. Presented at the American Industrial Hygiene Conference, Atlanta, Georgia, May 11-15, 1998.

Salazar R., P. Sherblom and Y. Hammad, Production of Ochratoxin A by Aspergillus ochraceus Growing on Ceiling Tile and Carpet. Presented at the Third International Conference on Bioaerosols, Fungi, and Mycotoxins: Health Effects, Assessment, Prevention, and Control, Saratoga Springs, New York, September 24, 1998.

Smyth, J., K.A. Alstead and Y. Hammad, Determination of Airborne Rosin Concentration by a Colorimetric Method Presented at the American Industrial Hygiene Conference and Exposition, Toronto, Canada, June, 1999.

Logan, P. W. and T. E. Bernard, Heat stress and strain in an aluminum smelter. *American Industrial Hygiene Association Journal* 60:659-665, 1999.

Barker, D. W., S. Kini and T. E. Bernard, Thermal characteristics of clothing ensembles for use in heat stress analysis. *American Industrial Hygiene Association Journal* 60:32-37, 1999

O'Connor, D. J. and T. E. Bernard, Continuing the search for WBGT clothing adjustment factors. *Applied Occupational and Environmental Hygiene* 14:119-125, 1999.

Bernard, T. E and M. Pourmoghani, Prediction of workplace WBGT. *Applied Occupational and Environmental Hygiene* 14:126-134, 1999.

Bernard, T. E and F. Matheen, Evaporative resistance and sustainable work under heat stress conditions for two cloth anticontamination ensembles. *International Journal of Industrial Ergonomics* 23:557-564, 1999.

Bernard, T. E., N. W. Gonzales, N. L. Carroll, M. A. Bryner and J. P. Zeigler. Sustained work rate for five clothing ensembles and the relationship to air permeability and moisture vapor transmission rate. American Industrial Hygiene Conference, Toronto, June 1999

Walton, R. B., S. W. Schwartz, S. A. Field and T. E. Bernard. Combinations of Existing Ergonomics Tools to Predict Job-Related CTD Symptoms And Injuries. American Industrial Hygiene Conference, Orlando, May 2000

Maglievaz, R.and Y. Hammad: Evaluation of occupational noise exposure to airboat based aquatic herbicide applicators Presented at the American Industrial Hygiene Conference, New Orleans, LA, June 4-7, 2001.

Occupational Health Nursing

"Safe work in the 21st century." *OEM Report,* July 2000.

"Ergonomics and health care personnel." *CUE*, 2nd Quarter 2000.

Workers' comp management from a to z: A "how-to@ guide with forms, 2nd Ed. Beverly, MA: EM Press, 1998.

Workers' comp management from a to z: A "how-to@ guide with forms. Beverly, MA: OEM Press, 1995.

Workers' compensation.@ *The OEM Occupational Health and Safety Manual, Version 2.0.* Beverly, MA: OEM Press, 1996.

Burns, C., Jacobson, H., Smith, A., Reed, C., Westhoff, W., Hyer, K. (submitted) Training the interdisciplinary team in primary care. National Academies of Practice Forum: Issues in Interdisciplinary Care (NAPF).

Lowry, L. **Burns, C.**, Jacobson, H., Smith, A. (in press) Compete or complement: An interdisciplinary approach to training health professionals. Nursing and Health Care Perspectives.

Burns, C. & Covey, D. (1998). Dermatological problems in primary care. In, E. Youngkin, J. Kissinger & C. Savin (eds). Pharmacotherapy: A primary care clinical guide. Stamford, CN: Appleton & Lange.

Hewitt, M., **Burns, C.**, Long, M. C. (2000). Should classroom teachers include Student Wellness instruction within the curriculum: a comparison study. Journal of physical education, recreation and dance.

Burns, C. (1998). A retroductive theoretical model of the pathway to chemical dependency in nurses. Archives of Psychiatric Nursing. VII, No. 1, pp. 1-8.

Burns, C. (1998). Interdisciplinary training in primary care: Innovations in health. Nurse Practitioner World News.

Burns, C. (1997). Partnership in compliance: Strategies for the treatment of hyperlipidemia Part III. Strategies to enhance patient compliance. Florida Nurse. 45, (2). p. 2.

Burns, C. (1997). Partnership in compliance: Strategies for the treatment of hyperlipidemia Part II. Treatment of hyperlipidemia. Florida Nurse. 45, (1), p.2.

Occupational Medicine

Brooks S M. P inpointing E nvironmental Influences t o C ontrol A sthma. Contemporary Internal Medicine; 1997; 9: 8-12.

Brooks SM, Hammad Y, Richards I, Giovinco-Barbas J, Jenkins K. The spectrum of irritant induced asthma: sudden and not so sudden in onset and the role of allergy Chest 1998; 113:42-49.

Brooks, SM. Occupational and Environmental Asthma. Environmental and Occupational Medicine, William N. Rom, editor. Lippincott-Raven Publihers.1998, pp 481-524.

Reibman J, Brooks SM. Inflammatory Mechanisms of Asthma. Environmental and Occupational Medicine, William N. Rom, editor. Lippincott-Raven Publihers.1998, pp . 525-537.

Stabile, I, Brooks SM, Mason J. Medical Monitoring for Human health Impact from hazardous Waste Incineration. Stephen Roberts, editor. Hazardous Waste Incineration. CRC Press, 1999.

Brooks SM, Bernstein IL. Reactive Airways Dysfunction Syndrome or Irritant-Induce Asthma, in Asthma in the Workplace, editors, Bernstein IL, Chan-Yeung M, Malo J-L, Bernstein DI. Marcel Dekker Publisher, New York, 1999.

Bernstein IL., Brooks SM Metals, in Asthma in the Workplace, editors, Bernstein IL, Chan-Yeung M, Malo J-L, Bernstein DI. Marcel Dekker Publisher, New York, 1999.

Brooks, S M, A lam, W M. M an-Made V itreous Fibers, i n O ccupational Medicine S ecrets. R M Bower & JE Cone, Editors; Hanley & Belfus, Inc, Publisher, Philadelphia, 1999, pages107-110.

Kelley DE, Bidot P, Freedman Z, Haag B, Podlecki D, Rendell M, Schimel D, Weiss S, Taylor T, Krol A, Magner J: Efficacy and safety of Acarbose in Insulin-treated patients with type 2 Diabetes Care 21:2056-2061,1998.

Bidot P, Morgan M, Zhukov T, Tannenbaum M, Tockman MS.: Heterogeneous Ribonucloprotein (hnRNP) Antibody in Thyroid Neoplasia. Univ. of South Florida Medical School, Tampa, Florida. American Association of Clinical Endocrinologists. Ninth Annual Meeting & Clinical Congress, May 3-7, 2000, page 187, Atlanta, GA.

Rosenbach KA, Shah RP,Adelman HM. [Eds: Adelman HM, Cutolo EP, Bognar BA, Bidot P, Truitt CA.] MORNING R EPORT: AN ALCOHOLIC MAN WITH A N ABNORMAL PULSE. Hosp Pract 1999 Dec; 34(13):15, 16, 21.

P. Bidot, MB Morgan, T Zhukov, M Tannenbaum and MS Tockman. Feasibility Study of a Diagnostic Test to Detect Heterogeneous Nuclear Ribonucleoprotein (hnRNP) in thyroid cells as a Marker for Cancer. Endocrine Society 82nd June21-24, 2000, page 594, Toronto, Canada

Bidot P, Morgan M, Zhukov, T, Tannenbaum, M, Tockman, MS: Loss of Heterogeneous Ribonucleoprotein (hnRNP) A_2 /B_1 Expression in Thyroid Neoplasia. Accepted for Publication, Endocrine Practice, 2001.

Bidot P. Diabetic Foot. Florida Journal of Public Health.

Zito, Bidot, P : Effects of ASA and Vitamin E on Platelet Aggregation in Health Subjects as measured by the Slide Platelet Aggregation Test: A Double Blin Amer. J. of Clin. Pathol.

Heterogeneous Ribonucleoprotein (hnRNP) Antibody In Thyroid Neoplasia. Bidot P, Morgan M, Zhukov T, Tannenbaum, M, Tockman MS. 1999.

Babu S, Francois R, McCluskey J, Muro-Cacho C, Harbison RD. Paradoxical alteration of dibromoethane (EDB)-induced nephrotoxicity by adrenergic agents. Toxicologist 1999; 48:188-189.

Harbison RD, McCluskey J. Evaluating occupational claims of chemical-induced injury. Chemical Health & Safety 2001; July/August: 6-9.

McCluskey J, Haight R, Brooks S. Cockatiel-induced hypersensitivity pneumonitis. Environmental Health Perspectives 2002; 110:735-738.

Brooks S, McCluskey J. Reactive airways dysfunction syndrome and the spectrum of irritant-induced asthma. (Accepted for publication in The Journal of Respiratory Diseases)

Harbison RD, McCluskey J, Babu S, Muro-Cacho C. Paradoxical alteration of dibromoethane (EDB)-induced nephrotoxicity by adrenergic agents. (Submitted for publication to Teratogenesis, Carcinogenesis, and Mutagenesis)

Harbison, R.D., Babu, S., Muro-Cacho, C., Francois, M.R., Stedeford, T. (2000). Adrenergic Modulation of Bromohydroquinone-Induced Nephrotoxicity. Res. Comm. in Pharm. & Tox. 5:11-21

Safety Management

Cortés-Vizcaino, C. and T. E. Bernard. Effects on heat stress of a flame-retardant ensemble for aluminum smelters. *American Industrial Hygiene Association Journal* 61:873-876, 2000.

Logan, P. W. and T. E. Bernard. Heat stress and strain in an aluminum smelter. *American Industrial Hygiene Association Journal* 60:659-665, 1999.

Bernard, T. E.. Heat stress and protective clothing: an emerging approach from the United States. *Annals of Occupational Hygiene* 43:321-327, 1999.

Barker, D. W., S. Kini and T. E. Bernard. Thermal characteristics of clothing ensembles for use in heat stress analysis. *American Industrial Hygiene Association Journal* 60:32-37, 1999

O'Connor, D. J. and T. E. Bernard. Continuing the search for WBGT clothing adjustment factors. *Applied Occupational and Environmental Hygiene* 14:119-125, 1999.

Bernard, T. E and M. Pourmoghani. Prediction of workplace WBGT. *Applied Occupational and Environmental Hygiene* 14:126-134, 1999.

Bernard, T. E and F. Matheen. Evaporative resistance and sustainable work under heat stress conditions for two cloth anticontamination ensembles. *International Journal of Industrial Ergonomics* 23:557-564, 1999.

Bernard, T. E and R. L. Cross. Heat stress management: Case study in an aluminum smelter. *International Journal of Industrial Ergonomics* 23:609-620, 1999.

Ramsey, J. D. and T. E. Bernard. Heat Stress. In Harris, R. E. (ed), Patty's Industrial Hygiene and Toxicology, 5th ed., New York: John Wiley and Sons, 2000.

Bernard, T. E. Environmental Considerations: Heat and Cold. In Roitman, J. L. et al. (ed), ACSM's Resource Manual for Guidelines for Exercise Testing and Prescription, 3rd ed., Baltimore: Williams & Wilkins, 1998. (4th Edition in press)

Dietrich C., I. Richards, T. Bernard, Y. Hammad, Human Stress Protein Response to Formaldehyde Exposure.Exp Toxic Pathol 48:518-519, 1996.

Harbison, R.D. Diagnosis of Occupational disease. Hamilton and Hardy's Industrial Toxicology 5:3-11, 1998.

Price. D.C., C. Muro-Cacho, and R.D. Harbison. Role of apoptoris in phenobarbital modulation of cocaine-induced liver damage. Res Comm. in Alcohol and Subs. Abuse. 20:27-40, 1999.

LeRusk, G., D. Lynn Williams, and R.D. Harbison. Challenging class certification in the post-Daubert era. ABA Environmental Litigation Committee Newsletter 10:12-15, 1999.

Harbison, R.D., S. Babu, C. Muro-Cacho, M. Rony Francois and T. Stedeford. Adrenergic modulation of bromohydroquinone-induced nephrotoxicity. Res Comm. in Pharmacology & Toxicology 5:11-22, 2000.

Garvey, G.J., G. Hahn, R.V.Lee, and R.D. Harbison. Heavy metal hazards of Asian traditional remedies. Inter. Jour. Of Environ. Hlth Res., 11-63-71, 2001.

Stedeford, T., F. Cardozo-Pelaez, N. Nemeth, S. Song, R. Harbison, and J, Sanchez-Ramos. Comparison of base-excision repair capacity in proliferating and differentiated PC 12 cells following acute challenge with dieldrin. Neurotoxicology, 2001.

Stedeford, T., F. Cardozo-Pelaez, C. Hover, R. Harbison, and J. Sanchez-Ramos. Organ-specific differences in 8-oxoguanosine glycosylase (OGG1) repair following acute treatment with benzo(a)pyrene. Res. Comm. Molecular Pathology and Pharmacology, 2000.

Garipay, R., J. Reed, C. Muro-Cacho, G. Hahn and R.D. Harbison. Toxicological testing and risk analysis of vitrified material obtained from Naval Shipyard Charleston, S.C. Toxicologist 42:28, 1998.

Kassed, C.A., S.A. Shelley, J.E. Pariga, and R.D. Harbison. Response of growth arrest and DNA damage-inducible (GADD 45) m RNA to in vivo treatment with halocarbons. Toxicologist 42:28, 1998.

Babu, S., C. Muro-Kacho and R.D. Harbison. Phenylephrine-induced enhancement of bromohydroquinone (BHQ) nephrotoxicity. FASEB, 1998.

Lee, R.V., R. Harbison, A. Ellwood, C. Williams. Geographic determinants in health risk analysis. J. Occup. Environ. Med. 40:1023, 1998.

Babu, S, R. François, J. McCluskey, C. Muro-Cacho, and R.D. Harbison. Paradoxical Alteration of dibromoethane (EDB)-induced nephrotoxicity by adrenergic agents. Toxicologist 48:188-189, 1999.

Krause, J.D., N.D. Poor and R.D. Harbison. Characterization of aromatic candle emissions and its similarity to diesel engine exhaust. Toxicologist 48:395, 1999.

Reed, J., R., Garipay, G. Hahn, and R.D. Harbison. Comparative absorption of aluminum nitrate in soil and aqueous solutions. Toxicologist 54:187, 2000.

Stedeford, T.J., F. Cardozo-Pelaez, C.G. Hoover, and R.D. Harbison. Organ -specific differences in Base-excision repair following acute treatment with benzo(a)pyrene. Toxicologist 54:94, 2000.

Price, D.J., C.A. Muro-Cacho, and R.D. Harbison. The role of apoptosis in phenobarbital modulation of cocaine-induced liver damage. Toxicologist 54:112, 2000.

Stephen, F.D., C.H. Stineman, P.W. Jonmaire, D.W. Kelly, and R.D. Harbison. Risk analysis of candle missions. Toxicologist 54:107, 2000.

Stedeford, T., F. Cardozo-Pelaez, N. Nemeth, G. DiCarlo, R.D. Harbison, and J. Sanchez-Ramos. comparison of base-excision repair capacity in proliferating and differentiated PC 12 cells following acute challenge with dieldrin. Neuroscience 1:265, 2000.

Stedeford, T., F. Cardozo-Pelaez, R.D. Harbison, and J. Sanchez-Ramos. Selective accumulation of 8-ydroxy-2-deoxyguanosine in the lung following acute treatment with benzo(a)pyrene. Toxicologist , 2001.

Cardozo-Pelaez, F., T. Stedeford, N. Nemeth, S. Song, R.D. Harbison, and J. Sanchez-Ramos. Dieldrin inhibits the repair capacity of 8-oxoguanosine DNA glycosylase in differentiated PC 12 cells. Toxicologist, 2001.

Harbison, R.D., *Industrial Toxicology*, C.V. Mosby, 1998.

Wolfson, J. "Patient Safety Center of Inquiry Focuses on Patient Safety Improvement", Veterans Health Systems Journal, Vol 5, No. 5, June 2000

Dialysis Fraud and Abuse in Florida: Financial and Legal Relationships and Opportunities for Legislative and Regulator Action, Senior Author – Jay Wolfson with Ronald P. Kaufman. The Florida Legislature and the Florida Agency for Health Care Administration, February 2001.

Recommendations to Preserve the Safety Net Health Care System in Florida, Senior Author – Jay Wolfson with Michael Reid, Alan Friedlob, et al. The Florida Legislature and the Florida Agency for Health Care Administration, January 2001

Preserving the Safety Net Health Care Provider System in Florida: Health Policy Analysis, Senior author – Jay Wolfson with Michael Reid, Alan Freidlob, et al. The Florida Legislature and the Florida Agency for Health Care Administration, December 2000.

A Comparison of Utilization and Cost Patterns Between Services Provided to Injured Workers in Managed versus Unmanaged Care Environments in Florida's Mandatory Managed Care System. Senior Author – Jay Wolfson with Stuart M. Brooks, Catherine Johnson, Yiliang Zhu, Andrea Spehar and Trevor Smith, State of Florida, Department of Labor, Division of Workers' Compensation, June 1998.

HSAT

Moulvi, F.I. and Richards, I.S., 1998. Effects of eastern diamondback rattlesnake (Crotalus adamanteus) venom on electromechanical aspects of isolated perfused rat heart. The Toxicologist, 42, 286.

Sutton, E.T., Norman, J.G., Rao, P.S., Graham, L., Newton, C.A., and Richards, I.S.. 1998. Pulmonary endothelium and epithelium are maintained and reduced neutrophil infiltration is found post-endotoxin in Type 1 interleukin-1 receptor knockout mice. FASEB J. 12: A992.

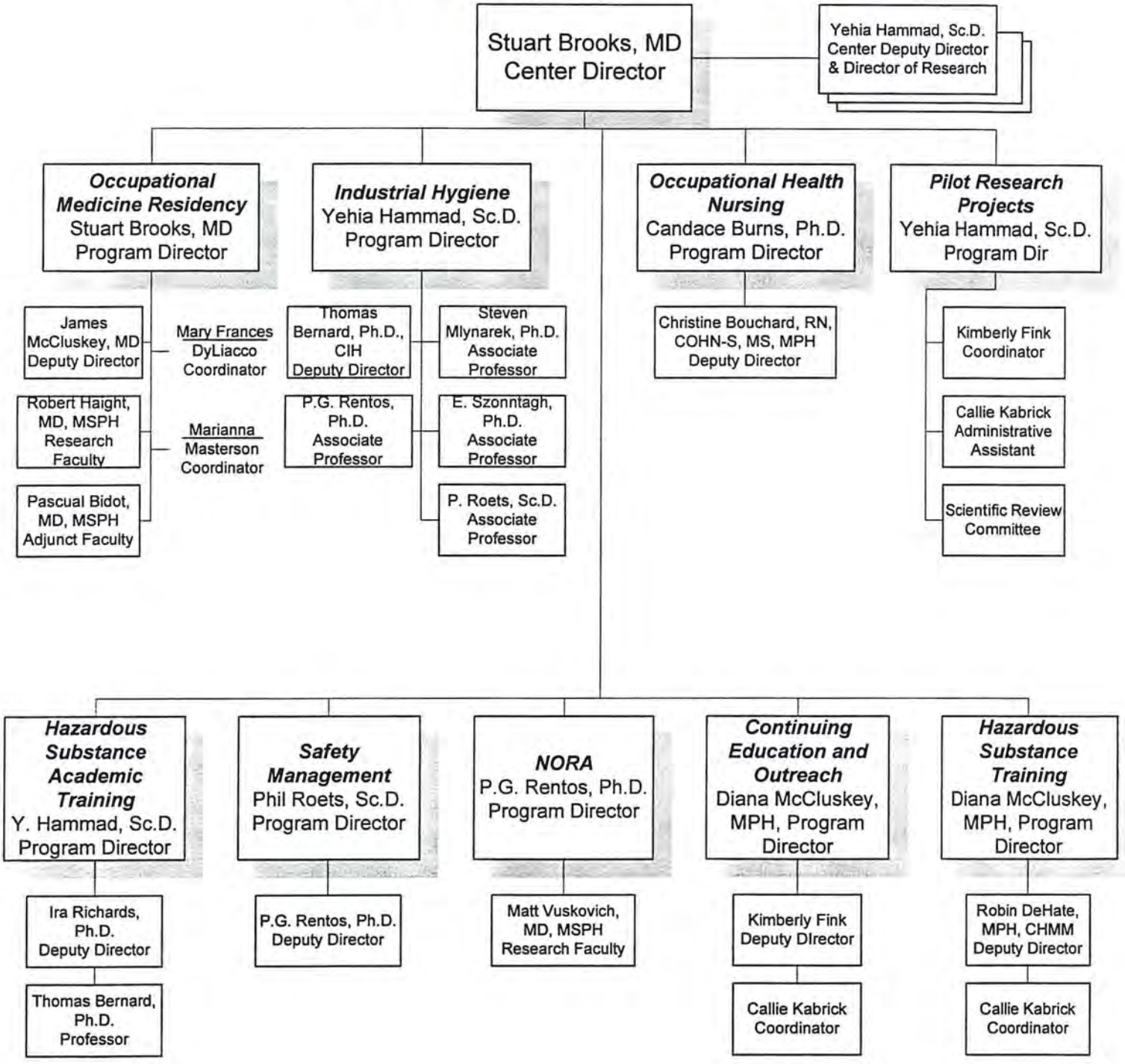
Sutton, E.T., Norman, J., Rao, P.S., Graham, L.B., and Richards, I.S. 2000. Pulmonary endothelial and epithelial integrity and neutrophil infiltration following endotoxin in interleukin-1 receptor knockout mice. Shock 13, 117-125.

Brooks, S.M., Fox, R., Lockey, R., Hammad, Y., Richards, I.S., Giovinco-Barbas, J. and Jenkins, K. 1998. The spectrum of irritant-induced asthma: Sudden and not-so-sudden onset and the role of allergy. Chest 113, 42-49.

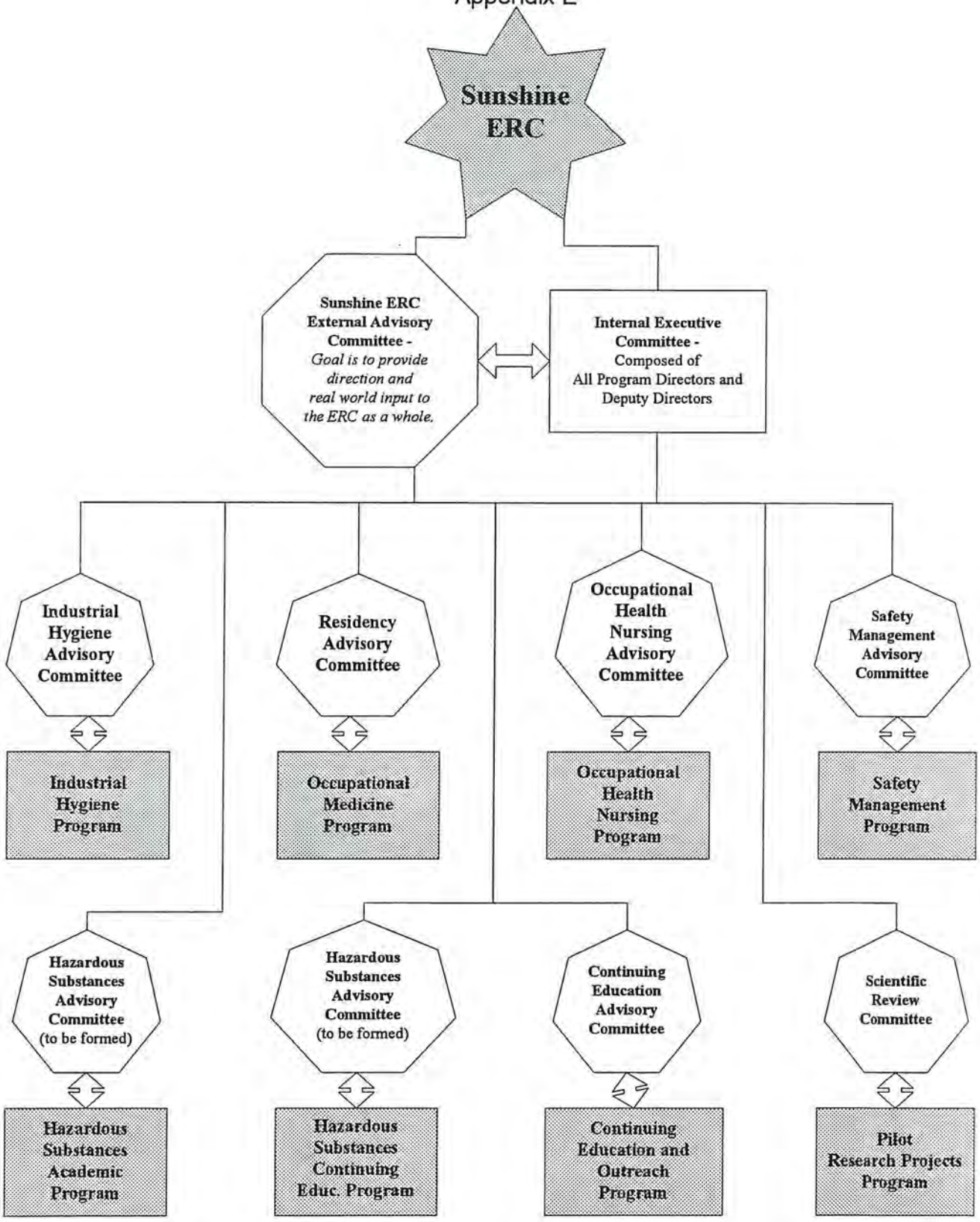
Appendix C
ERC External Advisory Committee Members

FName	LName	Title	Company	Discipline Committee
Jean	Aertker, ARNP, MS	Ms.	Tampa Occupational Health Services	Occupational Health Nursing
Chandra	Bilgi, MD	Dr.	St. Joseph's Occupational Health	Continuing Education and Outreach
Christine	Bouchard, ARNP, MS, MPH	Ms.	UCH, Occupational Health Services	Continuing Education and Outreach
Forrest	Branscomb	Mr.	Risk Manager, School Board of Manatee County	Safety Management
Lawrence	Brown	Mr.	President, Iron Workers Union, Local 397	Continuing Education and Outreach
Michael	Chrisholm	Mr.	Loss Control Counselor, FCCI Insurance	Safety Management
Douglas	Dean, CIH	Mr.	Environmental Consulting & Technology	Continuing Education and Outreach
Neil	Dillard	Mr.	International Rep., Internat. Chem. Workers Union	Continuing Education and Outreach
Richard	F. Johnson	Dr.	Dir. Lakeside Industrial Med. Center	Occupational Medicine
Lawrence	Falck	Mr.	Area Director, OSHA	Continuing Education and Outreach
Edward	Fields	Mr.	Golder and Associates	Continuing Education and Outreach
Laurence	Guilbault	Mr.	Innovative Computer Environments	Industrial Hygiene/Safety Management
Arlene	Guzik, ARNP	Ms.	Lakeside Industrial Medical Center	Occupational Health Nursing/Occupational Medicine
Marie	Jose Francois	Dr.		Industrial Hygiene
Barbara	Kennedy, ARNP, MS, MPH	Ms.	Deep South Ag Center, University of South Florida	Occupational Health Nursing
Kate	Mathison	Ms.	Work Center - Harborside	Occupational Health Nursing/Continuing Education
Jeanne	McGregor	Dr.	Director, Bay Health	Occupational Medicine
Burt	McKee	Mr.	Enviro. Manager, United Agri Products	Industrial Hygiene/Safety Management
Roger	Mooney	Mr.	Maryland Insurance Group	Industrial Hygiene/Safety Management
Margaret	Moore	Dr.	Bay Care Occupational Health	Occupational Medicine
Jose'	Morales, MS, PE	Mr.	West Coast Employers Association	Continuing Education and Outreach
David	Norris	Mr.	Area Deputy Director, OSHA	Safety Management
Robert	Pavlik	Dr.	Industrial Hygienist, State of FL, Div. Of Safety	Industrial Hygiene
Robert C.	Prior	Mr.	Risk Manager, Anchor Glass Container	Safety Management
Charlene	Purcell	Ms.	OSH Program Manager, FL Dept of Labor & Employment	Safety Management
Lucy	Read	Ms.	Industrial Medical Supply	Occupational Health Nursing
Lou	Rinaldi	Mr.	Safety Director, TECO	Occupational Medicine
John	Russell	Mr.		Safety Management
Rene'	Salazar, CIH, Ph.D.	Dr.	Salazar & Spaul Environmental Consultants, Inc.	Industrial Hygiene
JoAnn	Shea	Ms.	Manager, Employee Health Services	Occupational Health Nursing

Sunshine Education and Research Center
University of South Florida



Appendix E


Sunshine ERC
Sunshine ERC External Advisory Committee - Goal is to provide direction and real world input to the ERC as a whole.
Internal Executive Committee - Composed of All Program Directors and Deputy Directors
Industrial Hygiene Advisory Committee
Residency Advisory Committee
Occupational Health Nursing Advisory Committee
Safety Management Advisory Committee
Industrial Hygiene Program
Occupational Medicine Program
Occupational Health Nursing Program
Safety Management Program
Hazardous Substances Advisory Committee (to be formed)
Hazardous Substances Advisory Committee (to be formed)
Continuing Education Advisory Committee
Scientific Review Committee
Hazardous Substances Academic Program
Hazardous Substances Continuing Educ. Program
Continuing Education and Outreach Program
Pilot Research Projects Program

DEPARTMENT OF HEALTH & HUMAN SERVICES

Memorandum

Date November 5, 2002

From Principal Engineer, OEP, NIOSH

Subject Final Progress Report for entry into NIOSHTIC2/NTIS for NIOSH Training Grant No. T42 CCT 412874

To Vern P. Anderson, Chief, IRB, EID (C-18)

The enclosed report has been received from the Center Director to document work performed during the specified grant project period. The following information applies to the designated Education and Research Center (ERC):

Title: Sunshine Education and Research Center

Center Director: Stuart M. Brooks, M.D.
College of Public Health
University of South Florida
Tampa, FL 33612-3805

Grant No.: T42 CCT 412874

Project Period: 7/1/97 - 6/30/2002

Please place the report in DIDS and I also recommend it for entry into NIOSHTIC2 and submission to NTIS.

Thanks for your assistance.

John T. Talty, P.E., DEE

cc: S. Board/A. Berry, OEP
B. Kuchinski, OEP

Enclosure

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