Southwest Center for Occupational and Environmental Health

NIOSH Education and Research Center

ANNUAL REPORT
July 1, 2005 – June 30, 2006

The University of Texas School of Public Health
Health Science Center at Houston
Houston, Texas 77030

Submitted

NOVEMBER 2006

II. Introduction and Executive Summary

The University of Texas (UT) Education and Research Center (ERC) is housed in the Southwest Center for Occupational and Environmental Health (SWCOEH) in the Division of Environmental and Occupational Health Sciences (DEOHS) in the School of Public Health (SPH), and incorporates faculty and students from various disciplines related to occupational and environmental health. In addition to the facilities at the UT SPH, our current programs include two other campus locations: a) the UT School of Nursing, a collaborating institution in the Occupational Health for Nurses program located next door to the UT SPH; and b) the University of Houston, Cullen College of Engineering and College of Psychology, for collaboration on selected activities of the Occupational Injury Prevention program.

The SWCOEH ERC was first funded in 1977, and successfully competed for a new five-year award in 2005, for the period July 2005 – June 2010. The current core and specialty programs of the SWCOEH ERC are: Industrial Hygiene, Occupational and Environmental Medicine, and Occupational Health for Nurses, Occupational Epidemiology and Occupational Injury Prevention. A Pilot Projects Research Training program, a NORA Research Support Program area, a Continuing Education program, and Hazardous Substance Training program complete the spectrum of existing programs within the ERC. All programs were approved for five years in 2005.

A. Major Accomplishments

Major accomplishments during this reporting period have centered around three activities: 1) expanded student and minority recruitment efforts in coordination with the EOHS Division; 2) continued development of the research and training program support infrastructure available within the SWCOEH; 3) expanded regional visibility through enhanced distance learning activities and web-based initiatives; and 4) hosting the successful NIOSH NORA Town Hall Meeting in January 2006 devoted to the Healthcare and Social Assistance Sectors.

1) In coordination with the EOHS Division, our recruitment efforts have focused on 26 public and private four-year colleges and universities throughout Texas with strong academic programs in disciplines consistent with the field of occupational health and safety. A recruiting task force has been established and developed a recruitment plan that involves personal visits and enhanced information dissemination about the SWOCEH academic programs and ERC activities. We have seen a slight increase in enrollment in the DEOHS and general guidance in student recruitment suggests that there is a lag time of a few recruitment cycles before full impact is to be expected.

2) We have continued to develop the research and training grant support infrastructure through expanded responsibilities and staffing under the direction of Center Research Coordinator. We have developed a streamlined process by which faculty can seek and receive support at any point in the research application process according to their needs, and have a well experienced team of contract and grant support personnel including an experienced contracts and grants specialists, responsible for the budget accounting, reporting and compliance related to external funding for the SWCOEH. Together they provide exceptional support for research and training grant activities. During this reporting period there has been an increase in the number of new applications submitted by the DEOHS and ERC faculty.

3) We have expanded our regional visibility through enhanced distance learning capabilities of the UTSPH, as well as through our Pilot Projects Research Training Program (PPRTP). Over 60% of the PPRTP awards go to institutions outside of the UTSPH and in the region. Visibility has also been enhanced through resources available to the region that the SWCOEH is well known for:

occupational medicine clinical expertise, research and service expertise in the areas of occupational hazards of healthcare workers, and international aspects of occupational health through the SWCOEH NIH Fogarty International Center training grant. Our Continuing Education (CE) program has greatly expanded its scope and outreach to include collaboration with industry associations and under-served work settings including metropolitan area school districts and performing arts venues, as well as expanded collaboration with other UT component institutions and regional universities and colleges.

4) A major accomplishment during this reporting period was hosting the NORA Town Hall Meeting at the UT ERC in Houston on January 23, 2006. The NORA Town Hall meeting was designed to provide input for the next generation of the National Occupational Research Agenda (NORA). The morning session provided an opportunity for regional and multi-sector input from a variety of industries, followed by comments and presentations specific to the Healthcare & Social Assistance Sector in the afternoon. This meeting provided a critical opportunity to hear from the public about the pressing concerns for occupational health and safety in the United States, and to help set the research agenda for the next decade. The meeting was attended by workers from area industries including healthcare, petrochemical and construction, with a focus on the specialty area of healthcare and social assistance. The venue of the UT ERC, located in the Texas Medical Center with its 42 component healthcare institutions, provided an excellent setting. The meeting was well attended and provided an important opportunity for our current ERC trainees as well as our ERC graduates to participate in policy development at the grassroots level.

B. Significant Changes (July 1, 2005 – June 30, 2006)

The significant change during this reporting period is the appointment of our new CE Director, Janet Harreld. In January 2006, a strategic program analysis of the CE program (SWOT Analysis) was initiated that included both internal and external stakeholders. This analysis recommended a broadening of the scope and increase in the level of academic background and preparation of the next CE Director. A detailed job description was developed and a search was initiated and Ms. Harreld was appointed as permanent CE Director in January 2006. Since January, the CE program has increased its course offerings and revenue and has significantly expanded its collaborative and outreach activities (described above in A.3). Additional information about the CE program can be found it the CE program progress report.

C. ERC Website (including links to programs and faculty/staff directory)

We continue to improve and develop our website and links to related sites. The SWCOEH website can be accessed at: http://www.sph.uth.tmc.edu/swcoeh/. There you will find complete descriptions of our programs, research and training activities and directories of our faculty and staff. Additional directory information can be accessed through the University of Texas Health Science Center directory at: http://peopledirectory.uth.tmc.edu/peopledirectory/index.jsp.

III. Program Progress Reports

A. Program Title: CENTER ADMINISTRATION

B. Program Director: Sarah A. Felknor, DrPH, MS

C. Program Description

1. Goals and Objectives:

In the last competing renewal, specific goals were set for the 2005-2010 period, in the general areas of information dissemination, knowledge transfer and training, as follows:

Information Dissemination

Goal: Increase the number of research trainee (including Pilot Project Research Training) publications in the peer-reviewed literature by at least 20% within 3 years.

Goal: Increase the number of externally funded interdisciplinary projects of ERC faculty by at least 20% over 3 years.

Goal: Develop at least one new major area of research focus within the ERC within 3 years to compliment existing expertise and meet emerging needs in occupational and environmental health.

Knowledge Transfer

Goal: Increase the number of high school students exposed to occupational health and safety content within the region.

Goal: Increase the number of consultations to small businesses by 10% over 2 years.

Training

Goal: Increase the number of students recruited into ERC core academic programs by 20% within 3 years.

Goal: Reduce time to program completion by 20% within 3 years.

2. Responsible Conduct of Science

It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

3. Faculty Participation

Center Administration provides the infrastructure, management, and information systems support for all ERC programs, and is organized into four general areas: Grants and Contracts

Management, Research Coordination, Support Staff, and Information Technology Support. Center Administration is directed by an integrated team comprised of the Center Director, the Deputy Director (a.k.a. Associate Center Director) and the Research Coordinator, with the advice and assistance of the ERC Steering Committee and a Center Advisory Board. Faculty occupy the positions of Center Director, Deputy Director and as members of the Steering Committee.

4. Curricula

Not applicable. Please refer to the individual academic core and special emphasis program progress reports.

D. Program Activities and Accomplishments

1. Progress towards Goals and Objectives (trainee honors, awards, scholarships)

Information Dissemination: Goal: Increase the number of research trainee publications in the peer-reviewed literature by at least 20% within 3 years. Accomplishment: a) Offer writing workshops for trainees on a regular basis to assist in the identification of appropriate scientific journals, improve writing skills, and facilitate the submission of completed manuscripts; and b) implement a manuscript editing service available to students and faculty. The manuscript editing service has been used on several occasions by ERC junior faculty over the past reporting period (primarily Dr. Vela-Acosta in the IH program), with submission of several manuscripts for review. Goal: Increase the number of externally funded interdisciplinary projects of ERC faculty by at least 20% over 3 years. Accomplishment: During the reporting period, the SWCOEH has developed a sophisticated support infrastructure to assist faculty in identifying possible grant initiatives, provide pre and post-award assistance, and detailed budget and accounting support. During the past reporting period, this mechanism has attracted a greater number of faculty who were not "traditionally" a part of the ERC to use this service for preparation and subsequent management of grant awards. Goal: Develop at least one new major area of research focus within the ERC within 3 years to compliment existing expertise and meet emerging needs in occupational and environmental health. Accomplishment: The SWCOEH has participated actively in an EOHS Division strategic planning process that took place between October 2005 and February 2006 to build a 3 to 5 year research strategy for the Center and the EOHS. Three research areas of focus relevant to occupational health emerged from this process on which to build over the next 3 to 5 year period: a) Air Environment, b) Injury Prevention, and c) Multidisciplinary collaborative research in occupational and environmental health, based at the UTSPH El Paso Regional Campus site. In addition, other initiatives in the areas of enhancement of interinstitutional research collaborations, faculty development processes and strengthening of the research infrastructure completed the goals of the plan. After presentation to and approval by the Dean of the School of Public Health, implementation of the strategic plan began in summer 2006 with the establishment of workgroups by specific activity area. A formal search for senior faculty to bolster the Air Environment initiative was launched in the summer as well.

Knowledge Transfer: Goal: Increase the number of high school students exposed to occupational health and safety content within the region. Accomplishments: The main achievement in this area has been through the work of Dr. Vela-Acosta, IH program faculty at the UTSPH regional campus in Brownsville, who has continued to pilot and refine a curriculum in OHS for high school students in the Lower Rio Grande Valley area. In addition, exposure of undergraduate college students to OHS increased through several recruitment visits to undergraduate colleges within a 200 mile radius of Houston, conducted by Drs. Whitehead and Delclos in Fall 2005. Goal: Increase the number of consultations to small

businesses by 10% over 2 years. Plan: a) Identify small businesses within the region and link occupational health and safety needs with existing ERC faculty expertise; b) develop web-based links to occupational health and safety resources and disseminate this information to small businesses in the region; and c) offer focused, applied presentations and seminars on occupational health and safety to small businesses in the region.

Training: Goal: Increase the number of students recruited into ERC core academic programs by 20% within 3 years. Accomplishment: It is anticipated that the recruitment efforts described above will result in an increase in enrollment. As these recruitment activities continue, we expect that we will see a continued increase over time. Goal: Reduce time to program completion by 20% within 3 years. Accomplishment: During the reporting period, we have graduated students in Industrial Hygiene, Occupational Medicine, Occupational Injury Prevention, Occupational Health for Nurses and Occupational Epidemiology.

2. Appointments (trainee theses and dissertations)

Not applicable.

3. New Faculty Positions

Since the last report, Sarah A. Felknor, DrPH, MS has been named Principal Investigator and Director of the ERC, and George L. Delclos, MD, MPH has moved to ERC Deputy Director. Dr. Felknor also directs the Southwest Center for Occupational and Environmental Health (which houses the ERC) and the Fogarty International Training and Research Program in Environmental and Occupational Health.

4. New Courses

Not applicable.

5. Trainee Recruitment

The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

In addition to ongoing institutional minority recruitment efforts, a comprehensive review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 thru June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

E. Program Products

1. Publications and Presentations of Program Faculty and Trainees

Not applicable.

2. Conference/Symposia Sponsored

Not applicable.

3. **CE Courses Presented**
   Not applicable.

4. **Successful R2P Projects**
   Not applicable.

5. **Research Projects Completed having Significant Trainee Involvement**
   Not applicable.

6. **Unique Training Courses Presented**
   Not applicable.

F. Future Plans

The specific Center goals articulated for the 2006-2010 period (above) were designed to be accomplished within the first 3 years of the grant period. These goals remain unchanged, and work will continue along these lines.

A. Program Title: PILOT PROJECTS

B. Program Director: Maria Morandi, PhD, CIH

C. Program Description

1. Goals and Objectives:

In the last competing renewal application (2005-2010), the following goals were articulated for the Pilot Projects Research Training Program:

1) Continue further refinement and increase the efficiency of distribution of the announcement of THE RFP.

2) Strive to increase the number of applications while maintaining the rigor of the review process.

3) Improve productivity by devising mechanisms to facilitate the dissemination of study findings in the peer review literature.

4) Work with our contracts and grants office to devise ways of improving the efficiency of the contract process and fiscal administration of the projects awarded.

5) Continue refining and administering the research trainee survey as a means of collecting information on the impact of the program and for program improvement.

2. Responsible Conduct of Science

It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

All applications submitted in response to the annual RFA for this ERC Pilot Projects Research Training Program must indicate the IRB status (approved/pending) of their projects at the time of submission of the application. Once the decision of award is communicated to the applicant, projects are not allowed to begin until contract negotiations are final, IRB approvals have been obtained, and NIOSH has reviewed and approved these materials.

3. Faculty Participation

The current Research Training Coordination core for this Program remains as per the last competing renewal application and is composed of the following faculty:

Maria Morandi, PhD, CIH serves as Research Training Program Director for this project. Dr. Morandi is assisted in this program by a Steering Committee, composed of:
George Delclos, MD, MPH, tenured Professor of Occupational Medicine and Epidemiology; Dr. Delclos has been on the UTSPH faculty since 1989, is Deputy Director of the ERC and Director of the UTSPH Division of Environmental and Occupational Health Sciences.
Benjamin Amick III, PhD tenured Associate Professor of Behavioral Sciences, Occupational

Health and Epidemiology; Dr. Amick is director of the Occupational Injury Prevention and Occupational Epidemiology doctoral training programs for the ERC.

Xifeng Wu, MD, PhD, tenured Professor of Epidemiology at the M.D. Anderson Cancer Center; and Adjunct Associate Professor of Epidemiology at the UTSPH; Dr. Wu is an occupational physician and obtained a PhD in epidemiology from the UTSPH in 1994.

4. Curricula

Not applicable.

D. Program Activities and Accomplishments

1. Progress towards Goals and Objectives (trainee honors, awards, scholarships)

The goals established at the start of the 5-year funding cycle guide the activities of this program. The annual process for announcing, accepting, reviewing, awarding, contracting and disseminating results of our pilot project awards remain viable and increasingly successful. In the 2005-2006 reporting period, a total of 18 applications were received and eight received awards (see below). Of these, one was a translational award. Three awards were received by faculty or doctoral students at the UT School of Public Health and the remainder to research trainees in other institutions. Seven of these awards were made to applicants from other institutions in Texas, and one to Louisiana. The annual offering continues to attract attention and an increased number of quality applications.

2. Appointments (trainee theses and dissertations)

The following are the eight pilot project awards (including one transitional investigator award) made during the reporting period (through June 30, 2006):

Ann O. Cheek, PhD, Assistant Professor, The University of Texas Helth Science Center at Houston, School of Public Health: "Experimental Model for Hypogonadism".

Stefan Hurlebaus, Assistant Professor,The Texas A&M University System: "Autonomous Overhead Power Line Monitoring"

Joseph A. Kotarba, PhD, Professor University of Houston: "Injury Management Among Professional Female Athletes". (transitional investigator award)

Chi-Chi Lin, Doctoral Student, The University of Texas at Austin:"Human Exposures to Texanol Ester Alcohol Following Latex Paint Applications".

Sandra M. Olfert, Doctoral Student, The University of Texas Health Science Center at Houston, School of Public Health: "A Cohort Mortality Study of Workers in the Polyethylene Pipe Manufacturing Industry".

John-Paul Stephens, Doctoral Student, The Texas A&M University System Health Science Center: "Complex Task Analysis for the Strain Index".

Jessica Tullar, Doctoral Student, The University of Texas Health Science Center at Houston, School of Public Health: "A Psychometric Evaluation of Outcome Measures from an Intervention to Reduce Injuries Among Nursing Home Patient Care Staff".

Shu-Hua Wang, MD, Tulane University Health Science Center: "Evaluation and Assessment of Transmission of Tuberculosis in Health Care Workers".

The annual RFA announcement for pilot projects for the 2006-2007 reporting period was distributed in May 2006. Applications were accepted in July 2006. The announcement was distributed exclusively by electronic communication for the first time since the inception of the program. As in past years, the ditribution list included the offices of sponsored projects of all eligible institutions within Region 6, departments with occupational health-relevant programs within those institutions, prior applicants to the program, and past and current members of the scientific review panel.

3. New Faculty Positions

There have been no changes to the Pilot Projects Research Training Program faculty since the last report.

4. New Courses

Not applicable.

5. Trainee Recruitment

The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

In addition to ongoing institutional minority recruitment efforts, a comprehensive review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 through June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

As per the last competing renewal and progress report, an extensive distribution of the annual PPRT RFA is made, targeting all occupational health and safety and other relevant graduate programs in Region VI are eligible to submit proposals for pilot project funding. Proposals that include interinstitutional collaboration are especially encouraged.

E. Program Products

1. Publications and Presentations of Program Faculty and Trainees

Four presentations and four publications resulted from this program. Presentations include:

Branham, S.L., Wilson, M.S. and Hurlebaus, S.: Autonomous Overhead Power Line Monitoring. Fourth World Conference on Structural Control and Monitoring, University of California, San Diego, 2006, CDROM

Schulze, L. J. H., Ginsburg, R. A., and Quereshi, J., (2005). Rotational Force Capabilities of Males and Females Between the Ages of 30 and 55 Years. American Institute of Chemical Engineers, 2005 Spring National Meeting, Process Plant Safety Symposium. Atlanta, GA.

Branham, S.L., Wilson, M.S., Hurlebaus, S., Beadle, B.M., and Gaul, L.: Nondestructive Testing of Overhead Transmission Lines. NDTnet, Dec. 2006.

Wilson, M.S., Tian, M., and Hurlebaus, S.: Power Line Monitoring. American Control Conference 2007, abstract submitted

Publications are listed in Appendix C.

2. **Conference/Symposia Sponsored**
   As has been the case since its inception, the major seminar offered by the ERC Pilot Projects Research Training Program is the annual seminar, held at the UTSPH, where all current awardees publicly present the results of their pilot projects. Recipients of awards for the 2005-2006 reporting period presented their results at a seminar held on June 29, 2006.

3. **CE Courses Presented**
   Not applicable.

4. **Successful R2P Projects**
   Not applicable.

5. **Research Projects Completed having Significant Trainee Involvement**
   Since it was first offered in 1999 through July 31, 2006, the Texas ERC Pilot Projects Research Training Program has awarded a total of $562,722.00, distributed among 56 pilot projects. Of these 56 projects, the breakdown by state is as follows: 49-Texas, 3-Louisiana, 1-Arkansas, 1-New Mexico and 2-Oklahoma. We are in year eight of our program and are one of the few ERC Pilot Projects programs that has made at least one award in each of the component states of its federal region. The program continues to improve each year and strives to cover its region.

6. **Unique Training Courses Presented**
   Not applicable.

F. Future Plans

Work will continue on the five program goals defined in the last competing renewal review.

A. Program Title: NORA RESEARCH SUPPORT

B. Program Director: George Delclos, MD, MPH

C. Program Description

1. Goals and Objectives:

Since 2002, NORA Research Support funding has established an effective Center administrative grants management infrastructure within the ERC.

The goal of this infrastructure is to provide a comprehensive, quality service to SWCOEH faculty and students in the areas of: a) identification of research grant opportunities, b) assistance with preparation of grant applications, c) day to day management of extramural funding, d) provision of technical assistance in the areas of laboratory and information technology, e) assistance with grant reports preparation and close-out activities, and f) promoting effective dissemination of research results through scientific publications, other print and electronic media, continuing education offerings and outreach seminars.

2. Responsible Conduct of Science

It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

3. Faculty Participation

Dr. George Delclos continues to serve as NORA Program Director. Since the last progress report, there have been two changes in NORA Program personnel. Unfortunately, Dr. Frank Cole passed away in summer 2006. Discussions are under way with the Occupational Health for Nurses Program to find an appropriate replacement.

4. Curricula

Not applicable.

D. Program Activities and Accomplishments

1. Progress towards Goals and Objectives (trainee honors, awards, scholarships)

GOAL A: Identification of research opportunities. The NORA research support program at the SWCOEH uses four main methods of assessing regional research needs and identifying new grant opportunities: a) weekly screening of research funding opportunities, b) feedback generated through the SWCOEH Pilot Projects Research Training Program, c) feedback on research needs identified through the School of Public Health regional campuses, and d) advice on research agenda development activities provided by consultants/colleagues from

graduate academic institutions within Region VI. This has not changed since the last report.

GOALS B, C and E: Assistance with preparation of grant applications, day to day management of extramural funding and assistance with grant reports preparation and close-out activities. This has also not changed since the last report, except in the sense of strengthening of this offer. Over the past year, both SWCOEH faculty as well as faculty (including several for the first time) in the Division of Environmental and Occupational Health Sciences have availed themselves of the infrastructure for grants management by submitting several new proposals for funding.

GOAL D: Provision of technical assistance in the areas of laboratory and information technology. Major contributions were made by the NORA Research Support Program in support of this goal. Two major pieces of equipment were purchased: a) a particle counter to enhance our capabilities in air environment research (by allowing us detailed examination of ultrafine particulates down to the 5 nanometer range), and b) a surface electromyograph, with related software, for the conduct of field studies in ergonomics. In addition, monies were used for purchase of supplies in support of the industrial hygiene and ergonomics research efforts, as well as for upgrading of our computer inventory. NORA monies are also used to support subscription fees and online licenses for our Teleform survey software, CCINFO database access and website updating and support for the Center.

GOAL F: Promoting effective dissemination of research results through scientific publications, other print and electronic media, continuing education offerings and outreach seminars. NORA monies were used to support faculty travel to School of Public Health regional campuses for lectures and work on research projects, as well as to scientific meetings in injury prevention, epidemiology and occupational safety. Travel for SWCOEH research staff was also funded with NORA monies for attendance at a Research Coordinator's forum and a Research Administration conference. Trainee travel was also provided for students to attend various national meetings, including AOHC, ASSE, the NORA Symposium, and travel to the Institute for Work and Health in Toronto for work on a research project related to a systematic review of effectiveness of intervention studies in office ergonomics.

2. Appointments (trainee theses and dissertations)

Not applicable.

3. New Faculty Positions

Not applicable (For recent changes to NORA Program personnel, see Faculty Participation, above).

4. New Courses

Not applicable.

5. Trainee Recruitment

The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

In addition to ongoing institutional minority recruitment efforts, a comprehensive review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 thru June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

E. Program Products

1. Publications and Presentations of Program Faculty and Trainees

Not applicable (please refer to individual academic program progress reports).

2. Conference/Symposia Sponsored

Not applicable.

3. CE Courses Presented

Not applicable (please refer to continuing education progress reports).

4. Successful R2P Projects

Dr. Amick, together with Shelley Brewer (trainee), completed a systematic literature review of the effectiveness of office ergonomics interventions, which is currently in press. This work provides workplace safety managers with the evidence base for selecting interventons in office settings.

Dr. Amick, together with Cammie Chaumont-Menendez (trainee), completed an evaluation of risk injuries among Rice University College of Engineering students that was subsequently presented to the Deans of that school, to help guide the design of appropriate interventions.

Although more related to environmental health, given the industrial sources of many of these pollutants, we also mention here the successful preparation of a report on air quality in Houston, presented to the Mayor of Houston in June 2006. This report represents the first attempt at identifying leading pollutants in the Houston area and where the greatest impact on health is likely to be. The report was developed by an interinstitutional task force that included three members of the EOHS Division (Drs. Sexton, Stock and Delclos). The Mayor will be relying on this report to approach surrounding counties, which house the major polluting industries in our area, to develop a regional control plan.

5. Research Projects Completed having Significant Trainee Involvement

Air monitoring of VOCs: Dr. Maria Morandi, faculty; Coty Maypole, trainee.

Asthma in healthcare workers: Drs. Delclos, Carson, Stock, Whitehead, Symanski, Lai-faculty; Farah Ahmed, trainee.

Systematic literature review of effectiveness of office ergonomics interventions: Dr. Amick, faculty; Shelley Brewer, trainee.

A review of occupational hazards in nursing: Dr. Delclos, faculty; Dawn Green Marshall, trainee (final draft of manuscript under review).

Sacred Vocations and Work: Dr. Amick, faculty; Jessica Tullar, trainee.

Multilevel analysis of the impact of an office ergonomics intervention study on visual symptoms: Dr. Amick, faculty; Cammie Chaumont-Menendez, trainee.

Analysis of role of computing exposures in musculoskeletal injuries among college students: Dr. Amick, faculty; Cammie Chaumont-Menendez, trainee.

Multilevel analysis of social norms and drinking: Dr. Amick, faculty; Tonatiuh Barrientos, trainee.
Analysis of role of organizational worksite factors in drinking: Dr. Amick, faculty; Farah Ahmed, trainee.

PMR and SMR study of bladder cancer among polyethylene pipe manufacturing workers: Drs. Felknor and Delclos, faculty; Sandra Olfert, trainee.

6. Unique Training Courses Presented

Not applicable (please refer to continuing education progress reports).

F. Future Plans

For the coming year, the goals of the NORA Research Support Core will remain the same as those described under C.1. Goals and Objectives, above. This program has been critical to the strengthening of our research infrastructure and productivity. Its flexible nature allows us to buttress and supplement our other research and continuing education activities in ways that effectively leverage the budgets of each of those programs.

A. Program Title: OCCUPATIONAL EPIDEMIOLOGY

B. Program Director: Benjamin Amick III, PhD

C. Program Description

1. **Goals and Objectives:**
   Program goals and objectives for the reporting period remain the same as those provided in the five-year competitive renewal for the period 2005-2010. These goals include 1) recruitment of students at the local and regional level to identify outstanding candidates for traineeships, 2) strengthen the integration of occupational epidemiology into the interdisciplinary activities of the SWCOEH, such as the other core and special component programs, Continuing Education program and Outreach activities, 3) continue to develop and expand the research activities of the occupational epidemiology faculty with the SWCOEH to provide stable and additional opportunities for research training, 4) continue to strengthen our ties with the Texas A&M School of Public Health, Department of Epidemiology and Biostatistics in the areas of joint teaching and collaborative research and 5) strengthen collaboration with occupational epidemiologists in the five-state region.

2. **Responsible Conduct of Science**
   It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

   All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

3. **Faculty Participation**
   NA

4. **Curricula**
   No Changes

D. Program Activities and Accomplishments

1. **Progress towards Goals and Objectives (trainee honors, awards, scholarships)**
   We have developed a strong relationships with John Hellstrom at the Texas State Department of Health. The SWCOEH faculty participate as co-investigators in a State-based Occupational Safety and Health Surveillance grant, awarded in 2005 by NIOSH to the Texas Department of State Health Services Environmental and Injury Epidemiology branch. In this capacity, SWCOEH provide assistance with detailed statistical analysis of patterns and trends of leading occupational health indicators. Some of this work will involve graduate students working on thesis and/or dissertation projects under faculty supervision. Occupational Epidemiology trainee Farah Ahmed received a NIOSH Pilot Projects award for

the collection of data relevant to her doctoral dissertation.

2. Appointments (trainee theses and dissertations)

We have graduated one NIOSH trainee during the reporting period, Eva Shipp. Dr. Shipp, whose dissertation was titled: Low Back Injuries among Migrant Farm Workers, has taken a faculty position at the Texas A&M Rural School of Public Health. Farah Ahmed completed and passed her qualifying exam and is working on her dissertation proposal; and trainees Erin Fox and Grace Tee are working to complete their doctoral dissertations. Sandi Olfert (non-NIOSH trainee) has graduated from the Occupational Epidemiology program and is currently employed by the Regina Qu'Appelle Health Region in Regina, Canada.

3. New Faculty Positions

Dr. Lisa Pompeii was recruited as an occupational epidemiologist, trained at Duke University in North Carolina, and joined the SWCOEH faculty this year. Dr. Pompeii has a background in nursing and injury epidemiology and contributes to Occupational Epidemiology program.

4. New Courses

Dr. Anne Coker has developed a violence epidemiology course. This course provides a new substantive area for students. Dr. Amick and Dr. Harrist (Biostatistics faculty) continued to develop an applied multi-level modeling course to provide critical analytic skills.

5. Trainee Recruitment

The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

In addition to ongoing institutional minority recruitment efforts, a comprehensive review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 thru June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

E. Program Products

1. Publications and Presentations of Program Faculty and Trainees

Five publications resulted from this program and are listed in Appendix C.

2. Conference/Symposia Sponsored

Not Applicable

3. CE Courses Presented

Not Applicable

4. Successful R2P Projects

Not Applicable

5. **Research Projects Completed having Significant Trainee Involvement**
   No research projects have been completed all are on-going

6. **Unique Training Courses Presented**
   The multi-level modelling course being developed by Drs. Amick and Harrist has been offered as a training course where students actually analyze data and prperae it for a pulbication.

F. Future Plans

The most important activity is to work towards the successful graduation of the current class of students and to recuit new students.

A. Program Title: INDUSTRIAL HYGIENE

B. Program Director: Lawrence Whitehead, PhD, CIH

C. Program Description

1. Goals and Objectives:

Goals for the reporting period remain essentially unchanged from the competing application for the period 2005-2010, and include: a) Increase recruiting activities, for both masters and doctoral level full-time students. b) Maintain ABET status by developing outcomes assessment activities to comply with new ASAC requirements, and achieve re-accreditation on the next review in 2007-2008. c) Maintain current interdisciplinary interaction within the SPH programs. d) Maintain current CE and outreach activity. We have requested that ABET approve a one-year extension on the current accreditation period to permit further development of the ongoing internal academic review in the Division of Environmental and Occupational Health Sciences (DEOHS) prior to our application for reaccreditation.

2. Responsible Conduct of Science.

It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

3. **Faculty Participation**

All faculties in the competing renewal application for 2005-2010 continue to participate. The IH Program Director is Lawrence W. Whitehead, PhD, CIH, and tenured Associate Professor in the DEOHS. He teaches: IH1: Fundamentals of Industrial Hygiene; IH2: Occupational Health Controls (50%); Occupational Health Field Trips (33%); Physical Agents (50%); Occupational Safety. Not all courses are offered each year. Dr. Whitehead was also recently elected to the Council (board of directors) of the American Academy of Industrial Hygiene. Thomas Stock, PhD, CIH, tenured Associate Professor, teaches Air Environment, and Environmental Sampling and Analysis, and is involved in research and research training. Maria Morandi, PhD, CIH, Assistant Professor, is also involved in research and research training. Elaine Symanski, PhD, tenured Associate Professor teaches Methods of Exposure Analysis, and Overview of Environmental Science. She is involved in research and also has done very extensive work in academic review/revision in the EOHS. Jimmy Perkins, PhD, CIH, tenured Professor in DEOHS, is based at the SPH San Antonio regional campus. He co-teaches IH2: Occupational Health Controls, leading instruction in industrial ventilation, and chemical protective clothing. He is actively involved in Continuing Education for the ERC. Dr. Perkins has also recently been elected as incoming Vice President of ACGIH, and will move up into the Presidency over a three year cycle. Robert Emery, DrPH, CIH,SP, CHP, Associate Professor in DEOHS and Assistant Vice president of The Health Science Center,

and Executive Director of the UT office of Environmental Health and Safety, and co-teaches courses in Physical Agents, and Occupational Health Program Management. Dr. Emery is active in Continuing Education, serving as course organizer for CE courses in Radiation Safety Officer training, ESH Academy (intensive training for campus, and institutional ESH staff), and several refresher courses. Dr. Emery is also active in outreach and professional education nationwide. Martha Soledad Vela Acosta, MD, PhD, is based at the SPH Brownsville regional campus. In addition to DEOHS teaching in Brownsville, she lectures on agricultural H&S, and is active on AIHA in this area.

4. Curricula

The only change for this year from the curriculum reported in the competing renewal and intermediate reports is the addition of a divisional requirement for Foundations of Environmental and Occupational Health Sci I & II, total 6 credits. The number of technical elective credits has been reduced from 9 to 6 to compensate somewhat in program length.

D. Program Activities and Accomplishments

1. Progress towards Goals and Objectives (trainee honors, awards, scholarships)

NIOSH doctoral trainee for 05-06 and 06-07 (and former summer intern at NIOSH Morgantown) Michelle McHugh was awarded for the 2005-2006 academic year an American Industrial Hygiene Association Fellowship. These are national, prestigious awards. She also received a small scholarship from the local section of the AIHA. Coty M. Maypole, NIOSH trainee in 05-06 and 06-07, obtained a substantial industrial internship with a national chemical company.

Extensive recruiting was conducted in 05-06, the first year of much-expanded recruiting by the DEOHS and industrial hygiene. Steps are being taken toward our next ABET accreditation; given an ongoing major curriculum revision by the DEOHS, a request has been made to extend the current period of accreditation by one year, to 2008-2009. If approved, this will permit our application to have much more information about the future objectives and curriculum design of the DEOHS and therefore the IH track. If the extension is not granted, we will proceed to apply for reaccreditation in 2007-2008. Interdisciplinary activity remains high. Occupational physician, occupational health nurse, and IH students take several courses together, including Occ. Health Field Trips, where cross-disciplinary teams jointly write walk-through reports. CE activities of IH faculty remain high. Dr. Robert Emery has the highest participation, and Drs. Whitehead and Perkins also lecture and are involved with developing new course proposals at present. Drs. Stock, Morandi, and Symanski conduct more research so participate less in CE, but do advise on content for new courses, and on occasion lecture in CE.

2. Appointments (trainee theses and dissertations)

Costello, R. DrPH Dissertation. 'A Field Method for Validating Estimated 32P Activities in Solid Radioactive Waste'

Cress, A. MPH Thesis. 'A Radiological Dispersal Device Training Protocol For First Responders Using Short Lived Dispersible Radioactive Material'.

McFarland, S. PhD dissertation. Airliner cabin air quality exposure assessment

Parham, J. MPH Thesis. 'An Assessment of the Effectiveness of Mitigation Efforts on Indoor Air Quality in the Aftermath of Tropical Storm Allison: A One-Year Post Event Analysis'

Sheffield, K. DrPH Dissertation. Influence of contact pressure, moisture, and compression time on the performance of cotton anti-contamination clothing

Statzer, J. DrPH Dissertation. Environmental, health and safety cost benefit analysis in the U.S. chemical industry

3. New Faculty Positions

None in Industrial Hygiene**.**

4. New Courses

No new courses in industrial hygiene were created in the reporting year. A new divisional course, Foundations of Environmental and Occupational Health Science, has been created and will be first offered in 2006-2007. Industrial hygiene students along with all other majors in DEOHS admitted in fall 2006 and after are required to take this course.

5. Trainee Recruitment

The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

In addition to ongoing institutional minority recruitment efforts, review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 thru June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

In the 2005-2006 reporting period, the DEOHS contacted all undergraduate schools within a roughly 200 mile radius, emailing information on the division and its web sites to chairs of appropriate science departments, and to identifiable student organizations in the health and science areas. We offered to visit each group; five invitations were received, and division faculty spoke at these groups (Dr. Whitehead for four of them). Division faculty accompanied SPH recruiters or exhibited alone at four graduate school fairs at undergraduate schools. Repeating relationships have been established with two schools, one an Hispanic-majority school.

E. Program Products

1. Publications and Presentations of Program Faculty and Trainees

Twenty-three publications and fifteen presentations resulted from this program. Publications are listed in Appendix C.

2. Conference/Symposia Sponsored

None

3. CE Courses Presented

Please see CE report.

4. **Successful R2P Projects**
   Not Applicable

5. **Research Projects Completed having Significant Trainee Involvement**
   Several are in progress, but none happened to be completed per se in the reporting period.

6. **Unique Training Courses Presented**
   We consider the Continuing Education courses in Radiation Safety Officer Training, and the EHS Academy (intensive course on campus/institutional HSE), both created at UT, as unique offerings.

F. Future Plans

Plans for the next academic year address the four goals in the competing renewal period that began in July 2005. On recruitment, we plan to repeat the email and campus visit effort initiated last year. Other schools report that recruiting must continue for 2-4 years before increases in applications occur. A request has been made to extend the current accreditation period for one year. Assessment methods will be added this year to our prior less-formal assessment procedures, to address outcomes at graduation and after a few years of practice. For interdisciplinary activities, we will maintain all current activity, primarily joint classes with trainees from other ERC programs. Continuing Education plans are underway to expand offerings in industrial hygiene. A course proposal has been made to a private industry. Sequences of classes in IH are in planning for two levels of training. Further detail is being sought on an enquiry from another organization. These are in addition to annual courses.

A. Program Title: INJURY PREVENTION

B. Program Director: Benjamin Amick III, PhD

C. Program Description

1. Goals and Objectives:

Program goals and objectives for the reporting period remain the same as those provided in the five-year competitive renewal for the period 2005-2010. These goals include: 1) the establishment of a recognized program in occupational injury prevention, including implementation of a management plan; 2) recruit excellent applicants; 3) continue to develop and enhance collaborative relationships between faculty, students and universities; 4) select appropriate representation to the SWCOEH Advisory Board and hold meetings to garner input; 5) continue to develop and expand the research activities of the occupational injury prevention faculty to provide stable and additional opportunities for research training; 6) identify employment opportunities for training program graduate; and 7) implement mechanisms to evaluate the program progress.

2. Responsible Conduct of Science

It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

3. Faculty Participation

Not Applicable

4, Curricula

Not Applicable

D. Program Activities and Accomplishments

1. Progress towards Goals and Objectives (trainee honors, awards, scholarships)

The Injury Prevention Program remains strong. All students were relocated to space in the Southwest Center allowing for greater synergy. Four trainees applied for (Brewer, Menendez, Tullar and Calabro) and received NIOSH Pilot Project awards. Ms. Menendez, Brewer and Tullar have all passed their doctoral qualifying examination. Ms. Reynolds and Ms. Calabro had their doctoral dissertation proposals approved; Ms Calabro has completed data collection and Ms. Reynolds is abstracting data from microfiche. Dr. Iha has graduated.

2. Appointments (trainee theses and dissertations)

There have been no new appointments. G. Sue Iha completed her doctoral dissertation in

2005: Organizational Determinants of Job Accommodation and Improved Self-Efficacy Following Carpal Tunnel Surgery, and returned to her job as Director of Clinical Services at Exxon/Mobil in Houston.

3. New Faculty Positions

Dr. Lisa Pompeii has been recruited to the University of Texas and the SWCOEH. She is an RN, PhD Epidemiologist from Duke University who is involved in interventions in health care workplaces to reduce musculoskeletal injuries. Dr. Bahman Roudsari, a new injury epidemiologist, has extensive experience in international traffic injury research and has joined the School of Public Health faculty. He will take an active role in traffic injury and injury epidemiology research methods components of the program.

4. New Courses

Dr. Anne Coker has developed a violence epidemiology course. This course provides a new substantive area for students interested in violence as an injury research area. Dr. Amick and Dr. Harrist (Biostatistics faculty) continued to develop an applied multi-level modeling course to provide critical analytic skill.

5. Trainee Recruitment

The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

In addition to ongoing institutional minority recruitment efforts, a comprehensive review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 thru June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

Dr. Amick has attended both the International Ergonomics Association meetings and the American Society for Safety Engineers meetings to try and recruit prospective students. At both meetings over 100 brochures were distributed.

E. Program Products

1. Publications and Presentations of Program Faculty and Trainees

Nine presentations and nineteen publications resulted from this program. Presentations include:

An Office Ergonomics Quasi-Experimental Field Study and its Replication, NORA Priorities Research Symposium, Opelika, Alabama, July 22, 2005.

Office Ergonomics: Using Science to Speak to Many Stakeholders, American Society of Safety Engineers Region III Conference, Galveston, Texas, August 9, 2005.

What's Good for Your Eyes? Results from a Field Evaluation of Two Interventions, National

Institute for Occupational Safety and Health NORA 10th Anniversary Conference, Washington, DC, April 20, 2006.

Using a Systematic Approach to Analysis: Examples from Two Quasi-experimental Field Studies, University of Texas School of Public Health Department of Environmental and Occupational Health Sciences Seminar, Houston, Texas, May 12, 2006.

Conducting Risk Assessments of Postures on Computer Users, American Society of Safety Engineers Region III Conference, Austin, Texas, August 7, 2006.

Office Ergonomics Intervention Study Panel, Human Factors and Ergonomics Society, San Francisco, California, October, 2006.

The Effect of an Office Ergonomics Field Intervention and its Replication on Visual Symptoms, Human Factors and Ergonomics Society, San Francisco, California, October, 2006.

An Injury Prevention Intervention Among Nursing Home Patient Care Staff: Qualitative Evaluation of Outcome Measures - June 29, 2006 - Jessica Tullar

American Society of Safety Engineers (ASSE) professional development conference in Seattle, WA was "Workplace Interventions To Prevent Musculoskeletal And Visual Symptoms And Disorders Among Computer Users: A Systematic Review" Shelley Brewer

Publications are listed in Appendix C.

2. Conference/Symposia Sponsored

Not Applicable

3. CE Courses Presented

Not Applicable

4. Successful R2P Projects

We have completed one systematic review that trainee Shelley Brewer took the lead on related to office ergonomics interventions designed to reduce musculoskeletal disorders in workplaces. This review had extensive stakeholder involvement and was a collaborative effort with the Insitute fdor Work & Health in Toronto, Canada. We worked with with George R. Brown College of Engineering at Rice University to do an assessment of the ergonomic problems in graduate engineering student. Cammie MEnendez took the lead on this and made the formal presentation to the Deans of the College. We have worked with them on the implementation of interventions. Trainee Jessica Tullar has been actively involved in the implementation of the Sacred Vocation Program (a work reorgainzation effort) at a large health care system in Dallas, Texas, and at a Neighborhood Health Center in Houston, Texas. These projects have resulted in major improvements in work and patient satisfaction. We are now exploring with the empoyers effects on injury reduction. Finally, trainee Jessica Tullar is leading a new systermatic review on interventions in health care settings to reduce musculoskeletal injuries again in partnership with the Institue for Work and Health.

5. Research Projects Completed having Significant Trainee Involvement

No new projects have been completed.

6. Unique Training Courses Presented

The multi-level modelling course being developed by Drs. Amick and Harrist has been offered as a training course where students actually analyze data and prperae it for a pulbication.

F. Future Plans

In the next year we would expect to: (1) grauate our first wave of students, (2) recuit our second wave of students, (3) continue to develop our research portfolio, (4) build partnerships with industry.

A. Program Title: OCCUPATIONAL MEDICINE

B. Program Director: Arch Carson, MD, PhD

C. Program Description

1. Goals and Objectives:

Program goals for the reporting period are consistent with those expressed in previous submissions. These goals include: 1) maintaining consistently high quality of residency candidates by developing a systematic annual recruitment plan and procedure, directed primarily at existing internal/general medicine, family medicine and emergency medicine residencies in the region, 2) continuing to add variety and solid educational value to the practicum year rotations, 3) increasing opportunities for interdisciplinary practicum projects for all occupational health students, by increasing the penetration of clinical occupational health services at the UTHSC and by promoting outside referrals and contracts, 4) providing strong elective rotation opportunities for medical schools, medical residencies and other academic institutions in Houston and the region. Increase the participation of OM faculty at the undergraduate level in both Houston medical schools and 5) strengthening ties with other local, regional and international academic institutions and agencies through more collaborative research and outreach projects, as well as joint continuing education offerings.

2. Responsible Conduct of Science

It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

Occupational Medicine Residents and Trainees also adhere to the principles expressed in the ACOEM Code of Ethics in their professional practice activities.

3. Faculty Participation

Arch Carson, MD, PhD - Occupational Medicine Program Director
George Delclos, MD, MPH - Associate OM Program Director and Principal Investigator
Arnold Schecter, MD, PhD - Occupational and Environmental Medicine Faculty
Other Division Core Faculty and Adjunct Faculty

4. Curricula

Occupational Medicine Residents and Trainees, engage in a curriculum leading to acquisition of a Master of Public Health degree with a concentration in any of the core disciplines of public health. In doing so, they must complete all requirements for the degree in that discipline as well as those of the Occupational and Environmental Medicine Residency

(Occupational and Environmental Health, Fundamentals of Industrial Hygiene, Toxicology, Seminar on Workplace Safety, Occupational Medicine Practice). A Culminating Experience meeting the requirements of the School must be completed in order to qualify for the degree.

D. Program Activities and Accomplishments

1. Progress towards Goals and Objectives (trainee honors, awards, scholarships)

Continued progress as stated in previous non-competing submission.

2. Appointments

Three Residents have completed the program:

- Sofya Pugach, MD, PhD, MPH (Sept 2005) Now in Locum tenens, Dallas TX.
- Camille Hinojosa, MD, MPH (Dec 2005) Hospital-based Occupational Health Services Director, Waco TX.
- Anwar Haque, MD, MPH (June 2006) VAMC Occupational Health Provider, Anchorage AK.

Three Residents have been appointed:

- Savithri Fernando, MD (October 2005)
- Monica Clark, MD (April 2006)
- C. Austin Cropper, MD, MS, MS (July 2006)

One Resident is continuing:

- Zizhuang Li, MD, PhD

3. New Faculty Positions

Not applicable

4. New Courses

Curriculum review and reorganization in process.

5. Trainee Recruitment

The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

In addition to ongoing institutional minority recruitment efforts, a comprehensive review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 thru June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

The Program continues to receive a substantial number of inquiries and completed applications from top level practicing physicians.

E. Program Products

1. Publications and Presentations of Program Faculty and Trainees

Forty-six publications and three presentations resulted from this program. Presentations include:

Schecter A.J., Päpke O., Ryan, J., Tung, K.C., Olson, J., Harris, T.R. 2005. PBDE in US human milk, archived and recent blood, fetal liver, partitioning between milk and blood, cooked and uncooked food and the environmental specimens. Short Papers from Dioxins 2005, 25th International Symposium on Halogenated Environmental Organic Pollutants and POPs, 20th International Symposium on Polycyclic Aromatic Compounds, Toronto Canada. Organohalogen Compounds 67:651–653.

Schecter A.J., Ryan, J.J. 2005. Dioxin poisoning in Germany, The USA and Russia. Short Papers from Dioxins 2005, 25th International Symposium on Halogenated Environmental Organic Pollutants and POPs, 20th International Symposium on Polycyclic Aromatic Compounds, Toronto Canada. Organohalogen Compounds 67:1718 – 1721.

Schecter A.J., Quynh, H.T., Päpke O., Ryan, J., Constable, J.D., Tung, K.C. 2005. Agent Orange, dioxins and other chemical concern in Vietnam: Update 2005. Short Papers from Dioxins 2005, 25th International Symposium on Halogenated Environmental Organic Pollutants and POPs, 20th International Symposium on Polycyclic Aromatic Compounds, Toronto Canada. Organohalogen Compounds 67:1566 – 1570.

Publications are listed in Appendix C.

2. Conference/Symposia Sponsored

Occupational Health for Health Department Epidemiologists (Summer 2005)
Occupational Medicine for the Primary Care Physician (Fall 2005)

3. CE Courses Presented

Occupational Health for Health Department Epidemiologists (Summer 2005)
Occupational Medicine for the Primary Care Physician (Fall 2005)

4. Successful R2P Projects

Not Applicable

5. Research Projects Completed having Significant Trainee Involvement

Not Applicable

6. Unique Training Courses Presented

Public Health Risk Communication

F. Future Plans

The Program Leadership is actively engaged in the present domestic and international debate on the future of occupational medicine training and practice. We are participants in the national debate through the ACOEM Task Force on the Future of Occupational Medicine and the Association of Occupational and Environmental Medicine Residency Directors, and in the

international debate through the Union of European Medical Specialists Conference on Occupational Medicine Training. We expect to participate in the generation of both national and international policy recommendations by the end of calendar year 2007.

A. Program Title: OCCUPATIONAL HEALTH FOR NURSES

B. Program Director: Thomas Mackey, PhD, NP-C

C. Program Description

1. **Goals and Objectives:**
   Program goals for the reporting period remain the same as those provided in the five-year competitive renewal for the period 2005-2010. These goals include 1) increasing the number of students in the program through aggressive recruiting efforts at the local and regional levels, 2) establish a collaborative research program with School of Nursing and School of Public Health faculty to obtain funded research and produce publications, 3) recruit a part time faculty member to assist in teaching didactic courses, arranging field experiences and practicum, and conducting continuing education, 4) provide necessary support and guidance to successfully complete theses in progress so that these trainees can graduate and enter the workforce as soon as possible, 5) develop and strengthen participation of OHN trainees in interdisciplinary activities of the SWCOEH and provide outreach opportunities for trainees to interact with the community at large and 6) secure additional institutional support from the SON in the form of additional funding for faculty.

2. **Responsible Conduct of Science**
   It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

   All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

3. **Faculty Participation**
   Susan Parnell, MSN/MPH, CIC, COHN-S is currently engaged in research related to her doctoral dissertation. The title of her dissertation is Patient on Staff Assault among Mental Health Care Workers: A Qualitative Examination of Worker Perceptions. She is in the data collection stage and anticipates finishing her program August, 2007.

4. **Curricula**
   No changes.

D. Program Activities and Accomplishments

1. **Progress towards Goals and Objectives (trainee honors, awards, scholarships)**
   Susan Parnell, MSN/MPH, CIC, COHN-S presented several Bioterrorism Training and Curriculum Development Programs which is part of the HRSA Program. The title is Texas Bioterrorism Continuing Education Program. Total funding for 9/1/05 – 8/31/06 was

$1,500,000 – total funding (if approved) for 9/1/06 – 8/31/07 is $900,000.

2. Appointments (trainee theses and dissertations)

Robert Moran - Theses title: Determining a Medical Review Officer's Competence by Scoring at Least 85% on the Medical Review Officer Self-Assessment Examination
Nancy Dufrane - Theses title: The Role of Diesel Emissions in the Development and/or Exacerbation of IGE Mediated Allergic Airway Disease

3. New Faculty Positions

None

4. New Courses

None

5. Trainee Recruitment

The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

In addition to ongoing institutional minority recruitment efforts, a comprehensive review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 thru June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

E. Program Products

1. Publications and Presentations of Program Faculty and Trainees

Five publications resulted from this Program and are listed in Appendix C.

2. Conference/Symposia Sponsored

See Continuing Education Section

3. CE Courses Presented

2005 Recognizing and Responding to Bioterrorism and Other Public Health Emergencies: HRSA grant funded lectures for Texas nurses at multiple sites in Texas.

- June 16, 2005 Valley Baptist Medical Center Harlingen, TX
- June 17, 2005 Edinburg Regional Medical Center Edinburg, TX
- September 19, 2005 Humble ISD Administration Kingwood, TX
- October 8, 2005 Texas Children's Hospital CHAT Conference Houston, TX
- October 13, 2005 Twelve Oaks Hospital Houston, TX
- November 4, 2005 Advance for Nurses Conference Houston, TX
- November 8, 2005 Memorial Hermann Fort Bend, Houston, TX

2005 Bioterrorism Update: One hour presentation given to the students of the American College of Acupuncture and Oriental Medicine given on March 23, 2005.

2005 Occupational Health Issues in Primary Care: A lecture given to family nurse practitioner students at the University of Texas Health Science Center at Houston School of Nursing given on
April 27, 2005.

2005 Basic Disaster Life Support: Taught biological disasters, chemical disasters, and mental health responses to disaster sections of this 8 hour course to a multidisciplinary group of healthcare providers at Memorial Hermann Southeast Houston, TX on May 23, 2005.

2005 Management of Tuberculosis: A lecture given to the family nurse practitioner students at University of Texas Health Science Center at Houston School of Nursing given on July 5, 2005.

2005 Travel Medicine for Primary Care: A lecture given to the family nurse practitioner students at University of Texas Health Science Center at Houston School of Nursing given on July 5, 2005.

2005 OHN Safety Management Review Course: A course developed by Susan Parnell and Dr. Robert J. Emery and given at the Texas State Association of Occupational Health Nurses (TSAOHN) in Dallas on November 1-2, 2005.

2006 Recognizing and Responding to Bioterrorism and Other Public Health Emergencies: HRSA grant funded lectures for Texas nurses at multiple sites in Texas.

- February 27, 2006 Mental Health Mental Retardation Administration of Houston (MHMRA), Houston, Texas
- April 20, 2006 Memorial Hermann Woodlands Hospital. Woodlands, Texas
- July, 13, 2006 Memorial Hermann Hospital, Houston, Texas
- July 14, 2006 Memorial Hermann Hospital, Houston, Texas

2006 Travel Medicine: Lecture given to occupational Health Students in the course Clinical Occupational Medicine at the School of Public Health, University of Texas Health Science Center at Houston. April 3, 2006

2006 Basic Disaster Life Support: Taught biological disasters, chemical disasters, and mental health responses to disaster sections of this 8 hour course to a multidisciplinary group of healthcare providers.

- May 15, 2006 Memorial City Hospital, Houston, Texas
- July 28, 2006 Texas Children's Hospital, Houston Texas
- August 28, 2006 Memorial Hermann Hospital-Woodlands, Houston, Texas

2006 Emergency Preparedness: Lessons Learned from Hurricane Katrina: Invited speaker at the 2006 American Association of Occupational Health Nurses Annual Symposium. May 6, 2006.

4. Successful R2P Projects

None

5. Research Projects Completed having Significant Trainee Involvement

None

6. Unique Training Courses Presented

See above

F. Future Plans

We will continue to with projects, publications and presentation similar to the above in the next funding year.

A. Program Title: CONTINUING EDUCATION / OUTREACH

B. Program Director: Janet Harreld, MA, MPA

C. Program Description

1. Goals and Objectives:

Goal 1: Develop new course titles:

Occupational Hazards in Healthcare: CE/O is currently working to develop a new course for occupational hazards in Healthcare that includes ethics and security in a disaster situation. *Occupational Health Nursing*: A new two day course, Occupational Health Nursing Safety Management Review, was offered at the annual TSAOHN conference. With some minor restructuring to better address participants needs, the course has become a regular part of the fall roster of courses to coincide with the TSAOHN conference.

Shelter in Place was originally developed for Industrial Hygiene (IH) professionals; however, it has emerged into two separate offerings – one for IH professionals and one for personnel responsible for emergency sheltering of a large number of people. The non-professional version will be provided to school districts, small municipalities, apartment complexes, hotel/motel operators and other similar types of entities. It is scheduled to be offered in the spring.

Occupational Safety: The success of EHS Academy is demonstrated in the increasing demand for it outside of post secondary as well as in multiple locations. To address some of this need, the program piloted a shortened version in several locations. It is hoped that EHS A will be on line as both a “short” course and the full five day version in the next fiscal year. BioSafety Basics (Biological Safety Officer & exam prep), rescheduled for August, is a new course developed to train professionals to handle biological hazards. Demand for Radiation Safety Officer appears to be increasing such that we are now considering holding the course twice per year.

Other/Interdisciplinary: The SWCOEH will again co-sponsor The Summer Institute in collaboration with the Texas Public Health Training Center also at the UTSPH. Faculties from the SWCOEH are designing an occupational and environmental health track for the week long institute. The Spring Institute, developed and held consecutively for 17 years, will return for the Spring of ‘07 (March 5-9). Finally, several short “basics” courses are in development including Professional/Technical Writing and Training the Trainer.

Goal 2: Develop/continue courses which may be repeated several times each year, and/or repeated annually: This was done with several courses (Please see above in Goal 1 listing.). While CE/O wants to have some flexibility to temporarily address certain "hot topics" the objective is to create a roster that has several courses in each discipline that are offered at least annually in Houston and at least once annually in another location in Region VI.

Goal 3: Develop new relationships with outside organizations while continuing to build upon existing relationships: The SWCOEH faculty maintains active participation in outreach activities, reflecting the strong commitment to service that is a central component of the mission of the UTHSCH and the UTSPH. The need for outreach activities is communicated through professional associations and service groups, individual contact such as a request from a particular community or profession, and contact generated through applied research and training efforts in occupational and environmental health. The primary regional outreach activity has been the SWCOEH Pilot Projects Research Training Program (PPRTP), through

its annual offering of small grants to investigators in graduate academic institutions in Federal Region VI. This has been a very successful program that annually awards several grants outside the UT System to other academic institutions in Region VI. The PPRTP includes mentoring and direct educational development of the research training preparation of the young investigators at the other institutions and has direct impact on the academic preparation of new professionals in occupational health and safety in the region.
In addition to an active schedule of lectures and presentations made routinely by the ERC faculty, significant effort has been devoted during this reporting period to presentations and awareness seminars that have targeted colleges and universities (including historically minority and smaller institutions) in the region. This effort has been in conjunction with a student recruitment effort under the division of Environmental and Occupational Sciences, and led by ERC faculty. A target list of 26 public and private four-year colleges and universities was complied from the Texas Higher Education Coordinating Board, all within a 200 mile radius of Houston including all such schools in San Antonio, Austin, as far north as Waco and College Station, to the Louisiana boarder to the east, and as far as Victoria to the south. Initial contact was made with the chairs of chemistry and biology, and departments of microbiology and any form of environmental science. If student clubs could be identified for biology, chemistry, pre-med and public health, these entities were also notified. By the end of Fall 2005, presentations were made to student clubs in biology (1), chemistry (2), and pre-med (1). The SWCOEH ERC was also represented at a number of graduate school recruiting fairs in cooperation with the UT SPH. One more school visit to a job fair for nurses occurred in February 2006. The environmental club at one nearby predominantly Hispanic university expressed interest in visiting the SPH and they have been invited to do so. A recruiting task force is planned for constitution by March to provide advice for the next cycle of recruiting in fall 2006; that will include two to three faculty and two or three graduate students and possibly some other SPH/SWCOEH members. A key faculty member at UT-Austin, who sponsors the undergraduate student public health association, is being appointed to an adjunct position as part of the relationship building process.

Much of the activity of the Outreach Program of the SWCOEH ERC is directed toward historically black colleges and universities and minority oriented institutions (HBCU and MI). Through our Hazardous Substance Training Program, we provide on-site training in the form of our annual offering of the Environmental Health and Safety Academy. EH&S personnel from the HBCUs and MIs are specifically targeted with scholarship and reduced fees support. In addition to the on-site training described in the HST program progress report, this contact with HBCUs and MIs has often lead to consultations in basic health and safety program training and management provided by our ERC faculty and staff.

Other outreach activities during the reporting period include the development of planned outreach to the ten county greater Houston area municipalities and independent school districts with the plan to expand outreach to other Region VI metro areas. We are planning a series of professional development programs for teachers in the public schools that will cover environmental health and safety including blood borne pathogen protection and how to protect yourself from violence in the classroom. The CE/O Program is in the process of developing relationships with professional organizations with whom we have had little to no previous contact such as the Texas Academy of Family Physicians and the Houston Chapter of the Association of Environmental Professionals. On January 23rd 2006, the SWCOEH hosted the NIOSH NORA town Hall Meeting for the Health Care and Services Sectors at the SPH in Houston, TX, in collaboration with our co-partner – the Southwest Center for Agricultural Injury Prevention and Education at UT Health Science Center at Tyler. To further that co-operative relationship, we are co-sponsoring an Asbestos Abatement Refresher series with Tyler scheduled for August and repeated in January 2007.

2. Responsible Conduct of Science

It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

3. Faculty Participation

UTSPH and other university faculty who present in CE course offerings frequently have multiple degrees and certifications, professional association memberships, research involvement, publications, and consulting activity; some are routinely selected as recipients of teaching excellence awards. Their reputations are excellent within and outside the university setting. The CE program structures faculty participation based on technical knowledge, ability to apply that knowledge to everyday "real world" situations, practical scenarios, problem-solving and ability to communicate information. This frequently results in a course faculty that features a combination of academicians and practitioners who receive very good evaluations for their contributions. University faculty adds to the depth, and strengthens the quality and variety of our courses. In addition to both in-house and outside faculty, the CE program has established an ongoing partnership with the Gulf Coast Chapter of the American Industrial Hygiene Association (AIHA), and the Texas State Association of Occupational Health Nurses (TSAOHN). Members of each of these groups are frequent presenters at our programs and are well respected in their fields. The CE program also seeks experts from outside our geographical area to add to our offerings.

On December 31, 2005 there was a change in key personnel associated with the Continuing Education program with the resignation of Julie Schmitz, CE Director. In January 2006, a strategic program analysis of the CE program (SWOT Analysis) was initiated that included both internal and external stakeholders. This analysis recommended a broadening of the scope and increase in the level of academic background and preparation of the next CE Director. A detailed job description was developed and a search was initiated. Interim leadership of the CE program was provided under the direction of Dr. Sarah A. Felknor, Center Deputy Director, with the support of Janet L. Harreld, consultant, who also conducted the strategic analysis and helped manage the daily activities of the CE program. With the CE support staff in place and good support of external stakeholders, the course offerings continue as planned. Janet L. Harreld, MA, MFA, MPA, was appointed to the position by the School on March 1 with appointment approval received from NIOSH by the Center on April 13, 2006.

4. Curricula

CE works to be certain that the Center is offering a minimum of one course annually in each discipline. Several disciplines currently have more than a single offering and are offered in more than one location.

D. Program Activities and Accomplishments

1. **Progress towards Goals and Objectives (trainee honors, awards, scholarships)**
   Please see C.1. Goals and Objectives

2. **Appointments (trainee theses and dissertations)**
   This aspect doesn't apply to CE/O except for the appointment of a new Director for CE/O

3. **New Faculty Positions**
   During the reporting period, Janet Herrald, MA, MPA, was named Director of Continuing Education and Outreach and received a faculty specialist appointment with the University of Texas School of Public Health.

4. **New Courses**
   Safety Management Review for OHNs
   BioSafety Basics
   Asbestos Abatement Refresher series

5. **Trainee Recruitment**
   The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

   In addition to ongoing institutional minority recruitment efforts, a comprehensive review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 thru June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

E. Program Products

1. **Publications and Presentations of Program Faculty and Trainees**
   Not Applicable

2. **Conference/Symposia Sponsored**
   Co-sponsored pilot versions of the EH&S Academy; the Summer Institute of the Texas Public Health Training Center; work directly with the Center for BioSecurity on Disaster Life Support Training

3. **CE Courses Presented**
   Safety Management Review for OHNs; Occupational Medicine Update for Primary Care Providers; EH&S Academy - 3 pilot versions in different locations and of differing lengths/content, 1 full five day held in Brownsville, TX; Hazardous Materials Management Overview; Certified Industrial Hygiene Review - 1 condensed version with exam proctoring and 1 full five day with exam proctoring; Radiation Safety Officer; Biological Safety Officer;

Asbestos Abatement Refresher Training series (3 days for entire worker/supervisor/planner/inspector); Greater Houston Industrial Hygiene - full day program of rotating topics held bi monthly; Occupational Medicine Journal Club - 1/2 day program of rotating topics held monthly from September through May.

4. **Successful R2P Projects**
   Not Applicable

5. **Research Projects Completed having Significant Trainee Involvement**
   Not Applicable

6. **Unique Training Courses Presented**
   EH&S Academy pilot courses referred to previously

F. Future Plans

Future plans are extensive and include the following but are not necessarily limited to what is listed below.

A strategic analysis and needs assessment of the overall SWCOEH CE program was initiated in the Winter 2005-2006 and identified strengths, weaknesses, opportunities and threats facing the CE program. Based on the results of this analysis, new areas of interest for CE course offerings have been identified, enhanced marketing strategies have been development, new stakeholders have been engaged in course and program development, and potential collaborations have been identified for course development and sponsorship opportunities.

In house creation of promotional materials geared to the different disciplines

Development of new training materials and modalities, including collaboration with the University of Texas TeleCampus project for the provision of “on line” accessible training; and investigation into development of content with film schools in 2 major universities within Region VI for on-line course use and possible distribution as DVD

Development of Certificate Programs for Techniciian status in industrial hygiene and associated disciplines

Work with ERC and SPH faculty to develop an ABIH approved CE program for the foundation courses in industrial hygiene

Extensive research and up dating of databases

New collaboration with established CE Programs (UAB, UT Arlington, and UT Tyler) as well as CME Programs (UTMB and UTMS)

Exploration of potential courses in new areas, specifically agriculture and petrochemical

Continuing the development of the strategic partnership with OMI specifically for the creation of 2 “new” courses that would be co-sponsored

Participation as significant partner in the 2006 Summer Institute with the Texas Public Health Training Center, providing course content and design for the Occupational and Environmental Health

training track for the Institute

Collection of data on potential additional funding sources (through grants) to provide seed and one time development money for special projects being planned by CE & Outreach (examples: The Home Depot, Comerica Bank Foundation, SBT Foundation aka AT&T Foundation); application for OSHA's Susan Harwood Training Grant money if RFP is applicable to current and future plans.

A. Program Title: HAZARDOUS SUBSTANCE TRAINING

B. Program Director: Robert Emery, DrPH

C. Program Description

1. Goals and Objectives:

The overall objective for the HST program is to train HSE staff from small and historically underserved colleges and universities (While in the past SWCOEH had focused heavily on historically black colleges and universities, a search for minority oriented schools- Hispanic and Native American-particularly in Region VI resulted in the addition of 22 institutions to the original list.), professionals working in a healthcare setting, and state and local health and environmental agency personnel on a broad management overview and on specific program elements for managing hazardous exposures, hazardous materials and hazardous waste. The program plan for this coming year includes the offering of an expanded region-wide program of hazardous substance training courses, based on training needs. This training is conducted through a series of continuing education courses that are from 1 to 5 days in duration and address a variety of topics. In addition to the program faculty, an HST Advisory Committee comprised of members from state and local governmental agencies and associations assists with identifying current and future training needs, course development, marketing, and strengthen interagency coordination. Additional program goals for this year include the training of a minimum of 200 health and safety personnel throughout Region VI, and the evaluation of training quality effectiveness by surveying both immediate and long term learning.

Goal 1. Continue the active participation of the HST Advisory Committee; review their findings and recommendations in light of how best to implement those recommendations in a timely fashion; consider their input on specific training needs, course development, marketing and interagency coordination.

Goal 2. Conduct on a bi annual basis a needs assessment to assess Region VI state and local health and environmental agency hazardous training needs and existing resources within the Region.

Goal 3. Develop a strategic plan in cooperation with the HST Advisory Committee for addressing unmet hazardous substance training needs of Region VI state and local health and environmental agency personnel, private sector organizations and other professionals engaged in the management of hazardous substances within the Region. The Plan will address needs NOT currently covered by existing resources, identify geographic areas with additional hazardous materials management training needs and regional evaluation processes including but not necessarily limited to the criteria for quantifiable measures of effectiveness.

Goal 4. Expand the Region-wide program(s) of hazardous substance training courses based upon needs assessment.

Goal 5. Conduct a minimum of seven (7) courses annually.

Goal 6. Train a minimum of 200 health and safety professionals throughout Region VI annually.

Goal 7. Evaluate, and make appropriate changes based upon those evaluations, the training

quality effectiveness by surveying both immediate and long term learning through follow up surveys.

2. Responsible Conduct of Science

It is the policy of the UTHSC-H that faculty, staff, and students conduct research, research training, experimentation, and testing activities in the safest manner possible and with the highest ethical standards. A member of the UTHSC-H faculty, staff, or student body who conducts research in the name of the UTHSC-H must adhere to all federal, state, and local statutes and regulations; to The University of Texas Regents' *Rules and Regulations;* and to UTHSC-H policies, regardless of whether the research is conducted on a campus of the UTHSC-H or at an external facility.

All faculty, staff, students, and trainees planning to conduct research involving human subjects or data from human-derived materials must complete education on the protection of human subjects, and their research protocols must also be reviewed and approved by UTHSCH's Committee for the Protection of Human Subjects. This provides assurance that all students complete human subject training before starting research regardless of funding. Some programs may require additional training in Ethics as appropriate.

3. Faculty Participation

The HST program is directed by Robert Emery, DrPH, CIH, CSP, CHP. Dr. Emery is the Executive Director of Environmental Health and Safety at the UTHSC and provides excellent leadership to the HST program. Lawrence Whitehead, PhD, CIH, serves as the program Assistant Director. Dr. Whitehead is Associate Professor of Environmental Health and has been Program Director of the ERC IH Program since 1986. UTSPH and other affiliated faculty have mutliple degrees and certifications, professional association memberships, research involvement, publications and consulting activity. their reputations are excellent within and without the university setting. The HST program structures faculty participation based upon technical knowledge, ability to apply that knowledge and experience in real world situations, practical scenarios usied for demonstration and learning, problem solving methodologies and ability to effectively communicate information. The HST searches particularly within Region VI to identfy and incorporate the best experts/the most knowledgeable practitioners for instructors to add to the breadth and depth of individual course contents.

This program is housed within the SWCOEH Continuing Education and Outreach Program. On December 31, 2005 there was a change in key personnel associated with the CE/O and HST Programs with the resignation of Julie Schmitz, CE director. In January of 2006, a strategic program anaylsis of the CE program (which adminsters the HST Program), a SWOT anaylsis, was initiated that included internal and external stakeholders. This anaylsis recommended a broadening of the scope and increase in the level of academic background and preparation for the next CE/O director. A detailed job description was developed and a search was intitiated. Interim leadership of the CE program was provided by Dr. Sarah Felknor, Cente Deputy director, with the support of Janet L. Harreld, consultant, who also conducted the strategic anaylsis and assisted in managing the day to day activities of the CE/O Program. It was anticipated that a full time replacement would be secured by March. Janet L. Harreld, MA, MFA, MPA was appointed to the CE/O Program Director as a faculty associate in the UT School of Public Health and her appointment was approved by NIOSH on april 13, 2006.

4. Curricula

Environmental Health & Safety Academy (EHS): 5 days

Condensed EHSA: 2/3 days
Radiation Safety Officer: 5 days
Certified Materials Management Overview Course & Exam: 3 ½ days
Emergency Response Refresher for Clinics and Labs: 1 day
Security 101 for Safety & Health Professionals: ½ day
Biosafety Basics: 3 days
CIH Review: 5 days

D. Program Activities and Accomplishments

1. **Progress towards Goals and Objectives (trainee honors, awards, scholarships)**
   Please see table in Curricula as an indication of progress.

2. **Appointments (trainee theses and dissertations)**
   Not Applicable

3. **New Faculty Positions**
   Not Applicable

4. **New Courses**
   BioSafety Basics (a Biological Safety Officer course) We have several titles on the drawing board but want to be certain we are appropriately serving Region VI with current offerings. By late autumn, it should be more clear with the input of the advisory committee and a review of all needs assessments exactly what more should be developed and geographically where the Program needs to focus attention.

5. **Trainee Recruitment**
   The University of Texas Health Science Center – Houston (UTHSC-H) School of Public Health is committed to equal access for all qualified applicants seeking quality graduate education in the fields of public health regardless of age, sex, race, disability, religion or national origin. The policies and programs are designed to create a diverse student population and a Diversity Office has been established in the School of Public Health and a director was appointed. Specifically the UTHSC-H School of Public Health has one of the highest minority enrollments for a school of public health.

   In addition to ongoing institutional minority recruitment efforts, a comprehensive review of web based and hard copy recruitment materials was conducted in collaboration with the Division of Environmental and Occupational Health during the September 1, 2004 thru June 30, 2005 period. This review was completed and new academic program brochures were developed for the NIOSH training program. These brochures, along with updated web-based materials are being integrated into recruitment programs and activities at the School of Public Health level, and include the development of new division-based brochures and website.

E. Program Products

1. **Publications and Presentations of Program Faculty and Trainees**
   Dr. Emery is frequently on the road making presentations to associations and at conferences. In the recent past he made presentations as far away as Boston and as close as the greater Houston area. He is schedule as a presenter for the Campus Safety Health and Environmental Management Association's annual conference in southern California; the College and University Hazardous Waste Association in Galveston, a college and university auditors conference in Kentucky and the Texas Risk Management Association in Galveston.

2. **Conference/Symposia Sponsored**

3. **CE Courses Presented**
   Please refer to the table above (4. Curricula).

4. **Successful R2P Projects**
   Not Applicable

5. **Research Projects Completed having Significant Trainee Involvement**
   Not Applicable

6. **Unique Training Courses Presented**
   EH& S Academy

F. Future Plans

As previously mentioned in other sections, we have several titles on the drawing board but want to be certain we are appropriately serving Region VI with current offerings. By late autumn 2006, it should be more clear, with the input of the advisory committee and a review of all needs assessments, exactly what more should be developed and geographically where the Program needs to focus attention. We are engaging in extensive professional outreach and expect to collect some results shortly.

IV. Report on Specific Improvements in OS&H Resulting from ERC Programs

Perhaps the most significant improvement in Occupational Safety and Health that is a direct result of the University of Texas ERC programs is the number of OS&H professionals who are now in the field directing OS&H programs, and developing policies and procedures to protect worker health and safety in the United States. Since this is the annual report for the first year of a five-year training grant cycle, it is premature to report on improvements in the field at this time. Please see Program Progress Reports for specific progress.

V. Appendices

Appendix A: Program Curricula, Course Requirements and Sample Curricula by Academic Program

OCCUPATIONAL EPIDEMIOLOGY RESEARCH TRAINING PROGRAM
The University of Texas School of Public Health

Sample Doctoral Course of Study in Occupational Epidemiology

The following courses or their equivalents are assumed to have been taken in the master's program: Introduction to Epidemiology, Epidemiology Proposal Development, Demography, Intermediate Biometry I and II, Advanced Epidemiologic Methods I, Field Epidemiology, and Statistical Methods in Epidemiology. It should be understood, however, that the individual course of study, directed by the student's committee, will vary depending on each trainee's background prior to entering the program.

A DrPH. student, choosing to concentrate in occupational epidemiology would also be expected to follow this curriculum and have the necessary master's level prerequisites.

Sample Course of Study

Fall Semester (first year)		Credit hours
PH1830	Logistic Regression*	4
PH2175	Principles of Toxicology	3
PH2998	Work Organization Epidemiology (Part 1)	3
PH6615	Fundamentals of Industrial Hygiene	4
PH6998	Seminar in Workplace Safety	1
Spring Semester (first year)		
PH2998	Work Organization Epidemiology (Part 2)	3
PH2998	Occupational Epidemiology	3
PH2711	Advanced Epidemiologic Methods II	4
PH6610	Occupational and Environmental Health	4
Summer Semester (special topics courses--examples)		
PH1115	Health Survey Research Design*	4
PH1998	Introduction to SAS*	3
PH2998	Cancer Epidemiology	3
PH2298	Social Epidemiology	3
Fall Semester (second year)		
PH1745	Sampling Techniques for Health Surveys*	3
PH1831	Survival Analysis	4
PH2170	Methods for Exposure Assessment	3
PH2711	Advanced Epidemiologic Methods III	3
PH2998	Injury Epidemiology	2
Spring Semester (second year)		
PH6998	Occupational Health Field Trips	2
	Electives (optional)	4
PH9999	Dissertation Proposal Development (after passing qualifying exam)	6

*if not already taken in master's program

The remainder of the program consists of Dissertation Research courses (6 credit hours in the summer semester of the second and third years, and 9 credit hours in each of the fall and spring semesters during the third year).

Other elective courses available to students include Research Survey Design in Behavioral Sciences, Statistical Programming, Ergonomics, Chronobiology, Ethics and Public Health, Mutagenesis and Carcinogenesis, Pathology, Molecular Epidemiology, Genetic Epidemiology, Reproductive and Perinatal Epidemiology, Causal Thinking, Fundamentals of Occupational Safety, Occupational and Environmental Respiratory Diseases, Workplace Safety Seminar, and Rapid Epidemiologic Assessment.

To augment the formal courses recommended to prepare independent researchers, attendance and participation in a number of regularly scheduled interdisciplinary seminars and conferences will be strongly recommended to the trainees. Currently there are two seminars that include relevant topics. Academic and community occupational health professionals, averaging approximately 30 participants per session, attend the SWCOEH monthly Journal Club. There is also a bimonthly SWCOEH Research Seminar (inserted into the Journal Club) that features ongoing or recently completed faculty and student research projects; alternatively, there is also a monthly Division of Environmental and Occupational Health Research Seminar. Occupational epidemiology trainees are expected to present their proposals and final results either in one of these seminars or as a separate, publicly announced dissertation presentation. In addition, there are various regularly scheduled discipline-specific brown bag seminars and conferences that offer trainees the opportunity to familiarize themselves with research activities and programs of other UTSPH faculty and students. It is expected that trainees will present preliminary and/or final results from their research in at least one national scientific meeting, and will prepare at least one manuscript for publication in an appropriate scientific journal. Skills in oral and written communication will be developed and practiced at school seminars; and formal teaching experience is recommended through teaching assistantships.

INDUSTRIAL HYGIENE & AIR ENVIRONMENT CURRICULUM

The University of Texas School of Public Health

Accredited by the Applied Science Accreditation Commission,
Accreditation Board for Engineering and Technology
MS (Environmental Sciences), or MPH (Occupational & Environmental Health)

Core Courses in Industrial Hygiene & Air Environment

(F = fall semester, S = spring semester, I = spring institute)

PH 6615 F Fundamentals of Industrial Hygiene (IH I) (4 cr.hrs.)
PH 6620 S Occupational Health Controls (IH II) (3)
PH 2155 S Environmental Sampling and Analysis (4)
PH 2175 F Principles of Toxicology (5)
PH 2150 F Air Environment (3)
PH 2498 S Physical Agents (3) (offered in 2004-2005)
PH 6998 S Occupational Health Field Trips (2)
PH 2498 S Environmental Sciences Seminar (1)
PH 9998 Thesis Research (varies)

Core Courses in Related Areas

PH 1725 F Intermediate Biometric Methods I (4)
PH 1726 S Intermediate Biometric Methods II (4)
PH 2610 F,S Introduction to Epidemiology (4)
PH 6998 S Health & Safety Program Management, or equivalent**
PH 1230 F Behavioral Aspects of Occ and Env Health (3), or equivalent**
PH 9997 Practice Experience in Public Health (internship, practicum, or other approved activity) **required of all students unless proceeding directly to PhD.

Elective Advanced or Cognate Courses (min. nine sem.cr.hrs.;more recommended)

PH 2498 F Methods – Exposure Assessment (3) **[recommended for all IH students]**
PH 6610 S Occupational and Environmental Health (4)
INDE6325 S Industrial Ergonomics (taught at Univ.of Houston)
PH 6998 F Fundamentals of Occupational Safety (3) (alt. years)
PH 2498 F Hazardous and Solid Waste Management (3)
PH 6998 F Seminar in Workplace Safety (1)

Other electives relevant to a student's interests may be taken as additional hours or, by permission of the industrial hygiene curriculum director, may be counted in the minimum of nine elective credit hours required.

Preparation: (1) requirements determined by accreditation: a Baccalaureate or higher degree with at least 120 semester credit hours, which should include at least 63 semester credit hours of science, math, engineering, or technology, at least 15 hours of which are at the upper level; and courses in communications, humanities, or social sciences; (2) requirements determined by the curriculum faculty: 1 semester calculus, 2 semesters chemistry including organic chemistry (4 semesters incl. 2 of organic chemistry recommended), 2 semesters biology (the IH faculty may consider minor variations in these requirements); (3) the GRE is required, with a preferred average per section >550; (4) a GPA $\geq$ 3.0 out of 4, overall and in math/sciences, is highly recommended; (5) letters of recommendation should attest to an individual's ability to do graduate level work, and should where possible include academic recommendations; (6) physics, statistics, and physiology are also recommended.

Industrial Hygiene Sample Course of Study

Typical Full-Time program

Fall Semester First Year

PH 6615 Fundamentals of Industrial Hygiene (IH I) (4 cr.hrs.)
PH 2175 Principles of Toxicology (5)
PH 1725 Intermediate Biometric Methods I (4)
PH 2610 Introduction to Epidemiology (4)

Sprung semester First Year

PH 6620 Occupational Health Controls (IH II) (4)
PH 2155 Environmental Sampling and Analysis (4)
PH 1726 Intermediate Biometric Methods II (4)
PH 6998 Occupational Health Field Trips (2)
PH 2498 Environmental Sciences Seminar (1)

Summer semester First Year

PH 9997 Practice Experience in Public Health (e.g., internship, practicum, or other approved activity)**

Fall Semester second Year

PH 2150 Air Environment (3)
PH 6998 Fundamentals of Occupational Safety (3)
PH 2498 Methods for Exposure Assessment (3)
PH 6998 Seminar in Workplace Safety (1)
PH 1498 Behav. Aspects of Occ/Env Health (3)
PH 9999 Thesis, or PH 6999 Individual Study

Spring Semester Second Year

PH 9998 Thesis Research (3-6)
PH 6998 Health & Safety Program Management (4)
PH 2498 Special Topics: Physical Agents (3)
Elective in IH curriculum (3)

Summer semester Second Year (and later if required)

PH 9998 Thesis Research (varies)

OCCUPATIONAL INJURY PREVENTION RESEARCH TRAINING PROGRAM

The University of Texas School of Public Health

Sample Doctoral Course of Study in Occupational Injury Prevention

The following core curriculum has been established for the doctoral course of study in occupational injury prevention research. This is intended to be a fairly structured course of study and represents the minimum that will be expected of each student in the doctoral program. **In response to reviewers, we have reduced the number of required courses creating a 36-38 credit core curriculum supplemented by methodological courses and specified a series of optional courses.** Also, the reduction in required credits was based on student input that there was overlap between courses. We do not specify the course sequence. Students will be exempted from courses if they demonstrate equivalency. For example, a student with a Masters degree in Industrial Engineering would likely place out of the three safety engineering courses. **All courses are currently in existence, except injury prevention and control, added in response to reviewer concerns about the lack of a focused course on injury prevention.** Additional new course development may ensue based on the outcome of the program evaluation by trainees, faculty and Advisory Board.

Dr. Cooper recently moved from The University of Texas School of Public Health to the Texas A&M School of Rural Public Health and will be co-teaching these courses. Dr. Steve Moore , also at Texas A&M, will be collaborating with Dr. Amick on teaching Work Organization Epidemiology. Dr. Spitzmueller has replaced Dr. Tetrick and will teach the College of Psychology courses. Dr. Amick is now co-teaching a course with Dr. Ron Harrist, a biostatistician, on applied multi-level modeling. Dr. Felknor is now co-teaching with Dr. Aday a course on Survey Design.

Core Curriculum

	Course Title	Instructor	Credits
University of Houston: Safety Engineering			
INDE 6322	Occupational Safety Engineering	Schulze	3
INDE 7397	Biomechanics and Rehabilitation	Schulze	3
INDE 7397	Systems Safety	Schulze	3
University of Houston: Psychology			
PSYC 7366	Motivation	Spitzmueller	3
PSYC 6379	Occupational Health Psychology	Spitzmueller	3
PSYC 7365	Leadership and Teams	Spitzmueller	3
UT School of Public Health: Epidemiology			
PH 2998	Occupational Epidemiology	Delclos/Cooper	3
PH 2998	Injury Epidemiology	Frankowski/Cooper	3
UT School of Public Health: Occupational Health			
PH 6998	Injury Prevention and Control (to be developed)	Amick/Frankowski/ Coker	3
PH 6680	Clinical Occupational Medicine	Delclos	4
PH 6610	Occupational and Environmental Health	Carson	4
UT School of Public Health: Management and Policy Studies			
PH 3915	Methods for the Economic Evaluation of Health Programs	Lairson/Swint/ Franzini	3
Total Credits			**38**

Because each student will have placed out of some of the core courses due to his or her background, students will be expected to supplement core courses with at least three of the quantitative methods courses indicated in the table below. Depending upon their background, some students may have already completed some of these courses or equivalent courses at other universities. For example, an epidemiology student

entering the program will likely have completed both Intermediate Biometry courses and Advanced Epidemiology Methods courses. A Behavioral Sciences student may have already completed Research Design I & II and Program Evaluation.

Supplemental Methodological Courses

Course Number	Course Title	Instructor	Credits
PH 3998	Econometrics for Public Health	Franzini	3
PH 1725/1726	Intermediate Biometry I & II	Frankowski	4 each
PH 2711/2712	Advanced Epidemiological Methods I & II	Coker/Waller	4 each
PH 1120	Program Evaluation	Mullen	4
PH 1420	Research Design and Analysis in Behavioral Sciences I & II	Diamond,Amick, Williams	3 each
PH 2498	Exposure Assessment Methods	Symanski	4
PH 1830	Logistic Regression	Davis	4
PH 1831	Survival Analysis	Davis	4
PH 1998	Applied Multilevel Analyses	Amick/Harrist	3
PH 1115	Health Survey Research Design	Aday/Felknor	3

In addition, the following substantive area courses are optional for students to take, depending on their particular area of interest and/or research focus.

Optional Substantive Courses

	Course Title	Instructor	Credits
University of Houston: Safety Engineering			
INDE 6325	Industrial Ergonomics	Schulze	3
University of Houston: Psychology			
PSYC 7365	Leadership and Teams	Spitzmueller	3
UT School of Public Health: Epidemiology			
PH 2998	Work Organization Epidemiology I & II	Amick/Moore	3 each
UT School of Public Health: Occupational Health			
PH 3998/6998	Occupational Health and Safety Program Management	Felknor/Emery	4

To augment the formal courses recommended to prepare independent researchers, attendance and participation in a number of regularly scheduled interdisciplinary seminars and conferences will be strongly recommended to the trainees. Currently there are two seminars that include relevant topics. Academic and community occupational health professionals, averaging approximately 30 participants per session, attend the SWCOEH monthly Journal Club. There is also a bimonthly SWCOEH Research Seminar (inserted into the Journal Club) that features ongoing or recently completed faculty and student research projects; alternatively, there is also a monthly Division of Environmental and Occupational Health Research Seminar. Occupational injury prevention trainees are expected to present their proposals and final results either in one of these seminars or as a separate, publicly announced dissertation presentation. In addition, there are various regularly scheduled discipline-specific brown bag seminars and conferences that offer trainees the opportunity to familiarize themselves with research activities and programs of other UTSPH faculty and students. It is expected that trainees will present preliminary and/or final results from their research in at least one national scientific meeting, and will prepare at least one manuscript for publication in an appropriate scientific journal. Skills in oral and written communication will be developed and practiced at school seminars; and formal teaching experience is recommended through teaching assistantships.

Occupational and Environmental Medicine Residency

The University of Texas School of Public Health

Sample course of study

Academic Year

A minimum of 36 semester credit hours is required for the M.P.H. degree. At least one course in each of the Public Health core disciplines of epidemiology, biometry, environmental sciences, management and policy sciences and behavioral sciences is required. Supplemental courses include industrial hygiene, toxicology, clinical occupational medicine, occupational and environmental health, and workplace safety. Residents are also able to choose from electives in environmental health law, occupational and environmental epidemiology, injury epidemiology, occupational and environmental respiratory disease, radiation safety and various independent studies. To fulfill the requirements for a M.P.H. degree, a Master's level thesis is also required. During the academic year, residents perform periodic patient evaluations in the clinic, participate in case conferences and engage in didactic sessions on various topics. Under the supervision of either the Program Director or Associate Program Director. In this academic year, a Master's Advisory Committee that meets with the student at the end of each semester monitors progress.

Opportunities for research projects exist in many areas, and currently include occupational and environmental respiratory disease, epidemiology, international occupational health, occupational hazards of health care workers and molecular epidemiology.

Academic Year- Typical Course Sequence

Month/Semester	Course/Activity	**Credit Hours**
July-August	**General orientation to the OM Residency** **Pulmonary function testing certification course** **Audiometric testing certification course** **Computer skills courses** **Introduction to the U.T. Health Services clinic**	**0** **0** **0** **0** **0**
Fall Semester (Aug.-Dec.)	**PH 1610 Intro to Biometry** **PH 2610 Intro to Epidemiology** **PH 6615 Fundamentals of Industrial Hygiene** **PH 2175 Principles of Toxicology** **PH 6998 Seminar on Workplace Safety** **Monthly Journal Club/Research Seminar**	**4** **4** **4** **3** **1** **0**
Spring Semester (Jan.–May)	**PH 6610 Occupational and Environmental Health** **PH6680 Clinical Occupational Medicine** **PH3998 Health and Safety Program Management** **PH6998 Field Trips in Occupational Health** **PH 1110 Social and Behavioral Aspects of Community Health or PH1115 Health Survey Research Design** **Elective/Thesis Research** **Monthly Journal Club/Research Seminar**	**4** **4** **4** **3** **3** **Varies** **0**
Summer Session (May–Aug)	**PH 6998 Occupational and Environmental Respiratory Disease** **PH9997 Thesis research**	**3** **Varies**

Practicum Year

The practicum year consists of applied practical in-plant, corporate, public health agency and clinical rotations, in a block format. These include a minimum of four to six months of assignments at some of the large industries

in the greater Houston or Dallas areas, one month in a public health agency, and two to four months of rotations at various occupational medicine and subspecialty clinics. Preceptors for each rotation are board-certified in occupational medicine and/or internal medicine.

Industrial rotation sites include:

- *Dow Chemical U.S.A. (Freeport)*
- *Exxon Company U.S.A. (Baytown and Houston locations)*
- *University of Texas M. D. Anderson Cancer Center (Houston)*
- *American Airlines (Dallas)*
- *Shell Oil Company (Houston)*
- *SeaRiver Maritime (Houston)*
- *Kerr McGee Corporation (Houston)*

Where feasible, these rotations are scheduled through both corporate medical as well as plant medical departments.

Clinical rotation sites include:

- *University of Texas-Houston Health Science Center, Health Services*
- *Milby Clinic (serving small to midsize manufacturing and transportation businesses)*
- *U.S. HealthWorks (various locations in the Houston area)*
- *Concentra Medical Centers (several Houston locations)*
- *Respiratory Consultants of Houston (in the Texas Medical Center)*
- *Occupational and Environmental Medicine Clinic, University of Texas Health Science Center at Tyler*
- *The Institute for Rehabilitation and Research*
- *Texas Medical Center Employee Health Clinic*
- *Strawberry Clinic (Pasadena Texas, near the Houston Ship Channel)*
- *Hermann Hospital Emergency Room*

Opportunities also exist for elective rotations with various specialty clinics within the University of Texas Houston Health Science Center, as well as with the University's Department of Environmental Health and Safety.

Public health agency rotation sites include:

- *OSHA Regional Office (Houston, Dallas)*
- *OSHA Office of Occupational Medicine (Washington, D.C.)*
- *Texas Department of Health (Houston)*
- *NIOSH at Morgantown (Respiratory Disease) or Cincinnati (Hazard Evaluations or Industry-wide Studies)*

Resident evaluation
A reciprocal evaluation system is in place for residents, rotation sites and faculty preceptors.

Resident Colloquium
One half day each week the residents convene at the School of Public Health for formal didactic sessions and to discuss interesting cases.

Occupational and Environmental Medicine Journal Club
The monthly interdisciplinary Journal Club features presentations by occupational medicine residents and occupational/environmental health doctoral students. Academic and community professionals in the fields of occupational medicine, occupational nursing, industrial hygiene, occupational safety and environmental engineering, and epidemiology attend this unique forum. As of the 1998-1999 term, a research seminar has been incorporated into the Journal Club, with presentations by students and faculty. Also, as of the 1998-1999 term, Category I Continuing Medical Education credits are awarded to attendees of the Journal Club.

THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON
School of Public Health/School of Nursing
Occupational Health for Nurses Program

Sample Courses of Study

MPH Program

The required course of study for MPH candidates includes a minimum of 36 credit hours of coursework, with at least one course in each of the five core areas of public health, as well as completion of the occupational health and occupational health nursing curriculum, as identified below, completion of a thesis project and a practicum experience. Usually, OHN students will have completed closer to 50 credit hours by graduation. A typical MPH curriculum includes:

CORE	Course	Credit Hours
Public Health core	Introduction to Epidemiology	4
	Introduction to Biometry	4
	Health and Safety Program Management	4
	Behavioral Aspects of Occupational Health	4
Occupational Health core	Occupational and Environmental Health	4
	Fundamentals of Industrial Hygiene	4
	Clinical Occupational Medicine	4
	Principles of Toxicology	3
	Field Trips in Occupational Health	3
	Workplace Safety Seminar	1
Occupational Health Nursing core	Occupational Health Nursing I	3
	Occupational Health Nursing II	2-4
	Electives	Varies
	Thesis research	Varies

MSN/MPH Program

The course of study for dual degree (MSN/MPH) candidates includes: 1) a minimum of 71 credit hours of coursework as identified below, and 2) completion of a joint UTSPH/SON thesis project. The dual degree program plan includes all of the core public health, occupational health and occupational health nursing core courses described above, a thesis and completion of additional nursing courses. The table on the following page presents a typical course of study.

CORE	Course	Credit Hours
Public Health core	Introduction to Epidemiology	4
	Introduction to Biometry	4
	Health and Safety Program Management	4
	Psychosocial Aspects of Community Health or Behavioral Aspects of Occupational Health	4
Occupational Health core	Occupational and Environmental Health	4
	Fundamentals of Industrial Hygiene	4
	Clinical Occupational Medicine	4
	Principles of Toxicology	3
	Field Trips in Occupational Health	3
	Workplace Safety Seminar	1
Occupational Health Nursing core	Occupational Health Nursing I	3
	Occupational Health Nursing II	2-4
SON core	Advanced Pathophysiology	4-5
	Introduction to Population and Environmental Assessment	3
	Advanced clinical nursing I-III (in a specialty track such as mental health, women's health, oncology, or emergency nursing)	12
	Pharmacotherapy	3
	Health assessment	3
	Electives	Varies
	Thesis research	Varies

Appendix B: Data Tables

ERC Applicant Institution: The Unveristy of Texas Health Science Center at Houston
Program Director: Benjamin Amick III, PhD
Discipline: Epidemiology

Table 4a
Academic Training Report
Previous Budget Period: July 1, 2005 to June 30, 2006

Degree Awarded	How Does Degree Read?	# Full-Time Trainees Enrolled[1]	# Full-Time NIOSH-Supported Trainees	# Part-Time Trainees Enrolled	# Part-Time NIOSH-Supported Trainees	# Other Trainees Taking OS&H Courses[2]	# Trainees Graduated
Baccalaureate/associate degree							
Master's degree							
Doctorate degree							
Dr.PH		0	0	0	0	0	0
PhD		5	4	0	0	0	2
Post-doctoral (Include formally registered Occupational Medicine residents in all years of the residency.)[3]							
Other (specify, e.g., undergraduate Certificate program trainees)							

Refer to: Supplemental Instructions, page 8.

[1] Trainee counts include all students in the approved programs.

[2] Does not include trainees counted in any of the full-time or part-time categories

[3] In this case, there may be double counting between Doctorate degree and Post-doctoral categories.

ERC Applicant Institution: The Unveristy of Texas Health Science Center at Houston
Program Director: Benjamin Amick III, PhD
Discipline: Epidemiology

Table 13
Minority Recruitment Data[1]
Previous Budget Period: July 1, 2005 to June 30, 2006

GROUP DATA			INDIVIDUAL DATA			
# of Minorities Applied	# of Minorities Offered Admission	# of Minorities Entered Program	For those who entered program: Identify by sequential #	Current Status (in training, graduated, left the program, etc.)	Sources of Support	Subsequent Career Development/ Employment
0	0	0	0	0	0	0

Refer to: Supplemental Instructions, page 11.
[1] First three columns are a group total; last four columns refer to individual trainees.

ERC Applicant Institution: The Unveristy of Texas Health Science Center at Houston
Program Director: Lawrence Whitehead, PhD
Discipline: Industrial Hygiene

Table 4a
Academic Training Report
Previous Budget Period: July 1, 2005 to June 30, 2006

Degree Awarded	How Does Degree Read?	# Full-Time Trainees Enrolled[1]	# Full-Time NIOSH-Supported Trainees	# Part-Time Trainees Enrolled	# Part-Time NIOSH-Supported Trainees	# Other Trainees Taking OS&H Courses[2]	# Trainees Graduated
Baccalaureate/associate degree							
not offered							
Master's degree							
MPH	MPH (Occ. Health/Aero.Med)	1	1	8	0	6	2
MS	MS (Environmental Science)	0	0	3	0	1	0
Doctorate degree							
DrPH	DrPH (Occ.Health/Aero.Med.)	1	1	3	0	2	3
PhD	PhD (Environ.Sci.)	0	0	1	0	2	1
Post-doctoral (Include formally registered Occupational Medicine residents in all years of the residency.)[3]							
not offered							
Other (specify, e.g., undergraduate Certificate program trainees)							
not offered							

Refer to: Supplemental Instructions, page 8.

[1] Trainee counts include all students in the approved programs.

[2] Does not include trainees counted in any of the full-time or part-time categories

[3] In this case, there may be double counting between Doctorate degree and Post-doctoral categories.

ERC Applicant Institution: The Unveristy of Texas Health Science Center at Houston
Program Director: Lawrence Whitehead, PhD
Discipline: Industrial Hygiene

Table 13
Minority Recruitment Data[1]
Previous Budget Period: July 1, 2005 to June 30, 2006

GROUP DATA			INDIVIDUAL DATA			
# of Minorities Applied	# of Minorities Offered Admission	# of Minorities Entered Program	For those who entered program: Identify by sequential #	Current Status (in training, graduated, left the program, etc.)	Sources of Support	Subsequent Career Development/ Employment
not tracked, but believed to be 4	4	3	1	in training, PhD	self	in school
			2	in training, MPH	self, part-time	employed H&S major hospital
			3	in training, MS	self, part-time	employed H&S university

Refer to: Supplemental Instructions, page 11.

[1] First three columns are a group total; last four columns refer to individual trainees.

ERC Applicant Institution: The Unveristy of Texas Health Science Center at Houston
Program Director: Benjamin Amick III, PhD
Discipline: Injury Prevention

Table 4a
Academic Training Report
Previous Budget Period: July 1, 2005 to June 30, 2006

Degree Awarded	How Does Degree Read?	# Full-Time Trainees Enrolled[1]	# Full-Time NIOSH-Supported Trainees	# Part-Time Trainees Enrolled	# Part-Time NIOSH-Supported Trainees	# Other Trainees Taking OS&H Courses[2]	# Trainees Graduated
Baccalaureate/associate degree							
Master's degree							
Doctorate degree							
Dr.P.H.		3	3	3	1	0	1
Ph.D.							
Post-doctoral (Include formally registered Occupational Medicine residents in all years of the residency.)[3]							
Other (specify, e.g., undergraduate Certificate program trainees)							

Refer to: Supplemental Instructions, page 8.

[1] Trainee counts include all students in the approved programs.

[2] Does not include trainees counted in any of the full-time or part-time categories

[3] In this case, there may be double counting between Doctorate degree and Post-doctoral categories.

ERC Applicant Institution: The Unveristy of Texas Health Science Center at Houston
Program Director: Benjamin Amick III, PhD
Discipline: Injury Prevention

Table 13
Minority Recruitment Data[1]
Previous Budget Period: July 1, 2005 to June 30, 2006

GROUP DATA			INDIVIDUAL DATA			
# of Minorities Applied	# of Minorities Offered Admission	# of Minorities Entered Program	For those who entered program: Identify by sequential #	Current Status (in training, graduated, left the program, etc.)	Sources of Support	Subsequent Career Development/ Employment
0	0	0	0	0	0	0

Refer to: Supplemental Instructions, page 11.

[1] First three columns are a group total; last four columns refer to individual trainees.

ERC Applicant Institution: The Unveristy of Texas Health Science Center at Houston
Program Director: Arch Carson, MD, PhD
Discipline:Occupational Medicine

Table 4a
Academic Training Report
Previous Budget Period: July 1, 2005 to June 30, 2006

Degree Awarded	How Does Degree Read?	# Full-Time Trainees Enrolled[1]	# Full-Time NIOSH-Supported Trainees	# Part-Time Trainees Enrolled	# Part-Time NIOSH-Supported Trainees	# Other Trainees Taking OS&H Courses[2]	# Trainees Graduated
Baccalaureate/associate degree							
Master's degree							
MPH	Master's in Public Health	2	1	0	0	19	0
Doctorate degree							
Post-doctoral (Include formally registered Occupational Medicine residents in all years of the residency.)[3]							
Other (specify, e.g., undergraduate Certificate program trainees)							
Resident	Resident in Occupational Medicine	6	5	0	0	0	3

Refer to: Supplemental Instructions, page 8.

[1] Trainee counts include all students in the approved programs.

[2] Does not include trainees counted in any of the full-time or part-time categories

[3] In this case, there may be double counting between Doctorate degree and Post-doctoral categories.

ERC Applicant Institution: The Unveristy of Texas Health Science Center at Houston
Program Director: Arch Carson, MD, PhD
Discipline:Occupational Medicine

Table 13
Minority Recruitment Data[1]
Previous Budget Period: July 1, 2005 to June 30, 2006

GROUP DATA			INDIVIDUAL DATA			
# of Minorities Applied	# of Minorities Offered Admission	# of Minorities Entered Program	For those who entered program: Identify by sequential #	Current Status (in training, graduated, left the program, etc.)	Sources of Support	Subsequent Career Development/ Employment
8	2	2	1 Clark	In Training	NIOSH	In Training
			2 Fernando	In Training	Self Funded	In Training
			3 Haque	Graduated	NIOSH	VAMC Anchorage, Alaska
			4 Li	In Training	NIOSH	In Training
			5 Hinojosa	Graduated	NIOSH	Uni-Care Waco, Texas
			6 Pugach	Graduated	NIOSH	Locum Tenens, Texas

Refer to: Supplemental Instructions, page 11.

[1] First three columns are a group total; last four columns refer to individual trainees.

ERC Applicant Institution: The University of Texas Health Science Center at Houston

Program Director: Thomas, Mackey, PhD, NPC

Discipline:Occupational Health for Nurses

Table 4a
Academic Training Report
Previous Budget Period: July 1, 2005 to June 30, 2006

Degree Awarded	How Does Degree Read?	# Full-Time Trainees Enrolled[1]	# Full-Time NIOSH-Supported Trainees	# Part-Time Trainees Enrolled	# Part-Time NIOSH-Supported Trainees	# Other Trainees Taking OS&H Courses[2]	# Trainees Graduated
Baccalaureate/associate degree							
Master's degree							
MSN/MPH	Masters of Science in Nursing/Ma	2	2	0	0	0	2
MPH		1	1	0	0	0	1
Doctorate degree							
Post-doctoral (Include formally registered Occupational Medicine residents in all years of the residency.)[3]							
Other (specify, e.g., undergraduate Certificate program trainees)							

Refer to: Supplemental Instructions, page 8.

[1] Trainee counts include all students in the approved programs.

[2] Does not include trainees counted in any of the full-time or part-time categories

[3] In this case, there may be double counting between Doctorate degree and Post-doctoral categories.

ERC Applicant Institution: The Unveristy of Texas Health Science Center at Houston
Program Director: Thomas, Mackey, PhD, NPC
Discipline:Occupational Health for Nurses

Table 13
Minority Recruitment Data[1]
Previous Budget Period: July 1, 2005 to June 30, 2006

GROUP DATA			INDIVIDUAL DATA			
# of Minorities Applied	# of Minorities Offered Admission	# of Minorities Entered Program	For those who entered program: Identify by sequential #	Current Status (in training, graduated, left the program, etc.)	Sources of Support	Subsequent Career Development/ Employment
0	0	0	0	1	0	0

Refer to: Supplemental Instructions, page 11.

[1] First three columns are a group total; last four columns refer to individual trainees.

ERC Applicant Institution: The Universtiy of Texas Health Science Center at Houston
Program Director: Janet L. Harreld, MA, MFA, MPA

Table 12a
CE Course Offerings by Program Area
Previous Budget Period: July 1, 2005 to June 30, 2006

Program Area: OMR

					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title[1]	**Program Area**	**Total Trainees**	**Length of Course**	**Total Pers Days**	**MD**	**NURS**	**HYG**	**SAFETY**	**OTHER**	**Private Industry**	**Fed Gov**	**State Gov**	**Local Gov**	**Foreign Country**	**Academic**	**Other**
Occ & Environ Medicine for Primary Care Professionals	OMR	13	1.5	19.5	10	3	0	0	0	13	0	0	0	0	0	0
Occ Health Econ/Health Outcomes	OMR	20	.5	10	8	3	2	0	7	9	0	0	0	0	11	0
O/E Respiratory Disease & Epi	OMR	20	.5	10	10	2	0	0	8	15	0	0	0	0	5	0
Intern'l Occ Health & O/E Epi	OMR	36	.5	18	13	5	2	0	16	23	0	0	0	0	13	0
Occ Health Econ & Ergonomics	OMR	34	.5	17	10	4	3	0	17	22	0	0	0	0	12	0
Health Promotion	OMR	27	.5	13.5	11	3	1	0	12	16	0	0	0	0	11	0
Ind Hyg & Toxicology	OMR	27	.5	13.5	8	5	2	0	12	18	0	0	0	0	9	0
Occ Illness & Injury	OMR	21	.5	10.5	10	2	2	0	7	13	0	0	0	0	8	0
Occ Helath & Epi	OMR	26	.5	13	14	5	0	0	7	19	0	0	0	0	7	0
Subtotal [Program]	**[e.g., IH]**	**224**	**6**	**125**	**94**	**32**	**12**	**0**	**86**	**148**	**0**	**0**	**0**	**0**	**76**	**0**

Refer to: Supplemental Instructions, page 10.

[1] Group together by Program Area and provide sub-totals for each Program Area in Table 12b. Add or delete rows as necessary.

ERC Applicant Institution: The Universtiy of Texas Health Science Center at Houston
Program Director: Janet L. Harreld, MA, MFA, MPA

Table 12a
CE Course Offerings by Program Area
Previous Budget Period: July 1, 2005 to June 30, 2006

Program Area: OS

					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title[1]	**Program Area**	**Total Trainees**	**Length of Course**	**Total Pers Days**	**MD**	**NURS**	**HYG**	**SAFETY**	**OTHER**	**Private Industry**	**Fed Gov**	**State Gov**	**Local Gov**	**Foreign Country**	**Academic**	**Other**
Emergency Response Refresher	OS	61	1	61	0	0	0	61	0	61	0	0	0	0	0	0
Comprehensive EH&S UT Arlington	OS	18	1	18	0	0	0	18	0	0	0	0	0	0	18	0
Comprehensive EH&S Harvard Univ	OS	30	1.5	45	0	0	0	30	0	0	0	0	0	0	30	0
Comprehensive EH&S UNC	OS	44	1	44	0	0	0	44	0	0	0	0	0	0	44	0
EH&S Academy	OS	22	4.5	99	0	0	0	21	1	1	0	1	0	0	20	0
Subtotal [Program]	**[e.g., IH]**	**175**	**9**	**267**	**0**	**0**	**0**	**174**	**1**	**1**	**0**	**1**	**0**	**0**	**112**	**0**

Refer to: Supplemental Instructions, page 10.

[1] Group together by Program Area and provide sub-totals for each Program Area in Table 12b. Add or delete rows as necessary.

ERC Applicant Institution: The Universtiy of Texas Health Science Center at Houston
Program Director: Janet L. Harreld, MA, MFA, MPA

Table 12a
CE Course Offerings by Program Area
Previous Budget Period: July 1, 2005 to June 30, 2006

Program Area: HST

					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title[1]	**Program Area**	**Total Trainees**	**Length of Course**	**Total Pers Days**	**MD**	**NURS**	**HYG**	**SAFETY**	**OTHER**	**Private Industry**	**Fed Gov**	**State Gov**	**Local Gov**	**Foreign Country**	**Acad emic**	**Other**
Hazardous Materials Management & CHMM Exam - SA	HST	13	1	13	0	0	0	13	0	13	0	0	0	0	0	0
Hazardous Materials Management & CHMM Exam	HST	12	3.5	42	0	0	0	12	0	9	0	0	0	0	3	0
Radiation Safety Officer	HST	15	4.5	67.5	0	0	0	13	2	7	0	0	1	0	7	0
Subtotal [Program]	**[e.g., IH]**	**40**	**9**	**123**	**0**	**0**	**0**	**38**	**2**	**29**	**0**	**0**	**1**	**0**	**10**	**0**

Refer to: Supplemental Instructions, page 10.

[1] Group together by Program Area and provide sub-totals for each Program Area in Table 12b. Add or delete rows as necessary.

ERC Applicant Institution: The Universtiy of Texas Health Science Center at Houston
Program Director: Janet L. Harreld, MA, MFA, MPA

Table 12a
CE Course Offerings by Program Area
Previous Budget Period: July 1, 2005 to June 30, 2006

Program Area: Ag S&H

Not applicable to this Center

					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title[1]	Program Area	Total Trainees	Length of Course	Total Pers Days	MD	NURS	HYG	SAFETY	OTHER	Private Industry	Fed Gov	State Gov	Local Gov	Foreign Country	Acad emic	Other
Subtotal [Program]	**[e.g., IH]**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Refer to: Supplemental Instructions, page 10.

[1] Group together by Program Area and provide sub-totals for each Program Area in Table 12b. Add or delete rows as necessary.

ERC Applicant Institution: The Universtiy of Texas Health Science Center at Houston
Program Director: Janet L. Harreld, MA, MFA, MPA

Table 12a
CE Course Offerings by Program Area
Previous Budget Period: July 1, 2005 to June 30, 2006

Program Area: OT

					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title[1]	**Program Area**	**Total Trainees**	**Length of Course**	**Total Pers Days**	**MD**	**NURS**	**HYG**	**SAFETY**	**OTHER**	**Private Industry**	**Fed Gov**	**State Gov**	**Local Gov**	**Foreign Country**	**Academic**	**Other**
NIOSH Approved Pulmonary Function Testing					0	51	0	0	127	178	0	0	0	0	0	0
Full course offered 14 occasions	OT	149	2	298												
Refresher course offered 14 occasions	OT	29	1	29												
Subtotal [Program]	**[e.g., IH]**	**178**	**3**	**327**	**0**	**51**	**0**	**0**	**127**	**178**	**0**	**0**	**0**	**0**	**0**	**0**

Refer to: Supplemental Instructions, page 10.

[1] Group together by Program Area and provide sub-totals for each Program Area in Table 12b. Add or delete rows as necessary.

ERC Applicant Institution: The University of Texas Health Science Center at Houston
Program Director: Janet L. Harreld, MA, MFA, MPA

Table 12b
Summary of CE Course Offerings by Program Area
Previous Budget Period: July 1, 2005 to June 30, 2006

					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title	Program Area	Total Trainees	Total # of Courses	Total Pers Days	MD	NURS	HYG	SAFETY	OTHER	Private Industry	Fed Gov	State Gov	Local Gov	Foreign Country	Acad emic	Other
Subtotal IH	IH	303	12	317	0	0	303	0	0	301	1	0	0	0	1	0
Subtotal OHN	OHN	179	7	418	0	70	0	0	109	179	0	0	0	0	0	0
Subtotal OMR	OMR	224	9	125	94	32	12	0	86	148	0	0	0	0	76	0
Subtotal OS	OS	175	9	267	0	0	0	174	1	1	0	1	0	0	112	0
Subtotal HST	HST	40	9	123	0	0	0	38	2	29	0	0	1	0	10	0
Subtotal Ag S&H Ag S&H not applicable to SWCOEH	Ag S&H	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Other Category	OT	178	3	327	0	51	0	0	127	178	0	0	0	0	0	0
GRAND TOTALS (All Program Areas)		1,099	49	1,577	94	153	315	212	325	836	1	1	1	0	199	0

Refer to: Supplemental Instructions, page 10.

ERC Applicant Institution: The Universtiy of Texas Health Science Center at Houston
Program Director: Janet L. Harreld, MA, MFA, MPA

Table 12a
CE Course Offerings by Program Area
Previous Budget Period: July 1, 2005 to June 30, 2006

Program Area: IH

					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title[1]	Program Area	Total Trainees	Length of Course	Total Pers Days	MD	NURS	HYG	SAFETY	OTHER	Private Industry	Fed Gov	State Gov	Local Gov	Foreign Country	Academic	Other
Sensitizers, Asthma Triggers & Lead Poinsioning	IH	56	1	56	0	0	56	0	0	56	0	0	0	0	0	0
Topics in Arc flash & fire Safety	IH	44	1	44	0	0	44	0	0	44	0	0	0	0	0	0
Hurricanes Katrina & Rita - an EHS Perspective	IH	43	1	43	0	0	43	0	0	43	0	0	0	0	0	0
Zoonoses & Related Issues at Work and War	IH	31	1	31	0	0	31	0	0	31	0	0	0	0	0	0
Management, Insurance & Busiess Continuity Primer for IH	IH	39	1	39	0	0	39	0	0	39	0	0	0	0	0	0
HSE Management Systems: Certification, Benefits & the Future	IH	43	1	43	0	0	43	0	0	43	0	0	0	0	0	0
Comprehensive Industrial Hygiene Review	IH	4	4.5	18	0	0	4	0	0	2	1	0	0	0	1	0
Hexavalent Chromium & Welding	IH	43	1	43	0	0	43	0	0	43	0	0	0	0	0	0
Subtotal [Program]	**[e.g., IH]**	**303**	**12**	**317**	**0**	**0**	**303**	**0**	**0**	**301**	**1**	**0**	**0**	**0**	**1**	**0**

Refer to: Supplemental Instructions, page 10.

[1] Group together by Program Area and provide sub-totals for each Program Area in Table 12b. Add or delete rows as necessary.

ERC Applicant Institution: The Universtiy of Texas Health Science Center at Houston
Program Director: Janet L. Harreld, MA, MFA, MPA

Table 12a
CE Course Offerings by Program Area
Previous Budget Period: July 1, 2005 to June 30, 2006

Program Area: OHN

					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title[1]	Program Area	Total Trainees	Length of Course	Total Pers Days	MD	NURS	HYG	SAFETY	OTHER	Private Industry	Fed Gov	State Gov	Local Gov	Foreign Country	Academic	Other
OHN Safety Management Review	OHN	20	2	40	0	20	0	0	0	20	0	0	0	0	0	0
CAOHC Appoved Hearing Conservation Training	OHN	120	2.5	300		37	0	0	83	120	0	0	0	0	0	0
CAOHC Appoved Refresher	OHN	39	2	78	0	13	0	0	26	39	0	0	0	0	0	0
Subtotal [Program]	**[e.g., IH]**	**179**	**7**	**418**	**0**	**70**	**0**	**0**	**109**	**179**	**0**	**0**	**0**	**0**	**0**	**0**

Refer to: Supplemental Instructions, page 10.

[1] Group together by Program Area and provide sub-totals for each Program Area in Table 12b. Add or delete rows as necessary.

Appendix C: Publications

Epidemiology

Shipp EM, Cooper SP, Burau KD, Bolin JN. Pesticide safety training and access to field sanitation among migrant farmworker mothers from Starr County, TX. J Agric Saf Health. 200511(1): 51-60.

Shipp EM, Tortolero S, Cooper SP, Weller N, Baumler E. Substance use and occupational injuries among high school students in South Texas. Am J Drug Alcohol Abuse. 2005 31(2): 253-265.

Cooper SP, Weller NF, Fox EE, Cooper SR, Shipp EM. Comparative description of migrant farmworkers vs. other students attending South Texas schools: Demographic, academic, and health characteristics. Tex. Med.2005 101(8): 58-62.

Industrial Hygiene

Baxter, D. M., J. L. Perkins, C.R. McGhee, and J. Seltzer, (2005) A Regional Comparison of Mold Spore Concentrations Outdoors and Inside Clean and Mold Contaminated Southern California Buildings, J. Occ. Env. Hlth., 2:8-18.

Barcenas, C.H., G.L.Delclos, R.El-Zein, G.Tortolero-Luna, L.W.Whitehead, M.R.Spitz (2005). Wood Dust Exposure and the Association with Lung Cancer Risk. Am.J Indust. Med. 47(4): 349-357.

Cech, I., Smolensky, M.H., Afshar, M., Broyles, G., Barczyk, M., Burau, K., Emery, R.J.(2006) "Lead and Copper in the Drinking Water Fountains – Information for Physicians" Sou. Med. Journal, 99(2): 137-142.

Cooper,S.R.; Cooper,S.P.; Felknor,S.S.; Santana,V.S.; Fischer,F.M.; Shipp,E.M.; Vela Acosta,M.S.(2005) Nontraditional work factors in farmworker adolescent populations: implications for health research and interventions. Public Health Reports, 2005 Nov-Dec; Vol. 120 (6), pp. 622-9.

Delclos, G.L., A.A.Arif, L.Aday, A.I.Carson, D.Lai, C.Lusk, T.Stock, E.Symanski, L.W.Whitehead, F.G.Banavides, J.M.Anto (2006). Validation of an Asthma Questionnaire for Use in Healthcare Workers. Occupational and Environ. Med. 63: 173-179.

Delclos GL, Arif AA, Aday L, Carson A, Lai D, Lusk C, Stock T, Symanski E, Whitehead LW, Benavides FG, Maria Antó J. A Validated Asthma Questionnaire for Healthcare Workers. Occup. Environ. Med., 63:173-179 (2006).

Emery, R.J., Delclos, G.L. (2005) "World at Work: Research and Testing Laboratories: Spotlight on a Diverse Industry" Occupational and Environmental Medicine, 62(3) 200-205; 2005.

Emery, R.J., Valizadeh, F., Kennedy, V., Shelton, A. (2005) "An Analysis of Variables Influencing the Number of Radiation Overexposure Events in Texas from 1970 to 2000" Health Physics, 89(1):46-52.

Emery, R.J., Charlton, M.A. "Radiation Protection Programs", chapter in *Concentration of Radionuclides in Food and the Environment: Prevention and Human Health*, Nollet, L and Poschl, M. eds. CRC Press Taylor & Francis Group, Boca Raton, FL, 2006.

Enebo B, Corbin, L, Gilkey D, Vela Acost, Integrating Complementary and Alternative

Therapies in An Outpatient University Hospital Setting, Evidence Based Integrative Medicine, 2(1), 21-26, Aug 2005.

Korshukin M, Emery R (2006). An Analysis of Reported Events of Stolen Sources of Radioactivity in Texas from 1956 to 2000. Health Physics. 90(3):266-272.

Kwon J, Weisel CP, Turpin BJ, Zhang J, Korn LR, Morandi MT, Stock TH, Colome S. (2006) Source proximity and outdoor-residential VOC concentrations: results from the RIOPA study. Environ Sci Technol. 2006 Jul 1;40(13):4074-82

Liu W, Zhang J, Kwon J, Weisel C, Turpin B, Zhang L, Korn L, Morandi M, Stock T, Colome S. (2006) Concentrations and source characteristics of airborne carbonyl compounds measured outside urban residences. J Air Waste Management Assoc. 2006 Aug;56(8):1196-204.

Lucas, A., Emery, R.J., "Assessing Occupational Mercury Exposures During the Onsite Processing of Spent Fluorescent Lamps" Journal of Environmental Health, 68 (7): 30-34; 2006.

Meyer TE, Coker AL, Sanderson M, Symanski E. A case-control study of farming and prostate cancer in African American and Caucasian men, Occup. Environ. Med., published Online First: 15 August 2006.

Patlovich, S., Emery, R.J., Whitehead, L. "Characterization and Geolocation of Sources of Radioactivity Lost Downhole in the Course of Oil and Gas Exploration and Production Activities in Texas, 1956 to 2001" *Health Physics,* 89 (Supplement 5):S69-S77; 2005

Polidori A, Turpin B, Meng QY, Lee JH, Weisel C, Morandi M, Colome S, Stock T, Winer A, Zhang , Kwon J, Alimokhtari S, Shendell D, Jones J, Farrar C, (2006) Fine organic particulate matter dominates indoor-generated PM2.5 in RIOPA homes. J Expo Sci Environ Epidemiol. 2006 Jul;16(4):321-31. Epub 2006 Mar 15

Symanski E, Maberti SI, Chan W. (2006) A meta-analytic approach for characterizing the within- and between-worker sources of variation in exposure to workplace contaminants,Ann.Occup.Hyg,50:343-357.

Tovalin-Ahumada, H., M.T.Morandi, L.W.Whitehead (200). Evaluation of Personal Exposures to VOCs: A Comparison Between Indoor and Outdoor Workers in Two Mexican Cities. Science of the Total Environment. 318. Accepted for publication.

Thommen, P.J., Emery, R.J. "An Analysis of 20 Years of Radiation-related Health Care Complaints in Texas for the Purposes of Quality Improvement", *Health Physics*, 90 (Supplement 2): S62-S66; 2006.

Tovalin-Ahumada, M. Valverde, M. Morandi, S. Blanco, L. Whitehead, E. Rojas, (2006). DNA Damage in outdoor workers occupationally exposed to environmental air pollutants. Occup Environ Med. 2006 Apr;63:230-6.

Vela Acosta, MS (2006) Occupational Health and Safety Education for Hispanic Workers at the Border, Health Education & Behavior, (in press) 2006.

Vela Acosta MS, Reding D, Cooper SP, Gunderson P. 2005. Lessons Learned: Geographic Information Systems and Farmworkers in the Lake States. Journal of Agricultural Safety and Health. 11(1):85-97.

Weisel CP, Zhang J, Turpin BJ, Morandi MT, Colome S, Stock TH, et al (2005) Relationships of Indoor, Outdoor, and Personal Air (RIOPA). Part I. Collection methods

and descriptive analyses. Res Rep Health Eff Inst. 2005 Nov;(130 Pt 1):1-107; discussion 109-27

Injury Prevention

Williams Renee M, Westmorland Muriel G, Shannon Harry S, Amick III Benjamin C. Disability Management Practices in Ontario Health Care Workplaces. Journal of Occupational Rehabilitation Volume 1-13, 2006.

Chaumont Menéndez Cammie, Amick III Benjamin C, Jenkins Mark, Janowitz Ira, Rempel David M, Robertson Michelle, Dennerlein Jack T, Chang Che-Hsu (Joe), Katz Jeffrey N. A Multi-Method Study Evaluating Computing-Related Risk Factors among College Students. Work: A Journal of Prevention, Assessment, and Rehabilitation (accepted for publication).

Robertson Michelle M, Amick III Benjamin C, Fossel Anne H, Coley Christopher M, Hupert Nathaniel, Jenkins Mark, Tullar Jessica*, Katz Jeffery N. Undergraduate Students' Ergonomics Knowledge of Appropriate Computer Workstation Design and Work Habits: The Emerging Young Knowledge Workforce. Work: A Journal of Prevention, Assessment and Rehabilitation (accepted for publication).

Jenkins Mark, Chaumont Menéndez Cammie*, Amick III Benjamin C, Robertson Michelle M, Hupert Nathaniel, Tullar Jessica, Katz Jeffery N. Undergraduate college students' upper extremity symptoms and functional limitations related to computer use: A replication study. Work: A Journal of Prevention, Assessment, and Rehabilitation 28(3), 2006.

Tullar Jessica M*, Amick III Benjamin C, Robertson Michelle M., Fossel Anne H, Coley Christopher M, Hupert Nathaniel, Jenkins Mark, Katz Jeffery N. Direct Observation of Computer Workplace Risk Factors of College Students. Work: A Journal of Prevention, Assessment and Rehabilitation 28(1), 2006.

Brewer Shelley*, Van Eerd Dwayne, Amick III Benjamin C, Irvin Emma, Daum Kent, Gerr Fred, Moore J Steven, Cullen Kim, Rempel Dave M. Workplace Interventions to Prevent Musculoskeletal and Visual Symptoms and Disorders among Computer Users: A Systematic Review. Journal of Occupational Rehabilitation 16(3), 2006.

Gimeno David*, Amick III Benjamin C, Habeck Rochelle V, Ossmann Janet, Katz Jeffrey N. The Role of Job Strain on Return to Work after Carpal Tunnel Surgery. Occupational and Environmental Medicine 62(11): 778-785, 2005.

Cullen Kimberly L*, Williams Renee M, Shannon Harry S, Wessel Jean, Amick III Benjamin C, Westmoreland Murial G. Workplace Disability Management Practices in Ontario Educational Facilities. Journal of Occupational Rehabilitation 15(3): 417-433, 2005.

Westmorland Muriel G, Williams Renee M, Amick III Benjamin C, Shannon Harry, Rasheed Farah. Disability Management Practices in Ontario Workplaces: Employee's Perceptions. Disability and Rehabilitation 27(14): 825-835, 2005.

Ossmann Janet, Amick III Benjamin C, Habeck Rochelle V, Hunt Allan, Ramamurthhy Gopika, Soucie Valerie, Katz Jeffrey N. Management and Employee Agreement on Reports of Organizational Policies and Practices Important in Return to Work Following Carpal Tunnel Surgery. Journal of Occupational Rehabilitation 15(1): 17-26, 2005.

Williams Renee M, Westmorland Murial G, Shannon Harry, Rasheed Farah, Amick III Benjamin C. Disability Management Practices in Education, Hotel/Motel and Health Care Workplaces. American Journal of Industrial Medicine 47: 217-226, 2005.

Katz Jeffrey N, Amick Benjamin C, Keller Robert, Fossel Anne H, Ossmann Janet, Soucie Valerie, Losina Elena. Determinants of Work Absence Following Surgery for Carpal Tunnel Syndrome. American Journal of Industrial Medicine 47:120-130, 2005.

Dembe Allard, Savageau Judith, Amick III Benjamin C, Banks Steven. Racial and Ethnic Variations in Office-Based Medical Care for Work-Related Injuries and Illnesses. Journal of the National Medical Association 97(4): 498-507, 2005.1. Amick, Benjamin C.,

Chaumont Menéndez, Cammie, Amick III, Benjamin C., Jenkins, Mark, Robertson, Michelle, Janowitz, Ira, Rempel, David M., Dennerlein, Jack T., Chang, Che-Hsu, Katz, Jeffrey N., and Harrist, Ron (2004). Computing-Related Risk Factors Among College Students. Proceedings of the 17th Annual International Occupational Ergonomics and Safety Conference. Houston, Texas, United States: Building Bridges to Healthy Workplaces. Lawrence J. H. Schulze (Ed). 265-268.

Amick III, Benjamin C., Robertson, Michelle, Bazzani, Lianna, DeRango, Kelly, M Chaumont Menéndez, Cammie, Rooney, Ted, Harrist, Ron, and Moore, Anne (2004). Health Impacts of Two Office Ergonomic Interventions. Proceedings of the 17th Annual International Occupational Ergonomics and Safety Conference. Houston, Texas, United States: Building Bridges to Healthy Workplaces. Lawrence J. H. Schulze (Ed). 269-271.

Chaumont Menéndez, Cammie, Amick III, Benjamin C., Bazzani, Lianna, Robertson, Michelle, DeRango, Kelly, Rooney, Ted, Moore, Anne, and Harrist, Ron (2004). The Impact of Two Office Ergonomics Interventions on Visual Symptoms. Proceedings of the 17th Annual International Occupational Ergonomics and Safety Conference. Houston, Texas, United States: Building Bridges to Healthy Workplaces. Lawrence J. H. Schulze (Ed). 272-274.

Brewer S, Van Eerd D, Amick III BC, Irvin E, Daum K, Gerr F, Moore JS, Cullen K, Rempel D. Workplace interventions to prevent musculoskeletal and visual symptoms and disorders among computer users: A Systematic Review. Journal of Occupational Rehabilitation September 2006;16(3)

Occupational Health for Nurses

Mackey, T. (2006) Common diagnostic and treatment challenges in primary care of acute bacterial rhinosinusitis. Medical Advisor (2006).

Mackey, T. Planning your nursing business. Journal of the American Academy of Nurse Practitioners (2005), 17(12), 501-505.

Mackey, T., Cole, F., Lindenberg, J. Quality improvement and changes in diabetic patient outcomes in an academic nurse practitioner primary care practice. Journal of the American Academy of Nurse Practitioners (2005), 17(12), 547-553.

Pohl, J., Breer, L, Tanner, C., Barkauskas, V., Bleich, M., Bomar, P., Fiandt, K., Jenkins, M., Lundeen, S., Mackey, T., Jagelkerk, J., Weerner, K. (2005) Brief Report of the National Network for Nurse Managed Health Centers (NNNMHC) Data Consensus Conference.

Nursing Outlook (Submitted, 4/05).

Delclos, GL, Bright KA, Carson AI, Felknor SA, Mackey TA, Morandi MT, Schulze LJH, Whitehead LW. A global survey of occupational health competencies and curriculum. International Journal of Occupational and Environmental Health 2005; 11: 181-194.

Occupational Medicine

Schecter, A., Harris, T.R., Tung, K.C., Päpke, O. 2005. Temporal limitation in the use of potassium dichromate as a blood preservative for the analysis of organohalogenated contaminants including polybrominated diphenyl ethers, dioxins and PCBs. Toxicological and Environmental Chemistry 87(1- 4):439-447.

Schecter, A., Päpke, O., Harris, T.R., Tung, K.C. 2005. Partitioning of Polybrominated Diphenyl Ether (PBDE) in human blood and milk. Toxicological and Environmental Chemistry 88(2): 319-324.

Gupta, A., Schecter, A., Aragaki, C., Roehrborn, C., Claus, G. 2006. Dioxin exposure and benign prostatic hyperplasia. Journal of Occupational and Environmental Medicine 48 (7): 708-714.

Schecter, A., Harris, T.R., Päpke, O., Tung, K.C., Musumba, A.2006. Polybrominated Diphenyl Ether (PBDE) levels in the blood of pure vegetarians (vegans). Journal of Toxicological and Environmental Chemistry, 88(1): 107-112.
Schecter, A., Johnson-Welch, S., Tung, K.C., Harris, T.R., Päpke, O., Rosen, R. 2006. Polybrominated diphenyl ether (PBDE) levels in U.S. human fetuses and newborns. Toxicological and Environmental Chemistry (In Press)

Schecter, A.J., Birnbaum, L., Ryan, J.J., Constable, J.D. 2006. Dioxins: An Overview. Environmental Research 101(3):419-428.

Schecter, A., Päpke, O., Tung, K.C., Brown, T., Musumba, A. 2006. Changes in Polybrominated diphenyl ether (PBDE) levels in cooked food. Toxicological and Environmental Chemistry 88(2):207-211.

Schecter, A., Päpke, O., Harris, T.R., Olson, J., Musumba, A., Birnbaum, L. 2006. An expanded market basket survey of US food for PBDEs and estimated dietary intake by age and gender. Environ Health Perspectives: doi:10.1289/ehp.9121. [Online 13 July 2006]

Schecter, A., Quynh, H.T., Päpke, O., Tung, K.C., Constable, J.D. 2006 Agent Orange, dioxins, and other chemicals of concern in Vietnam: update 2006. Journal of Occupational and Environmental Medicine 48(4): 408-413.

Schecter, A., Constable, J.D. 2006. Commentary : Agent Orange and Birth Defects in Vietnam. International Journal of Epidemiology, In Press, 2006.

Gupta, A., Ketchum, N., Roehrborn, C. G., Schecter, A., Aragaki, C.C., Michalek, J. 2006. Serum Dioxin, testosterone and subsequent risk of benign prostatic hyperplasia: a prospective cohort study of Air Force veterans. Environ Health Perspect: doi:10.1289/ehp.8957. [Online 20 July 2006]

Schecter, A., Birnbaum, L., Ryan, JJ., Constable, JD. 2006. Response to “Letter to the Editor. Environmental Research. In Press.

Schecter, A., Paepke, O., Tung, K.C., Ryan, J.J., Harris, T.R., Rosen. R., Olson, J, Masumba, A. 2006. Polybrominated diphenyl ether (PBDE) flame retardants in US human blood, milk, food and environmental Samples. Short Papers from Dioxin 2006, 26rth International Symposium on Persistent Organic Pollutants, Oslo, Norway, Organohalogen Compounds 68 (In Press).

Schecter, A. Paepke, O., Quynh, H.T., Constable, J.D. Musumba, A. 2006.Vietnam and Agent Orange. Short Papers from Dioxin 2006, 26th International Symposium on Persistent Organic Pollutants, Oslo, Norway, Organohalogen Compounds 68 (In Press).

Ryan, J.J., Wainman, B.C., Schecter, A., Moisey, J., Kosarac, I, Sun, W.F. Trends of the brominated flame retardants in human milks from North America. Short Papers from Dioxin 2006, 26th International Symposium on Persistent Organic Pollutants, Oslo, Norway, Organohalogen Compounds 68 (In Press).

Pless-Mulloli, T., Schecter, A., Schilling, B., Paepke, O. 2006. Levels of PBDE in household dust and ling in the UK, Germany and the USA. Short Papers from Dioxin 2006, 26th International Symposium on Persistent Organic Compounds, Oslo, Norway, Organohalogen Compounds 68 (In Press).

Schabath MG, Delclos GL, Barcenas C, Wu X, Spitz MR. Opposing effects of emphysema, hay fever, and select genetic variants on lung cancer risk. American Journal of Epidemiology 2005;161:412–422.

Emery RJ, Delclos GL. World at Work: Research and Testing Laboratories. Spotlight on a diverse industry. Occupational and Environmental Medicine 2005;62:200-204.

Delclos GL, Bright KA*, Carson AI, Felknor SA, Mackey TA, Morandi MT, Schulze LJH, Whitehead LW. A global survey of occupational health competencies and curriculum. International Journal of Occupational and Environmental Health 2005; 11: 185-198.

Gimeno D, Felknor SA, Burau KD, Delclos GL. “Organisational and occupational risk factors associated with work-related injuries among public hospital employees in Costa Rica”. Occupational and Environmental Medicine 2005; 62: 337-343.

Zhao H*, Grossman HB, Delclos GL, Hwang L, Troisi CL, Chamberlain RM, Chenoweth MA, Zhang H, Spitz MR, Wu X. “Increased plasma levels of angiogenin and risk of bladder cancer: from initiation to recurrence” Cancer 2005; 104: 30-35.

Schabath MB*, Delclos GL, Grossman HB, Wang Y, Lerner SP, Spitz MR, Chamberlain RM, Wu X. Polymorphisms in XPD exons 10 and 23 and bladder cancer risk. Cancer Epidemiology Biomarkers & Prevention 2005 Apr;14:878-884.

Barcenas CH*, Delclos GL, El-Zein R, Tortolero-Luna G, Whitehead LW, Spitz MR. Wood dust exposure and the association with lung cancer risk. American Journal of Industrial Medicine 2005;47: 349-357.

Benavides FG, Delclos GL. Flexible employment and health [Editorial]. Journal of Epidemiology and Community Health 2005; 59: 719-720.

Du XL, Chan W, Giordano S, Geraci JM, Delclos GL, Burau K, Fang S. Variation in modes of chemotherapy administration for breast cancer and association with hospitalization for chemotherapy-related toxicity. Cancer 2005; 104: 913-924.

Du XL, Key CR, Dickie L, Darling R, Delclos GL, Waller K, Zhang D. Information on chemotherapy and hormone therapy from tumor registry had moderate agreement with chart review. Journal of Clinical Epidemiology 2006; 59: 53–60.

Arif AA, Rohre JE, Delclos GL. A population-based study of asthma, quality of life, and occupations among the elderly. BMC Public Health 2005; 5: 97. Available online from http://www.biomedcentral.com/1471-2458/5/97 .

Delclos GL, Arif AA, Aday LA, Bartholomew LK, Carson AI, Lai D, Lusk C, Stock T, Symanski E, Whitehead LW, Benavides FG, Antó JM. A validated asthma questionnaire for healthcare workers. Occupational and Environmental Medicine 2006; 63:173-179.

Benavides FG, Benach J, Muntaner C, Delclos GL, Catot N, Amable M. Associations between temporary employment and occupational injury: what are the mechanisms? Occupational and Environmental Medicine 2006; 63: 416-421.

Porsa E. Cheng L. Seale MM. Delclos GL. Ma X. Reich R. Musser JM. Graviss EA. Comparison of a new ESAT-6/CFP-10 peptide-based gamma interferon assay and a tuberculin skin test for tuberculosis screening in a moderate-risk population. Clinical and Vaccine Immunology 2006; 13:53-58.

Schabath MB, Spitz MR, Lerner SP, Pillow PC, Delclos GL, Grossman HB, Wu X. Case-control analysis of dietary folate and risk of bladder cancer. Nutrition and Cancer [in press].

Savely SM, Carson AI, Delclos GL. A survey of the implementation status of environmental management in U.S. colleges and universities. Journal of Cleaner Production 2006 [in press].

Savely SM, Carson AI, Delclos GL. An environmental management system implementation model for U.S. colleges and universities. Journal of Cleaner Production 2006 [in press].

Shipp EM, Cooper SP, del Junco DD, Delclos GL, Burau KD, Tortolero SR. Severe back pain among farmworker high school students from starr county, texas: baseline results. Annals of Epidemiology [accepted].

Olfert SM, Felknor SA, Delclos GL. An updated review of the literature: risk factors for bladder cancer with focus on occupational exposure to beta-napthylamine. Southern Medical Journal [accepted].

EMERY, R.J., Delclos, G.L. “World at Work: Research and Testing Laboratories: Spotlight on a Diverse Industry” Occupational and Environmental Medicine, 62(3) 200-205; 2005.

EMERY, R.J., Valizadeh, F., Kennedy, V., Shelton, A. “An Analysis of Variables Influencing the Number of Radiation Overexposure Events in Texas from 1970 to 2000” Health Physics, 89(1):46-52; 2005.

Patlovich, S., EMERY, R.J., Whitehead, L. “Characterization and Geolocation of Sources of Radioactivity Lost Downhole in the Course of Oil and Gas Exploration and Production Activities in Texas, 1956 to 2001” Health Physics, 89 (Supplement 5):S69-S77; 2005

Korshukin, M., EMERY, R.J., “An Analysis of Reported Events of Stolen Sources of Radioactivity in Texas from 1956 to 2000 “Health Physics, 90(3): 266-272; 2006.

Lucas, A., EMERY, R.J., “Assessing Occupational Mercury Exposures During the Onsite Processing of Spent Fluorescent Lamps” Journal of Environmental Health, 68 (7): 30-34; 2006.

Cech, I., Smolensky, M.H., Afshar, M., Broyles, G., Barczyk, M., Burau, K., EMERY, R.J. “Lead and Copper in the Drinking Water Fountains – Information for Physicians” Southern Medical Journal, 99(2): 137-142; 2006.

Thommen, P.J., EMERY, R.J. “An Analysis of 20 Years of Radiation-related Health Care Complaints in Texas for the Purposes of Quality Improvement”, Health Physics, 90 (Supplement 2): S62-S66; 2006.

Mackey, T. (2006) Common diagnostic and treatment challenges in primary care of acute bacterial rhinosinusitis. Medical Advisor (2006).

Mackey, T. Planning your nursing business. Journal of the American Academy of Nurse Practitioners (2005), 17(12), 501-505.

Mackey, T., Cole, F., Lindenberg, J. Quality improvement and changes in diabetic patient outcomes in an academic nurse practitioner primary care practice. Journal of the American Academy of Nurse Practitioners (2005), 17(12), 547-553.

Delclos, GL, Bright KA, Carson AI, Felknor SA, Mackey TA, Morandi MT, Schulze LJH, Whitehead LW. A global survey of occupational health competencies and curriculum. International Journal of Occupational and Environmental Health 2005; 11: 181-194.