Occupational and Environmental Health and Safety Education and Research Center at the University of Illinois at Chicago

FINAL PROGRESS REPORT

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I. Occupational and Environmental Health and Safety Education and Research Center at the University of Illinois

A. Abstract

The Illinois Center for Occupational and Environmental Safety and Health exists to improve, promote, and maintain the health of workers and communities by applying innovative and interdisciplinary approaches to: 1) prepare professionals to be leaders in occupational and environmental safety and health who will direct and manage occupational and environmental safety and health programs, teach other occupational and environmental health professionals, and research issues pertinent to occupational and environmental safety and health; 2) provide continuing education to occupational and environmental health and safety professionals and outreach to workers and communities to improve their knowledge, skills, and awareness of key issues in occupational and environmental safety and health, devoting special attention to the problems and needs of at risk and underserved workers and communities; 3) contribute to the knowledge base in occupational and environmental safety and health by preparing doctoral students, performing faculty and student research on problems of regional, national, and global significance, and disseminating the results of their research; and 4) serve as a regional information resource.

The Occupational and Environmental Health and Safety Education and Research Center (Illinois ERC) is comprised of 12 programs which are summarized in this report. During the reporting period there were 6 academic programs: Industrial Hygiene (IH), Hazardous Substances (HSAT), Occupational Medicine at the University of Illinois at Chicago (OM-UIC), Occupational Medicine at Stroger Hospital of Cook County (OM-CCH), Occupational Health Nursing (OHN), and Agricultural Safety and Health (ASH-A). There were three continuing education and outreach programs: Continuing Education in industrial hygiene, occupational medicine, occupational health nursing, and occupational safety (CE); Hazardous Substances (HST); Agricultural Safety and Health (ASH-CE), and an Outreach program. The ERC also had a Center Administrative Core as well as a Pilot Projects Research Training program (PPRT) and NORA Research Support program (NRS).

B. Highlights/Significant Results

1. Center Wide Activities

In 2005-2006 reporting period, a needs assessment of trainees revealed that geographic barriers limited participation of some students. To overcome this barrier, the EOHS 551 classroom course was offered using real time computer based technology. Additionally, an interdisciplinary subcommittee of the Executive Committee was established to explore using real-time computer based technology to offer other courses. A pilot project in 2005-2006 recommended that this technology be used to deliver EOHS 421 and the interdisciplinary seminar series. EOHS 421 Fundamentals of Industrial Hygiene, EOHS 551 Occupational Diseases, and the weekly interdisciplinary seminar were offered using Centra, a web-based synchronous program that allows students to participate in a classroom session from any computer. EOHS 421 was delivered, in Fall 2006, to a group in the classroom and to others logged in off-site. As a pilot, the technology was used but only faculty and staff from the ERC accessed the course remotely, i.e., during the initial test, no credit-seeking students were enrolled at remote locations. The pilot testing was very successful and the program was then used during the Spring 2007 semester for both EOHS 551 and the weekly interdisciplinary seminar. We are exploring options, including the use of Centra to make EOHS 482 Occupational Safety Science and EOHS 558 Industrial Toxicology accessible to students in Rockford and Urbana.

The PPRTP program completed its ninth year of funding and through June 30, 2008, 43 awards have been given to fund 39 projects. Funded projects have helped support twenty junior faculty, one post-doctoral fellow, eight PhD student principal-investigators, and thirty student research assistants for one semester or more. The projects have generated six subsequent grant proposals based on the pilot project research findings, four of which were successfully funded, twenty-five presentations at regional or national meetings, thirteen reports/abstracts/posters or papers, and fifteen publications. Four Pilot Projects received supplementary funding from other sources and fifteen resulted or are expected to result in findings used toward MS or PhD theses. The program has demonstrated a continuous, steady increase in the project outcomes after project completion. In general, the number and quality of applications submitted have increased, with minor variation in numbers apparently based on funding rates for the preceding year.

The NORA Research Support program provided support to projects in all capacities across a broad spectrum of research disciplines. Administrative support included management of data and Institutional Review Board documents. Technical support was provided in the form of tools, technology, and knowledge that allowed for exposure assessments and worker health protection to cooperating partners. The support was available to interdisciplinary research outreach teams comprised of faculty and trainees in the ERC.

In the first year of the NRS program, we developed and delivered a research seminar series that was included in our weekly interdisciplinary seminar. In the subsequent years of the program, we held special two-hour seminars with an informal meeting/reception following the seminar. This allowed for a longer discussion of the topic than could be had during the one-hour weekly seminar. In the last four years, recognized researchers and/or policy makers presented topics related to interdisciplinary research. In order to include the widest possible audience for these research seminars, we presented the seminars via computer link to remote sites (University of Illinois campuses in Urbana, Rockford, Peoria, and Quad Cities).

2. Continuing Education and Outreach

The Illinois ERC has been successful at far exceeding the minimum number of 400 trainees per year (participants) in continuing education (CE) in the traditional occupational safety and health disciplines as well as reaching others active in health and safety in our region. Over the past five years (2003-2008) the Illinois ERC has offered training courses for 1,979 physicians, 862 nurses, 867 industrial hygienists, 3171 safety professionals, and 9222 other occupational safety and health professionals, paraprofessionals, technical workers, and health and safety committee members in all CE programs including hazardous substance training and agricultural health and safety for a total of 16,101 trainees.

Some CE highlights include working with the health and safety committee at a large homecare agency which provides services throughout Illinois to develop and conduct participatory training programs, in English and Russian, for 1200 homecare workers, coordinators and supervisors. Additional training included a train the trainer programfor 40 health and safety committee members, NIOSH trainees, and ERC faculty and staff.

We identified underserved and minority populations, developed CE initiatives and developed interdisciplinary teaching and training knowledge and skills. Program focus included the OSHA 10 hour course for Spanish speaking day laborers and train the trainer classes for homecare workers.

Additionally, the GeoLibrary (www.geolibrary.org) continues to be an important product for cataloging and distributing occupational health and safety training materials and practice tools. We provided

enhanced communication and marketing related to our bi-weekly occupational medicine seminars through our web site.

In the area of occupational health nursing we have continued our successful partnership with the Respiratory Health Association of Metropolitan Chicago to provide the NIOSH approved Spirometry course and to develop two other occupational health nursing offerings. Additionally, we worked with the local AAOHN chapters to support their continuing education programs.

In the area of industrial hygiene, we continued our successful collaboration with the Chicago Chapter of AIHA by developing a student chapter at UIC and by continuing to collaborate on programming. For example, the program on diisocyinates held during March, 2007 was designed and conducted by Dr. Lacey in partnership with Robert Safe a member of our Advisory Committee representing the local section.

Safety programming is enhanced through the new partnership with the Illinois Safety Council. For many years the Illinois ERC participated in the planning committee, program development, and program evaluation for the local ASSE/OSHA annual conference. The local ASSE section is going through leadership changes. While the Illinois ERC will continue to participate in this program we expanded our safety program through a new partnership with the Illinois Safety Council. We have worked with this group for many years, however, in 2006 we became more formally engaged in their training program including program planning, marketing, and continuing education.

3. Academic Programs

a. Industrial Hygiene and Hazardous Substances Academic Training

Significant results and highlights of the industrial hygiene and hazardous substances academic training programs include:

- 55 IH trainees graduated in all degree programs in the five year project period, including 19 NIOSH-funded IH trainees and 7 NIOSH-funded HSAT trainees
- Recent graduates of the program have taken positions of responsibility with US OSHA, US EPA, US DOE, NIOSH, regional industry, and national consulting firms.
- Faculty and students have authored or co-authored at least 71 peer-reviewed manuscripts that were published or accepted for publication
- Faculty and students presented numerous poster and platform presentations at regional, national and international conferences.
- Students received at least 28 awards, scholarships, and funding proposals accepted during this project period.
- 29 MS and 8 PhD theses were produced
- Under the guidance of Dr. Lacey, the students formed an AIHA Chicago Section Student Chapter, the UIC Industrial Hygiene Student Association (IHSA), in order to better integrate students into the profession and to promote service and life-long learning. IHSA has been actively meeting and performing local public service, and enjoying a very productive relationship with the AIHA Chicago Local Section.

b. Occupational Health Nursing

NIOSH trainee and PhD candidate Sarah Katula was named the 2008 recipient of the Rue Bucher Memorial Award for Qualitative Studies in Social Process for her project entitled "Employed Women in IPV Situations: Workplace Experiences and the Perception of Safety." As a member of the Sociology department, Professor Bucher recognized that important research was being conducted outside the

confines of her discipline and the award in her memory was explicitly designated as one that students in all disciplines at UIC would be eligible for.

c. Occupational Medicine University of Illinois at Chicago

Significant results and highlights of the occupational medicine program include:

- Fourteen residents graduated, all board certified in Preventive Medicine/Occupational Medicine.
- The program achieved full five-year accreditation by the Accreditation Council on Graduate Medicine Education
- Additional industrial and outpatient occupational medicine rotations were added to practicum year
- Curriculum and evaluation processes are now competency based
- The program increased the caliber of research mentorship resulting in three resident publications and numerous faculty publications.
- The program increased its visibility by having a UIC Occupational Medicine Residency booth at annual local AMSA fairs and UIC College of Medicine elective fairs.
- All UIC medical students now receive Occupational and Environmental medicine exposure.

d. Occupational Medicine Stroger Hospital of Cook County

Significant results and highlights of the occupational medicine program include:

- The program supported training for 6-8 residents per year.
- Approximately 2 residents/year graduated.
- After many years of training residents in occupational medicine, including many of the leaders in occupational medicine in the US, the residency program at Stroger Hospital of Cook County closed due to budget cuts at the hospital, effective August 31, 2007. Two of the residents in the program graduated, two transferred to the UIC program, three decided to continue in the internal medicine program, and one transferred to the University of Connecticut's combined internal medicine/occupational medicine program.

e. Agricultural Safety and Health

The minor in Agricultural Safety and Health received final approved by the University of Illinois early in 2008 and students will first be allowed to enroll during the fall semester of 2008.

During the project period all three core courses were offered once each year, 8 students participated in independent study courses, and two did internships in agricultural safety and general occupational safety and health. Approximately, 160 students completed core courses. During this period 14 students were trainees. Seven were graduate students and 7 were undergraduate students. The graduate students included a medical student, a veterinary student, and five master degree students. Three of the MS graduate students were in the department of human and community development, one MS student was in the agricultural business management program, and one MS student is in the community health program. Five of the graduate students and six of the undergraduate students have graduated from their respective programs.

C. Outcomes/Relevance/Impact

1. Centerwide Activities

The NORA Research Support (NRS) program has had a significant effect on the academic training programs and the research directions of the Illinois ERC. The program provided support for Interdisciplinary Research teams and some funds to support field and laboratory studies as a mechanism for providing research training. We have successfully completed a number of projects, many of which have led to other projects, extramural research funding, MS theses, PhD dissertations, and publications. While ERC faculty continue to pursue their individual research interests, the NRS program has resulted in 3 groups of faculty that are pursuing research activities in an interdisciplinary manner and are providing practical training in interdisciplinary research methods to trainees.

Twenty-eight students were involved in NRS activities and projects and 19 publications or capstone, MS theses, and PhD dissertations resulted from these projects. Fifteen speakers participated in the interdisciplinary research seminar series.

The PPRT program tracks the history of PPRT research that leads to other research projects through the quantitative assessment presented in the section on evaluation and in a less direct manner by following the growth of the original projects into even more interesting lines of study.

For example, the “Immunologic Risk Factors for Laboratory Animal Allergen” study was initially funded in July, 2001. Since that time, the project has developed from a relatively small project involving a single investigator to a series of projects involving several other departments and investigators. Two veterinarians at UIC became interested in allergen and irritant levels in the animal research facility studied in the original project. Investigations have been conducted in which mouse and rabbit allergen concentrations, as well as total dust and airborne endotoxin have been measured. One of these projects was the basis of a research study by a veterinary medicine trainee, and another was the basis for a master’s degree thesis by an industrial hygiene trainee. An intervention study that employed a relatively low-cost engineering control of allergen exposure to workers at the facility was also performed. In addition, a PhD student in immunology and another master’s degree student participated in a study of in vitro responses of lymphocytes of workers in the same facility. Furthermore, in 2004, an occupational medicine resident participated in the laboratory animal allergy surveillance of workers at the facility and two other UIC departments. Since the launch of the original project, 193 research subjects have participated. Data from the research has been presented at numerous scientific meetings and two peer-reviewed papers have been published. Data analysis is ongoing, and other manuscripts may be submitted for publication by researchers in a variety of disciplines, including epidemiology/ biostatistics, environmental and occupational health sciences, immunology/ microbiology, and veterinary medicine. The research plan from the original project led to the development of a proposal for a successful NIEHS K08 award of $584,886 in direct funds.

Another example of a continuation of a PPRTP line of inquiry is a group of studies related to welding and welding fume exposure health outcomes. These studies were spawned at UIC with initial funding from the PPRT program for a welding fume exposure chamber. The subsequent studies focused on a number of aspects of welding work, including laboratory characterization of welding fume and emission, occupational exposures, exposures to artist-welders, and studies of the mechanisms of metal exposures on lung epithelial cytotoxicity. The investigator for the initial study was awarded a NIOSH K01 career development grant of $240,237 for a study of welding fume characterization and deposition. Four MS theses were generated from related studies, while another PPRTP welding study generated data used for the investigators’ PhD thesis.

2. Continuing Education and Outreach

While this program has had a significant impact by bringing occupational safety and health content to a large and diverse, both expert and non-expert, audience, the specific impact on reducing injuries and illnesses has not been measured. However, recent attempts to better understand the impact of continuing education through post course interviews and surveys suggests that participants change the way they work after attending a course.

We have met and expect to continue to meet NIOSH objectives for CE participants by program area. Program Products include: GeoLibrary, CE Courses, Partnerships, and the IL Lead Poisoning Prevention Act.

3. Academic Programs

a. Industrial Hygiene and Hazardous Substances Academic Training

The following are examples of the impact of the industrial hygiene and hazardous substances academic training programs

- 55 Industrial Hygiene trainees graduated in all degree programs
- Ninety-five percent of our graduates continue to work in the field of environmental and occupational health science.
- Recent graduates of the program have taken positions of responsibility with US OSHA, US EPA, US DOE, NIOSH, regional industry, and national consulting firms.
- Illinois ERC needs assessment data are consistent with a recent report from the Institute of Medicine that demonstrates the need for additional worker health and safety professionals.
- Our research training approach provided service to local and regional business and institutions, including federal and local public health agencies of all levels, the Illinois and Missouri Departments of Natural Resources, the Illinois Department of Labor, municipal and local water quality and law enforcement agencies, and local professional organizations such as the Chicago Local Section of AIHA.

b. Occupational Health Nursing

An important method for evaluating the impact of the OHN Program is to determine the number of graduates that have successfully graduated and obtained positions in occupational health nursing. Over the past five years, the OHN Program has recruited seventeen trainees. Of these, seven have successfully completed the program; eight remain in the program; only three did not complete the program. Of the seven graduates, six are employed as practicing OHNs. They are licensed as Family Nurse Practitioners and are providing primary care to patients in various clinical settings. The additional occupational health training is “value added” to their skills and knowledge as providers. Since some of the 7 graduates started the program prior to the previous project period, the number of graduates, continuing trainees and those leaving the program do not add to the seventeen trainees enrolled during the previous project period. In 2006, Ms. Hyeonkyeong Lee successfully completed the requirements for a doctoral degree (PhD) and has entered the ranks of academia.

c. Occupational Medicine

There continues to be a shortage of qualified occupational medicine health care providers. This is due to in part to the relative obscurity of the field and the lack of understanding of what the field is about. The UIC Occupational Medicine Program is working to increase the visibility of the program both within UIC

and the greater Chicago area. The program continued to graduate highly trained, highly qualified physicians who are all currently working in the field. Residents receive multiple job offers, allowing them to choose jobs that are best for them and to negotiate for better working conditions and benefits.

d. Agricultural Safety and Health

Fourteen graduate and undergraduate students received significant specialized training in agricultural safety and health. They also received basic academic training in the principles of occupational injury and illness causation and prevention, occupational health, injury incident investigation, and safety risk management. Approximately another 150 students received training through participation in one or more program courses. Over 80 percent of these students are now or will be working in some type of agricultural or rural health occupation. As a result of the knowledge they have gained through the program they have the capacity for a deeper understanding of how to address agricultural safety and health issues that they face in their careers and in their daily lives. Many of these students have the ability to have a significant impact on agricultural injury and illness reduction as leaders and advocates within their professions.

In a survey of the trainees we were able to contact who had graduated, all of them indicated that the training they received in the agricultural safety and health program was beneficial to their current careers. They all had some level of responsibility for safety and health in their current position. Two were industrial hygienists, one was a rural medical physician, three were responsible for a rural community education program, and three were employed by an agricultural business.

II. Center Administration

A. Background

The Illinois Occupational and Environmental Health and Safety Education and Research Center (Illinois ERC) exists to improve, promote, and maintain the health of workers and communities by applying innovative and interdisciplinary approaches to:

- prepare professionals to be leaders in occupational and environmental safety and health who will direct and manage occupational and environmental safety and health programs, teach other occupational and environmental health professionals, and research issues pertinent to occupational and environmental safety and health;
- provide continuing education to occupational and environmental health and safety professionals and outreach to workers and communities to improve their knowledge, skills, and awareness of key issues in occupational and environmental safety and health, devoting special attention to the problems and needs of at risk and underserved workers and communities;
- contribute to the knowledge base in occupational and environmental safety and health by preparing doctoral students, performing faculty and student research on problems of regional, national, and global significance, and disseminating the results of their research; and
- serve as a regional information resource.

1. Major Changes

We revised the delivery of two of the interdisciplinary core courses, Fundamentals of Industrial Hygiene and Occupational Diseases, and our weekly interdisciplinary seminar to use distance based technology and allow trainees in Urbana and Rockford, and others at any location to take the courses. The Fundamentals of Industrial Hygiene was taught this way in Fall 2006 and Fall 2007 and was successful in integrating distance-based technology into a traditional classroom setting. The Occupational Diseases course was taught for the first time in Spring 2007 and was also very successful. In addition to making the course available to trainees in the University of Illinois system, we opened this course to international participants. One student from Sri Lanka participated in all of the class sessions and found the course very useful and the technology reasonable easy to use.

We developed a new program in Occupational Epidemiology which was reviewed and approved for funding. The funded program will begin July 1, 2008. We believed this is a particularly opportune time for building an Occupational and Environmental Epidemiology program at UIC for several reasons. First, the leader of the Division of Epidemiology and Biostatistics (Leslie Stayner) is a former employee of NIOSH with extensive experience in conducting epidemiologic research on occupational health and safety issues. Faculty and students from the Epidemiology and Biostatistics and Environmental and Occupational Health Sciences are already collaborating on research studies in several key areas of occupational and environmental epidemiology including studies of occupational injuries, cancer, intervention research, air and water pollution. However, the scope of collaboration among faculty of the two divisions has been limited and there is substantial room for growth in this area.

We developed a new program in Occupational Safety which will offer a Master of Science (MS) and Doctorate of Philosophy (PhD) degree in occupational safety. The funded program will begin July 1, 2008. The concentration in Occupational Safety at the University of Illinois at Chicago is a viable, fully-functioning degree option administratively housed within the Division of Environmental and Occupational Health Sciences (EOHS), and exists in partnership with the Department of Mechanical and Industrial Engineering (MIE). Steven Lacey, PhD, CIH, CSP joined the EOHS faculty in 2004 and was

recently hired into a state funded, tenure-track faculty position.. Beginning in 2005 he has had a joint appointment in the Department of Mechanical and Industrial Engineering, where he teaches two courses, Safety Engineering and Ergonomics.

2. Faculty

The Illinois ERC is led by a dedicated group of faculty representing interdisciplinary fields of industrial hygiene, occupational medicine, occupational health nursing, and continuing education. The ERC has an Executive Committee that meets monthly and is comprised of the ERC Director, Deputy Director, and directors and deputy directors of each ERC program area. Table CWA-4 shows roles and responsibilities within the ERC.

Lorraine M. Conroy, ScD, CIH is the Director of the Illinois ERC and also serves as program director for the NORA Research Support program. Dr. Conroy is Associate Professor of Environmental and Occupational Health Sciences. She has an undergraduate degree in Chemical Engineering and MS and ScD degrees in Environmental Science and Physiology, with a concentration in Industrial Hygiene, from Harvard University School of Public Health. She has been at UIC since 1988 where she started as Assistant Professor and was promoted to Associate Professor (with tenure) in 1995. Her research interests include characterizing workplace contaminant sources, ventilation system model development and validation, and workplace exposure assessment. She is a research advisor to IH and OHN trainees, teaches EOHS 421 Fundamentals of Industrial Hygiene and co-teaches EOHS 523 Engineering Controls. She received the Golden Apple award for excellence in teaching in 1994 and is a member of Delta Omega, the public health honor society. Dr. Conroy serves on the Occupational Medicine Residency Advisory Committee and on the Hull House Museum Advisory Board. Dr. Conroy took over leadership of the ERC in 2000. Since that time, the ERC has experienced growth in the size of the academic programs, continued improvement in all program areas, introduction of additional research training activities, and increased funding. From 2004-2006, Dr. Conroy served as vice-chair and chair of the Association of University Programs in Occupational Health and Safety, an association of the seventeen ERCs. Under her leadership, the organization was instrumental in assisting NIOSH with a review of the current funding formula for ERCs and developing a vision for ERCs in the 21st century.

Leslie Nickels, MEd, serves as Deputy Director of the Illinois ERC and Director of Continuing Education and Outreach programs. Ms. Nickels works on program development, evaluation, research, technical assistance, and outreach. Special continuing education program areas include hazardous substances and agriculture health and safety. Ms. Nickels has over 20 years of experience in health and safety. Before becoming Program Director for CE, Ms. Nickels was Program Director for Occupational and Environmental Health for the Chicago Health Department. Prior to this she was the Area Manager for the Safety Inspection and Education Program for the Illinois Department of Labor. In both of these capacities Ms. Nickels was responsible for enforcing health and safety standards, conducting training programs and developing policies to protect workers health and safety. Ms. Nickels has a Master of Education degree and has completed courses in graduate training in industrial hygiene. Additionally Ms. Nickels is a PhD candidate in curricular studies at the University of Illinois at Chicago College of Education.

Peter Scheff, PhD, CIH, is the Director of the Industrial Hygiene Program. He is Professor of Environmental and Occupational Health Sciences (EOHS) within the School of Public Health. Dr. Scheff has been on the faculty since 1989 and has directed the industrial hygiene program since the fall of 2002. His research interests include evaluation and control of the indoor environment, air quality management, exposure assessment and environmental statistics. He was also director of the Region V Center of the EPA's Air Pollution Training Institute, one of five regional training centers nationwide

through 2007. Dr. Scheff is retiring effective August 16, 2008. Dr. Steven Lacey has been hired into a state-funded tenure track position and will direct the industrial hygiene and hazardous substances academic training programs.

Arlene Miller, PhD, RN, FAAN, is Interim Director of the Occupational Health Nursing Program and is Professor and Department Head of Public Health, Mental Health and Nursing Administration. Dr. Miller has a master's degree in Public Health Nursing and a doctorate in Counseling Psychology. She has been a Family Nurse Practitioner for over 20 years. She teaches an interdisciplinary doctoral-level cross-cultural research methods course, and has examined relationships among acculturation and health in immigrant women and their husbands. She is presently conducting a study of acculturation, social ties, and health literacy among female immigrant home care workers from the former Soviet Union and the Philippines. She has been Principal Investigator on a federally funded longitudinal study of women from the former Soviet Union, "Post-Migration Health and Behavior Change in Midlife Women."

Susan Buchanan, MD, MPH is Director of the Occupational Medicine Program. She had been a practicing Family Physician for ten years before joining the OM residency program. Her primary appointment is in the Environmental and Occupational Health Sciences Division of the UIC School of Public Health. Her current research covers the occupational hazards and injuries of Chicago day laborers and temporary agency workers. Her work in this area has been published in New Solutions, the Archives of Environmental and Occupational Health, and Public Health Reports. She continues clinical practice in the UIC Department of Family Medicine and in University Health Services, the UIC employee health clinic.

Robert Aherin, PhD, CSP is the Director of the Agricultural Safety and Health Academic Program. He is a Professor in the Agricultural and Biological Engineering Department within the College of Agriculture, Consumer and Environmental Sciences (ACES) located at the Champaign/Urbana campus and is a member of the graduate college. He is also an Adjunct Professor with the School of Public Health. He has degrees in Occupational Safety and Health, Agriculture and Education. He has over 30 years experience in education and research in the agricultural safety and health area. He is a Certified Safety Professional and has held numerous professional leadership positions. He has been president of the National Institute for Farm Safety, chaired the American Society of Agricultural Engineers safety committee, served on the National Safety Councils' Agricultural Division Executive Committee and served on a national agricultural child injury prevention task force. Dr. Aherin helped found the Illinois Network for Agricultural Safety and Health which consists of professionals throughout the state who have interest and responsibilities in this area. He served as the organization's first chair for two years when it formed in 1992.

Rosemary Sokas, MD, MOH is the Director of the Pilot Projects Research Training Program. Dr. Sokas is Professor in the Division of Environmental and Occupational Health Sciences at UIC. Dr. Sokas joined UIC in November 2002, following six years in government service, initially as Director of the Office of Occupational Medicine at OSHA and, most recently, as Lead Medical Officer and Associate Director for Science at NIOSH, CDC, where she coordinated the interface between science and policy, facilitated the implementation of the National Occupational Research Agenda, and assisted in the response to the terrorist attacks of September 11, 2001 and subsequent anthrax attacks. Prior to that, she served on the faculty at the University of Pennsylvania, School of Medicine and at the George Washington University School of Medicine and School of Public Health and Health Sciences. Her research includes education intervention effectiveness evaluation, the interface between clinical medicine and public health, and work addressing the needs of low-wage, high-risk workers. She is currently conducting extramurally-funded research exploring the impact of training on construction workers and exploring occupational exposures among home care workers. She directs the Illinois Public Health Research

Fellowship program that supports 12 postdoctoral trainees and 4 pre-doctoral students throughout the UIC SPH in establishing transdisciplinary research careers with an emphasis on reducing health disparities and promoting environmental justice.

Over the reporting period, there were several changes in key personnel which are described here. The OHN program has had sustained leadership since its inception. The UIC College of Nursing (CON) has been preparing occupational health nurses since 1978, and continues to be committed to this program with an open faculty line. Dr. Shannon Lizer, was appointed director of the Occupational Health Nursing program in 2003. In August 2006, Dr. Lizer accepted another position and reduced her commitment to the University of Illinois at Chicago. Arlene Miller, PhD, RN, FAAN and Department Head in Public Health, Mental Health and Administrative Nursing as well as the advisor to two of the three OHN PhD students, has been the director of the OHN program since Aug 2006. Dr. Miller's work is concerned with personal and contextual factors that affect health behavior, adjustment, and mental health, particularly the role of cultural factors for vulnerable populations. Her research interests also include stress and health in immigrant health care workers. She is collaborating with Dr. Linda Forst in the Occupational Medicine program on a project regarding medical interpreters for injured immigrant workers, which began as one of the OHN students' masters projects. She is also a co-mentor for a -doctoral student in the School of Public Health who is conducting a study of Russian-speaking home care workers recently funded by the Pilot Project Research Training program. Dr. Miller's work complements research on the precarious worker targeted research training group in the ERC. Dr. Miller is responsible for overseeing the OHN programmatic administration and is the primary advisor for PhD students in the OHN program.

Ms. Jacqueline Wuellner, MPH, RN is the Deputy Director for the UIC OHN Program. From 2000- March, 2007, Ms. Wuellner was at John H. Stroger, Jr. Hospital of Cook County, one of the largest public hospitals in the country where she Director of the Occupational Health Clinics serving as case manager for patients as well as manager of the clinics. While at Stroger she collaborated on research projects investigating occupational asthma in low income workers in Illinois. As Deputy Director of the OHN program, she is responsible for budget management, practicum placement, interdisciplinary activity coordination, program marketing, student recruitment, and outreach effort. She also teaches the Introduction to OHN course (NUPH 400) and serves as faculty preceptor to OHN students during their clinical rotations.

Susan Buchanan, MD, MPH replaced Dr. Linda Forst as director of the Occupational Medicine program at UIC in 2004. Dr. Forst continues her involvement with the residency program and serves as deputy director for the program. Dr. Nurtan Esmen was hired as a Professor of Environmental and Occupational Health Sciences and as a Faculty Fellow in the Institute for Environmental Science and Policy. Dr. Steven Lacey was hired as Research Assistant Professor in Environmental and Occupational Health Sciences and was hired into a state-funded, tenure track position effective August 16, 2008. Dr. Serap Erdal was promoted to Associate Professor, with tenure in 2006. In 2003, Dr. Leslie Stayner joined the SPH faculty as Professor of Epidemiology and Director of the Epidemiology/Biostatistics division.

3. Curriculum

Course requirements for each of the core areas include a set of common courses that trainees must take. Trainees also participate in a number of interdisciplinary activities that are described in the results section.

4. Trainees

Trainee characteristics are described in the academic programs.

B. Objectives

The overall objective of the Administrative Core is to provide a supportive structure for accomplishing the activities of the Center. The specific objectives are to:

- Provide leadership to all aspects of the ERC
- Coordinate and integrate the components and activities in the Center;
- Coordinate interdisciplinary activities within the ERC
- Assess productivity, effectiveness, and appropriateness of Center activities;
- Organize Center planning and evaluation activities;
- Organize the internal executive committee and external advisory committee;
- Keep records and coordinate preparation of reports to NIOSH; and
- Coordinate interactions with other ERCs, NIOSH, and others

C. Results

Summary data for the ERC is given in Tables CWA-1 to CWA-3. Table CWA-1 summarizes the number of faculty and trainees by program; Table CWA-2 summarizes extramural funding for faculty in the ERC; and Table CWA-3 summarizes trainees by program area. All tables are in Appendix 2.

1. Program Administration

The Occupational and Environmental Health and Safety Education and Research Center (Illinois ERC) is comprised of 13 programs. There are five continuing academic programs: Industrial Hygiene (IH), Hazardous Substances (HSAT), Occupational Medicine at the University of Illinois at Chicago (OM-UIC), Occupational Health Nursing (OHN), Agricultural Safety and Health (ASH-A). During the project period, two new academic programs were developed: Occupational Safety (OS) and Occupational Epidemiology (OE) and one program (occupational medicine at Stroger Hospital) closed. There are three continuing education and outreach programs: Continuing Education in industrial hygiene, occupational medicine, occupational health nursing, and occupational safety (CE); Hazardous Substances (HST); and Agricultural Safety and Health (AgCE). The ERC also has a Pilot Projects Research Training program (PPRT) and NORA Research Support program (NRS).

The ERC is administratively part of the Environmental and Occupational Health Sciences (EOHS) division at the SPH. The OHN program is in the Department of Public Health, Mental Health, and Administrative (PMA) Nursing in the College of Nursing. Arlene Miller, PhD is the Department Head in PMA Nursing and she reports to the Dean of the College of Nursing. The ASH-A program is in the College of Agricultural, Consumer, and Environmental Sciences (ACES) at the University of Illinois at Urbana-Champaign (UIUC). The OM program is administered through the EOHS Division but enjoys considerable financial and administrative support from the Graduate Medical Education (GME) department in the College of Medicine. All other programs are in the EOHS Division. Peter Scheff is the interim director of EOHS and he reports to the Dean of the School of Public Health.

The OM program, for many years, included residency programs at two institutions: a straight occupational medicine residency program in EOHS, SPH, UIC and a combined occupational medicine/ internal medicine residency program at Cook County Hospital. One year of both residency programs includes an MPH in EOHS at SPH). As of August 31, 2007, the combined program at Stroger Hospital closed due to budget cuts at the hospital.

Overall coordination and integration of activities within the ERC is done through Center Wide activities. The Center Director has responsibility for coordination of program activities, interdisciplinary activities, diversity recruitment, and targeted research training. The PPRT Program is directed by Dr. Sokas. The Center Director reviews the recommendations of the PPRT review committee and communicates with NIOSH regarding human subjects approval and funding decisions. The Outreach Program is directed by Ms. Nickels and includes faculty and staff from all programs in the ERC. Other activities such as strategic planning and overall program evaluation are conducted by the ERC executive committee under the direction of the Center Director, who chairs the committee. Working groups, comprised of executive committee members and others, are formed as needed to perform specific activities. For example, during the last two years, the executive committee had three working groups to perform specific tasks. One working group, led by Dr. Conroy, conducted the ERC-wide needs assessment. Another working group, led by Dr. Buchanan, worked on improving the ERC web pages, and the third working group, led by Ms. Nickels, worked on accessibility of ERC interdisciplinary core courses and the seminar for students in Rockford and Urbana.

Our advisory board is instrumental in helping us define the needs of our region and to advise us on innovative and effective ways to meet that need. Membership on the ERC Advisory Board represents all disciplines and includes representatives from government, industry, and labor. The Advisory Board is chaired by Dr. Linda Murray and meets 1-3 times per year. A number of members retired during the project period. We are in the process of recruiting new members, specifically we are identifying new members to represent the Chicago Federation of Labor, the OSHA consultation program in Illinois, the Central States Occupational Medicine Association, and the local section of American Association of Occupational Health Nurses. Current members of the external advisory board are listed in Table CWA-5.

Recordkeeping for the ERC is the responsibility of the ERC administrative assistant (B. Harper-Smith). She is responsible for scheduling meetings, keeping meeting minute and for all recordkeeping related to appointments, communication with NIOSH, and grant submissions. Recordkeeping for each of the programs is the responsibility of the program directors and deputy directors. They are assisted in this task by the ERC administrative assistant and by the academic coordinators in the divisions or departments where the program is located. The deputy director of the PPRT program keeps records of awards and outcomes for that program.

2. Needs Assessment

There was substantial agreement among the Advisory Committee, current trainees, and graduates regarding the value of interdisciplinary training and research training for all OSH professionals. Most agreed that interdisciplinary training is essential for effective workplace health and safety because it represents the real world approach to solving occupational safety and health problems. These diverse groups also agreed that research skills such as technical writing; critical reading of the literature; problem solving; analytical skills; and communication, are extremely important.

A few gaps between what the various groups told us were important areas to be included in the curriculum and what is available in our curriculum were identified, specifically business skills, history and advocacy, and occupational safety and health ethics. Additionally, students felt that research opportunities needed to be presented in a more organized and less ad hoc fashion.

Because of the strong support of the existing curriculum in each of the program areas, we have not made substantial changes to the interdisciplinary activities that have been offered since the last review. We have developed changes to the interdisciplinary seminar to better address the gaps identified above.

3. Interdisciplinary Interaction

Interdisciplinary interaction is coordinated by the ERC Director with assistance from the ERC executive committee. Several core activities form the basis for interdisciplinary interaction among trainees in each of the ERC programs. These include common coursework, occupational health and safety seminar, occupational history tours, occupational medicine clinic, plant visits, and research.

a. Common Coursework

Course requirements for each of the core areas include a set of common courses that trainees must take. These include:

EOHS421 Fundamentals of Industrial Hygiene*
EOHS482 Occupational Safety Science
EOHS558 Industrial Toxicology[1]
EOHS551 Occupational Diseases[1*]
EPID 400 Principles of Epidemiology or EPID403 Introduction to Epidemiology: Principles and Methods
BSTT400 Biostatistics I

[1]IH trainees must take EOHS 558 or EOHS 551 although many trainees take both courses
[*]Classroom based course accessible through Internet.

These courses allow students to be in class with trainees from all disciplines in the Illinois ERC with the exception of ASH-A. Several courses are designed to allow students to work together on common problems in occupational safety and health. One of the assignments in the EOHS 529 Industrial Hygiene Lab II class is to develop and deliver a 2 hour course in laboratory health and safety to entering EOHS students, including the IH and OM trainees. This activity provides real-world practice for the IH trainees and meets the training requirement for the UIC Environmental Safety and Health Office's Chemical Hygiene Plan. In EOHS 421 Fundamentals of Industrial Hygiene, students are required to complete a number of assignments and a project as a group. The groups are assigned in order to ensure that each group has trainees from each of the programs in the ERC. The project is to work as an interdisciplinary team to review the literature and develop an occupational exposure limit for a chemical or physical agent. The proposed Standard setting requires the input of a multidisciplinary team to ensure that the standard will protect against adverse health effects, will be technically feasible, and will be enforceable. Other group assignments are to investigate and characterize exposures and hazards and to recommend control measures to reduce exposures associated with offset printing. These assignments involve reviewing the literature as well as touring an industrial facility.

b. Occupational and Environmental Health Seminar Series

The ERC conducts a seminar series on topics related to occupational and environmental health and safety. A schedule of seminar topics for the 2002-2006 academic years is presented in Table CWA-6 of this section. Trainees are required to participate in the seminar and graduating trainees are strongly encouraged to present their research results in this forum. Faculty participation in the seminar is also expected.

c. Distance Education

In 2005-2006 reporting period, a needs assessment of trainees revealed that participation of some students was limited by geographic barriers. To overcome this barrier, the EOHS 551 classroom course was offered using real time computer based technology. Additionally, an interdisciplinary subcommittee of the Executive Committee was established to explore using real-time computer based technology to offer other courses. A pilot project in 2005-2006 recommended that this technology be used to deliver EOHS 421 and the interdisciplinary seminar series. EOHS 421 Fundamentals of Industrial Hygiene, EOHS 551 Occupational Diseases, and the weekly interdisciplinary seminar were offered using Centra, a web-based synchronous program that allows students to participate in a classroom session from any computer. EOHS 421 was delivered, in Fall 2006, to a group in the classroom and to others logged in off-site. As a pilot test, the technology was used but only faculty and staff from the ERC accessed the course remotely, i.e., during the initial test; no credit seeking students were enrolled at remote locations. The pilot testing was very successful and the program was then used during the Spring 2007 semester for both EOHS 551 and the weekly interdisciplinary seminar. We are exploring options, including the use of Centra to make EOHS 482 Occupational Safety Science and EOHS 558 Industrial Toxicology accessible to students in Rockford and Urbana.

d. Occupational History Tours

In Spring 2000, the CEO program began offering Occupational History tours of Chicago. Two tours per year are offered. The first is a tour of sites related to the Haymarket demonstration for an 8-hour workday, and subsequent events. This tour is conducted near the May 1 anniversary date and includes trainees as well as faculty, staff, other SPH students, and community members. The second tour is conducted near Labor Day and visits the Pullman Historic District in Chicago. Both tours are generally led by noted labor historian William Adelman, Professor Emeritus, University of Illinois Institute for Labor and Industrial Relations or by a labor historian identified through the Chicago Labor History Society.

e. Occupational Medicine Clinic

The occupational medicine program conducted three clinic sessions per week. This is one of the primary clinical training activities for OM trainees. The clinic offers an ideal opportunity for interdisciplinary training. Industrial hygiene, occupational health nursing, and occupational medicine trainees attend the clinic. The IH and OHN trainees work with the residents and attending physicians to elicit information on work history and possible workplace exposures. They research occupational health issues related to the cases presented in clinic and develop recommendations for controlling exposure. All trainees in the core academic program are required to participate in the Occupational Clinic program as their schedules allow. Trainees from the non-core programs are encouraged to participate and the opportunity is open to all students in EOHS. With the closing of the Stroger Hospital OM program, the number of occupational medicine clinic sessions was reduced to two; one at Stroger Hospital and one at UIC. The third clinic session was replaced by the Friday morning occupational lung disease clinic at Stroger Hospital.

f. Plant Visits

With assistance from Nancy Quick, an advisory board member and Compliance Assistance Officer for the West Chicago OSHA office, the occupational medicine program initiated a monthly plant visit experience. This program began several years ago. Once a month, the weekly OM conference deals with an industrial process. The following Friday, trainees and OM rotators visit an industrial plant. The

industrial sites are identified by advisory board members and adjunct faculty members. These conferences and plant visits are open to trainees and faculty in all programs in the Center. These activities had been coordinated by Cile Buckley, the industrial hygienist in the division of occupational medicine at Stroger Hospital. Following the closing of that program, Ms. Buckley will no longer be available to perform this task. Dr. Conroy works with a graduate assistant to arrange the plant visits. Industrial hygiene trainees are now responsible for researching the industrial process and preparing a presentation for the OM trainees and others. Drs. Conroy and Lacey advise the IH students in this activity.

g. Research Training

Interdisciplinary research training in the ERC is described in the NORA Research Support and PPRT Program sections.

h. Outreach

Outreach activities in the ERC are described in the Outreach Program section.

D. Conclusions

The ERC is administered by the Center Director and Deputy Director with assistance of the ERC Administrative Assistant. Policy decisions in the Center are made by the ERC Executive Committee with advice from the Advisory Board. The Center Administration program is responsible for the day to day activities of the Center including budget management, reporting and recordkeeping. It is also responsible for policy and administration and interdisciplinary activities.

E. Publications and Tables

Publications and presentations by program area are included in Appendix 1. All tables are included in Appendix 2.

III. Outreach

A. Background

While the Illinois ERC takes a comprehensive approach to improving, promoting, and maintaining the health of workers and communities, we devote special attention to the problems and needs of minority and disadvantaged workers and communities, the specific occupational and environmental safety and health needs of our region, and to the development of innovative and interdisciplinary approaches to addressing these needs. While outreach activities are coordinated through the Continuing Education Program (CE), all academic programs contribute faculty time and expertise to actualizing the program. We plan on continuing with the current administrative and oversight structure and to focus translation efforts to effecting the work environment by reaching practitioners through the professional associations locally and the GeoLibrary regionally, nationally, and globally.

B. Objectives

The aim of the outreach program at the University of Illinois at Chicago ERC is to serve as a regional information resource to enhance health and safety within other academic institutions, government agencies, professional and trade associations, labor unions, and advocacy groups by providing curricula, technical assistance, and consultation.

C. Results

1. Program Administration

The outreach program is managed by the CE program with oversight by the Executive Committee. Additionally, outreach is a regular agenda item for the Advisory Committee. Therefore, there are both internal harmonization and external perspectives of outreach activities. Program planning takes place in each program area as well as within the CE programs. The Executive Committee and research meetings offer opportunities to discuss outreach activities and needs. CE provides centralized administrative support for all of the programs. Outreach activity and program development are conducted through the Executive Committee. Through the program planning process faculty expertise is summarized and reflected in biosketches, faculty profiles, and CVs. Core faculty primarily consist of division faculty including: lecturers, instructors, research and clinical faculty, and tenure faculty as well as divisional adjunct faculty and faculty from other divisions within the SPH. Divisional faculty participate in outreach as part of the service component of their appointment. Adjunct faculty may participate in outreach activities as stated in their letter of appointment. Additionally, students are invited and encouraged to participate in outreach activities. Trainees are made aware of outreach opportunities through orientation, interdisciplinary seminar, listserv, and student associations.

While much of the outreach is based on requests, over the past 5 years specific program focused activities include Occupational Health and Social Justice; Dangerous Trades; Alice Hamilton and the History of Occupational Health; Health in the Arts (HARTS); Healthy Schools Campaign; Health Care Without Harm; Lead Safe Chicago Fostering Compliance Work Group; Service Employees International (SEIU) building service workload; and Chicago Area Workers' Centers Project.

Interdisciplinary outreach activities are also often associated with CE activities. Frequently a CE activity will generate an on-going relationship with an organization that is primarily outreach but may include CE activities such as the Healthy Schools Campaign and Health in the Arts both of which started with a CE

workshop. Conversely there are outreach activities that result in CE programs such as the Chicago Area Workers' Center Project which has resulted in five Spanish language OSHA 500 Courses.

A recent innovation that has resulted in significant opportunities for translation is the GeoLibrary (www.geolibrary.org) a data base of educational materials and practices tools searchable in six languages. While still being populated, currently there are just over 500 materials in the database; the library provides an outstanding forum for dissemination of occupational safety and health educational information. It is publicly available and all material in the library is free to be used and adapted.

Measuring the impact of outreach activities is challenging. Historically, the Illinois ERC has measured outreach impact by the success of on-going relationships with the educational institutions, professional associations, and community partners. Completion of an annual activity summary for the Advisory Committee and NIOSH is part of the process evaluation. Output is measured by the number of faculty from each program who participate in outreach activities (education, professional, and other) and the number of programs reached. Outcome is measured by the number of projects created and sustained (HARTs, Health Schools, etc). Impact has been measured grossly by examining changes in policy. For example the Lead Safe Chicago Fostering Compliance Work Group was effective in showing that a public health outreach intervention was effective in increasing the availability of lead safe work practice information and resources at local hardware stores in Chicago. This success resulted in the inclusion of language in a newly passed Illinois Lead Poisoning Prevention Act that requires hardware stores and other retail establishments that carry painting supplies to post and distribute information on lead safe work practices as developed by the intervention project. Other impacts have included the publication and distribution of the Healthy Schools manual and proposed changes to the Hull House museum to reflect occupational safety and health perspectives.

2. Outreach Activities by Program Area

a. Occupational Medicine

i. Outreach to UIC departments/medical residents.

In the past five years the UIC Occupational Medicine Residency has developed an on-going relationship with the UIC Department of Family Medicine through the OM residency program director who is also on staff in both departments. The following educational activities have been established.

ii. Occupational/Environmental Medicine seminars for medical students

UIC third year medical students are required to complete an 8-week rotation in the Family Medicine department. During the rotation they attend two 2-hour sessions on Occupational and Environmental Medicine. They learn about the history of occupational medicine in Chicago, they practice taking an Occ/Env history from their clinic patients, and they submit and present a case write-up of a patient seen during the rotation. Evaluations of the seminar series have been extremely positive.

iii. Occupational/Environmental Curriculum for Family Medicine residents

A curriculum in Occ/Env medicine has been established during the required Community Medicine curriculum in the UIC Family Medicine residency. During the first year, residents receive two didactic sessions that introduce them to Occ/Env medicine using videos, on-line cases, and practice Occ/Env history taking. In the second year they receive training on disability and return-to-work. Site visits to local manufacturing facilities have been utilized.

iv. Lectures to UIC undergraduate engineering students

Faculty of the UIC Dept. of Occupational Medicine present didactic lecture on occupational musculoskeletal conditions as part of the Ergonomics course.

Dr. Sam Dorevitch presents one lecture per year to Pulmonary Medicine. He is also conducting journal clubs for them.

v. Outreach to other medical trainees in Chicago.

UIC Occ Med faculty have presented Grand Rounds and resident lectures on topics in Occupational Health and Safety at the St. Elizabeth Family Medicine Residency and Stroger/Rush Internal Medicine residency lecture series.

Exploratory occupational med experiences – residents from Family Medicine programs at Hinsdale Hospital and St. Elizabeth Hospital have spent single days at residency rotation sites to become exposed to the field. Residents have spent days at General Motors, Argonne National Labs, and Rush Employee Health Service. One such resident is now enrolled in the UIC Occupational Medicine residency.

Elective rotation is provided on the Occupational Medicine consult service. Internal Medicine residents from Stroger/Rush and medical students from programs city-wide complete elective rotations on the Occupational Medicine consult service. They attend Wednesday morning conferences, spend 3 ½-days per week in clinic, conduct inpatient consultations, answer our "telephone hotline" for local citizens, participate in the ongoing lecture series on the consult service, and generally participate in all the activities of the OM Consult Service. Approximately 15 such trainees per year rotate through the service.

vi. Outreach to Practicing Physicians

We offer Category I CME accreditation for four hours/month of the Wednesday morning conference. We advertise this conference to physicians practicing Occupational Medicine in the Chicago area via our newly developed website.

We have developed a series of on-line CME courses for physicians in the area of Clinical Toxicology. To date, one mini-course on Methyl Parathion poisoning and one on Lead Poisoning are offered via the Great Lakes Center for Environmental and Occupational Health and Safety website.

Our chief resident in 2006 completed a rotation at the World Health Organization and developed a presentation on avian flu preparedness. He has presented this at various venues including the UIC Internal Medicine Grand Rounds.

Dr. Linda Forst developed and presented a masters level course on Occupational Lung Diseases in Leon, Nicaragua.

Dr. Linda Forst provides occupational health consulting to the UIC Medical Center at O'Hare Airport relating to occupational health issues among patients and employers at the airport.

vii. Outreach to unions, labor rights organizations, research to practice

Outreach to labor rights organizations – During the past five years a research and training relationship has been established with the network of labor rights organizations in Chicago. Specifically, a project interviewing day laborers about workplace hazards resulted in two training workshops aimed at workplace safety for day laborers and the distribution of free work gloves. A referral system has been developed for injured day laborers to be seen in our occupational medicine clinic.

The UniteHere hotel workers injury project is conducted byUIC occupational medicine faculty and residents in an on-going epidemiology project involving OHSA log data from hotels represented by the UniteHere union. Consultation between union staff and UIC Occupational Medicine has resulted in documents that have increased the visibility of hotel housekeepers' workloads, work speed and injuries, as well as the racial and ethnic disparities in injury rates among hotel workers.

Linda Forst and Lee Friedman have provided an analysis of the Illinois Trauma Registry to the Illinois Department of Public Health. We are working with the Illinois Workers Compensation Commission to analyze work compensation injury data.

Susan Buchanan has taken results and recommendation from research with workers' centers to develop a program to distribute personal protective equipment to day laborers.

b. Occupational Health Nursing

i. Outreach to UIC departments/nursing students.

The Occupational Health Nursing Program is situated within the Department of Public Health, Mental Health and Nursing Administration where the Department Chair is also serving as the Interim OHN program director. The following educational activities throughout the College of Nursing have been established:

The FNP program is the largest nurse practitioner program in the CON. The OHNP students are trained with the Family Nurse Practitioner students and as a result there are ongoing opportunities for FNP students to learn about worker health and safety, workers comp issues, ergonomics and musculoskeletal disorders. Two OHN faculty serve as lecturers and clinical instructors to the FNP and OHNP students.

Faculty of the Occupational Health Nursing program present didactic lectures on occupational nursing to undergraduate public health nursing classes once each semester.

Charles Yingling is a 2005 graduate of our OHNP program. He is currently on faculty at the CON teaching FNP and OHNP students and precepting students in clinical settings.

Shannon Lizer co-led "No Harm on the Farm Tour" in 2006 geared toward OHN graduate students, FNP students and medical students.

ii. Outreach to other nursing students in the region

OHN faculty have presented Occupational Health lectures for undergrad public health nursing classes at Rush University annually. (75 students)

OHN faculty have presented Occupational Health lectures for undergrad public health nursing classes at North Park University twice per year.(25 each session)

Dr. Shannon Lizer lectures on farm injury and occupational illness at the UIC College of Medicine Rockford annually.

iii. Outreach to Practicing Nurses

Faculty member Rebecca Mischak serves as the liaison for the Occupational Health Nursing Program and the Illinois State Association of Occupational Health Nurses.

iv. Outreach to unions, labor rights organizations, research to practice

There are future plans for OHN faculty member Jacqueline Wuellner to educate occupational health nurses on the best practices for recognizing and preventing isocyanate asthma and addressing the hazard where it exists. Planning for this statewide activity is underway and being done in collaboration with Dr. Anne Krantz, MD, MPH, at Stroger Hospital.

c. Industrial Hygiene

The Industrial Hygiene program participates in a number of projects that address public health issues and provide experience and purpose to the educational mission. These projects provide an outreach mechanism that, in turn, fosters new ideas and opportunities for new activities. Descriptions of industrial hygiene projects and outreach activities associated with them are provided below.

Outreach activities at the University of Illinois include the development of an Indoor Air Quality Laboratory with the Energy Resources Center, College of Engineering; serving on the board of the campus-wide Institute for Environmental Science and Policy; collaboration with faculty in the College of Engineering on the development of the test facility for emissions from welding; collaboration with faculty in the College of Engineering on exposure to toxic compounds in jet-engine manufacturing facilities; collaboration with faculty and staff in the College of Medicine on environmental and occupational health issues for animal-care workers; collaboration with faculty in the Division of Epidemiology on personal exposure issues; teaching IE 341 Ergonomics and Human Factors and IE 461 Safety Engineering for undergraduate and graduate industrial engineering students; and advising IE students undergraduate research experience.

i. Outreach to other health and safety students in our region

Faculty and staff participate attend regional conferences sponsored by the Illinois ERC, OSHA, and ASSE. Through these venues we interact with students from health and safety programs at Purdue University, Illinois State University, and Northern Illinois University. Additionally, the Illinois ERC co-sponsors the American Industrial Hygiene Association-Chicago Chapter Student night. Students from the above mentioned Universities participate in this annual event.

ii. Outreach to Practicing Industrial Hygienists, Labor Unions, and Labor Rights Organizations

Interaction with industry, labor, not-for-profit community groups and local government in Wisconsin, Indiana and Illinois is a major outreach activity through our funded field research projects, our interdisciplinary projects, and our advanced IH laboratory course. For example, a recent major field test involved monitoring particulate emissions from demolition of Public Housing in Chicago and the effect the emissions had on housing residents. Mr. Selway carries out noise and organic solvent exposure evaluations for industry in the region as part of his IH Lab 2 class. IH faculty and trainees have carried out NORA research-training and Health Hazard Evaluation projects including the evaluation of Lead Exposure in a Police Department Firing Range, Indoor Air Quality in a Suburban High School, Lead in Soil from Local Train Track Structures, Noise exposures at an AMTRAK diesel engine maintenance facility, Bioaerosols in a Large Office Building, Asbestos-containing Materials in a State Park Beach, Vapor Intrusion in Residential Properties, and a Beach Sanitary Survey. Both Drs. Scheff (air pollution measurement and control) and Erdal (risk assessment) work closely with staff at the Region V EPA, and have been successful in involving students in those activities. Dr. Lacey works on health and safety issues at the Shedd Aquarium and Lincoln Park Zoo. Other regulatory agencies that IH faculty interact with include the ATSDR, OSHA, NIOSH, Illinois Department of Public Health, Chicago DPH, Cook County DPH, other local public health agencies, Illinois EPA and Illinois Department of Natural Resources. In

addition to his part-time position with the University, Dr. Franke is Industrial Hygiene Manager of Evanston Hospital, which involves oversight of three hospitals as well as a number of out-patient clinics.

IH faculty are also very active in outreach and service to professional organizations and government. Dr. Franke is a member and former Chair of the Modeling Subcommittee of the Exposure Assessment Strategies Committee for the national AIHA. Dr. Conroy is Past Chair of the Associations of University Programs in Occupational Safety and Health, hosted a NIOSH town hall meeting on the National Occupational Research Agenda, and was a member of the NIOSH working group on training grant program evaluation. Dr. Scheff served on the Board of Directors for the Lake Michigan States Section of the Air and Waste Management Association and represents the American Industrial Hygiene Association on the Board of the Institute for Professional Environmental Practice. Dr. Steven Lacey was the Founding Chair of the AIHA Student and Early Career Professionals Committee, Past Chair of the AIHA Engineering Committee, faculty advisor to the Engineers Without Borders Student Chapter at UIC, and faculty advisor for the UIC Industrial Hygiene Student Association. Dr. Nurtan Esmen is a Science Advisory Board Member of the Semiconductor Industry Association. Dr. Serap Erdal is a member of the International Committee for the International Society of Exposure Analysis and Secretary of the Chicago Chapter, and serves on the Board of Directors of the AIHA Chicago Local Section. Mr. Cali works with a number of other organizations through his affiliation with the Health Hazard Evaluation (HHE) Program of the Great Lakes Center of Excellence in Environmental Health (GLCEEH) and through instruction in continuing education programs. GLCEEH works directly with the Centers for Disease Control and Prevention, and the HHE program includes a project with the Agency for Toxic Substances and Disease Registry. HHE partners have included the Illinois and Wisconsin Departments of Public Health, the Illinois Department of Natural Resources, the Illinois Attorney General's Office, the US Army Corp of Engineers, the USEPA, the Illinois EPA, and the Lake County Department of Public Health. Mr. Cali has taught in continuing education classes for the Midwest Energy Efficiency Alliance, the Wisconsin Energy Conservation Corporation, the Missouri Department of Natural Resources, and the National Center for Healthy Housing.

IH faculty have served as peer reviewers of the Journal of Occupational and Environmental Hygiene, Applied Occupational and Environmental Hygiene, Water Research, Environmental Science and Technology, the Journal of the International Society for Exposure Analysis, International Journal of Occupational and Environmental Health, Journal of the British Occupational Hygiene Society, Journal of Environmental Science and Engineering, Atmospheric Environment, Journal of Exposure Analysis and Environmental Epidemiology, Science Asia, Journal of Indoor Air Quality, ASCE Journal of Environmental Engineering, Aerosol Science and Technology, Journal of Aerosol Science, American Journal of Industrial Medicine, Annals of Occupational Hygiene, and The Scientific World. Dr. Scheff is an Associate Editor for the Journal of the Air and Waste Management Association, Dr. Esmen is an Editorial Board member of the Journal of Occupational and Environmental Hygiene, and Dr. Forst is an Executive Editor for Archives of Environmental and Occupational Health. IH faculty also serve on study sections for the U.S. Environmental Protection Agency, NIOSH, the National Science Foundation and the Science Advisory Board of the USEPA.

In the past we have had a strong international component to our program, involving both students and faculty. Ms. Leslie Nickels, and Drs. Conroy and Forst developed and delivered a 12 hour course on Global Occupational Health at the University of Cape Town, Cape Town, South Africa; and also taught the course to public health professionals in Ankara, Turkey and Costa Rica. Drs. Forst, Krantz and Cohen used the curriculum for a course in Nicaragua. Drs. Conroy and Lacey and Ms. Nickels taught a short course using the seminar at the International Conference on Occupational Hygiene, Pillanesburg, South Africa. Dr. Scheff traveled to Pune, India and Hanoi, Vietnam to deliver short courses on air quality

monitoring and modeling. Dr. Lacey recently traveled to Havana, Cuba with a team of health and safety professionals to explore research opportunities regarding health problems associated with the performing arts. Dr. Lacey traveled to Cerro Alto, Guatemala to lead a community health assessment as part of an Engineers Without Borders Student Chapter project. Dr. Lacey traveled to Tanzania with colleagues in the Division of Epidemiology to build collaborative research projects in zoonotic disease transmission and occupational health. Dr. Conroy and Ms. Nickels conducted a week long training course for 60 students, chemical and pharmaceutical plant managers, and physicians on occupational safety and health, Hyderabad, India.

d. Continuing Education

i. Activities at the University of Illinois

Hull House Museum- Lorraine Conroy is a member of the Advisory Committee. Joseph Zanoni and Leslie Nickels convened a work group on Health and Human Rights. The work group included representatives for the UIC Colleges of Nursing, Arts and Architecture, Sociology, and Education as well as representatives from Heartland Alliance and the Newbury Library.

We participated in a SPH Community Health Science course on community-based research.

We consulted with representatives from the Chancellor's office on the development of a health sciences high school.

ii. Outreach to students in our region

Continuing education provides opportunities for high school and college students to participate in occupational health projects as part of summer internship and work-study programs. Examples include increasing awareness of lead safe work practices for small businesses and identifying training materials and practice tools for the GeoLibrary database.

iii. Outreach to other training programs in our region

We provided technical assistance on lead safe work practice issues for the Loyola Child Law Center. We provided expertise on curriculum development on materials for realtors on issues of lead safe work practices for Lead Safe Chicago.

We provided expertise to Lead Safe Illinois on curriculum development on materials for realtors on issues of lead safe work practices. ERC was recently funded by EPA to translate awareness program on lead safe work practices for small businesses throughout Illinois.

We provided technical assistance to Rush College of Nursing on the development and delivery of on-line introduction to occupational health course.

iv. Outreach to labor unions, labor rights organizations, research to practice

CE provided technical assistance as well as training programs for labor union and labor rights organizations.

Unions

- SEIU Local 880-train the trainer classes and consultation on curriculum design.
- UFCW International-program evaluation and curriculum design
- AFSCME-consultation on staffing and stress issues

Labor Rights Organizations

- Chicago Area Workers' Rights Initiative- Joseph Zanoni participated in scheduled meetings to address health and safety problems.
- San Lucas Workers' Center-provided technical assistance on health and safety topics for staff and worker leaders, and enhanced their health and safety library.
- Latino Union- provided technical assistance on health and safety topics for staff and worker leaders, and enhanced their health and safety library.
- Chicago Workers' Rights Collaborative- provided technical assistance on health and safety topics for staff and worker leaders, and enhanced their health and safety library.

We supervised an MPH student's 400 hour practicum, consultation on data collection and analysis, enhancement of health and safety library, and reviewed health and safety training materials.

Joseph Zanoni is a member of the Health Schools Campaign Advisory Committee and the Illinois ERC provided technical and financial support for the publication of a healthy schools workbook.

v. Other practice community initiatives

Joseph Zanoni is a board member of the Health and Medicine Policy Research Group.

We provided technical assistance to Community of Care Program on Aging on issues related to health and safety for home care workers and curriculum development. We were recently funded by a NIOSH contract to create a database of health and safety training materials for home care agencies.

We provided technical assistance to Health Care without Harm on issues related to training and disposal of health care hazardous waste. ERC was recently funded by the United Nations Development Programme to develop curriculum for managers at hospitals in seven countries.

Leslie Nickels represents the ERC on occupational health and safety issues in Chicago to the Healthy Chicago Partnership

vi. Global initiatives

World Health Organization Collaborating Center in Occupational Health- Leslie Nickels is Manager for the Training, Education and Technical Materials activity area for the World Health Organization Collaborating Center in Occupational Health, and is assisting the Pan American Health Organization's occupational health program staff in conducting web-based meetings with occupational health collaborating centers in North and South America four times per year.

Leslie Nickels is working with staff from the NIOSH Director's office to create a specialty library of training, educational and technical materials on road safety within the GeoLibrary.

Faculty in the Illinois ERC CE program have active research projects on health and safety issues of underserved and minority populations including homecare workers, immigrant workers, day laborers, and temporary workers. Through the research programs CE has developed important relationships with joint health and safety committees, worker center staff, and worker leaders. Through a partnership with Truman College we have started offering OSHA 500 courses in Spanish for Spanish speaking day laborers and temporary workers. Additionally, Dr. Buchanan has conducted training sessions for day laborers at a Chicago Area workers' center based on findings from her research. Mr. Zanoni is conducting training programs at 3 workers' centers on health and safety issues identified through Dr. Buchanan's and Ms. Nickels' research. This intervention effectiveness research will inform us about future training methods.

Under-represented groups have participated in the outreach program through research and intervention with Spanish speaking and other minority workers, through conference development,

through academic courses, and through activities coordinated with organized labor. The CE program has documented their participation in the following ways: CE participates in the Chicago Area Workers Rights Initiative which conducted planning meetings and documented the needs and working conditions of minority workers in sweatshop employment. In the courses participants list their risks and exposures, create risk maps of their workplaces and create action plans to address their concerns. These sources of documentation guide the development and direction of this part of the CE/O program. Additional training programs for underserved populations include training for homecare workers and artists.

Through an employer-union partnership we will continue to develop health and safety curricula in English and Russian and to conduct train the trainer sessions for worker leaders who will implement the course with Russian participants. Currently, we have 16 hours of health and safety curricula on the topics of bloodborne pathogens, infectious disease, and routes of entry in Russian.

D. Conclusions

The Illinois ERC interacts closely with the group of academic organizations located within the Great Lakes Center for Occupational Safety and Health, the EOHS Division, and the UIC School of Public Health. This group offers unique opportunities for connections between state and federal entities with public health interests, including academia, regulatory agencies, industry, not-for-profit community groups, professional organizations, and labor groups.

E. Publications and Tables

Publications and presentations by program area are included in Appendix 1. All tables are included in Appendix 2.

IV. Pilot Project Research Training Program

A. Background

The Illinois ERC Pilot Project Research Training Program provides small amounts of funding to encourage new investigators to develop research careers in occupational safety and health and encourage projects that address the priority areas and sectors described by the NIOSH National Occupational Research Agenda (NORA).

This program has been fully operational at UIC since 1999 (FY2000). The program was modeled on a UIC program that for ten years had pioneered the concept of an intramural pilot research grant program focused on trainees and new investigators.

The stability of formal funding and support from NIOSH, the input of the ERC Advisory Board, the ERC Research Board, and subsequent evaluation of the program over the last 10 years, have shaped and strengthened the program over time. In the last few years, improvements have included the requirement of a formal mentorship relationship, explicit guidance concerning research hypothesis development, a limit of two funded projects per investigator, plans for subsequent extramural funding application, and expanded inter-disciplinary outreach to enhance the developmental nature of the program.

The program provides new investigator education and an opportunity for new researchers to:

- Learn how to develop their ideas into competitive proposals;
- Plan research time lines, budgets, and task completion;
- Perform their own research under the supervision of a mentor;
- Develop presentations, posters, and publications from the results of their own research;
- Develop new proposals for expanded research based on their original findings.

1. Major Changes

No major changes. The program has evolved over the years with minor changes to the requests for proposal (RFP), the list of entities that receive the RFP, application instructions, required documentation for Protection of Research Subjects training, and mentorship requirements.

The program announcement and application process were revised in 2005 in response to suggestions from the ERC Research Board as part of a continuous quality improvement process aimed at improving the quality and number of applications as well as the diversity of the applicants. The Research Coordinator and the Program Director send electronic and print announcements that provide an overview of the PPRTP Request For Proposals to a number of individuals, entities, and list-serves in the target area of Illinois, Wisconsin, and Indiana. These announcements provide the web page where instructions, applications, budget spreadsheets, and policies and procedures are located. The individuals and entities that receive the notice include ERC faculty and trainees, other investigators at our participating institutions who are engaged in research in a broad array of related fields ranging from sociology to engineering, TPG programs in our region and their trainees, other academic institutions in our region who have investigators working in these areas, members of the ERC Advisory Board, occupational safety and health (OHS) researchers in labor and industry in our region, and researchers in related fields, such as physical and occupational therapy.

2. Faculty

The PPRT Program Director of Research and Training is Rosemary Sokas, MD, MOH. Dr. Sokas is responsible for directing and implementing the PRRTP. Dr. Sokas is also Chair of the ERC Research Committee that chooses fundable pilot project proposals. She devotes 5% FTE, which is contributed from UIC. Dr. Sokas is currently a Professor of Environmental and Occupational Health Sciences at UIC. Dr. Sokas joined UIC in November 2002, and served for five years as the Division Director for EOHS. She had previously served as Director of the Office of Occupational Medicine at OSHA and, most recently, as Lead Medical Officer and Associate Director for Science at NIOSH, CDC, where she coordinated the interface between science and policy, facilitated the implementation of the National Occupational Research Agenda, and assisted in the response to the terrorist attacks of September 11, and subsequent anthrax attacks. Prior to that, she served on the faculty at the University of Pennsylvania, School of Medicine and at the George Washington University School of Medicine and School of Public Health and Health Sciences. Her research includes education intervention effectiveness evaluation, the interface between clinical medicine and public health, and work addressing the needs of low-wage, high-risk workers. She is currently conducting extramurally-funded research exploring the impact of training on immigrant workers served by a network of worker centers. She directs the Illinois Public Health Research Fellowship program that supports 12 postdoctoral trainees and 4 pre-doctoral students throughout the UIC SPH in establishing transdisciplinary research careers with an emphasis on reducing health disparities and promoting environmental justice.

The Research Coordinator, Salvatore Cali, MPH, CIH, has a wealth of applied research experience from his role as project coordinator on a number of funded research projects and Health Hazard Evaluations, and has been working with the PPRTP since its inception. He provides technical and programmatic information to investigators and research background information, administrative guidance, and institutional memory to the research committee.

In addition to Dr. Sokas and Mr. Cali, six to seven faculty members participate in the PPRT program as Research Committee members and/or consultants. The Committee membership has recently reduced the number of occupational physician members and increased the number of occupational health nursing members; other membership has been relatively constant. In addition to volunteering their time for the application review process, these scientists have generously contributed time and advice that has improved the application process. Committee members include:

- Peter Scheff, PhD, CIH is a Professor of Environmental and Occupational Health Sciences and Director of the Industrial Hygiene and Hazardous Substances Programs at UIC.
- Arlene Miller, PhD, RN, FAAN is a Professor and Director of Occupational Health Nursing at UIC.
- Linda Forst, MD, MPH, is an Associate Professor in the Division of Environmental and Occupational Health Sciences at UIC and is the Associate Director of the Occupational Medicine Program at the University of Illinois.
- Robert Aherin, PhD, is a Professor in the College of Agricultural, Consumer, and Environmental Sciences and is the Director of the Agricultural Safety and Health Program at the University of Illinois at Champaign/Urbana (UIUC).
- Pamela Levin, PhD, RNC, is the Associate Chair, Dept Community & Mental Health Nursing, Community and Mental Health Nursing, Rush University Medical Center
- Kathleen Rospenda, PhD, Associate Professor of Psychology, UIC College of Medicine.

There are minor changes to the personnel who serve on the review committee from year to year, depending on their other commitments.

3. Curriculum

Does not apply.

4. Trainees

Does not apply relative to stipends. Project Principal Investigators are research trainees.

B. Specific Objectives

The success of the PPRTP program is measured quantitatively for each of the two program objectives, which are to develop research expertise and capacity in new investigators, and to encourage established investigators from other fields to apply their expertise to NORA occupational safety and health topics. In addition to measuring the number and quality of PPRT proposals submitted by junior faculty and doctoral and post-doctoral trainees in the occupational safety and health fields and from other disciplines, follow-up information is tracked for the number and types of grant proposals submitted on the basis of pilot work conducted through the PPRTP program; the number of proposals funded; the number of research publications produced by the grant; the number of publications and presentations generated from the funded projects; and the number of trainees, young investigators, or new investigators engaging in occupational safety and health research as a result of the PPRTP program.

New program evaluation procedures that will be included for the future include: Additional quantitative tracking of the summary scores over time for all applicants to review as potential predictors of other products, and conduct of brief follow-up phone interviews for both the successful and the unsuccessful applicants for process evaluation one year after the application process.

C. Results

The PPRT program tracks the history of PPRT research that leads to other research projects through the quantitative assessment presented in the section on evaluation and in a less direct manner by following the growth of the original projects into even more interesting lines of study.

For example, the “Immunologic Risk Factors for Laboratory Animal Allergen” study was initially funded in July, 2001. Since that time, the project has developed from a relatively small project involving a single investigator to a series of projects involving several other departments and investigators. Two veterinarians at UIC became interested in allergen and irritant levels in the animal research facility studied in the original project. Investigations have been conducted in which mouse and rabbit allergen concentrations, as well as total dust and airborne endotoxin have been measured. One of these projects was the basis of a research study by a veterinary medicine trainee, and another was the basis for a masters degree thesis by an industrial hygiene trainee. An intervention study that employed a relatively low-cost engineering control of allergen level exposure to workers at the facility has also been performed. In addition, a PhD student in immunology and another masters degree student participated in a study of in vitro responses of lymphocytes of workers in the same facility. Furthermore, in 2004, an occupational medicine resident participated in the laboratory animal allergy surveillance of workers at the facility and two other UIC departments. Since the launch of the original project, 193 research subjects have participated. Data from the research has been presented at numerous scientific meetings and a manuscript has been accepted in a peer-reviewed publication. Data analysis is ongoing, and other manuscripts may be submitted for publication by researchers in a variety of disciplines, including epidemiology/ biostatistics, environmental and occupational health sciences, immunology/

microbiology, and veterinary medicine. The research plan from the original project led to the development of a proposal for a successful NIEHS K08 award of $584,886 in direct funds.

Another example of a continuation of a PPRTP line of inquiry is a group of studies related to welding and welding fume exposure health outcomes. These studies were spawned at UIC with initial funding from the PPRT program for a welding fume exposure chamber. The subsequent studies focused on a number of aspects of welding work, including laboratory characterization of welding fume and emission, occupational exposures, exposures to artist-welders, and studies of the mechanisms of metal exposures on lung epithelial cytotoxicity. The investigator for the initial study was awarded a NIOSH K 01 career development grant of $240,237 for a study of welding fume characterization and deposition. Four MS theses were generated from related studies, while another PPRTP welding study generated data used for the investigators' PhD thesis.

These two sets of projects provide excellent examples of interdisciplinary research that has supported new investigators in establishing new research areas and encouraged established investigators from other fields to apply their expertise to NORA topics.

D. Conclusions

The PPRTP program at UIC is currently in its tenth year of funding (including FY 2009). Including the funding through FY2008, to date, 43 awards have been given to fund 39 projects since the inception of the ERC Pilot Project Research Training Program in 1999 (FY2000). Two of these awards were withdrawn by the PIs, and one award could not get human subjects approval from NIOSH for foreign research.

Funded projects have helped support twenty (20) junior faculty, one post-doctoral fellow, eight (8) PhD student principal-investigators, and thirty (30) student research assistants for one semester or more. The projects have generated six (6) subsequent grant proposals based on the pilot project research findings, four (4) of which were successfully funded, twenty-five (25) presentations at regional or national meetings, thirteen (13) reports/abstracts/posters or papers, and fifteen (15) publications. Four (4) Pilot Projects received supplementary funding from other sources and fifteen (15) resulted or are expected to result in findings used toward MS or PhD theses.

The program has demonstrated a continuous, steady increase in the project outcomes after project completion. In general, the number and quality of applications submitted are increasing, with minor variation in numbers apparently based on funding rates for the preceding year.

The Illinois ERC PPRTP has succeeded in competitive review, most recently in 2008. In the previous review in 2003, recommendations were made by reviewers to increase the number of applicants and the program's geographic reach. In response to that review, outreach has been significantly expanded and now includes universities and departments that do not normally perform occupational health research. In the past three years, eight of seventeen proposals (47%) funded were awarded to principal investigators in disciplines that are not usually well represented in occupational health and safety, including occupational and physical therapy, applied health sciences, industrial management, education, pharmacy, epidemiology and community health sciences. Further emphasis on enlarging the scope of outreach has prompted a reallocation of personnel to include more attention to marketing, presentation and follow-up.

E. Publications and Tables/Illustrations

Publications and presentations by program area are included in Appendix 1. All tables are included in Appendix 2.

The **PPRTP Appendix** that follows includes:

- Table 1: A summary of Pilot Project (PPRT) Applications and Awards by institution
- Table 2: A summary of funded projects by fiscal year that the projects were funded
- Table 3: A summary of all proposals received and funded or not funded by year and institution
- Table 4: A list of all reported manuscripts generated from the PPRT Program awards
- Table 5: A list of titles and abstracts for all funded PPRT projects
- Table 6: A summary of the PPRTP awards, including the title, principle investigator, affiliation of the principle investigator, total amount awarded, IRB status and project outcomes
- Exhibit 1: Full project Technical Report
- Exhibit 2: Pilot Project Announcement and Instructions

V. NORA Research Support

A. Background

The NORA Research Support (NRS) program provides interdisciplinary research training using a combination of required course work (described in each of the academic training programs), elective course work specific to their research area, other didactic training in our weekly Interdisciplinary seminar, and participation on interdisciplinary research teams addressing NORA research priorities. This combination of didactic and practical training provides students with comprehensive research and collaboration skills necessary for professional practice and research careers.

The NIOSH announced National Occupational Research Agenda (NORA) in 1996 as a research framework for NIOSH and the nation. The NORA was used to guide internal NIOSH research programs and priorities for the extramural research programs funded by NIOSH. After 10 years of very successful research and partnerships, NIOSH revisited the NORA and announced a revised set of priorities in 2006. UIC hosted one of the stakeholder meetings soliciting input into NORA. The UIC Town Hall meeting was held on December 19, 2005 and was attended by more than 100 people. The morning session solicited input and opinions about general priorities for our region, while the afternoon session was specific to construction industry priorities nationally. NIOSH celebrated the success of the first decade and announced the second decade of NORA and the revised priorities at the NORA Symposium in April 2006. The NORA now uses a sector-based approach with 8 NORA Sector Programs. The NORA also has fifteen Cross-Sector Programs and seven Coordinated Emphasis Areas.

B. Objectives

The overall goals of the training are to provide trainees with research training, in general, and with training that entails interdisciplinary expertise and interaction.

The specific objectives of the overall research training are to provide training in:

- qualitative research methods
- quantitative research methods
- research ethics
- research project planning, implementation logistics, and budgeting
- publication

The overall goal of the Mixed Exposure Team is to design and conduct interdisciplinary research projects as a mechanism for training students in quantitative research methods. The specific objectives are:

- to quantify exposure to particulate and irritant gases;
- to apply published emission factors to the development of a predictive model for personal exposure;
- to assess respiratory health of workers in these settings; and
- to begin testing the use of biomarker for exposure and as an indicators of lung response mechanisms.

The goal of the Vulnerable Populations Team are to conduct research training, which ultimately results in improved services and increased safety on the job for special populations. This work involves participatory action research that usually includes interventions as part of any research project. The project focuses on vulnerable populations, specifically day laborers and the organizations that provide services for immigrants and day laborers. Day laborers in Chicago, including those who obtain work on

street corners and those who go to temporary agencies for work, likely work under hazardous conditions and suffer high rates of occupational injury. The specific objectives are to:

- Support faculty, staff, and student research skill development including generation of questions, writing proposals, collecting and analyzing data, presenting at conferences, publishing papers, generating grant applications.
- Support community/university partnerships in developing methods to characterize issues and develop intervention strategies.
- Develop research training projects that include hypothesis generation, surveillance, and interventions effectiveness. Characterize and describe special populations at risk including nature of work, risks associated, demographics, type of employers, organization of work, and type of employment.

Occupational Surveillance is the systematic monitoring of health events and toxic exposures in working populations to prevent and control occupational hazards and their associated diseases and injuries. The overall goal of occupational surveillance is to prevent fatalities, non-fatal injuries, and illnesses in the workplace. It can be used to: a) prioritize occupational health problems; b) determine whether an intervention program is needed; c) evaluate progress, success, or failure of an intervention program; d) provide planning data for cost-effectiveness and benefit analysis. A comprehensive occupational fatality/injury/illness surveillance system entails gathering, compiling, linking, analyzing, and disseminating statistics on occupational health and safety. The ability to perform each of these tasks is essential to the practice of occupational health and forms a core competency for students in training across occupational health and safety disciplines.

The goal of the Occupational Surveillance Team is to foster and support interdisciplinary research training for NIOSH trainees and junior faculty in the Illinois ERC. Specific objectives of the proposed program are:

- To form and support an interdisciplinary work group focused on Occupational Surveillance
- To design and conduct development projects as a mechanism for training students and postdoctoral fellows in research methods.
- Train students, post-doctoral fellows and junior faculty in the importance of risk communication

C. Results

1. Program Plan

a. Program Administration

Lorraine M. Conroy, ScD, CIH is the Director of the Illinois ERC and also serves as program director for Targeted Research Training program. Dr. Conroy is Associate Professor of Environmental and Occupational Health Sciences. Her research interests include characterizing workplace contaminant sources, ventilation system model development and validation, and workplace exposure assessment. She is a research advisor to IH and OHN trainees, teaches EOHS 421 Fundamentals of Industrial Hygiene and co-teaches EOHS 523 Engineering Controls. She serves as Director of the NORA Research Support program and is responsible for overall coordination of the program and each of the teams. She also serves as Team Leader for the Mixed Exposure team.

Leslie Nickels, MEd serves as Team Leader for the Vulnerable Populations team. Ms. Nickels is Deputy Director of the Illinois ERC and Program Director for Continuing Education programs in the ERC. Ms. Nickels has over 20 years of experience in health and safety.

Linda Forst, MD, MPH serves as Team Leader for the Occupational Surveillance team. Dr. Forst is Associate Professor of Environmental and Occupational Health Sciences in the UIC School of Public Health. She teaches two courses, Principles of Environmental Health and Occupational Diseases. She received a grant from the Center for Excellence in Teaching and Learning to develop a new course in Occupational Injury Epidemiology and Prevention. She is the research mentor to MPH, MS, PhD, and OM residents, and contributes to the residency curriculum development. Her areas of expertise include injury surveillance, distance learning, and vulnerable worker populations. Her surveillance research has included evaluating the Illinois Trauma Registry as a tool for occupational surveillance. She has a formal agreement with the Illinois Workers Compensation Commission to receive all of its injury reports from 2000-2011. She has the assurance of the Illinois Governor Blagojevich to obtain all public health surveillance data necessary to conduct occupational surveillance in the State.

Todd Schoonover, MS, CIH serves as Project Manager and assists Dr. Conroy with the overall coordination of the research training teams and is responsible for day to day laboratory and field activities of the teams. Mr. Schoonover has an MS in industrial hygiene from the University of Illinois at Chicago and has been Project Manager for the NRS program since 2002. Prior to pursuing a graduate degree, he worked as an environmental consultant. He is certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene.

Each team has a core group of faculty who make up the interdisciplinary nature of the team. They are responsible for working on the team and training students in research methods through demonstration of research projects among the team members. The membership of each of the teams is shown in the next section.

The Illinois ERC Executive Committee, made up of the program directors in the Center, provides advice and evaluation of the program. The academic program directors are responsible for matching trainees with research training teams. The Illinois ERC Executive Committee reviews each of the teams at two of its monthly meeting per year for progress towards team goals and ERC research training goals and changes in program direction are made as necessary.

b. Program Faculty and Trainees

i. Mixed Exposure Team

- Lorraine M. Conroy, ScD, CIH, Team Leader- see above
- Todd Schoonover, MS,CIH, Project Manager,- see above
- Samuel Dorevitch, MD, MPH is Research Assistant Professor in EOHS and Epidemiology at the UIC School of Public Health. He mentors research and serves on the residency curriculum committee. His areas of expertise are community asthma triggers and laboratory animal allergies.
- Daniel Tessier, PhD is Assistant Professor in EOHS and is a research advisor for ERC trainees. He teaches EOHS 455 Environmental and Occupational Toxicology and EOHS 555 Advanced Topics in Toxicology.
- Peter Scheff, PhD, CIH is the Director of the Industrial Hygiene Program. He is Professor of Environmental and Occupational Health Sciences (EOHS) within the School of Public Health. Dr. Scheff has been on the faculty since 1989 and has directed the industrial hygiene program since the fall of 2002. His research interests include evaluation and control of the indoor environment, air quality management, exposure assessment and environmental statistics. He was also director of the Region V Center of the EPA's Air Pollution Training Institute, one of five regional training centers nationwide.

- Robert Aherin, PhD, CSP has been the Director of the Agricultural Safety and Health Academic Program since its initiation in July, 2000. He is a Professor in the Agricultural and Biological Engineering Department within the College of Agriculture, Consumer and Environmental Sciences (ACES) located at the Champaign/Urbana campus and is a member of the graduate college. He is also an Adjunct Professor with the School of Public Health. He has degrees in Occupational Safety and Health, Agriculture and Education. He has over 30 years experience in education and research in the agricultural safety and health area.
- Robert Cohen, MD is director of the Stroger Hospital Black Lung clinic. His primary academic affiliation is in EOHS, SPH. He precepts two weekly Stroger clinic sessions and mentors research and case presentations involving pulmonary conditions, and lectures frequently on pulmonary function testing, stress testing, and occupational lung diseases. He is a certified B-reader and interprets our pneumoconiosis films.
- Jeffrey Fortman, DVM Director, UIC Biological Resources Laboratory (animal research facility)
- James Artwohl, DVM Clinical Veterinarian, UIC Biological Resources Laboratory
- Lilia Chen MS trainee (IH) {graduated}
- David Vinson MS trainee (IH) {left program}
- Srinivas Durgam MS student (IH) {graduated}
- Kimberly Hopp MS trainee (IH) {on leave}
- Joy Schnackenbeck MS trainee (IH) {graduated}
- Julie Plavka MS trainee (IH) {graduated}
- Laura Pascal PhD trainee (IH, Tox) {graduated}
- Bogdan Catalin MS trainee (IH, Tox) {graduated, current PhD trainee}
- Robert Malcolm MS trainee (IH) {left program}
- Tara Ooms, DVM Post-doctoral fellow, UIC Biological Resources Laboratory {completed fellowship}
- Cong Zhao, MD OM trainee {graduated}
- Leslie Tharenos, MD OM trainee {graduated}
- Dyan Doughty, MS trainee (IH) {graduated}

ii. Vulnerable Populations Team

- Leslie Nickels, MEd, Team Leader- see above
- Todd Schoonover, MS,CIH, Project Manager-see above
- Rosemary Sokas MD, MPH is Professor of Environmental and Occupational Health Sciences (EOHS). She joined UIC in November 2002, following six years in government service, initially as Director of the Office of Occupational Medicine at OSHA and, subsequently, as Lead Medical Officer and Associate Director for Science at NIOSH, CDC. Prior to that, she served on the faculty at the University of Pennsylvania School of Medicine and at the George Washington University School of Medicine and School of Public Health and Health Sciences. Her research includes education intervention effectiveness evaluation, and publications at the interface between clinical medicine and public health. She also directs the ERC pilot research grant program, which disseminates small grants through a competitive process to doctoral, post-doctoral, and junior faculty applicants; the IPHR Fellowship Program; and is conducting extramurally funded research in educational intervention effectiveness among low wage, high-risk worker populations, including construction workers and home health aides.
- Susan Buchanan, MD, MPH is program director for Occupational Medicine. Dr. Buchanan replaced Dr. Linda Forst in 2005 after completing the UIC Occupational Medicine residency and a UIC fellowship in Occupational Health Services Research. She had been a practicing Family

Physician for ten years before joining the residency program. Her primary appointment is in the Environmental and Occupational Health Sciences Division of the UIC School of Public Health. Her current research covers the occupational hazards and injuries of Chicago day laborers and temporary agency workers. She continues clinical practice in the UIC Department of Family Medicine and in University Health Services, the UIC employee health clinic.

- Joseph Zanoni, MILR is Associate Director for CE. Mr. Zanoni has 20 years of experience in health and safety training. Mr. Zanoni is also a PhD student at the University of Illinois College of Education in Curriculum Studies. Mr. Zanoni worked for the Service Employees International Union on bloodborne pathogens training and exposure prevention programs, ergonomics issues in the nursing home industry and hospital worker training programs in hazardous materials. Mr. Zanoni's expertise and experience have enabled the program to more systematically develop outreach objectives and implement outreach activities. He serves on the board of the Healthy Schools Campaign and the Health and Medicine Policy Research Group.
- Kathleen Rospenda, PhD Assistant Professor, Psychology, UIC Department of Psychiatry (psychology)
- Rachel Rubin, MD, MPH Adjunct Assistant Professor, EOHS; OM Residency Director, Stroger Hospital (OM)
- Michele Issel, PhD Clinical Associate Professor, Community Health Sciences, UIC SPH
- Linda Murray, MD, MPH Co-medical Director, Ambulatory Care, Cook County Bureau of Health Service (OM)
- Anne Buckley, MPH. Industrial Hygienist, Stroger Hospital of Cook County (IH)
- Karen Conrad, PhD Research Associate Professor, UIC School of Public Health (OHN)
- Pamela Levin, PhD Clinical Assistant Professor, Rush College of Nursing (OHN)
- Katherine Bissell Chicago Interfaith Workers' Rights Center
- Jose Oliva, National Network of Worker's Centers
- Anne Evens, Center for Neighborhood Technology
- Nadine Remington MS trainee (IH), working group coordinator {graduated}
- Butch DeCastro, PhD Post-doctoral fellow, EOHS {completed fellowship}
- Kaori Fujishiro, PhD Post-doctoral fellow, EOHS {completed fellowship}
- Julia Lippert MS trainee (IH) {graduated}
- Lezah Brown-Ellington PhD candidate (IH)
- John Halpin OM trainee (OM) {graduated}
- Douglas Myers, ScD Post-doctoral Fellow, Epidemiology {completed fellowship}

iii. Occupational Surveillance Team

- Linda Forst, MD, MPH- see above
- Todd Schoonover, MS,CIH, Project Manager- see above
- Lee Friedman, PhD, Research Assistant Professor is a graduate of the UIC School of Public Health. His dissertation work entailed three occupational surveillance projects: 1) relating trends in nationwide occupational injuries to OSHA reporting rules; 2) use of the Illinois Trauma Registry to describe occupational injuries; 3) occupational health disparities in Illinois workers. Two of the three have been accepted for publication and the third is in review. He worked under the research mentorship of Dr. Forst.
- Emile Jorgensen, PhD Candidate, Epidemiology
- Justin Ford, PhD Candidate, EOHS
- Maria Guitierrez, PhD Candidate, EOHS

c. Research Training

i. Interdisciplinary Research Training

We accomplish these goals and objectives through interdisciplinary teams focused on one or more NORA priority areas. Teams are formed by ERC faculty who collaborate to establish the mission, set practical goals and protocols for executing them, and recruit students whose interests, needs and assets fit the group's agenda. Each team must be interdisciplinary and must include at least two trainees. The team leader works with the academic program directors to identify appropriate trainees. Proposals for new teams are submitted by ERC faculty and reviewed by the Illinois ERC Executive Committee on a yearly basis, deciding on appropriate resource allocation from the overall NORA Research Support budget.

In the first year of the program, a model team was developed, evaluated, and refined, in order to more clearly define achievement goals for the program. The "mixed exposures" group was established by a large, interdisciplinary subset of faculty members to take advantage of faculty expertise and available resources, as well as to exploit opportunities with partners outside of the School of Public Health. The first group consisted of a team of faculty from medicine, hygiene, and toxicology that evaluated metal exposures in a manufacturing facility that had served as a site for training OM residents. Groups of students and faculty planned an array of research projects, and traveled to the facility to do exposure monitoring and health outcomes monitoring among welders. In the second year, the "mixed exposures" group added veterinarians to the group and did assessments of laboratory environments where animal research was being conducted, doing air monitoring for antigenic materials, and monitoring personnel for allergic health outcomes. Between the two projects, some 14 students received research training ranging from design, protocol development, ethical considerations, program implementation, qualitative and quantitative assessment of the work, and manuscript writing.

Based on the success of this program, a second program was added in the realm of vulnerable populations. Through this mechanism, faculty were able to bring in many outside parties from non-profit organizations to partner on an array of projects that led to training of six trainees and several post docs. Several of the projects led to publication and collaborative grant writing, falling under the rubric of Community Based Participatory Research. Many of the meetings of this group involved presentations of grant proposals, manuscripts, and protocols, which have subsequently leveraged further funding for faculty and students.

On the heels of success of these two groups, a third team has been added that addresses "occupational surveillance." Faculty has established links with State agencies to receive datasets that will allow extensive occupational surveillance in Illinois. This group just began its work at the end of the project period covered by this report. Their work will dovetail with the Occupational Safety program and the Occupational Epidemiology program that are being funded as of July 1, 2008. We have already begun work in the realm of occupational amputations, surveillance of Hispanic workers, and evaluation of OSHA efforts in the State and across the US.

The NORA Research Support program provides a stable mechanism to support interdisciplinary research training. It provides a small amount of salary support to encourage faculty in the Illinois ERC to work on interdisciplinary teams, and more importantly, provides some incentive to bring faculty, staff, and students from complementary disciplines onto the interdisciplinary teams. The IOM (2000) report "Safe Work in the 21st Century" highlighted the need to broaden the field of occupational safety and health to include other disciplines such as economics, psychology, social work, etc. Our teams have made a concerted effort to expand the scope of our work to include these disciplines, and it is already paying off in terms of broadening both the vision and the expertise that comes about from bringing

transdisciplinary expertise to bear on occupational health and safety problems. Collaborative proposals have been written as a direct result of actively engaging in team activities.

The team approach allows for more effective and consistent research training of students in the ERC. By being a part of the team, trainees have access to a larger group of faculty who can provide formal and/or informal training and mentorship. The team approach allows for review of progress by more than the trainee's research advisor. The research advisor continues to have the primary responsibility of training and mentoring the student, but is supported by an interdisciplinary team. The teams have regular meetings. The meetings are devoted to developing new projects, meeting with community partners, reviewing literature relevant to their team's goals and objectives, inviting outside experts to present new methods or research results, reviewing research proposals, presentations, or publications prior to submission.

All trainees in the Illinois ERC are required to conduct research including a capstone presentation. For MS and PhD trainees, the capstone is MS thesis or PhD dissertation. MS trainees must take 8-16 sh of MS research under the direction of their research advisor. PhD candidates are required to complete 32 sh of PhD research. Trainees are assigned an academic advisor at the time of matriculation. Their research advisor is selected prior to their starting their research and does not have to be same person as their academic advisor. A research committee comprised of 3 members for MS and 5 members for PhD students is required by the Graduate College at UIC. The research advisor serves as the committee chair. Regardless of project or degree program, the research committee has ultimate responsibility for progress and evaluation of the student's research. In this program, the research advisor and Interdisciplinary Research Team work with the student to determine the role of the student on the team. Students are expected to participate in the interdisciplinary projects, and to take "ownership" of some aspect of the project that will form the basis for their research requirement.

MS trainees typically complete their program in two years of full-time study. They are expected to begin their research work at the end of their first year or equivalent length of study. Each team presents research projects and opportunities that are available during the Interdisciplinary Seminar during the Fall and Spring semesters and to the Illinois ERC Executive Committee so that program directors can facilitate trainee involvement on the teams.

ii. Plan for Instruction in Responsible Conduct of Research

All trainees in the NRS program and in the Illinois ERC receive instruction in the Responsible Conduct of Research. Some of this is done formally through the Interdisciplinary Seminar or through training provided by the Office of Protection of Research Subjects. Some training is conducted informally by the Research Advisor and Research Committee. Additionally, trainees participating on Interdisciplinary Research teams will receive additional instruction as part of the team.

In an effort to support the research endeavors of UIC investigators, advance their own interest in research, and ensure that research at the University of Illinois is carried out in accord with the highest ethical standards, all faculty and students are required to receive formal training in human research subjects protection, the protection of health information, and if applicable, training in the humane use of animals in research and teaching. This formal training is organized through the Office for the Protection of Research Subjects, which also provides administrative support for the review and approval of research protocols involving humans, animals, and recombinant DNA or infectious agents. This training in research integrity, ethical behavior, and responsible conduct is also underscored in the classroom. The Office for the Protection of Research Subjects maintains a training database of human subject protection and research ethics and notifies faculty and students when additional training is required. Finally, the large amount of funded research that supports many students and offers practical

training also provides practical opportunities to understand the application of human research protection.

2. Outcomes, Relevance, and Impact

a. Description

Table NRS-1 shows the output measures for the NRS Program. Each team defines its activities to ensure that trainees actively participate as a member of the team, that trainees have defined roles on the research project(s), and that trainees are getting didactic and practical training to meet the overall training goals of the program. The teams define field and laboratory, and in the case of the surveillance team, data analysis projects that are interdisciplinary in nature, address a NORA priority area, and involve trainees. Examples of the types of projects along with their outcomes are described below. Trainee involvement including degree and discipline, research mentors, research project, publications, and collaboration is shown in Table NRS-2.

We developed and delivered a research seminar series that was included into our weekly interdisciplinary seminar. In the subsequent years of the program, we held special two-hour seminars with an informal meeting/reception following the seminar. This allows a longer discussion of the topic than could be had during the one-hour weekly seminar. In the last four years recognized researchers and/or policy makers were invited to present on topics related to the proposed interdisciplinary research. In order to include the widest possible audience for these research seminars, we presented the seminars via computer link to remote sites (University of Illinois campuses in Urbana, Rockford, Peoria, and Quad Cities). Table NRS-3 lists the research seminars for the project period.

The NRS program continues to support projects in all capacities across a broad spectrum of research disciplines. Administrative support often includes management of data and Internal Review Board documents. Technical support is provided in the form of tools, technology, and knowledge that allows for exposure assessments and worker health protection to cooperating partners. The support is available to interdisciplinary research outreach teams comprised of faculty and trainees in the ERC.

The NRS program continues the coordination of training and research among students, faculty, and staff in Industrial Hygiene, Occupational Medicine, Occupational Health Nursing, Agricultural Safety and Health, Occupational Epidemiology, Occupational Safety, Biostatistics, Veterinary Medicine, Psychiatry, and related supporting disciplines. Trainees involved in projects are specifically trained from hypothesis to technical details in preparation for field and/or laboratory studies.

b. Projects

i. Respiratory Health Effects in Production Welders and Non-welders

This project involved a team of faculty from medicine, hygiene, and toxicology that evaluated metal exposures in a manufacturing facility that had served as a site for training OM residents. Groups of students and faculty planned an array of research projects, and traveled to the facility to do exposure monitoring and health outcomes monitoring among welders.

ii. New Welder Field Study

The rationale is that a cohort of new welders is likely to have had little to no welding exposure and will be better suited to investigate early and more subtle health effects associated with welding fume exposure. A research proposal was drafted and submitted to the UIC Institutional Review Board and subsequently approved. The new proposal involves the recruitment of forty welder trainee research volunteers. We had identified a union apprentice program as a source of study participants, but

immediately prior to recruitment, the union decided not to support the research and we are in the process of identifying another source of participants. Volunteers will be asked to undergo a battery of health effects measures before and after four hours of welding instruction and will wear personal exposure monitors during instruction. Area monitoring and a facility assessment will also be conducted to try to relate the amount of welding with welding fume area concentrations.

iii. Welding Fume Characterization

With support from the Mixed Exposure Team and from the Pilot Projects Research Training program, Dr. Erdal constructed an emission chamber in the Welding and Joining Laboratory. The chamber was tested and validated and subsequently used for a project characterizing welding emissions encountered by artist welders. The pilot data collected in these activities formed the basis for a successful K01 application, funded by NIOSH for Dr. Erdal. The work on that project is progressing and is supporting two industrial hygiene students, one who is a NIOSH funded IH trainee.

iv. Molecular Responses on Lung Epithelial Cells in Vitro Following Chromium and Manganese Exposure.

Condensed vapors of heavy metals are a significant hazard of welding activities, associated with an increased risk for developing respiratory disease. Chromium, nickel and manganese are predominant metals in welding fumes, and were therefore the focus of the present study. Molecular and cellular effects of heavy metal exposure to lung epithelial cells in vitro were investigated using cytotoxicity assays, immunoblot analysis of protein phosphorylation and immunochemical detection of the inflammatory cytokines IL-6, IL-8 and TNF-alpha. We show that chromium(VI) and manganese, but not nickel, are cytotoxic to normal human lung epithelial cells (SAEC and BEAS-2B) in vitro, at concentration ranges correlated to concentrations of these metals found in welding fumes. Chromium(VI) and manganese (0.2 – 200 mM) caused cytotoxic effects within one hour post-treatment, with a maximal effect of 64% and 60% loss of cell viability, respectively following 24 hrs exposure. The toxic effect was associated with increases levels of intracellular phosphoprotein levels and subsequent release of inflammatory cytokines IL-6 and IL-8. Therefore, the observed effects of chromium(VI) and manganese in lung epithelial cells demonstrate a mechanism through which cytotoxicity of these metals can result in inflammatory responses in the lung, a hallmark of various respiratory diseases.

v. Agriculture Exposure

Data analysis and manuscript preparation for the field project conducted in Jan 2004 is continuing. One IH trainee is using the data for his MS thesis. An OHN trainee completed the NIOSH spirometry course and used some of the data in her research methods course.

vi. Laboratory Animal Exposure

Several projects have been undertaken examining exposure and possible health effects to laboratory animal workers. These projects involved ERC faculty and trainees as well as veterinarians and a veterinarian post-doctoral fellow. Dr. Dorevitch led two health projects; the first was a study of sensitization to common allergens in workers exposed and unexposed to laboratory animal allergens, and the second is a study of association of H. pylori IgG antibodies and allergic sensitization. The first project involved an OM trainee and the second involves a PhD student in epidemiology. We have completed two exposure studies. One was a study to determine occupational exposures to and emission rates of various animal related agents in a rabbit housing rooms. The manuscript resulting from this study has been submitted for review. The other study determined emission rates and occupational exposures as well as the effects of changing the cage design. One IH trainee used the data for her MS thesis. We expect 2 publications to result from this project. A new project is in progress to

investigate personal exposure in research mice rooms. This study will assess exposure to mouse allergens and endotoxin as a function of specific work practices with the option for work practice interventions to reduce exposures. The study also involved collecting exhaled air with analysis for carbon monoxide and nitric oxide that are markers of respiratory inflammation, and conducting skin prick allergy testing. The field data collection is complete and laboratory analysis of samples is currently under way. Fifteen IH trainees, 2 OM trainee, an undergraduate biology student, a PhD student in epidemiology, and a post-doctoral fellow in veterinary medicine, along with 4 ERC faculty and staff members and two faculty veterinarians were involved in these projects.

vii. Respiratory Health Effects Associated with Demolition

A multi-day sampling project characterizing dust generated during building demolition was completed in Dec 2003-Jan 2004. The results of these sampling events will provide a detailed characterization of dust emissions resulting from demolition activities and of the size distribution of the generated dust. The results were used in cooperation with a project to conduct biological monitoring of individuals with varying degrees of asthma living in close proximity to the demolition sites to determine the effects of demolition activites on asthma exacerbation. Several publications have resulted from this work. Several IH faculty members, occupational physicians and student trainees were involved with this project.

viii. Integration of Clinical Occupational Services and Labor Rights Training and Prevention

The goal of this project is to improve workplace safety and health for low-wage immigrant workers with three objectives: 1) to improve identification of occupational hazards among outreach volunteers at the Chicago Interfaith Workers' Rights Center; 2) to identify appropriate referral needs and enable at-risk workers to access occupational medicine services; and 3) to improve the ability of the occupational medicine clinic staff to identify and refer patients at the Interfaith Workers' Center for counseling and follow up. A series of interventions with evaluation of the outcomes were carried out. The project involves 1 IH trainee, 2 SPH students, 2 CDC-funded post-doctoral fellows, and 2 ERC faculty members. One publication has resulted from this work and another has been submitted for publication.

ix. Occupational Injuries and Hazards among Immigrant and Minority Workers in Chicago

The goal of this project is to reduce day laborers' exposures to hazards on the job. Components include working with four worker centers to understand how to create good worker health and safety practice and increase day laborers access to occupational health services. The project included 1 ERC faculty member, 1 staff member, 2 IH trainees. Output included one MS thesis and 2 conference poster presentations. One article is being prepared for publication.

x. Intervention Effectiveness for Reducing Injuries and Illnesses through Workers' Centers in Chicago

Day and temporary laborers work in the informal sector (employers are generally "under the radar"). They are mostly Latino males, work in dangerous occupations (demolition, construction, and landscaping), and face a variety of work, community, and home issues. An intervention to reduce injuries and illnesses in this group has been planned. The intervention will be conducted in collaboration with 4 worker centers in Chicago. One staff member and collaborators from Chicago Labor Studies program and College of Education are involved in data collection.

xi. Blood Lead Levels and Clothing Dust Wipes for Lead in Day Laborers

This is a pilot project of blood lead levels and clothing dust wipes for lead in Albany Park day laborers performing demolition activities. One faculty member, 1 staff member and 1 trainee participated in data collection. The results were used for submission of a successful PPRT grant and a journal article is in preparation.

xii. Lead Poisoning Prevention during Remodeling and Renovation

The project focused on reducing generation of lead using lead safe work practices (LSWP). Components include working with suppliers (hardware and paint stores) to ensure that necessary supplies are available and their purchase and use is promoted; working with renovators and remodelers to increase awareness and change behaviors in the use of LSWP; and work with day laborers to increase awareness of LSWP in construction. The ultimate goal is to harmonize public health, small business, and worker implementation of LSWP. The project includes 1 faculty member, 1 staff member, and 13 IH trainees. The results from a pilot study in Chicago were used in a successful application to the US Environmental Protection Agency, Region 5 to expand the project to large cities in Illinois and to other cities and towns in our region.

xiii. Increasing Awareness of Workplace Hazards and Their Control for Homecare Workers

This project focuses on an employer, union, and university partnership to increase recognition and reduce exposure of occupational hazards in homecare. Using participatory research methods, interventions were identified including training and program implementation. This project includes 3 faculty, 3 staff, and 7 trainees. Data collection is ongoing and one PhD dissertation and several publications will result from this work.

xiv. Intervention Research to Reduce Eye Injuries in Latino Farm Workers

This is a collaboration between UIC, University of South Florida, and Florida A & M University to develop, evaluate, and disseminate a model for reducing traumatic injuries to Florida citrus workers. The project participants are currently drafting two manuscripts for publication, and planning a collaborative proposal for funding.

xv. Intervention Research to Reduce Burns in Food Vendors

Research is being undertaken to characterize burns among food vendors at O'Hare Airport as the first step in an intervention project. Most of the workers are minimum wage, and Latino. An OM trainee used the project as his MPH capstone project.

xvi. Occupational Injuries in Hispanic Workers

This will be the first project of the new Interdisciplinary Research team focusing on occupational surveillance. They will be utilizing datasets from the Illinois Department of Public Health (IDPH) and Illinois Workers Compensation Commission to look at specific sentinel events (burns, carpal tunnel, death, pneumoconiosis, traumatic injuries) among Latino workers.

D. Conclusions

The NRS program has had a significant effect on the academic training programs and the research directions of the Illinois ERC. The program has provided support for Interdisciplinary Research teams and some funds to support field and laboratory studies as a mechanism for providing research training. We have successfully completed a number of projects, many of which have led to other projects,

extramural research funding, MS theses, PhD dissertations, and publications. While ERC faculty continue to pursue their individual research interests, the NRS program has resulted in 3 groups of faculty that are pursuing research activities in an interdisciplinary manner and are providing practical training in interdisciplinary research methods to trainees.

E. Publications and Tables

Publications and presentations by program area are included in Appendix 1. All tables are included in Appendix 2.

VI. Continuing Education Programs

A. Background

The Continuing Education (CE) program at the Illinois-ERC, in existence since 1977, is devoted to training health and safety professionals to excel in our field, to educate workers and communities about key workplace health and safety issues which affect them, and to provide technical assistance to labor, management, health care institutions, government agencies, and local communities in addressing workplace environmental challenges. Every year we provide a large array of occupational health and safety educational services which benefit thousands of people. CE offers short courses and conferences to enhance the ongoing professional development of health and safety professionals in occupational medicine, occupational health nursing, industrial hygiene, and occupational safety. We also specialize in providing programs to address particular topic areas, e.g. hazardous substances. Our outreach efforts include initiatives designed to meet the needs of targeted industrial sectors (schools, health care and agriculture) and underserved populations such as personal care assistants, day laborers, temporary workers, artists and performers. Consistent with the NIOSH definition of customer, the audience for Illinois-ERC programs includes anyone who will benefit from training, e.g., employers, health and safety experts, employees, government agencies, and communities.

1. Major Changes (None)

2. Faculty

Core CE program faculty and staff have extensive experience in the design of occupational safety and health programs and have directed the Illinois ERC CE program for a number of years. Leslie Nickels, MEd, full time, lecturer, academic professional and Program Director of CE and Joseph Zanoni, MILR, full time academic professional and Associate Director for CE can be credited with the growth of CE as one of the Illinois ERC's most successful components.

Each academic program area has a faculty or staff member who works with the CE core staff to plan, implement and evaluate CE programs related to their discipline or expertise. These include Susan Buchanan, MD, MPH, Occupational Medicine; Jacqueline Wuellner, RN, MPH, Occupational Health Nursing; and Steven Lacey, PhD, Industrial Hygiene and Safety. Faculty have developed and taught in short courses and provide valuable liaison to professional associations.

Both the Advisory Committee (the external professionals and representative that provide feedback to the ERC Director) and Executive Committee members (the Directors, Associate Directors and Program Managers and staff) are also active in CE program planning and implementation.

3. Curriculum

The CE program plan primarily includes courses with regional training provider partnerships, courses for health and safety experts (classroom and distance-based courses), and courses for non-experts. Courses are developed through a process that includes program area faculty, a curriculum planning committee which may include faculty and others, a course director, and a course manager. Courses which are offered multiple times per year are assessed annually for their continued relevance to the target audiences.

All courses provide continuing education units. Additionally, where appropriate, courses carry ABIH maintenance points, continuing medical education units, and approval from licensing agencies such as

Illinois Emergency Management Agency and certification organizations such as the National Radon Safety Board and the National Environmental Health Association.

4. Trainees

Participants of our courses and events are not considered trainees but are from many specific areas of professional occupational health practice or are workers interested in expanding their knowledge of occupational health. Academic program trainees are encouraged to participate in CE programs.

B. Specific Objectives

The Illinois ERC CE program supports the goals and objectives of the NIOSH Training Grant Program and the WHO Global Plan of Action on Workers' Health 2007-2017. Objectives are enumerated below (in Section 3: Results).

C. Results

While discipline-specific outreach is detailed in the Outreach section of Center Administration, the outreach related to continuing education is described below.

1. Progress

Objective #1: Provide educational opportunities for the ongoing professional development of occupational and environmental health and safety practitioners and researchers in Illinois, Wisconsin, and Indiana

Our Continuing Education program prides itself on bringing occupational safety and health content to large and diverse, both expert and non-expert, audiences. We have met and expect to continue to meet NIOSH objectives for CE participants by program area. (A listing of our many courses and a tally of participants can be found in Appendix 2, Table CE-12a.)

Objective #2: Continue to develop partnerships with local occupational and environmental health and safety professional associations, government agencies, and non-governmental organizations (advocacy groups, labor organizations, employers, and trade associations) to conduct needs assessments and training programs.

The Illinois ERC embraces the philosophy that communication and cooperation, rather than competition, will enable training providers to offer the highest quality of training. Therefore, we make a special effort to partner with other organizations to assist them in providing training and education, to complement their training efforts with our own programs where we see gaps, to extend their capabilities in reaching new audiences. For example, we participate in courses and events of professional organizations as presenters, guest speakers and/or exhibitors, enhancing the scope of training by bringing information about relevant research to practitioners. We create educational programs for employers and unions, training employee-trainers who can continue to train co-workers after our involvement ends. We help government agencies reach out to workers with particularly challenging work circumstances or special needs. We aim to provide services at the local, national, and international level.

A sampling of our partners for the period 2003-2008 follows:

Local and regional partnerships

Chicago Chapter American Industrial Hygiene Association, Illinois Safety Council, OSHA Region V, National Safety Education Center at Northern Illinois University, Truman College Business and Industry Services, Medical Directors Club, Respiratory Health Association, Chicago Department of Public Health, Healthy Schools Campaign, Department of Housing and Urban Development, Illinois Department of Public Health, Cook County Dept. of Public Health, Wisconsin Safety Council, SEIU Illinois/Indiana, Addus Homecare, Illinois Home Care Council, Illinois Community of Care Program, Illinois Department on Aging, Ambulatory & Community Health Network of Cook County, and the Division of Labor Studies at Indiana University Northwest.

National and other partnerships

CDC, NIOSH, Healthy Homes Coalition, University of Washington, University of Massachusetts Lowell, University of Maryland, and University of Michigan ERC.

International partnerships

International Congress on Occupational Safety and Health, National Institute of Occupational Health South Africa, Health Care Without Harm, World Health Organization, and International Labor Organization.

Objective #3: Identify and utilize effective training methods, formats and tools for delivering training

The Illinois ERC has a long track record in designing and selecting the best, most appropriate means for achieving particular course objectives, reflecting our commitment to respecting learner-centered adult education principles. We choose from a variety of methods (e.g., case studies, problem solving, small group activities, demonstrations, in addition to lecture), settings (the classroom, the laboratory, field trips), formats (e.g., conferences, workshops, seminars, and laboratories), and we offer learners flexibility (e.g. one-on-one mentoring, self-study, web-based distance learning). Examples include conferences with workshop components (Home Care Conference); courses with a lecture built into small group activities (bloodborne pathogens training); field trips (Labor and Occupational Health Tour); and self-study continuing education (methylparathion on-line CME course).

The Illinois ERC is a leader in using technology for health and safety training. The CE program was in the forefront at the School of Public Health and UIC in offering distance-based (D-B) learning opportunities for continuing education. D-B technology is an important method of delivery that is ideal for some courses. Even for courses delivered in a class/workshop format, D-B technology provides the opportunity to both archive programs and make them available to those who were unable to participate at a specific time and place. In addition to courses designed entirely for Internet delivery, we have also incorporated into most courses an objective for improving computer use in addressing health and safety issues. Over the past five years CE has worked with faculty and staff in all core program areas to develop D-B short courses (both web-based and video-conferencing), web-based conferences, web-based seminar series, and hybrid courses that include web and face-to-face training. Further, course materials are created on CD-ROM to accommodate students who don't have access to fast Internet connections.

Objective #4: Underserved and Minority Populations

One of the most important missions of the CE program is to address the needs of underserved and minority populations. To that end faculty in the Illinois ERC have active research projects on health and safety issues affecting homecare workers, immigrant workers, day laborers, and temporary workers. Developing and maintaining relationships with worker representatives has been critical to the success of these efforts; the input we receive from joint union/management health and safety committees, worker center staff, and worker leaders has been instrumental in shaping our research and teaching. Research highlights include our work with community organizations (i.e., worker centers) which serve low wage immigrant day laborers. We explored hazards of construction work and frequency of injuries in construction day laborers (Buchanan); examined the role of worker centers in accessing occupational health services for day laborers (Nickels); studied the impact of informal interaction as a method of transmitting health and safety information in this population (Zanoni); explored interactive methods to teach health and safety concepts to day laborers learning English (Haddadin).

In addition to research CE has developed a variety of educational programs for minority and underserved populations. Highlights include the following:

- OSHA 500 courses and OSHA 10 hour construction courses in Spanish for day laborers and temporary workers. The ERC funded worker center participants to take the courses and provided them lost work time wages through the resources of the Targeted Research Training program. Instruction was given by our partners at Truman College Business and Industry Services, Northern Illinois University National Safety Education Program, OSHA Calumet City Area office, and the Illinois On-site consultation program.
- documenting the needs and working conditions of minority workers in sweatshop employment.as a member of the Workers Rights Initiative (an umbrella group of labor, community and faith based organizations which advocates for immigrant and low wage workers)
- creating a 16 hour health and safety curriculum on bloodborne infectious disease prevention in Russian for Russian speaking health care workers for a joint health care employer and union initiative.

Objective # 5: Develop teaching and training knowledge and skills in students in the academic program areas.

CE continues to work closely with the academic programs to provide opportunities for students to enhance their skills and capabilities. For example, four NIOSH trainees participated in the OSHA 511 Standards for General Industry course in March, 2007 held at the UIC School of Public Health in collaboration with the National Safety Education Center.

CE has positions for one to three students per year to assist in curriculum development as research assistants. Students have worked on radon, day labor construction hazards, lead poisoning prevention, health and the arts, healthy schools, and the GeoLibrary. CE also offers students opportunities to participate in all CE courses at no cost and provides field opportunities. ==

Objective # 6: Increase resources (financial and faculty) for program development and implementation

Additional resources to support CE activities come from other grant support, conference grants, and technical assistance. Examples include:

- a State Indoor Radon Grant (SIRG) from EPA through the Illinois Emergency Management Agency to create a new internet-based continuing education program describing GIS and its use for radon measurement and mitigation professionals
- funding for lead safe work practices and creation of a home care training database
- a NIOSH funded program to research, review and develop a tool for evaluating curricula for home care workers.
- creation of an elder abuse prevention curriculum and conducting a train-the-trainer program for John Stroger Hospital employees (the largest public hospital in Chicago), as consultants to the Illinois Dept. of Aging.

Objective #7: Evaluate the continuing education program for student satisfaction, instructor and material quality, implementation outcome, and program effectiveness in meeting its goals

The participants of each CE event are offered participant satisfaction evaluations at the close of the event. These evaluations are gathered and analyzed by both the program director and the CE staff the supports the training events. These evaluations are then kept in the specific course folder in the CE office.

Recent attempts to better understand the impact of continuing education through post-course interviews and surveys suggest that participants change the way they work after attending a course. The Elder Abuse Prevention Train-the-Trainer sessions held in 2007 is one such example. All of the participants (35 people) were contacted by email and/or telephone during a one week period, 19 weeks after the training. They were all asked the same list of questions about the content of the training and actions they may have taken as a result of the training. Of the 10 respondents, most were positive, stating that the session was informative, with good material and resources, and that the training had helped them to look for signs of abuse beyond the physical manifestations of abuse for their senior patients. For instance, one social worker reported calling a community-based agency to investigate a family situation where elder abuse may have been involved. Some took the information from the training to their friends or churches. In this way it seemed the curriculum had a spill over effect into the home and family lives of participants. Interviewees also provided important feedback on how the curriculum could be improved, i.e., that basic, most understandable concepts should be presented first and then move to more troubling and complex issues such as those involving poverty, racism or sexism. They also suggested getting the patient's input to assist in creating the solutions, a principle we have incorporated into subsequent projects where a client, customer or patient is involved in addition to the workers.

2. Other important components of our program

a. Hazardous Substances Training

The Hazardous Substances Training Program (HST) Program, directed by Symantha Aydt, develops and conducts several types of continuing education courses for public sector occupational health and safety employees in state, county and municipal government. Our aim is to improve their knowledge, technical skills, and awareness of key issues related to hazardous substances (i.e., control, safe handling, remediation, transportation, emergency releases). Some examples follow:

- The HST Program has collaborated with local health and police departments to develop programs for planning and responding to hazardous materials incidents.

- Through a special recruitment effort, we successfully increased participation of local public health department staff in attending our 40-hour programs.
- We have conducted a 4 hour Incident Management System Awareness Program, 3 hour Hazwoper Awareness courses, 8 hour Haz-Com Compliance courses, 4 hour Incident Management Awareness classes, and 4 hour Hazwoper Awareness classes.
- We track changes in relevant EPA regulations and provide annual updates to clients in refresher courses

HST Program presentations at conferences/meetings included the following:

- "Hazardous Materials and the Industrial Employee" at the Illinois Safety Council Annual Conference in May 2008 to raise awareness of OSHA compliance requirements
- The need for PPE in the agricultural industry. 2008 Southern Illinois Medical School Agricultural Occupational Health training to doctors and other medical staff.

b. Agricultural Safety and Health

The mission of the Agricultural Safety and Health Continuing Education program, directed by Dr. Robert Petrea, is to educate farmers, students, health and safety professionals, academics, and the agriculture industry about agricultural health and safety hazards. We conduct conferences and classes, produce educational materials, and provide technical assistance. Highlights include the following:

- We planned, implemented and evaluated a conference on aging farmers, "The Aging Farm Community, held in Indianapolis, IN in 2007, which attracted 40 farmers and academics. Conference details and peer reviewed articles can be found in the *Journal of Agromedicine*, Volume 13, #2, 2008.
- ASH–CE continues to be active in creating ag safety curricula for high school students. Two modules, "Human Safety Issues in Livestock and Poultry Production Environments" and "Human Illness and Disease Issues in Livestock and Poultry Production Environments" were developed for Illinois Secondary Agriculture Programs for distribution to 310 agriculture programs in high schools and also placed on the national Agricultural Extension web site http://www.extension.org/pages/Manure_Storage_Safety
- We provide technical assistance to the Safety Committee of the Illinois Association of Aggregate Producers (owners/operators of stone quarries, sand and gravel pits and recyclers who produce aggregates for construction); give safety presentations to aggregate producers in western and northwestern Illinois and to southern Illinois surface mining companies on topics which augment required OSHA training; conduct tailgate presentations which are then posted on the IAAP website
- In our continuing collaboration with the UIUC medical school (begun in 1996) we lecture Rural Medicine students.
- Finally, Dr. Petrea serves as the Executive Director of the Agriculture Safety and Health Network, which assists in training health professionals and establishing rural occupational clinics for farmers and their families

c. Geolibrary

In 2005 the Illinois ERC CE program began to develop an electronic library of training materials and practice tools on occupational and environmental health, called Geolibrary. (www.geolibrary.org). The materials contained in this library come from governmental institutes and agencies, academic

institutions, corporations, unions, international organizations, and non-governmental organizations. Geolibrary materials are in the public domain, and they are available to the user free of charge. The library user information is available in six languages. A new feature for 2007-2008 was the addition of "specialty libraries", e.g., "Road Safety for Workers", led by NIOSH. In the next year we anticipate creating another specialty library, adding 500 materials and orienting 10 new contributing editors to the GeoLibrary.

D. Conclusions

The Illinois ERC has been committed to putting into practice the aims and goals of the NIOSH training grants program since 1977. Over the past 30 years we have worked with professional associations, government agencies, other university and college programs, and individuals to understand and address the occupational safety and health training needs in our region, nationally, and internationally. The Illinois ERC has been successful at far exceeding the minimum number of 400 trainees (participants) per year in CE in the traditional occupational safety and health disciplines as well as reaching others active in health and safety in our region. Between 2003 and 2008 the Illinois ERC reached 1,979 physicians, 862 nurses, 867 industrial hygienists, 3,171 safety professionals, and 9,222 other occupational safety and health professionals, as well as paraprofessionals, technical workers, and health and safety committee members, for a total of 16,101 participants in our courses.

E. Publications and Tables

Publications and presentations by program area are included in Appendix 1. All tables are included in Appendix 2.

VII. Industrial Hygiene

A. Background

1. Major Changes

Major changes and accomplishments in the Industrial Hygiene program since the competitive review in 2003 include:

- The promotion of Dr. Serap Erdal to Associate Professor with tenure and Dr. Linda Forst to Professor
- Significant upgrade to the toxicology curriculum with the addition of two new courses, EOHS 455 Environmental and Occupational Toxicology (3 sh) and EOHS 555 Advanced Topics in Toxicology (3 sh)
- Strengthened PhD curriculum with a new required course, EOHS 557 Design and Analysis of Experiments (3 sh)
- Substantial increase in extramural support
- Improved recruitment with a connection to UIC College of Engineering students and the Graduate College's Summer Research Opportunities Program (SROP) minority student recruitment program
- Improved collaboration with the College of Engineering including the teaching of IE 341 Ergonomics and Human Factors and IE 461 Safety Engineering by IH faculty

2. Faculty

The core members of the IH faculty include Drs. Peter Scheff, Steven Lacey, Nurtan Esmen, Lorraine Conroy, John Franke, and Mr. Salvatore Cali. All IH faculty are listed in Table IH-3 in Appendix 2.

Dr. Scheff was the Director of the Industrial Hygiene program for the project period. He announced his retirement effective August 2008. Dr. Steven Lacey, CIH, CSP, will be the new Interim Director of the Industrial Hygiene Program as of August 2008. Dr. Lacey is an Assistant Professor of Environmental and Occupational Health Sciences (EOHS) within the School of Public Health, and holds an appointment in the Department of Mechanical and Industrial Engineering. Dr. Lacey has been on the faculty since 2004. His research interests include exposure reconstruction methods to inform occupational epidemiology, exposure assessment, and injury prevention. He currently serves on the Board of Directors of the American Industrial Hygiene Association, and he is faculty advisor to the UIC AIHA Student Chapter.

Dr. Nurtan Esmen is a Professor of EOHS and faculty scholar within the University's Institute for Environmental Science and Policy. His research interests include the application of engineering principles and mathematics to occupational and environmental health problems with special emphases on aerosol physics, exposure estimation and characterization, and theory of decision-making in environmental health sciences. He is a research advisor to numerous IH trainees, teaches EOHS 557 Design and Analysis of Experiments (a required course for doctoral students), is PI of the Pratt and Whitney retrospective exposure analysis project and is very active in service to the profession. Dr. Esmen is a Fellow of the American Industrial Hygiene Association and a Fellow of the Royal Society of Health.

Dr. Lorraine Conroy, CIH, is an Associate Professor of EOHS and Principal Investigator of the Illinois ERC grant. Her research interests include characterizing workplace contaminant sources, ventilation system model development and validation, and workplace exposure assessment. She is a research advisor to IH

trainees, teaches EOHS 421 Fundamentals of Industrial Hygiene and co-teaches EOHS 523 Engineering Controls and is very active in service to the IH profession.

Dr. John Franke, CIH, is a Research Assistant Professor of EOHS. He teaches EOHS 570 Hazardous Materials Management and co-teaches EOHS 523 Engineering Controls. His research interests include characterizing workplace contaminant sources, ventilation system model development and validation, and workplace exposure assessment. In addition to his work within the Division, Dr. Franke is the Director of Environmental Health for Evanston Hospital.

Mr. Salvatore Cali, CIH, is an Instructor and Senior Research Specialist of EOHS. He is the deputy director of the IH program and teaches EOHS 428 Industrial Hygiene Laboratory I. Mr. Cali is also the project coordinator of the Health Hazard Evaluation (HHE) Program of the Great Lakes Center of Excellence in Environmental Health.

Key support faculty include Drs. An Li, Serap Erdal, Dan Tessier, Dan Hryhorczuk, Linda Forst, Rosemary Sokas, and Dave Jacobs, and Mr. Mike Selway, CIH, and Jack Standard, CIH.

3. Curriculum

The Industrial Hygiene training program supports students in the MPH, MS and PhD degree programs. The MS is structured to take 2 years of full-time study to complete and includes a thesis. The PhD usually takes 3 years post MS and includes a dissertation. Trainees in these degree programs are integrally involved in the Division's research program. Industrial Hygiene trainees are also involved in a comprehensive interdisciplinary program that includes field research with trainees from the other occupational health disciplines, the weekly center-wide interdisciplinary seminar, participation in Occupational Medicine clinics, working with NORA research teams, and completion of the core Illinois ERC coursework.

Masters Training in Industrial Hygiene: The academic requirements for obtaining an ABET-accredited MS and receive NIOSH Traineeship support in Industrial Hygiene is shown here:

Table IH-1. Required Courses for MS in Industrial Hygiene		
Course #	Name	Semester Hours
SPH Core Requirements		
EPID403	Introduction to Epidemiology: Principles and Methods	3
BSTT400	Biostatistics I	4
BSTT401	Biostatistics II	4
ERC Interdisciplinary Core Requirements		
EOHS421	Fundamentals of Industrial Hygiene	2
EOHS482	Occupational Safety Science	2
either EOHS455	Environmental and Occupational Toxicology	3
and EOHS554	Occupational and Environmental Epidemiology	2
or EOHS551	Occupational and Environmental Diseases	4
Industrial Hygiene Requirements		
EOHS405	Environmental Calculations	2
EOHS424	Environmental Acoustics	2
EOHS428	Industrial Hygiene Laboratory I	2
EOHS431	Air Quality Management I	3
EOHS438	Air Quality Laboratory	2
EOHS523	Engineering Controls/Industrial Ventilation	4
EOHS529	Industrial Hygiene Laboratory II (Field Studies)	2
EOHS570	Hazardous Materials Management	3
EOHS584	Radiation Protection	3
Research		
IPHS598	Research in Public Health Sciences	16
Required + Research = 42 to 43 + 16 = 58 to 59 Semester Hours		

All MS students who receive NIOSH traineeship support complete this full curriculum as full-time students. Note that students starting in the fall of 2007 were required to take EPID 403 to fulfill the epidemiology requirement. Trainees are encouraged (and most do) to attend the annual meeting of the American Industrial Hygiene Association and present the results of their thesis research. Travel support for IH trainees is available through the NIOSH grant and the Graduate College at UIC.

The academic requirements for obtaining an ABET Accredited MPH and receive NIOSH Traineeship support in Industrial Hygiene are shown below. The MPH capstone project gives the student an opportunity to demonstrate the integration of core public health skills into their discipline, and often includes field projects that provide professional experience to the students. MPH students who accept NIOSH traineeship support are also required to participate with the MS and PhD trainees in all center-wide interdisciplinary activities.

Table IH-2. Required Courses for MPH in Industrial Hygiene		
Course #	Name	Semester Hours
SPH Core		
BSST400	Biostatistics I	4
CHSC400	Public Health Concepts and Practice	3
CHSC401	Behavioral Sciences in Public Health	3
EOHS400	Principles of Environmental Health Sciences	3
EPID403	Introduction to Epidemiology: Principles and Methods	3
HPA400	Principles of Management in Public Health	3
IPHS650	Field Experience in Public Health	3-5
IPHS698	Master of Public Health Capstone Experience	1
ERC Interdisciplinary Core		
EOHS421	Fundamentals of Industrial Hygiene	2
EOHS482	Occupational Safety Science	2
either EOHS455	Environmental and Occupational Toxicology	3
and EOHS554	Occupational and Environmental Epidemiology	2
or EOHS551	Occupational and Environmental Diseases	4
Industrial Hygiene Requirements		
EOHS405	Environmental Calculations	2
EOHS424	Environmental Acoustics	2
EOHS428	Industrial Hygiene Laboratory I	2
EOHS431	Air Quality Management I	3
EOHS438	Air Quality Laboratory	2
EOHS523	Engineering Controls/Industrial Ventilation	4
EOHS529	Industrial Hygiene Laboratory II (Field Studies)	2
EOHS570	Hazardous Materials Management	3
EOHS584	Radiation Protection	3
Recommended electives		
BSTT401	Biostatistics II	4
EOHS440	Chemistry for Environmental Professionals	3
EPID404	Intermediate Epidemiologic Methods	4
Required + Electives = 54-59 Semester Credits		

Doctoral Training in Industrial Hygiene: In contrast to the MS which is a highly specified degree, the PhD is very flexible and tailored to each student's specific needs. Because of this, doctoral students are admitted to the program only after a member of the faculty takes on the role of research mentor and agrees to support the student's research efforts. During their first year of residency, doctoral students must complete a program of study which specifies how all prerequisites of the IH program are met and identifies the major and collateral areas of focus. For students interested in NIOSH support, the major area of focus is industrial hygiene. The collateral area is a discipline that will support the student's specific research goals (often biostatistics, epidemiology or toxicology). The major points of assessment for doctoral students are the preliminary exam, the presentation and defense of a dissertation research proposal, and the defense of the dissertation research.

4. Trainees

IH trainees are general applicants to EOHS and the School of Public Health. We look for students with a degree in the sciences, a good GPA (usually greater than 3.0 on a 4.0 scale), GRE scores of at least 1000 (math and verbal combined), and good math and chemistry background. Applicants are required to take the GRE, and to have taken two semesters of calculus, a year of general chemistry, at least one semester of organic chemistry, and a course in human physiology. An undergraduate degree in the sciences or engineering is preferred. In unusual cases, if a program prerequisite is missing, permission may be given to take it in the first semester of residence.

The criteria for admission to the doctoral program are the same as for the MS with the addition of a master's degree in industrial hygiene or a related science discipline and demonstration of research aptitude. Students who do not have a research experience at the master's level may be required to complete a MS in EOHS before they matriculate into the PhD program.

Traineeship support is given in the first year of the program and renewed for students who make satisfactory progress during their first year in the program. NIOSH trainees are also supported as a Research Assistant (RA) on an extramural research grant or as a Teaching Assistant (TA) from University funds. One important benefit of the RA/TA support is that the Graduate College waives tuition and fees for students with a minimum 25% research and/or teaching job on campus. This allows us to maximize the use of the NIOSH student support on traineeships and not tuition.

B. Specific Objectives

The two major goals of the academic training program are: (1) to develop industrial hygiene practitioners with as much practical experience as possible; and (2) to provide a cadre of trainees, who have aptitude for research, with research training in occupational and environmental health. Over the past five years, our specific goals included:

- Maintain the commitment to the integration of research and hands-on experience within the academic IH training program.
- Maintain the extramural funding base to support the commitment to research in industrial hygiene.
- Maintain the current level of minority participation in the IH program.
- Strengthen our collaboration with the UIC Epidemiology and Biostatistics program and the College of Engineering.
- Graduate industrial hygiene practitioners to enter industry, government and academic positions.

C. Results

1. Progress toward objectives

a. Research and Research Training

IH faculty are actively involved with extramural research projects; extramural funding by faculty member is given in Table CWA-2 in Appendix 2. Projects that supported IH trainees include:

- Graduate Training in Air Pollution, (P. Scheff PI) funded by the U.S. Environmental Protection Agency to deliver short courses for professionals in the air quality management field
- Asthma and Demolition in Chicago Public Housing (S. Dorevitch PI) funded by the National Institute for Environmental Health Science

- Comparative Life Cycle Impacts of Bio and Petroleum Based Lubricants (T. Theis PI) funded by the National Science Foundation
- Epidemiologic Study of Recreational Use of the Chicago Area Waterways (S. Dorevitch PI) funded by the Water Reclamation District of Greater Chicago
- UIC and Chicago State MS/PHD Bridge to Future (N. Esmen PI) funded by the National Institute of General Medical Sciences
- Exposure Reconstruction for a Brain Cancer Epidemiological Study (N. Esmen, PI) funded by the Pratt and Whitney Corporation
- Fundamental Study of Welding Fume Inhalation (S. Erdal PI) funded by the National Institute for Occupational Safety and Health
- Tungsten Industry Pilot Study (N. Esmen PI) funded by the University of Pittsburgh
- Air Pollution Data Analysis Webcast Development & Delivery (S. Cali PI) funded by Lockheed Martin Corp contract with the U.S. EPA
- Exposure Reconstruction for September 2001 Pentagon Attack (S. Lacey PI) funded by a sub-contract with the Johns Hopkins University
- Analysis Of PBDEs In Human Placenta: Enhancing Sensitivity and Reducing Cost (An Li PI) funded by the National Institute for Environmental Health Science
- Exterior Lead Dust in Single Family Housing Demolition: A Multi-Site Investigation (D. Jacobs PI) funded by HUD
- SPORE 2-Genetic/Environmental Risk & Outcomes for Brain Tumors (F. Davis PI) funded by a subcontract with Duke University

b. Summary of graduates

Presently, the EOHS Division consists of approximately 70 graduate students in all degree categories (MS, MPH, and PhD). Since 1987 there have been 256 IH students in all degree programs, 96 of whom received full or partial NIOSH traineeship support. Over ninety-five percent of these graduates are actively working in the IH field. Forty-five graduates or students currently in the program are Certified Industrial Hygienists. The IH MS/MPH program has been ABET-accredited since 1993 and has been re-accredited to September 30, 2008. The IH program has held a relatively steady enrollment during the 2003-2008 project period.

c. Important results

EOHS IH trainees won the Student Chapter of the Year award at the 2007 American Industrial Hygiene Conference. Trainees received a number of awards and scholarships, and these are shown in Table IH-4 in Appendix 2. Under the guidance of Dr. Lacey, the students formed an AIHA Chicago Section Student Chapter, the UIC Industrial Hygiene Student Association (IHSA), in order to better integrate students into the profession and to promote service and life-long learning. IHSA has been actively meeting and performing local public service, and enjoying a very productive relationship with the AIHA Chicago Local Section.

The Industrial Hygiene training program has been very successful in the recruitment and retention of minority students. Table IH-13 summarizes minority recruitment since the beginning of the current project period. The past three Summer Research Opportunity Program (the UIC Graduate College program for minority student recruitment into graduate study) students that worked with our faculty over the past three summers have all returned for graduate study in our Division. The SROP has proven to be a stable source of minority student recruitment. Information on all IH trainees during the period July 2003 through June 2008 is included in the summary tables in Appendix 2.

Last Review The last competitive review of the IH program was during the 2007/2008 academic year. The IH program received a score of 174. The review notes that the IH program at the University of Illinois at Chicago is well established, remains strong and shows evidence of continuous improvement. No significant deficiencies or concerns were expressed. A previous concern about lack of flexibility was discussed, but this was not viewed as a serious issue. Past concerns about the focus of IH faculty research topics were judged to be no longer applicable. The research activities of core faculty, including funding and publications, were judged to be strong.

Outreach The Illinois ERC interacts closely with the group of academic organizations located within the Great Lakes Center for Occupational Safety and Health, the EOHS Division, and the UIC School of Public Health. This group offers unique opportunities for connections between state and federal entities with public health interests, including academia, regulatory agencies, industry, not-for-profit community groups, professional organizations, and labor groups.

The Industrial Hygiene program participates in a number of projects that address public health issues and provide experience and purpose to the educational mission. These projects provide an outreach mechanism that, in turn, fosters new ideas and opportunities for new activities. Outreach activities at the University of Illinois include the development of an Indoor Air Quality Laboratory with the Energy Resources Center, College of Engineering; serving on the board of the campus-wide Institute for Environmental Science and Policy; collaboration with faculty in the College of Engineering on the development of the test facility for emissions from welding; collaboration with faculty in the College of Engineering on exposure to toxic compounds in jet-engine manufacturing facilities; collaboration with faculty and staff in the College of Medicine on environmental and occupational health issues for animal-care workers; collaboration with faculty in the Division of Epidemiology on personal exposure issues; teaching IE341 Ergonomics and Human Factors and IE461 Safety Engineering for undergraduate and graduate industrial engineering students; and advising IE students undergraduate research experience.

IH faculty are also very active in outreach and service to professional organizations and government. IH faculty have served as peer reviewers most major journals in the field. Dr. Scheff is an Associate Editor for the Journal of the Air and Waste Management Association, Dr. Esmen is an Editorial Board member of the Journal of Occupational and Environmental Hygiene, and Dr. Forst is an Executive Editor for Archives of Environmental and Occupational Health. IH faculty also serve on study sections for the U.S. Environmental Protection Agency, NIOSH, the National Science Foundation and the Science Advisory Board of the USEPA.

D. Conclusions

The IH training grant has a major effect on the program. It supports key adjunct faculty who bring their professional experience into the classroom. The grant also helps to support a critical mass of graduate students to support faculty research programs. Our research training approach has provided service to local and regional business and institutions, including federal and local public health agencies of all levels, the Illinois and Missouri Departments of Natural Resources, the Illinois Department of Labor, municipal and local water quality and law enforcement agencies, and local professional organizations such as the Chicago Local Section of AIHA.

Faculty and students have authored or co-authored at least 71 peer-reviewed manuscripts that were published or accepted for publication, have presented numerous poster or platform presentations at regional, national and international conferences, and 29 MS and 8 PhD theses have been produced.

E. Publications and Tables

Publications and presentations by program area are included in Appendix 1. All tables are included in Appendix 2.

VIII. Occupational Health Nursing

A. Background

Initially funded in 1978, the Illinois ERC Occupational Health Nursing (OHN) program continues its long history of preparing nurses for leadership roles in the field of occupational health and wellness. Our graduates pursue careers in the private and public sectors, fully prepared to address both acute and chronic worker health needs and advocate for the health and wellness of worker populations. Our program offers both Masters degrees and Doctoral degrees.

Unlike traditional post-baccalaureate nursing programs, training of occupational health nurses is a multidisciplinary effort, exposing students to core courses within the College of Nursing as well at the School of Public Health where the nursing students take classes in toxicology, occupational diseases, safety science and industrial hygiene with students from related programs within the Department of Environmental and Occupational Health Sciences. The OHN student participates in academic coursework, clinical fieldwork, occupational health clinic observations, and weekly interdisciplinary seminars with other trainees. Regular field trips and site visits to local industry and museums also add to the students' depth of understanding and exposure to practical application.

The CON OHN program has the unique ability to offer its classes at all five campuses of UI, (Chicago, Rockford, Peoria, Quad Cities, and Urbana-Champaign) which allows students to increase the nursing workforce in medically underserved areas of Illinois. Use of advanced instructional technology allows us to extend the program nationally and internationally.

1. Major Changes

The major change occurring during the reporting period is the change in key personnel. This change has been described in the Center Administration section.

2. Faculty

Dr. Arlene Miller is the Interim Director of the OHN program, responsible for overseeing the OHN programmatic administration and is the primary advisor for PhD students in the OHN program. Her research interests are concerned with personal and contextual factors that affect health behavior, adjustment, and mental health. She is particularly interested in the role of cultural factors for vulnerable populations, and her work complements research on the precarious worker targeted research training group in the ERC.

Ms. Connor, a PhD candidate and Teaching Associate in the CON Department of Health Systems Sciences, shows great promise as a future faculty member, teacher, and researcher. We anticipate that she will assume the position of OHN Program Director when she completes her training. Her doctoral research aims to identify the sources of physical, psychological, and social work-related stress for migrant nurses from the Philippines.

Ms. Jacqueline Wuellner, MPH, RN is the Deputy Director for the UIC OHN Program, responsible for budget management, practicum placement, interdisciplinary activity coordination, program marketing, student recruitment, and outreach effort. She also teaches the Introduction to OHN course (NUPH 400) and serves as faculty preceptor to OHN students during their clinical rotations. From 2000- March, 2007, Ms. Wuellner was at John H. Stroger, Jr. Hospital of Cook County (one of the largest public hospitals in the country) where she was Director of the Occupational Health Clinics.

Other faculty in the Occupational Health Nursing Program include Tonda Hughes, Judith McDevitt and Beverly McElmurry, Rebecca Mischak, APN, COHN-S, and Charles Yingling, APN. Research interests of the faculty include stress and health in immigrant health care workers, workplace violence and women's health in midlife.

3. Curriculum

Masters Program: Those seeking a Masters degree can apply to one of two tracks: Occupational Health Nurse Practitioner (OHNP) and Occupational Health Nurse Specialist (OHNS). The Nurse Practitioner option has a primary care, clinical focus and prepares the student to become certified as a Family Nurse Practitioner with a specialization in Occupational Health. The Occupational Health Nurse Specialist track has an administrative focus preparing students for leadership roles in employee health departments and private industry.

The Doctoral Programs: UIC offers two doctoral programs, a PhD in Nursing and a Doctorate of Nursing Practice (DNP) which is a clinical doctorate. As with the Masters students, the doctoral students study a core of nursing theory and application plus an occupational health core at the School of Public Health. The doctoral program requires a minimum of 96 semester hours for graduation, which includes a maximum of 32 hours of credit from the student's master program, 13 hours of theory, research methods, and statistics, 14 hours of advanced coursework, and 31 hours of independent research (refer to Table OHN-3 for PhD Core Courses)

Students study philosophies of science as well as theories from the physical, behavioral, occupational health, and social sciences that are applicable to nursing with the required theory sequence of the doctoral program. The courses in this sequence strongly emphasize critical analysis of theories, their underlying assumptions, and their relevance for occupational nursing. The required research sequence includes courses for research design, management, and analysis. Students are expected to incorporate appropriate theoretical and conceptual frameworks into their research, select appropriate research designs, ascertain the psychometric properties of selected instruments, and choose sound analytic procedures that are linked to the research purpose. Advanced courses are selected based on the nature of the trainee's research and are determined in consultation with an academic advisor.

Courses: The OHN program is housed within the Health Systems Sciences (HSS) Department. The program includes courses from Community/Public Health Nursing, Family Nurse Practitioner, and Administrative Nursing. Core public health concepts comprise the basic components of the OHN program. The OHN core curriculum includes Epidemiology, Biostatistics, Population Assessment, and Program Planning and Evaluation as basic foundational components.

The *OHNS* track is for individuals who desire advanced education in the area of Occupational Health administration. Courses are focused on advancing leadership and management skills. One additional course is added for those individuals who would like to sit for the Certified Nurse Specialist in Occupational Health national examination. The *OHNP* track focuses on health promotion and primary care in occupational settings. This curriculum is composed of the traditional Family Nurse Practitioner (FNP) courses, plus five additional occupational health courses.

All OHN master's students take 5 CON core (nursing science, policy and professional issues) courses, 5 HSS Departmental core courses in OHN/PHN, and 4 core interdisciplinary occupational health courses in the School of Public Health: Industrial Hygiene, Occupational and Environmental Diseases, Occupational and Safety Science, and Occupational Toxicology. In addition, there are 2-3 advanced management courses required for trainees on the OHNS track and 7 advanced nursing courses for those on the OHNP

track. Leadership/management students take all the above required courses and two additional management courses.

The OHNP is integrated into the long-established Family Nurse Practitioner program. The OHN faculty review FNP content annually to ensure all occupational health information is timely and appropriate for both FNPs and OHNPs. With the exception of the two OHN-CS leadership/management courses, OHNPs take all the required courses listed above plus the additional eight FNP courses.

4. Trainees

Currently there are 3 PhD students and 5 Masters students in our program. Individuals who desire to be Occupational Health Nurse Practitioners enter the program in two different ways, depending on their background. Trainees who have bachelor degrees in nursing enter directly into the graduate program. Individuals who have bachelor degrees in fields other than nursing obtain their Master's in Nursing degree by entering the Graduate Entry Program (GEP). The first 18 months of the GEP program prepares the trainee to take the national nursing exam (N-CLEX) and become Registered Nurses (RNs). After passing the exam, the trainee is qualified to begin their graduate level nursing education.

Regarding the OHN doctoral program, most students entering it have completed the equivalent of the MS-level OHN course work. Those who have not, enter the program and complete the MS level OHN course work concurrent with the doctoral program classes (BSN-PhD track).

B. Specific Objectives

These are enumerated and addressed in Section C: Results.

C. Results

Objective 1: To address the nursing shortage

Currently, the demand for doctorally prepared nurses, at both the academic and clinical levels, is at an all-time high. The ERC at UIC is one of the few education and research centers to offer doctoral training to OHN students. This program has numerous academic resources and great flexibility that allows trainees to specialize in a variety of different occupational health and safety research areas. Students are drawn to the UIC OHN doctoral program because they have opportunities to enroll in a variety of advanced courses in occupational safety and health.

Further, in 2005 UIC began a graduate entry program (GEP), in which college graduates with non-nursing degrees complete an 18-month course of studying preparing them to take the national licensure exam for registered nurses, and then transition immediately into a masters program. Occupational Health Nursing is one of the Masters programs offered to the GEP students.

Table OHN-1. OHNS Concentration		
Course Number and Name	Semester Hours	Comments
CON Core Courses		
NUSC 525 Biostatistics or BSST 400 Biostatistics	3 4	Course offered online in CON Taken by OHN students in the SPH
NUSC 526 Inquiry I	2	CON Faculty
NUSC 527 Inquiry II	2	CON Faculty
NUSC 528 Health, Environment and Systems	2	CON Faculty; course offered online
NUSC 529 Issues of Advanced Practice Nursing	1	CON Faculty; course offered online; emphasis on professional issues and roles,
NUSC 531 Pharmaceutical Intervention	3	CON; advanced principles of pharmacotherapeutics; includes legal issues, client adherence, and medication selection factors
NUSC 532 Comprehensive Health Assessment for Advanced Practice	3	Prepares OHNP to distinguish between normal and abnormal findings and to progress to differential diagnoses.
NUSC 535 Biological Basis of Disease	4	CON faculty; Advanced Practice Nursing foundational course, concepts of pathological processes are examined with application to organ systems and across the lifespan
OHN/Public Health Nursing Core Courses		
NUPH 504 Introduction to OHN	2	Faculty: Wuellner, Connor (teaching associate)
NUPH 509 Population-Focused Assessment	3	HSS Dept. Faculty. Students conduct population-focused assessment in community and integrated healthcare systems; sources of OH data are provided to students; 45 hr clinical practicum
NUPH 511 Planning and Evaluation for Advanced Nursing Practice	3	Continuation of NUPH 509. Students continue at their assigned industries to explore strategic and program planning applications; focuses on evaluation as a measurement of quality, performance, and impact of health services; emphasizes interdisciplinary perspective and addresses integrated quality improvement systems; 45 hr clinical practicum
EPID 400 Principles of Epidemiology	3	Public health science-interdisciplinary course
NUSC 597 Master's Project or NUSC 598 Master's Thesis Research	3 5	All OHNs have the option to take 597 or 598. Specific faculty research mentors assist students in further development and refinement of their research proposal and in the selection of additional thesis or project committee members. At least one OHN faculty serves on all committees.
School of Public Health Courses*		
EOHS 421 Fundamentals of Industrial Hygiene	2	SPH Faculty
EOHS 551 Occupational and Environmental Diseases	4	SPH Faculty
EOHS 455 Environmental and Occupational Toxicology	3	SPH Faculty
EOHS 482 Occupational Safety Science	2	SPH Faculty
Advanced Management Courses		
NUPH 517 Budget and Finance of Health and Nursing Services	3	Financial and related accounting for non-business majors
NUPH 520 Internship in Advanced Nursing	1-3	Intensive field study for advanced nursing practice; students take 150-450 clinical hours depending on concentration-may be repeated for those requiring additional clinical hours (a minimum 150 hours to graduate, 500 hours for CNS certification)

Table OHN-2. OHNP Concentration		
Course Number and Name	Semester Hours	Comments
CON Core Courses		
NUSC 525 Biostatistics or BSST 400 Biostatistics	3	Course offered online in CON Taken by OHN students in the SPH
NUSC 526 Inquiry I	2	CON Faculty
NUSC 527 Inquiry II	2	CON Faculty
NUSC 528 Health, Environment and Systems	2	CON Faculty; course offered online
NUSC 529 Issues of Advanced Practice Nursing	1	CON Faculty; course offered online; emphasis on professional issues and roles,
NUSC 531 Pharmaceutical Intervention	3	CON; advanced principles of pharmacotherapeutics; includes legal issues, client adherence, and medication selection factors
NUSC 532 Comprehensive Health Assessment for Advanced Practice	3	Prepares OHNP to distinguish between normal and abnormal findings and to progress to differential diagnoses.
NUSC 535 Biological Basis of Disease	4	CON faculty; Advanced Practice Nursing foundational course, concepts of pathological processes are examined with application to organ systems and across the lifespan
OHN/Public Health Nursing Core Courses		
NUPH 504 Introduction to OHN	2	Faculty: Wuellner, Connor (teaching associate)
NUPH 509 Population-Focused Assessment	3	HSS Dept. Faculty. Students conduct population-focused assessment in community and integrated healthcare systems; sources of OH data are provided to students; 45 hr clinical practicum
NUPH 511 Planning and Evaluation for Advanced Nursing Practice	3	Continuation of NUPH 509. Students continue at their assigned industries to explore strategic and program planning applications; focuses on evaluation as a measurement of quality, performance, and impact of health services; emphasizes interdisciplinary perspective and addresses integrated quality improvement systems; 45 hr clinical practicum
EPID 400 Principles of Epidemiology	3	Public health science-interdisciplinary course
NUSC 597 Master's Project or NUSC 598 Master's Thesis Research	3 5	All OHNs have the option to take 597 or 598. Students select specific faculty research mentors who assist them in further development and refinement of their research proposal and in the selection of additional thesis or project committee members. At least one OHN faculty serves on all committees.
School of Public Health Courses*		
EOHS 421 Fundamentals of Industrial Hygiene	2	SPH Faculty
EOHS 551 Occupational and Environmental Diseases	4	SPH Faculty
EOHS 455 Environmental and Occupational Toxicology	3	SPH Faculty
EOHS 482 Occupational Safety Science	2	SPH Faculty
OHNP Courses		
NUPH 539 Health Management in Primary Care I	3	CON faculty; 60 clinical semester hours are done in OHN setting
NUPH 540 Clinical Practice in Primary Care I	3	
NUPH 541 Clinical Practice in Primary Care II	2	
NUPH 542 Health Management in Primary Care II	3	CON faculty; trainees learn to assess, diagnose and manage stable chronic and acute episodic illnesses encountered in occupational

Table OHN-2. OHNP Concentration		
Course Number and Name	Semester Hours	Comments
		health care settings
NUPH 543 Advanced Clinical Practice in Primary Care I		
NUPH 544 Health Management in Primary Care III	3	CON faculty; second of a two course sequence, prepares trainee to assess, diagnose, and manage stable chronic and chronic episodic illnesses encountered in occupational health care settings
NUPH 545 Advanced Clinical Practice in Primary Care II	2	Together these two courses offer
NUPH 529 Advanced Clinical Practice in Occupational Health Ns	2	225 applied clinical hours in various occupational health settings*

*There are many opportunities for OHNP clinical placement. The UIC clinical sites for OHN students include community-based clinics, hospitals, industries and occupational programs.

Table OHN-3. PhD Core Courses*		
Course Number	Course Name	Semester Hours
Theory Courses		
NUSC 505	Philosophy of Science for Health Research	3 sh
NUSC 506	Theory and Theory Development for Nursing Research	3 sh
NUPH 560		
NUPH 562		
NUSC 590	Leadership in Scientific Careers	1 sh
Research Courses		
SOC 401	Sociological Statistics	4 sh
SOC 402	Intermediate Sociological Statistics	4 sh
NUSC 515	Measurement in Health Research	4 sh
NUSC 511	Advanced Research Desig	4 sh
EPID 404	Intermediate Epidemiologic Methods	4 sh
Interdisciplinary Courses		
EOHS 421	Fundamentals of Industrial Hygiene	2 sh
EOHS 482	Occupational Safety Sciences	2 sh
EOHS 455	Environmental and Occupational Toxicology	3 sh
EOHS 551	Occupational Diseases	4 sh
Advanced Courses		
NUSC 517	Advanced Research Practicum	1-4 sh
NUSC 585	Advanced Research Seminar	1-2 sh
NUSC 599	Ph.D. Thesis Research	32 sh

* This is a sample program; students are encouraged to take additional content electives as appropriate to their area of research interest.

Objective 2: To prepare OHNs who will assume leadership positions within occupational health and academia.

An important method for evaluating the impact of the OHN Program is to determine the number of students who have successfully graduated and obtained positions in occupational health nursing. During this reporting period, the UIC OHN program graduated 4 nurse practitioners (OHNP), 4 nurse specialists (OHN-CS) and one PhD.

Over the past five years, the OHN Program has recruited seventeen trainees. Of these seventeen, seven successfully completed the program; eight remain in the program; only three did not complete the program. Of the seven graduates, six are employed as practicing OHNs. They are licensed as Family Nurse Practitioners and are providing primary care to patients in various clinical settings. The additional occupational health training is “value added” to their skills and knowledge as providers.

Objective 3: To prepare independent OHN researchers whose work will contribute to the knowledge base in occupational health

Currently there are three PhD trainees in the OHN program. Jorgia Connor, who entered the program in 2004, studies the effects of recent immigration to the United States among Philippine female nurses. An international student from Thailand, Theerarat Boonkuna, entered the OHN PhD program in 2007 with plans to complete her studies at UIC. NIOSH Trainee Sarah Katula (who entered the program in 2004) focuses on the impact of domestic violence on workers and the workplace. She was named the 2008 recipient of the Rue Bucher Memorial Award for Qualitative Studies in Social Process for her project entitled "Employed Women in IPV Situations: Workplace Experiences and the Perception of Safety."

Objective 4: To conduct research which will improve health and reduce health disparities globally and within the U.S.

The CON has consistently ranked in the top 6 among all schools of nursing in research support from the National Institutes of Health over the past 7 years, and in 2007 the College ranked third. The College has an NIH supported Center for Reducing Risks to Vulnerable Populations.

Research efforts range from projects affecting local communities to those reaching around the world. Locally, the College of Nursing is an active partner in the UIC Center of Excellence in Women's Health, the Center for Research on Women and Gender, and the Great Cities Institute, all serving Chicago's culturally diverse population with rich opportunities for community-based participatory research. Globally, the CON WHO collaborating center (the first of its kind in USA) sets the structure for intense international learning and research. This center enables Environmental and Occupational Health Nursing collaboration and enhances recruitment of international OHN graduate applicants.

In addition to the NIOSH-funded ERC training grant, four training grants provide pre- and post-doctoral research training in Biobehavioral Research, Primary Health Care Research, Minority International Research, and, in collaboration with the School of Public Health, AIDS International Research.

Most Health Systems Sciences faculty members, from clinical instructors to tenured full professors, are funded at least in part by external sources. Research areas among HSS faculty members are diverse, with programs ranging from basic biological and biobehavioral to community-based intervention research. Major areas include women's health, the development and evaluation of interventions to reduce health disparities and improve quality of life, and global primary health care. Notably, the HSS department faculty alone secured over $6,000,000 in external funding for its mission. There are currently 3 R01s funded by NIH and several projects funded by the Robert Wood Johnson Foundation and other foundations, and several service contracts funded by State and non-profit agencies. Recently completed and ongoing federally funded investigations include: HIV/AIDS sexual behavior risk reduction in adolescent African American mothers and daughters and Latino girls and boys; negotiating the role of fatherhood among African American adolescent fathers; a health promotion walking program for low income African American women; mental health and health behavior of newly immigrated women from the former Soviet Union, Korea, and other countries; impact of neighborhood factors on health of minorities, and health and risk behaviors in lesbian women.

CON faculty funded research projects can be found in Table CWA-2 in Appendix 2. These projects provide direct clinical practicum opportunities to OHN students as well as opportunities to serve as teaching and research assistants.

D. Conclusions

The Occupational Health nursing Program at UIC has a long history of preparing graduate students as leaders in the field of workers' health. Throughout our history we have recruited high caliber OHN students who are well prepared for positions in industry, government and clinical settings, and graduates who have made major contributions to the field. Other strengths of the program include our innovative and growing online course availability, strong CON and ERC infrastructure and interdisciplinary opportunities, strong curriculum, a strong record of NIH funding, and ability to offer classes at all five campuses of University of Illinois Chicago to a diverse cohort of students.

E. Publications and Tables

Publications and presentations by program area are included in Appendix 1. All tables are included in Appendix 2.

IX. Occupational Medicine

A. Background

The UIC Occupational Medicine Program is designed to provide comprehensive postgraduate residency training in Occupational Medicine for qualified physicians who have completed at least one year of clinical training in an ACGME accredited internship. The program lasts for two years. The Program consists of a 12-month Academic Phase (PG2) and a 12-month Practicum Phase (PG3). During both Phases, residents are required to attend a two-hour conference on Wednesday mornings, a weekly noon conference organized by our NIOSH Education and Research Center, and at least ½-day per week of occupational medicine consultation clinic. In addition, residents are included in special projects like health hazard evaluations related to the workplace and environment contaminations, exposure assessment, and development of surveillance programs. Site visits to local industries are organized approximately once per month. Residents present two case presentations and one toxicology conference per year. They complete a research project which is presented at the end of the PG-3 year.

The mission of the UIC Occupational Medicine Program is to advance the field of occupational medicine through training, research, and outreach at the local, regional, and national level. Residency graduates are board eligible in Preventive Medicine/Occupational Medicine. They evaluate, diagnose, and treat occupational illnesses and injuries regardless of occupation. Faculty members engage in occupational and environmental research that evaluates hazardous exposures to workers and communities. Faculty, current residents, and graduates serve as experts in the field of occupational and environmental medicine and actively engage in policy making.

1. Major Changes

The UIC Occupational Medicine Program has undergone several changes in the past five years. 1) Dr. Susan Buchanan became the residency director in 2005 after an interim year during which Dr. Forst was on sabbatical. 2) While the program continues to graduate three board-eligible residents each year, the curriculum has expanded and become more formalized as the Accreditation Council for Graduate Medical (ACGME) requirements have increased to become more competency based. Training activities are designed with these competencies in mind. 3) In 2007, the Stroger Cook County Hospital Internal Medicine/Occupational Medicine combined program closed due to budget cuts. As a result, two residents switched over to the UIC program to complete their training. Two faculty members changed to full-time appointments at UIC, and one faculty member lost her position completely. An additional faculty member changed her appointment to a full-time Internal Medicine position at Stroger but continues to precept in one Occupational Medicine clinic per week. The departmental library and consult service moved to UIC as well. The training experience for the UIC residents has changed very little as a result of the closing of the Stroger program.

2. Faculty

The residency faculty remains essentially unchanged except for the loss of Dr. Rachel Rubin in the Stroger budget cuts. Dr. Susan Buchanan is the Program Director. She took over from Dr. Forst in 2004 after completing the UIC Occupational Medicine residency and a fellowship year in Occupational Health Services Research. She is board certified in both Family Medicine and Preventive Med/Occupational Med and practiced Family Medicine for 9 years before completing the Occ Med residency. Dr. Forst became the assistant program director. She is Associate Professor in the EOHS Division of the School of Public Health. She is the residents' academic advisor, teaches in the didactic curriculum, and mentors

resident research. Dr. Peter Orris moved his office to UIC from Stroger Hospital. He precepts in the Stroger Occ Med clinic, presents in the didactic curriculum, and advises students. Dr. David Marder is the Medical Director of UIC Employee Health Service. He precepts the residents' weekly continuity clinic in the PG-2 year, teaches in the didactic curriculum, and precepts the University Health Services rotation. Dr. Kathy Duvall precepts in the UIC Occ Med clinic and precepts the Electro-Motive rotation. Dr. Sam Dorevitch is research assistant professor at the School of Public Health. He organizes the didactic curriculum and mentors resident research. Dr. David Hinkamp and Dr. Dan Hryhorczuk precept in the clinics intermittently and teach in the didactic curriculum. Dr. Anne Krantz is at Stroger in Internal Medicine, Occupational Medicine, and Toxicology. She precepts in the Stroger Occ Med clinic.

3. Curriculum

The Academic Phase (PG-2) provides the educational foundation for the Practicum phase and for the future practice of occupational medicine. Residents attend the UIC School of Public Health as full-time students. During this year residents complete the classroom requirements for a Master of Public Health degree which they receive at the end of the PG-3 year when they have completed their research requirement. During the Academic Phase residents attend a weekly occupational medicine clinic and ½ day in the University Health Service as their continuity clinic. Since the academic calendar covers only 8 months of the year, PG-2 residents complete four clinical rotations when classes are not in session.

SPH Required courses for Occ Med residency – PG2

Core:

Epi 403– 3 credits
Biostats 400 - 4 credits
HPA 400 – 3 credits
EOHS 400 – 3 credits
CHSC 400 – 3 credits
CHSC 401 – 3 credits

EOHS required courses:

Industrial Hygiene 421 – 2 credits
Toxicology 455 – 3 credits
Occ Diseases 551 – 4 credits
Occ and Environ Epi 554 (1/2 semester) – 2 credits
Occ Safety Science 482 – 2 credits

Suggested Electives:

Injury Epi and Control 571 - 3 credits
Global Environmental Health (1/2 semester) – 2 credits
Industrial Hygiene Lab 428 – 2 credits
Risk Assessment 556 – 3 credits

The Practicum Phase (PG-3) provides the clinical training, research, and administrative experience required of practicing occupational medicine physicians. This phase consists of 12 monthly rotations: at least five months of clinical occupational medicine, one or two months of research, one month on the OEM Consultation Service, and four months of electives. Throughout the year residents spend ½-day per week in one of the two OEM clinics (UIC or Stroger). They present their research in three phases during the Wednesday morning didactic sessions: 1) literature review, 2) methods, 3) final presentation

(results). Residents in the UIC Occupational and Environmental Residency participate in a wide variety of clinical and administrative/policy rotations:

- Agency for Toxic Substances and Disease Registry, Region 5 Office
- Advocate Occupational Health
- American Airlines Medical Department, O'Hare Airport
- Argonne National Laboratories Medical Department
- Electromotive Diesel, Inc. Medical Department/Rush Employee Health
- Evanston Northwestern Healthcare Omega Occupational Health
- Evanston Northwestern Dermatology
- International Truck and Engine (Navistar)
- National Institute for Occupational Safety and Health, Cincinnati, Ohio
- Occupational Safety and Health Administration (OSHA), Washington, DC
- St. James Occupational Health
- UIC Medical Center at O'Hare Airport
- University Health Services
- UIC/Stroger Occupational and Environmental Consultation Service
- Workers' Compensation Rotation
- Additional UIC Medical Center electives: Pain Clinic, Orthopedic Clinic, Dermatology, Radiology, Ophthalmology/General Eye Clinic, ER Fast Track.

Mandatory Conferences

The Wednesday mornings conferences are organized on a two-year curriculum. Each month covers a curriculum topic. The curriculum topics have been taken from the American College of Occupational and Environmental Medicine list of professional competencies.

- Week 1, Hour 1 Grand Rounds/ guest lecturer on Curriculum topic Overview
- Week 1, Hour 2 Resident Case Presentation on Curriculum topic
- Week 2, Hour 1 Faculty lecture on Curriculum topic
- Week 2, Hour 2 Journal Club on Curriculum topic
- Week 3, Hour 1 Board Review on Curriculum topic
- Week 3, Hour 2 Impairment/Disability evaluation on Curriculum topic if applicable
- Week 4, Hour 1 Occupational Medicine/Toxicology Combined Conference
- Week 4, Hour 2 Industrial Process Presentation by Industrial Hygiene Trainee

4. Trainees

Selection of residents is overseen by the Program Director with input from the Occupational Medicine core faculty and is discussed at faculty meetings. Residency candidates are required to submit an application that includes medical school transcripts, three letters of recommendation, Dean's letter from medical school, letter from previous Program Director, and all USMLE scores. These documents are a permanent part of the resident's portfolio. All applicants receive a folder upon arrival for their interview that includes a copy of the GME policy on liability, disability, and medical coverage.

Candidates who are selected for interviewing are interviewed by at least three faculty members and then have lunch with the residents. Interviewers complete an appraisal form which is forwarded to the Program Director. Bi-monthly faculty meetings include core faculty and one resident. If the program interviews over 5 residents, a ranking meeting is also held. Criteria for selection: Preference is given to

applicants who have completed a residency in Internal Medicine, Family Medicine, or Emergency Medicine. Prior experience in or familiarity with Occupational Medicine (med school or residency electives, clinical occ med practice, research in the field) is favorable. Equal weight is given to prior academic performance (medical school transcript, USMLE scores) and letters of recommendation. All prior program directors are contacted by telephone. Significant weight is given to the summary of the resident's performance according to the in-person conversation with the program director. The candidate interview is used to confirm/enhance the other aspects of the residents' application. The Program Director makes the final selections and notifies the candidates.

B. Specific Objectives

Specific objectives of the 2003-2008 period were to:

- Continuously evaluate and improve training within the program
- To enhance research capabilities of Occupational Medicine trainees
- To support new ERC endeavors to develop a Toxicology core and an Occupational Health Services Research (OHSR) concentration
- To increase outreach activities to the medical community

C. Results

1. Progress on Specific Objectives

a. Continuously evaluate and improve training within the program.

Since July 1, 2003 we have graduated fourteen residents. Twelve are practicing occupational physicians and two are in federal offices. All have passed the Preventive Medicine/Occupational Medicine board exam. The program underwent an accreditation site visit in March of 2003 and successfully achieved full accreditation for the maximum interval, five years.

Several enhancements to the training program were put in place to keep pace with the changing nature of clinical occupational medicine. The majority of UIC Occupational Medicine graduates are employed in clinical occupational medicine jobs. Therefore, the residency program has added opportunities for additional clinical training. Five rotations have been added including American Airlines, Advocate Occupational Health, International Truck and Engine, and Evanston Omega Occupational Services. In addition, we now require a rotation at the UIC Sports Medicine Physical Medicine and Rehabilitation clinic where residents become proficient in the diagnosis and treatment of musculoskeletal conditions. The weekly conference sessions have been enhanced significantly and are now scheduled to cover the ACGME occupational medicine competencies. Outside experts in specific clinical conditions are invited to present workshops such as splinting, eye injuries, and hand injuries.

The program curriculum has been organized to be competency based, as required by the RRC. All rotation objectives have been re-written to address the RRC core competencies in occupational medicine. The resident evaluation forms have been changed to address both the ACGME general residency competencies and the rotation objectives. A 360-degree evaluation is now conducted yearly. The rotation evaluation forms have been updated so residents have the opportunity to anonymously evaluate their rotations.

b. To enhance research capabilities of Occupational Medicine trainees.

Residents are now required to complete a research project and are mentored closely throughout the process. A new research methods course taught by the ERC director Dr. Conroy is required of all

residents and ensures they receive the basics of carrying out public health research. In the OM residency there is a monthly journal club with articles chosen by Dr. Dorevitch during which study design and analysis is discussed. He also plans at least one conference session at the beginning of every academic year that covers the mechanics of completing a literature review. Each resident is matched with a research mentor who meets regularly with them throughout the senior year. Residents are required to present during conference at three stages of their research process: literature review, methods, and results. They present their research projects during the Capstone poster session at the School of Public Health. Three residents during the past five years have presented their research at the American Occupational Health Conference. Three manuscripts were accepted for publication. All residents typically attend the American Occupational Health Conference sponsored by the American College of Occupational and Environmental Medicine in the spring.

c. To support new ERC endeavors to develop a Toxicology core and an Occupational Health Services Research (OHSR) concentration.

Both Toxicology and Occupational Health Services Research now have increased visibility in the UIC OMR. Residents rotating on the Occ Med Consultation Service attend toxicology rounds two days per week. During this month they plan a lecture with the toxicology fellow called "Occ/Tox" and present it to in a joint conference of the Occ Med and Toxicology Departments. Dr. Buchanan, the OMR Program Director, completed a one-year fellowship in OHSR at UIC. This program received funding for one year only. OHSR topics are now included in the conference curriculum.

d. To increase outreach activities to the medical community.

The UIC Occupational Medicine M-4 elective is now available and selected by medical students from UIC, Rush, and Chicago Medical School. A description of the elective appears in the elective handbooks of all six Chicago medical schools. UIC medical students now attend two mandatory sessions on Occupational and Environmental Medicine during their Family Medicine Clerkship. Internal medicine residents at Rush and Stroger receive regular didactic sessions from OMR faculty. There is a combined case review session with Stroger Pain Clinic several times per year. Stroger/Rush Internal Medicine Grand Rounds includes an Occupational or Toxicological topic presented by Occupational Medicine or Toxicology faculty bi-annually. All incoming UIC residents regardless of specialty now receive a pocket card with information on the Occupational Medicine Consultation Service and outpatient clinic. A month-long Occupational Medicine resident level elective has been developed.

2. Outcomes/Relevance/Impact

- Fourteen residents graduated, all board certified in Preventive Medicine/Occupational Medicine
- Achieved full five-year accreditation by the Accreditation Council on Graduate Medicine Education
- Additional industrial and outpatient occupational medicine rotations added to practicum year
- Curriculum and evaluation process are now competency based
- Increased caliber of research mentorship resulting in three resident publications and numerous faculty publications
- All UIC Medical students now receive Occupational and Environmental Medicine exposure

D. Conclusions

There continues to be a shortage of qualified occupational medicine health care providers. This is due to in part to the relative obscurity of the field and the lack of understanding of what the field is about.

The UIC Occupational Medicine Residency program is working to increase the visibility of the program both within UIC and the greater Chicago area. The program has continued to graduate highly trained, highly qualified physicians who are all currently working in the field. Residents receive multiple job offers, allowing them to choose jobs that are best for them and to negotiate for better working conditions and benefits.

In conclusion, despite the closing of the Stroger Cook County program causing a loss of some shared resources, the UIC Occupational Medicine residency was able to absorb some of the Stroger faculty, residents, and administrative duties in order to facilitate the transition to the lone Occupational Medicine residency in the Chicago region. More importantly, the UIC residents continue to benefit from excellent academic, clinical, and research opportunities. The program continues to graduate qualified residents who become board-certified and pursue clinical and administrative jobs in the field of occupational medicine.

E. Publications and Tables

Publications by program area are included in Appendix 1. All tables are included in Appendix 2.

X. Agricultural Safety and Health Academic

A. Background

1. Major Changes

There were only a few changes made to the program. The primary focus of one of the three core courses was changed. TSM 425 name was changed from Ag Safety Interventions to Managing Ag Safety Risks to better reflect a content emphasis change. Originally the course focused on a variety of safety and health intervention methodologies and tools including behavioral safety analysis and prediction, systems safety analysis, injury event investigation, safety training methodologies, job safety analysis, community safety interventions, fault tree analysis and safety risk management. Bob Aherin came to realize based on his experience and discussions with industry representatives that one of the greatest safety needs in the agricultural industry is a better understanding of the value and methods for developing and implementing a safety risk management program. The program's advisory committee confirmed this. Thus, it was decided to make modifications to the course so as to have a primary focus on managing safety risk. The course still covers the other interventions but more emphasis is on the steps or phases in development of a risk management plan. The first half of the semester is devoted to discussing various interventions and the phases in developing a safety risk management plan. Students also review safety and health research articles to become more familiar with current research. There is a mid term exam. The last half of the semester is devoted to their individual projects of developing a safety risk management plan for a farm or agricultural type of business that they identify and obtain an agreement of cooperation. Much of class periods in the second half of the semester are devoted to students discussing their work in developing their plan and any issues that they are dealing with. This provides an opportunity for students to learn about the practical issues of developing this type of plan and how to go about resolving them. Fifty percent of the student's grade is based on the development of a risk management plan and their formal presentation about their plan to the class at the end of the semester. The students who have participated in the class have rated it very high for what they have learned from applying the methods learned in class to a real world situation.

During the 5 year project period undergraduate students who were selected to be agricultural safety and health trainees were required to complete a minimum of 12 credit hours of approved program courses. During the spring of 2008 the university gave final approval to offering the minor in agricultural safety and health and students would be allowed to enroll for the minor beginning with fall 2008 semester. Once the minor was officially approved we decided that only students who enrolled in the minor would be considered for a traineeship. Thus, those undergraduate students selected in the spring and summer of 2008 for traineeship to begin during the fall 2008 semester had to commit to enrolling in the minor. Thus, this change will require trainees to complete 18 semester hours of approved program courses in stead of the 12 hours originally required.

Two web based courses offered by UIC Great Lakes Center industrial hygiene program were added to the electives for the agricultural safety and health academic program. They include EOHS 421 Fundamentals of Industrial Hygiene (2 credit hrs) and EOHS 400 Principals of Environmental Health Sciences (3 credit hrs). These course provide an opportunity for those students interested to obtain a stronger technical background in the areas of environmental health and industrial hygiene. Additionally, for students with very tight schedules EOHS 400 only requires a minimal amount of specific times that students have to participate in on line group discussions. The lectures are archived on line thus allowing students to access them at their convenience. This is helpful for students, particularly

veterinary students, who have required courses in their primary program that may make it difficult for them to enroll is some of the other elective courses in our program.

2. Faculty

Drs. Robert Aherin and Robert Petrea are the primary core course instructors and program advisers. Other faculty from the ERC and the Department of Agricultural and Biological Engineering provide select lectures.

3. Curriculum

The minor in Agricultural Safety and Health was approved by the University of Illinois early in 2008 and students will first be allowed to enroll during the fall semester of 2008. The curricula includes 3 core 3 credit upper level courses in agricultural safety and health, an optional internship course, 2 special problem courses and 23 elective courses available through various programs throughout both the University of Illinois Champaign/Urbana and Chicago campuses. The core courses are TSM 421: Ag Safety – Injury Prevention, TSM 422: Ag Health – Illness Prevention & TSM 425: Managing Ag Safety Risks (was named Applying Safety Interventions). Graduate students must complete at least two of the three core agricultural safety and health program courses and any of the other approved 400 or 500 level program courses. Graduate student trainees are developing a specialty in agricultural safety and health and must agree to complete a minimum of 15 credit hours of the approved program courses within two years as part of their eligibility to be a trainee. The following is a listing of the program courses as they are listed for the minor:

Table ASH-1. Agricultural Safety and Health Minor		
Course Number	Name	Hours
Required Courses for Agricultural Safety and Health Minor		
TSM 421	Ag Safety – Injury Prevention	3
TSM 422	Ag Health – Illness Prevention	3
TSM 425	Managing Ag Safety Risks	3
A minimum of 3 credit hours is required from the following courses:		
TSM 293 or ABE 293	Off-Campus Internship	1-4
TSM 295 or ABE 396	Undergraduate Research Thesis	1-4
TSM 496 or ABE 295	Independent Study	1-4
A minimum of 6 credit hours selected from:		
EOHS 421	Fundamentals of Industrial Hygiene (web-based UIC course)	2
EOHS 400	Principals of Environmental Health Sciences (web-based UIC course)	3
IE 442	Safety Engineering	3
IE 348	Human Factors in the Design of Complex Systems	3
IE 440	Occupational Biomechanics	3 or 4
CHLH 101	Introduction to Public Health	3
CHLH 244	Health Statistics	3
CHLH 274	Introduction to Epidemiology	3
CHLH 304	Foundations of Health Behavior	4
CHLH 469	Environmental Health	3 or 4
CHLH 474	Principles of Epidemiology	4
CHLH 540	Health Behavior: Theory	4
FSHN 480	Basic Toxicology	3
HDFS 105	Intro to Human Development	3
HRE 415	Diversity in the Workplace	4
HRE 585	Program Evaluation	4
KIN 262	Motor Develop, Growth & Form	3 or 4
KIN 454	Growth & Physical Development	3 or 4
NUSC 206	Personal Health and Wellness	4
PSYC 100	Introduction to Psychology	4
PSYC 103	Introduction to Experimental Psychology	4
PSYC 358	Human Factors in Human-Machine Systems	4
PSYC 456	Human Performance and Engineering Psychology	3 or 4

A minimum of 18 hours must be completed for this minor.
Courses in the minor cannot be completed Credit/No Credit.

Trainees (criteria for admission) - Students from any field in agriculture and health can apply for a traineeship. Graduate students have the opportunity to develop a special interest area in agricultural health and safety by: completing at least two and preferably all three core agricultural safety and health related courses; completing a special problems course; and, either focusing their thesis work preferably,

if they are in a thesis required program, or conducting a special project in the agricultural safety and health area with guidance from the program faculty. They are also encouraged to take one or more of the electives if this can be accommodated by their respective graduate program. Graduate students must agree to complete a minimum of 15 credit hours of approved program courses (including thesis hours if appropriate) in two years. First priority for undergraduate traineeships is given to undergraduates who are willing and interested in earning a minor in agricultural safety and health. Undergraduate trainees would generally not start any earlier than their sophomore year. Most undergraduates who are interested in the traineeship are able to take the agricultural safety and health program courses within their program as electives and some of the elective courses also meet the general education requirement for a BS degree. Students are selected on the basis of their background in agriculture and/or rural health, their interest in pursuing a career in agriculture, interest in addressing agricultural safety and health issues, and academic achievement. The program is open to anyone regardless of sex, ethnic background or financial need.

B. Specific Objectives from 5 Year Grant -

The goal of the program is to provide graduate and undergraduate students who are seeking careers in agricultural and rural health related professions with a basic foundation in agricultural safety and health. This allows students who will work in rural careers that are either directly involved in production agriculture as farm operators or more indirectly by working for organizations that provide various services to farm populations to have an educational background in injury/illness causation and prevention that directly relates to agricultural safety issues. This type of expertise is much needed to address the complex safety and health issues that face agricultural populations.

The specific objectives of the program are to:

- Provide students with a strong base of understanding of the occupational safety and health hazards and issues facing production agriculture. This includes offering a minor in agricultural safety and health for undergraduate students.
- Familiarize students with the primary injury control methodologies of safety risk management, behavioral persuasion, engineering design, and regulation or enforcement and their related strengths and weaknesses of effecting injury and occupational illness rates among agricultural populations.

C. Results

As stated under the curriculum section, the minor in Agricultural Safety and Health was approved by the University of Illinois early in 2008 and students will first be allowed to enroll during the fall semester of 2008.

The curricula includes 3 core 3 credit upper level courses in agricultural safety and health, an optional internship course, 2 special problem courses and 23 elective courses available through various programs throughout the university. The core courses are TSM 421: Ag Safety – Injury Prevention, TSM 422: Ag Health – Illness Prevention & TSM 425: Managing Ag Safety Risks (was “Applying Safety Interventions”). Approximately 160 students completed these courses. Also, students who enrolled in one or more of the three core agricultural safety and health courses were from 9 different departments and the colleges of : Agriculture, Consumer and Environmental Sciences (ACES); Engineering; Medicine; Veterinary Medicine and, Applied Life Sciences. Eight students participated in independent study courses and two did an internship in agricultural safety and general occupational safety.

During the reporting period 14 students were trainees. Seven were graduate students and 7 were undergraduate students. The graduate students included a medical student, a veterinary student, and five master degree students. Three of the MS graduate students were in the department of human and community development, one MS student was in the agricultural business management program, and one MS student is in the community health program. Five of the graduate students and six of the undergraduate students have graduated from their respective programs.

One of the MS graduate students was only in the trainee program for one semester and then for unforeseen personal reasons that developed had to drop out of the university. However, as an undergraduate she completed the agricultural injury and agricultural disease courses. She is currently working for a nursery and landscaping company and a portion of her job involves safety training of employees. Her undergraduate degree was in horticulture, thus, she is utilizing the academic training she received both in her major field of study and through our agricultural safety and health special emphasis program. One of the MS students dropped out of the traineeship program after one year because an unforeseen opportunity developed for her to have a half time assistantship in her major field of study. She felt it would be too difficult for her to be involved in both a half time assistantship and the agricultural safety traineeship program. This has not been a problem for our other graduate students who have had half time assistantships but she felt it would be for her.

All trainees who have graduated from the program have positions that have from a major focus on safety and health of workers to at least one aspect of their position being devoted injury/illness prevention.

Two of the undergraduate agricultural safety and health trainees who were Hispanic developed an interest in the MS Industrial Hygiene program offered through our U of I Chicago Center as a result of being exposed to it through their traineeship. One student became a graduate student trainee in the Industrial Hygiene program and the other was accepted into the Industrial Hygiene program but was not interested in pursuing a traineeship. Both students have now graduated and one is working as an industrial hygienist and safety specialist for OSHA and the other is an industrial hygienist with a company. This is the type of continued professional development that our undergraduate traineeship attempts to achieve with some students. We also currently have another undergraduate agricultural safety and health trainee who is a senior and is in the process of applying to be accepted into the Industrial Hygiene MS program at the University of Illinois Chicago.

Another undergraduate student trainee graduated from the Technical Assistance Management program and is working for a consulting firm and a portion of his job responsibilities is in the area of agricultural engineering safety and general safety issues. One undergraduate trainee, who earned a BS degree in animal sciences, accepted a position with the Monsanto Corporation as a sales representative. She indicated that when she was interviewing for the position the interviewer was delighted to see she had training in the agricultural safety and health area. A portion of her position involves promoting the safe use of the agricultural products the company sells. This student evaluated the safety program at a Monsanto seed processing facility for an independent study course in our program. Another undergraduate student who earned a BS degree in Technical Systems Management returned to his family farm as he planned. His farm is several thousands of acres and they employ several workers. One of the reasons he wanted to be in the agricultural safety and health traineeship program was to provide him with the knowledge and skill to manage the safety risk in his farming operation. This student was a college JB Scholar which designates him as one of the top academic students in the college. He took two courses in the program under our college honor class program. This meant for him to earn honors credit he had to conduct a more rigorous project in each class than what would be normally expected of most students. His desire is also to get involved in leadership roles in various

production agricultural groups. He could likely be very influential in promoting agricultural safety policy and programs among farmers.

Dr. Dan Hallam, who was the medical student trainee graduated in 2003. He grew up in a rural community in Illinois and had an associate's degree in agriculture from a community college. Prior to entering medical school he completed a PhD program in micro-biology. He was involved in a swine worker confinement study and a safety study conducted among dairy producers. He is currently a general surgeon at the University of Iowa Hospital and Clinic. One of the MS students who completed her traineeship and graduated is on the academic staff at Kansas State University. She is the extension youth education program specialist for the most populated county in Kansas. A portion of her position addresses farm children safety as well as other areas of safety. As of the writing of this report she accepted a position with USDA that will include assisting her program director provide national leadership to agricultural safety and health programs. One of the factors in receiving this job offer was her involvement in our trainee program. More details on her new position will be provided in future reports. The last MS student who graduated in August of 2006 completed both her degrees in human and community development and the agricultural safety traineeship program. She also had a BS degree in animal science and is working as a specialist with a state wide animal protection organization. A portion of her responsibilities address animal handling safety issues. She desires to eventually acquire a position that would be at least half time or more devoted to agricultural safety and health. Currently she is limited because of her family situation to having employment within 50 miles of her home near the University of Illinois.

Two current graduate student trainees started during fall of 2006 and each received a partial stipend which utilizes the one stipend that was funded. One of the students is an MS student in community health and her goal is to eventually enter medical school in the state's rural medicine program. She is an excellent student and has a strong personal desire to make a contribution to the agricultural safety and health area. She grew up on a farm and her dad was killed in a farm accident. The second graduate student is now a third year Veterinary Medicine student who is specializing in large animals and plans to practice in a rural area specializing in the treatment of production agricultural animals. Veterinarians can have a significant impact on the health and safety of farmers they serve. Their work normally involves personal visits to farms to treat animals. Much of their work is associated with livestock confinement facilities. These facilities are often pose significant health risk associated with environments that may contain high levels of particulates and gases. A veterinarian can minimize the risk of exposure through improved ventilation systems and the appropriate wearing of personal protective equipment. Many veterinarians sell respirators and other personal protective equipment to their clients. There are currently 3 undergraduate trainees. Two will graduate either next Spring or Summer.

While this report was being prepared one former graduate student trainee accepted a national leadership position in USDA that includes national leadership involvement in agricultural safety and health. One factor in her being offered the position was her academic training in agricultural safety and health that she received through this program. This is one of the best outcomes of the program to date. We will report more specifics on this person's position in future reports.

D. Conclusions

The program reached or exceeded its goals for the reporting period. It did take longer to get the minor in agricultural safety and health approved than originally anticipated. This delay was due partially to a university wide changing of course number designations that delayed the approval process for the minor by about one year. With additional funding recently approved for the program for student trainee

support, we will be able to support 4 graduate student trainees and approximately 6 undergraduate students. The students who have completed the program are utilizing the training they received and most of their efforts in this area are directed toward agricultural safety and health issues. Through exposure to the courses and instructors from both the UIUC and UIC campuses there has been success in developing the interest among some highly qualified undergraduate students who were minorities to pursue and complete masters degrees in industrial hygiene at the UIC campus. Other current undergraduate students are considering applying for an MS program in industrial hygiene at UIC. Once the masters in occupational safety is approved it is highly anticipated that this will enhance the appeal to even more undergraduate students in this program to pursue graduate degrees in either industrial hygiene or occupational safety within the UIC ERC program. Thus, the undergraduate program is proving to be a pipeline of enhanced professional development of students who will provide much needed professional with advanced degrees in this general vital area. Additionally, more than 150 other students have received training by their enrollment in one or more of the three core courses. We are looking forward to expanding the program over the next five years.

E. Publications

Publications by program area are included in Appendix 1. All tables are included in Appendix 2.

XI. Hazardous Substances Academic Training Program

A. Background

1. Major Changes

Major changes and accomplishments in the Hazardous Substances Academic Training program since the competitive review in 2003 include:

- The promotion of Dr. Serap Erdal to Associate Professor with tenure and Dr. Linda Forst to Professor
- Added requirement that HSAT students must complete at least one of the following two courses: EOHS 556 Risk Assessment in Environmental & Occupational Health or EOHS 408 Biological, Chemical, Explosives, and Nuclear Weapons as Public Health Threats
- Significant upgrade to the toxicology curriculum with the addition of two new courses, EOHS 455 Environmental and Occupational Toxicology (3 sh) and EOHS 555 Advanced Topics in Toxicology (3 sh)
- Strengthened PhD curriculum with a new required course, EOHS 557 Design and Analysis of Experiments (3 sh)
- Substantial increase in extramural support
- Improved recruitment with a connection to College of Engineering students and the UIC Graduate College's Summer Research Opportunities Program (SROP) minority student recruitment program
- Improved collaboration with the College of Engineering including the teaching of IE 341 Ergonomics and Human Factors and IE 461 Safety Engineering by IH faculty

2. Faculty

The core members of the HSAT faculty include Drs. Peter Scheff, Steven Lacey, Nurtan Esmen, Lorraine Conroy, John Franke, An Li, Serap Erdal and Mr. Salvatore Cali. All faculty that contribute to the HSAT program are listed in Table HSAT-2 in Appendix 2.

Dr. Scheff was the Director of the Hazardous Substances Academic Training (HSAT) program for the project period. He announced his retirement effective August 2008. Dr. Steven Lacey, CIH, CSP, will be the new Interim Director of the HSAT Program as of August 2008. Dr. Lacey is an Assistant Professor of Environmental and Occupational Health Sciences (EOHS) within the School of Public Health, and holds an appointment in the Department of Mechanical and Industrial Engineering. Dr. Lacey has been on the faculty since 2004. He is a research advisor for HSAT trainees, teaches IE 341 Ergonomics and Human Factors and IE 461 Safety Engineering for the College of Engineering and co-teaches an HSAT elective course EOHS 408 Biological, Chemical, Explosives, and Nuclear Weapons as Public Health Threats.

Dr. Nurtan Esmen is a Professor of EOHS and faculty scholar within the University's Institute for Environmental Science and Policy. His research interests include the application of engineering principles and mathematics to occupational and environmental health problems with special emphases on aerosol physics, exposure estimation and characterization, and theory of decision-making in environmental health sciences. He is a research advisor to numerous HSAT trainees, teaches EOHS 557 Design and Analysis of Experiments (a required course for doctoral students), is PI of the Pratt and Whitney retrospective exposure analysis project and is very active in service to the profession. Dr. Esmen is a Fellow of the American Industrial Hygiene Association and a Fellow of the Royal Society of Health.

Dr. Lorraine Conroy, CIH, is an Associate Professor of EOHS and Principal Investigator of the Illinois ERC grant. Her research interests include characterizing workplace contaminant sources, ventilation system model development and validation, and workplace exposure assessment. She is a research advisor to HSAT trainees, teaches two required courses, EOHS 421 Fundamentals of Industrial Hygiene and EOHS 523 Engineering Controls, and is very active in service to the IH profession.

Dr. John Franke, CIH, is a Research Assistant Professor of EOHS. He is a faculty advisor for the IH/HSAT field research program, teaches two required courses EOHS 570 Hazardous Materials Management and EOHS 523 Engineering Controls. His research interests include characterizing workplace contaminant sources, ventilation system model development and validation, and workplace exposure assessment. In addition to his work within the Division, Dr. Franke is the Director of Environmental Health for Evanston Hospital.

Dr. An Li is a research advisor to IH and HSAT trainees and teaches EOHS 440 Chemistry for Environmental Professionals (HSAT required course), EOHS 542 Water Chemistry, and EOHS 543 Environmental Organic Chemistry. Her research focus includes the fate of PBDEs in the environment.

Dr. Serap Erdal is a research advisor to IH and HSAT trainees and teaches two required courses, EOHS Air Quality Lab and EOHS 556 Risk Assessment. Her research focus includes environmental and occupational exposure assessment and health risk assessment.

Mr. Salvatore Cali, MPH, CIH, is Deputy Director of the Hazardous Substances Academic Program and teaches EOHS428 Industrial Hygiene Laboratory I. His research areas include indoor and industrial air quality, bio-aerosols, lead and asbestos. He also performs health hazard evaluations (HHEs) for the CDC-funded Great Lakes Center of Excellence in Environmental Health.

Additional contributing faculty includes Drs. Dan Tessier, Dan Hryhorczuk, Linda Forst, Rosemary Sokas, and Dave Jacobs, and Mr. Mike Selway, CIH, and Jack Standard, CIH.

3. Curriculum

The revised requirements for obtaining an ABET-accredited MS with NIOSH HSAT support are shown in Table HSAT-1.

Table HSAT-1: Requirements for NIOSH HSAT Support		
Course #	Name	Semester Hours
School of Public Health Core Courses		
EPID403		3
BSTT400	Biostatistics I	4
BSTT401	Biostatistics II	4
ERC Interdisciplinary Core Courses		
EOHS421	Fundamentals of Industrial Hygiene	2
EOHS482	Occupational Safety Science	2
EOHS455	Environmental and Occupational Toxicology	3
HSAT Required Courses		
EOHS405	Environmental Calculations	2
EOHS424	Environmental Acoustics	2
EOHS428	Industrial Hygiene Laboratory I	2
EOHS431	Air Quality Management I	3
EOHS438	Air Quality Laboratory	2
EOHS440	Chemistry for Environmental Professionals	3
EOHS523	Industrial Hygiene: Engineering Control/Ventilation	4
EOHS529	Industrial Hygiene Laboratory II (Field Studies)	2
EOHS570	Hazardous Materials Management	3
EOHS584	Radiation Protection	3
either EOHS556	Risk Assessment in Environmental & Occupational Health	3
or EOHS408	Biological, Chemical, Explosives, and Nuclear Weapons as Public Health Threats	3
Research		
IPHS598	Research in Public Health Sciences	16
Credits: Total Required + Research = 47 + 16 = 63 SH		

HSAT trainees must attend the weekly interdisciplinary seminar, attend the Occupational Medicine clinics, and participate in at least one extended field test. The HSAT trainees are also required to complete the 40-hour General Site Worker course and achieve certification. The Institute of Labor and Industrial Relations at the University of Illinois (Urbana) has multiple presentations of this offering, which is structured to meet the requirements of OSHA's Hazardous Waste Operations and Emergency Response Standard (1910.120). The curriculum is structured for completion in two years. Research topics of past HSAT students (July 03 - June 07) are included in Table CWA-3 in Appendix 2.

4. Trainees

HSAT trainees are general applicants to EOHS and the School of Public Health. We look for students with a degree in the sciences, a good GPA (usually greater than 3.0 on a 4.0 scale), GRE scores of at least 1000 (math and verbal combined), and good math and chemistry background. An undergraduate degree in the sciences or engineering is preferred. The prerequisites for entering the HSAT program are a full year of general chemistry, at least one semester of organic chemistry, mathematics through differential and integral calculus, and a course in human physiology.

Traineeship support is given in the first year of the program and renewed for students who make satisfactory progress. NIOSH trainees are also supported as a Research Assistant (RA) on an extramural research grant or as a Teaching Assistant (TA) from University funds. One important benefit of the RA/TA support is that the Graduate College waives tuition and fees for students with a minimum 25% research and/or teaching job on campus. This allows us to maximize the use of the NIOSH student support on traineeships and not tuition.

B. Specific Objectives

The primary academic objective of the Hazardous Substances Academic Training (HSAT) program is to train professional industrial hygienists with specialized knowledge in the management of hazardous substances at the master's degree level. HSAT is managed as a specialization of the Industrial Hygiene program. The two major goals of the academic training program are to 1) develop industrial hygiene practitioners with specialized training in hazardous materials management with as much practical experience as possible and 2) to provide a cadre of trainees, who have aptitude for research, with research training in occupational and environmental health. Over the past five years, our specific goals included:

- Maintain the commitment to the integration of research and hands-on experience within the academic IH/HSAT training program
- Maintain the extramural funding base to support the commitment to research in IH/ HSAT
- Maintain the current level of minority participation in the HSAT program
- Strengthen our collaboration with the UIC Epidemiology and Biostatistics program and the College of Engineering
- Graduate Industrial Hygiene practitioners with specialized training in hazardous materials management to enter industry, government and academic positions.

C. Results

1. Progress toward objectives

a. Research and Research Training

HSAT faculty are actively involved with extramural research projects (Table CWA-2). Current projects that support trainees include:

- Graduate Training in Air Pollution, (P. Scheff PI) funded by the U.S. Environmental Protection Agency to deliver short courses for professionals in the air quality management field
- Asthma and Demolition In Chicago Public Housing (S. Dorevitch PI) funded by the National Institute for Environmental Health Science
- Comparative Life Cycle Impacts of Bio and Petroleum Based Lubricants (T. Theis PI) funded by the National Science Foundation
- Epidemiologic Study of Recreational Use of the Chicago Area Waterways (S. Dorevitch PI) funded by the Water Reclamation District of Greater Chicago
- UIC and Chicago State MS/PHD Bridge to Future (N. Esmen PI) funded by the National Institute of General Medical Sciences
- Exposure Reconstruction For A brain Cancer Epidemiological Study (N. Esmen, PI) funded by the Pratt and Whitney Corporation

- Fundamental Study of Welding Fume Inhalation (S. Erdal PI) funded by the National Institute for Occupational Safety and Health
- Tungsten Industry Pilot Study (N. Esmen PI) funded by the University of Pittsburgh.
- Air Pollution Data Analysis Webcast Development & Delivery (S. Cali PI) funded by Lockheed Martin Corp contract with the U.S. EPA
- Exposure Reconstruction for September 2001 Pentagon Attack (S. Lacey PI) funded by a sub-contract with the Johns Hopkins University
- Analysis of PBDEs In Human Placenta: Enhancing Sensitivity and Reducing Cost (An Li PI) funded by the National Institute for Environmental Health Science
- Exterior Lead Dust In Single Family Housing Demolition: A Multi-Site Investigation (D. Jacobs PI) funded by HUD
- SPORE 2-Genetic/Environmental Risk & Outcomes For Brain Tumors (F. Davis PI) funded by a subcontract with Duke University

b. Summary of Graduates

Presently, the EOHS Division consists of approximately 70 graduate students in all degree categories (MS, MPH, and PhD). Since 1987 there have been 256 IH students, including HSAT trainees, in all degree programs, 96 of whom received full or partial NIOSH traineeship support. Over ninety-five percent of these graduates are actively working in the IH field. Forty-five graduates or students currently in the program are Certified Industrial Hygienists. The HSAT program has held a relatively steady enrollment during the 2003-2008 project period. Twenty-one students have graduated from the HSAT program at UIC since its start in 1995, and two are currently enrolled. Tables HSAT-4b, HSAT-5, HSAT-6, HSAT-9, HSAT-10, and HSAT-13 are included in Appendix 2 and provide summary information for trainees in the HSAT program. Recent graduates of the program have taken positions of responsibility with US OSHA, US EPA, US DOE, NIOSH, regional industry, and national consulting firms.

c. Important results

Trainee awards and scholarships are shown in Table HSAT-3 in Appendix 2. HSAT students are actively engaged in the AIHA student chapter, the UIC Industrial Hygiene Student Association (IHSA).

The Illinois ERC has been very successful in the recruitment and retention of minority students. Table HSAT-13 summarizes minority recruitment into the HSAT program from the beginning of the current project period. The past three Summer Research Opportunity Program (the UIC Graduate College program for minority student recruitment into graduate study) students that worked with our faculty over the past three summers have all returned for graduate study in our Division.

Last Review The HSAT program was last reviewed in the 2007/08 academic year. The program received a score of 167 and comments included that “The HSAT program has a strong history and continues to perform well currently. There are many strong aspects to the proposed program, and include among others, a good defined set of goals and objectives, strong leadership, good interdisciplinary interaction and innovative changes within the program. The HSAT Team is a strong research and trainee-focused program.”

Outreach The Illinois ERC interacts closely with the group of academic organizations located within the Great Lakes Center for Occupational Safety and Health, the EOHS Division, and the UIC School of Public Health. This group offers unique opportunities for connections between state and federal entities with public health interests, including academia, regulatory agencies, industry, not-for-profit community groups, professional organizations, and labor groups.

The HSAT program faculty participates in a number of projects that address public health issues and provide experience and purpose to the educational mission. These projects provide an outreach mechanism that, in turn, fosters new ideas and opportunities for new activities. Interaction with industry, labor, not-for-profit community groups and local government in Wisconsin, Indiana and Illinois is a major outreach activity through our funded field research projects, our interdisciplinary projects, and our advanced IH laboratory course.

D. Conclusions

The HSAT training grant has a significant effect on the program. It helps to support adjunct faculty who bring their professional experience into the classroom. The grant also helps to support the critical mass of graduate students needed to support faculty research programs.

Our research training approach has provided service to local and regional business and institutions, including federal and local public health agencies of all levels, the Illinois and Missouri Departments of Natural Resources, the Illinois Department of Labor, municipal and local water quality and law enforcement agencies, local professional organizations such as the Chicago Local Section of AIHA.

Faculty and students have authored or co-authored at least 71 peer-reviewed manuscripts that were published or accepted for publication, and have presented numerous poster or platform presentations at regional, national and international conferences.

E. Publications and Tables

Publications and presentations by program area are included in Appendix 1. All tables are included in Appendix 2.

Appendix 1: Publications and Presentations by Program Area (July 1, 2003-June 30, 2008)

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

Agricultural Safety and Health	
2003	Aherin R and Patton D: FARM (Fewer Accidents with Reflective Material). Published by the Illinois FARM Coalition, 2003
2003	Field WF, Aherin RA, Bean TL, and Murphy DJ: National land grant research and extension agenda for agricultural safety and health. NCR-197 Committee on Agricultural Safety and Health, Cooperative State Research, Education, and Extension Service, United States Department of Agriculture, Washington, DC. 18 pp., 2003.
2003	Petrea, R.E. (2003) *Using History and Accomplishments to Plan for the Future:* A Summary of 15 Years in Agricultural Safety and Health And Action Steps for Future Directions. Urbana, IL: Agricultural Safety and Health Network.
2004	Aherin R: Marking and lighting legislation for farm machinery in Illinois. Midwest Rural Agricultural Safety and Health Forum (Iowa City, IA, Nov. 2004)
2004	Aherin RA and Hunter AE: Amish agricultural safety program intervention impact. 2005 Annual Conference of the National Institute for Farm Safety, Wintergreen, VA. Paper #2005-11, 2005.
2004	Aherin R.A: Cooperative extension service research to practice history and capabilities in agricultural safety and health. Invited presentation. 2005 Midwest Forum on Agricultural Safety and Health. University of Iowa, Iowa City, IA, 2005.
2004	Forst, L., Lacey, S., Chen, H.Y., Jimenez, R., Bauer, S., Alvarado, R., Nickels, L., Zanoni, J., Petrea, R., & Conroy, L. (2004). Effectiveness of community health workers for promoting use of safety eyewear by Latino farm workers. American Journal of Industrial Medicine, 46 (6), 607-613.
2004	Hallam D[nt] and Aherin R: Pulmonary analysis of swine confinement workers. National Institute for Farm Safety Annual Conference. (Keystone, CO, June 2004).
2005	Petrea, R.E. (2005). Lesson: Agricultural Safety. Livestock and Poultry Environmental Stewardship. Midwest Plan Service: Iowa City, IA.
2005	Aherin R.A: Cooperative extension service research to practice history and capabilities in agricultural safety and health. Invited presentation. 2005 Midwest Forum on Agricultural Safety and Health. University of Iowa, Iowa City, IA, 2005.
2005	Petrea, R.E. (2005). Lesson: Agricultural Illness and Disease. Livestock and Poultry Environmental Stewardship. Midwest Plan Service: Iowa City, IA.

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2006	Morehouse E[nt], Reed D, Aherin R: Injury experiences of farm women over 50. 2006 proceedings of the National Institute for Farm Safety Annual Conference, Sheboygan, WI, June 2006.
2008	Petrea, R.E. (2008). Human illness and disease issues in livestock and poultry production environments. Urbana, IL: Agricultural Safety and Health Network/Livestock Environmental Learning Center, University of Nebraska.
2008	Petrea, R.E. (2008). Human safety issues in livestock and poultry production environments. Urbana, IL: Agricultural Safety and Health Network/Livestock Environmental Learning Center, University of Nebraska http://www.extension.org/pages/Manure_Storage_Safety.
2008	Lizer, S. & Petrea, R. (2008). Health and safety needs of older farmers Part II. Agricultural injuries. American Association of Occupation Health Nursing, 56 (1), 9 -14. http://www.extension.org/pages/Manure_Storage_Safety
2008	Lacey, S.E., Forst, L.S., Petrea, R.E., & Conroy, L.M. (2007) Eye injury in migrant farm workers and suggested hazard controls. *Journal of Agricultural Safety and Health*, 13 (3), 259-274.
	Continuing Education and Outreach
2004	Zanoni J: Building Public Health Capacity in Environmental and Occupational Health through Training. Public Health Practice in Illinois, Special Issue Environmental Contaminants, Spring, 2004, V 5, N 3, P. 13-16, Mid-America Public Health Training Center, UIC School of Public Health, Chicago, IL.
2007	Zanoni J, Kaufman K, McPhaul K, Nickels L, Hayden M, Glassman M, Vega L, Sokas R, Lipscomb J: Personal Care Assistants and Blood Exposure in the Home Work Environment: Focus Group Findings Progress in Community Health Partnerships. 2007;2:125-32.
	Industrial Hygiene / Hazardous Substances Academic Training
2002	Ross MA[nt], Persky VW, Scheff PA, Chung J[nt], Curtis L[nt], Ramakrishnan V, Wadden RA, and Hryhorczuk DO: The effect of ozone and aeroallergens on the respiratory health of asthmatics. Archives of Environmental Health, 57(6) 658-678 November/December, 2002
2003	Berman L[nt]: Fish uptake and bioaccumulation of polychlorinated biphenyls, presented at the American Industrial Hygiene Association Local Section, Chicago, February 2003
2003	Berman L[nt] and Erdal S: Multi-media emissions inventory for polychlorinated biphenyls in the Great Lakes basin. Presented at the Annual Meeting of the International Association of Great Lakes Researchers, Chicago, Illinois, June 22-23, 2003.

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2003 Brown-Ellington L[nt], Erdal S, and Scheff P: A field comparison of thoracic size selective exposure assessment techniques. Presented at the American Industrial Hygiene Conference and Exposition, May 12-15, 2003, Dallas, Texas.

2003 Butler GM[nt] and Li A: Co-solvent effect on aqueous solubility of 4-chlorobiphenyl at different temperatures. 26th Midwest Environmental Chemistry Workshop. Iowa City, Iowa. Oct. 11-12, 2003

2003 Bzdusek P, Christensen ER, Li A, Zou Q: Source apportionment of sediment PAHs in Lake Calumet, Chicago: Application of factor analysis with nonnegative constraints. Environ. Sci. Technol. (2003)

2003 Caudill M, Scheff P, Erdal S: Temporal trends of ambient benzene concentrations in U.S. EPA Region 5. Presented at the Annual Conference of the Air and Waste Management Association, San Diego, June 22-26, 2003

2003 Christensen ER, Bzdusek P, Li A: Anaerobic dechlorination of PCBs in sediments of Kinnickinnic River, Wisconsin. Intern. J. Sediment Res. 18(2), 231-238, 2003.

2003 Esmen NA and Vincent JH: The evolution of the modern concept of exposure: an historical perspective. British Occupational Hygiene Society Conference – London U.K., 8 April 2003

2003 Esmen NA, Jones EP, Hall TA, Phillips ML, Marsh GM: The changing character of exposure in synthetic rubber production. British Occupational Hygiene Society Conference – London U.K., 9 April 2003

2003 Esmen NA: Benzene exposure assessments: past practices and future prospects. Proceedings of Workshop on Leukemia Risks in Relation to Benzene Exposure. TM Sorahan (Edit) Institute of Petroleum, London p. 15-37 (2003)

2003 Hogan TJ: Picking the 'right' glove is wrong. American Industrial Hygiene Conference & Expo, Dallas, Texas, 2003

2003 Jang JK[t] and Li A: Temporal trend and spatial distributions of PAHs and PCBs in Lake Calumet Area, Chicago. Intern. J. Sediment Res. 18(2), 239-247, 2003.

2003 Jones EP, Esmen NA, Clinkenbeard RE, Hall TA: Effect of perception on the recollection of exposures: Empirical observations. British Occupational Hygiene Society Conference – London U.K., 8 April 2003

2003 Kashuba R[t], Scheff P, Rizzo M: Characterization of short-term particulate matter measurement. Presented at the Conference on the Environment, University of Illinois at Chicago, April 9, 2003.

2003 Li A, Jang JK[t], Scheff P: Application of EPA CMB8.2 model for source apportionment of sediment PAHs in Lake Calumet, Chicago. Environ. Sci. Technol. 37(13): 2958-2965. 2003.

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2003	Li A, Jang JK[t], Scheff PA: Application of EPA CMB8.2 model for source apportionment of sediment PAHS in Lake Calumet, Chicago. Presented at the international conference A Global Threats to Lakes: Managing in an Environment of Instability and Unpredictability, 46th annual conference of the International Association for Great Lakes Research, Chicago, IL, June 22-26, 2003.
2003	Li A, Jang JK[t], Scheff PA: Application of EPA CMB 8.2 model for source apportionment of sediment PAHS in Lake Calumet, Chicago. Environ. Sci. Technol., 37:2958-2965, 2003.
2003	Marsh, G. M., Youk, A. O., Buchanich, J.M., Cassidy, L.D., Lucas, L.J., Esmen (IHF), N. A., Gathuru, I.: Pharyngeal cancer mortality among chemical plant workers exposed to formaldehyde Toxicology and Industrial Health. 18:257-268 (2003)
2003	Marsh GM, Youk AO, Buchanich JM, Cassidy LL, Lucas LJ, Esmen NA, Gathuru I: Formaldehyde exposure and respiratory tract cancer among chemical plant workers: An updated cohort study and new nested case-control study. British Occupational Hygiene Society Conference – London U.K., 9 April 2003
2003	McCutcheon H, Johnson D, Esmen NA, Clinkenbeard R: Methodological issues in ultra-low concentration aerosol sampling. American Industrial Hygiene Conference Abstracts. Paper 161, p. 38 - Dallas, TX May 2003
2003	Phillips ML, Esmen NA, Lynch R, Johnson DL, Hall TA: Determinants of exposure to volatile organic compounds in ambient air: The Oklahoma urban air toxics study. American Industrial Hygiene Conference Abstracts. Paper 26, p. 7 - Dallas, TX May 2003
2003	Rizzo M and Scheff P: Assessing ozone networks with positive matrix factorization. Presented at the Spring meeting of the American Institute of Chemical Engineers, March 30-April 3, 2003, New Orleans, LA.
2003	Rizzo M, Scheff P, Kaldy W: Adjusting TEOM data for comparison to federal reference method PM2.5 measurements in region 5. Journal of the Air and Waste Management Association, 53:596-607 (May), 2003.
2003	Rizzo M, Scheff P, Curtis L[t], Wadden R: Characterization of fungal source contributions in forty-four homes. Abstract 134, for Presentation at the 22 Annual AAAR Conference in Anaheim, California, October 20 - 24, 2003.
2003	Rizzo M, Scheff PA, Kaldy W: Method for transforming continuous PM2.5 monitoring data for comparison with the FRM. Presented at U.S. EPA's 2003 National Air Quality Conference, San Antonio, TX, February 2-5, 2003.
2003	Rizzo M, Wadden R, Curtis L[t], Scheff P: Determination of the contribution of outdoor fungi to indoor bioaerosol concentrations. Submitted for Publication to the Journal of Aerosol Science, November 26, 2003

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2003	Rockne K, Gunty D, Song W, Mills W, Li A: Air deposition of soot to the Laurentian Great Lakes. International Association of Great Lakes Research. 2003 IAGLR/ILEC Conference. Abstract ID: 1039822937. Chicago, IL. Jun. 22-26, 2003.
2003	Song W, Li A, Mills W, Rockne K, Gunty D, Ford J[nt]: Recent sedimentary deposition of PBDEs/PCBs in the Great Lakes. International Association of Great Lakes Research. 2003 IAGLR/ILEC Conference. Abstract ID: 1039628805. Chicago, IL. Jun. 22-26, 2003.
2003	Song W, Li A, Xu X: Water solubility enhancement of phthalates by cetyltrimethyl-ammonium bromide and b-cyclodextrin. Ind. Eng. Chem. Res., 42, 949-955, 2003.
2003	Song W, Ford J[nt], Buckley D, Rockne K, Mills W, Li A: Temporal and spatial distribution of PBDEs and PCBs in the sediments of the Great Lakes. 26th Midwest Environmental Chemistry Workshop. Iowa City, Iowa. Oct. 11-12, 2003
2003	Tessier DM: Molecular and Cellular Toxicology in the Environmental Health Sciences. Great Lakes Center for Environmental Health & Safety, University of Illinois Chicago. March 26, 2003.
2003	Turyk M, Persky V, Coover L, Scheff P, Sanchez A, Piorkowski J: Associations of asthma symptoms with home environmental exposures. Paper #74658 for presentation at the annual meeting of the American Public Health Association, San Francisco CA, Nov. 15-19, 2003.
2004	Berman L[nt] and Erdal S: Assessment of highly-censored environmental data. Presented at the American Industrial Hygiene Association Local Section, Chicago, February 2004
2004	Berman L[nt]: The exposure of artist welders to metal fume, part I and II. Presented at the Tri-State Sculptors Conference, Winston-Salem, NC, October, 2004
2004	Brown L[nt] and Erdal S: Identification of wood-working tools resulting in high airborne exposures using real-time concentrations with area samples. Annual Meeting of the American Industrial Hygiene Association, Atlanta, GA. May 12, 2004
2004	Cali S: Multi-disciplinary outbreak investigation: Environmental source investigation of a cluster of opportunistic fungal pathogen infections at a dialysis clinic, at Interdisciplinary Occupational & Environmental Health and Safety Seminar, Nov 10, 2004
2004	Cali S: Illinois Center of Excellence and Health Hazard Evaluations. Presentation at National Environmental Health Conference, Anchorage, Alaska, May 6, 2004
2004	Erdal S and Brown L[nt]: Comparison of real-time aerosol measurements against the time-integrated sampling methods in a wood-working facility. Annual Meeting of the American Industrial Hygiene Association, Atlanta, GA. May 12, 2004
2004	Erdal S: Gasoline additives and public health, in Encyclopedia of Energy. Eds., Cutler J. Cleveland, Elsevier Science, Inc., 2004.

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2004	Hogan TJ: Business Crises are Not Forest Fires, American Industrial Hygiene Conference & Expo, Atlanta, Georgia, 2004
2004	Hogan TJ: Lessons From the Field (Dermal Exposure Roundtable), American Industrial Hygiene Conference & Expo, Atlanta, Georgia, 2004
2004	Hopp K[nt] and Erdal S: Evaluation of welding fume particulate exposures with area samples. Annual Meeting of the American Industrial Hygiene Association, Atlanta, GA. May 12, 2004
2004	Johnson DL and Esmen NA: Method induced exposure misclassification for a respirable dust sampled using ISO/ACGIH/CEN criteria. Ann Occup Hyg. 48:13-20, (2004)
2004	Kashuba RO[nt], Scheff PA, Rizzo M: Characterization of nephelometer-measured short-term fine particulate matter in Region 5. Paper 04-A-59-AWMA Presented at the Symposium on Air Quality Measurement Methods and Technology - 2004, April 19 to 22, 2004, Research Triangle Park, NC
2004	Kennedy K[nt], Conroy LM, Cohen RA, Anderson RJ, Mukhin V: Occupational dust exposure in Ukrainian coal miners. Presentation at American Industrial Hygiene Conference 2004, Atlanta, GA.
2004	Li A: Chronology of PBDE air deposition in the Great Lakes from sedimentary records. Invited Seminar, USEPA Central Laboratory, Chicago. Feb. 18, 2004.
2004	Li A: Emerging environmental challenges – New organic pollutants. Invited Seminar, Shanghai Jiao-tong University, Shanghai, China. December 28, 2004.
2004	Li A: Long range transport, spatial distribution, and chronology of input flux of PBDEs to the Great Lakes. Invited speaker at the 1st International Symposium on Persistent Toxic Substances. Beijing, China. Nov 7-11, 2004.
2004	Li A: Temporal and spatial distribution of PBDEs and PCBs in the sediments of the Great Lakes. Invited Seminar, Chinese Academy of Sciences, Research Center for Eco-Environmental Sciences. Beijing, China. July 2, 2004.
2004	Pascal LE[nt] and Tessier DM: Cytotoxicity of chromium(VI) and manganese to lung epithelial cells in vitro. Tox. Letters 147(2)143-151, 2004
2004	Rizzo M and Scheff P: Assessing ozone networks with positive matrix factorization. Environmental Progress, 23(2): 110-119, July, 2004
2004	Scheff P. and Kashuba R[nt]: Characterization of short-term fine particulate matter in Region 5. Presented at the Annual Conference of the Air and Waste Management Association, Indianapolis, IN, June 20-24,2004
2004	Scheff P and Rizzo M: Evaluation of PM2.5 in Chicago by positive matrix factorization. Presentation at Air Pollution 2004, Wessex Institute of Technology, Rhodes, Greece, June 30 - July 2, 2004

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2004	Schnackenbeck J[nt] and Erdal S: Respirable concentration of welding fumes at an electromotive plant using various exposure assessment techniques. Annual Meeting of the American Industrial Hygiene Association, Atlanta, GA. May 12, 2004
2004	Schnackenbeck J[nt] and Erdal S: Size-selective elemental composition of welding fumes in area samples. Annual Meeting of the American Industrial Hygiene Association, Atlanta, GA. May 12, 2004
2004	Song W, Ford JC[nt], Li A, Mills WJ, Buckley DR, Rockne KJ: Polybrominated diphenyl ethers in the sediment of the Great Lakes. 1 - Lake Superior. Environ. Sci. Technol. 38(12), 3286-3293, 2004
2004	Song W, Ford JC[nt], Sturchio N, Buckley DR, Rockne K, Mills WJ, Li A: Temporal and spatial distribution of PBDEs and PCBs in the sediments of the Great Lakes. 27th Midwest Environmental Chemistry Workshop. Madison, WI. Oct. 15-17, 2004
2004	Sorahan T and Esmen NA: Lung cancer mortality in UK nickel-cadmium battery workers, 1947-2000. Occup. Env. Medicine 61:1008-1016 (2004)
2004	Tessier DM: Mitogen activated protein kinases as targets for endocrine disrupting pesticides. Presented at 228th National Meeting of the American Chemical Society, Philadelphia, PA, August 22 - 26, 2004.
2004	Tessier DM: Metal Induced Cellular Signaling in Lung Epithelium. Occupational & Environmental Health & Safety Education and Research Center, University of Illinois Chicago April 21, 2004.
2004	Vinson D[nt], Erdal S, Conroy L: Pilot study: acute respiratory effects of welding fumes. Annual Meeting of the American Industrial Hygiene Association, Atlanta, GA. May 12, 2004
2005	Curtis L, Cali S, Conroy LM, Baker K[nt], Ou CH[t], Hershow R, Norlock F[nt], Scheff PA: Aspergillus surveillance project at a large tertiary care hospital. J Hosp Infect. 2005 Mar;59(3):188-96.
2005	Dardynskaia IV, Okeanov AE, Petrenko SV, Dardynskiy OA, Cuvshinnikov AV, Slutskiy MA, Levushev BY: The influence of environmentally related thyroid disorders on the development of breast cancer among women in Belarus Republic. Proceedings of the International Conference "Sakharov Readings 2005: Environmental problems of the XXI century," May 20-21, 2005, pp 91-93
2005	Day GA, Stefaniak AB, Hoover MD, Dickerson,RM, Peterson EJ, Esmen NA, Scripsick RC: Bioavailability of beryllium oxide particles: An *in vitro* study in the murine J774A.1 macrophage cell line model. Experimental Lung Research. 31: 341-360 (2005)
2005	Erdal S and Buchanan SA[nt]: Quantitative look at fluorosis, fluoride exposure, and intake in children using a health risk assessment approach. Env Health Persp 2005. 113:111-117.

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2005	Erdal S and Suero M: Case study: multi-pathway risk assessment for adults and children living near a hazardous waste site, in Environmental Health Risk Assessment for Public Health, Eds., Mark G. Robson and William A. Toscano, Submitted to Association of Schools of Public Health, 2005.
2005	Erdal S and Berman L[nt]: Occupational exposure environment, risk factors, and hazard awareness of metal sculptors and artist welders in the U.S., Journal of Environmental Health Research April 2006.
2005	Huhn GD, Austin C, Carr M, Heyer D, Boudreau P, Gilbert G, Eimen T, Lindsley MD, Cali S, Conover CS, Dworkin MS: Two outbreaks of occupationally acquired histoplasmosis: more than workers at risk. Environmental Health Perspectives, Vol. 113, No. 5, May, 2005
2005	Johnston KL, Phillips ML, Esmen NA, Hall TA: Evaluation of an artificial intelligence program for estimating occupational exposures. Annals of Occ. Hyg. 49:147-153 (2005)
2005	Lacey S, Esmen N, et al.: Empirical observations on exposure rates with its implications in exposure reconstruction. Abstract and presentation at International Society for Exposure Analysis Conference, Tucson, AZ, November 2005.
2005	Li A, Tai C, Wang Y, Zhang Q, Jiang G: Rapid debromination of decabromodiphenyl ether by nanoscale zero-valent iron. The 2nd International Symposium on Persistent Toxic Substances. Beijing, China. May 15-18, 2005.
2005	Li A: Analysis of PBDEs in environmental samples. Lecture in the 1st National Training Class for Environmental Analytical Techniques. Research Center for Eco-Environmental Sciences, Beijing, China. March 20, 2005.
2005	Li A: How PCBs get into polar bears at the North Pole. Undergraduate Special Seminar, College of Environmental Sciences, Nanjing University, Nanjing, China. June 27, 2005.
2005	Li A: Quality assurance and quality control in environmental organic trace analysis. Invited Seminar. College of Environmental Sciences, Nanjing University, Nanjing, China. May 10, 2005.
2005	Li A and Liu X: Combined effects of aging and cosolvents on sequestration of phenanthrene in soils. Journal of Environmental Engineering 131(7): 1068-1072, 2005
2005	Marsh GM, Youk AO, Esmen NA, Buchanich, JM: Mortality patterns among workers in an U.S. pharmaceutical production plant. Annals of Epidemiology 15:112–122(2005).
2005	Phillips ML, Esmen NA, Hall TA, Lynch RL: Determinants of exposure to volatile organic compounds in four Oklahoma cities. J. Exp. Anal. and Environ. Epid. 15: 35-46 (2005)
2005	Rao CY, Pachucki C, Cali S, Arduino M, Santhiraj M, Noble-Wang J,Brandt M, Krankowski K, Leehey D, Popli S, Fridkin S: An outbreak of *Phialemonium* mold infections in hemodialysis patients: When purified water is not so pure – Illinois, 2005, Latebreaker for 2006 Epidemic Intelligence Service Conference

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2005	Song W, Li A, Ford JC[nt], Sturchio NC, Buckley DR, Rockne KJ, Mills WJ: Polybrominated diphenyl ethers in the sediment of the Great Lakes. 2 - Lakes Huron and Michigan. Environmental Science and Technology 39(10), 3474-3479, 2005
2005	Song W, Ford JC[nt], Li A, Sturchio NC, Buckley DR, Rockne KJ, Mills WJ: Polybrominated diphenyl ethers in the sediment of the Great Lakes. 3 - Lakes Erie and Ontario. Environmental Science and Technology 39(15): 5600-5605, 2005
2006	Cali S: An investigation of an outbreak of rare fungal infections at a dialysis clinic. Presentation at American Industrial Hygiene Conference, May 15, 2006
2006	Cali S, Scheff PA, Sokas R: Use of the superfund/elutriator method to determine asbestos structure concentrations in beach sand. Presentation at American Industrial Hygiene Conference, May 17, 2006
2006	Clark T, Huhn GD, Conover C, Cali S, Arduino MJ, Hajjeh R, Brandt ME, Fridkin SK: Outbreak of bloodstream infection with the mold *Phialemonium* among patients receiving dialysis at a hemodialysis unit. Accepted for Publication, Infection Control and Hospital Epidemiology, November 2006, vol. 27, no. 11
2006	Clark T, Huhn GD, Conover C, Cali S, Arduino MJ, Hajjeh R, Brandt ME, Fridkin SK: Outbreak of bloodstream infection with the mold *phialemonium* among patients receiving dialysis at a hemodialysis unit. Accepted for Publication, Infection control and hospital epidemiology, November 2006, vol. 27, no. 11.
2006	Davis FG, Williams L, Erdal S, Bigner DD: Characterization of work exposures to a subset of known and suspected animal neurocarcinogens using the National Occupational Health Survey (1980-1983). International Journal of Environmental and Occupational Health. 12(1):16-23, 2006.
2006	Dorevitch S, Demirtas H, Perksy V, Erdal S, Conroy L, Schoonover T, Scheff, P: Demolition of high-rise public housing increases particulate matter air pollution in communities of high-risk asthmatics. Journal of the Air & Waste Management Association, 56:1022-1032, July, 2006.
2006	Esmen N, Lacey S, et al.: Validation of near-field vapour exposure prediction equations for unventilated chemical industrial processes. Abstract and presentation accepted for the British Occupational Hygiene Society Conference, Newcastle, UK, April 2006.
2006	Forst L, Martinez I, Lacey S, et al.: Barriers and benefits of protective eyewear use by Latino farm workers. Accepted for publication, J Agromedicine (2006).
2006	Jacobs DE and Nevin R: Validation of a twenty-year forecast of U.S. childhood lead poisoning: updated prospects for 2010. Environ Res 102(3) 352-364, Nov 2006.
2006	Jacobs DE: A qualitative review of housing hazard identification protocols in the U.S. Environ Res 102(1) 13-21, Sept 2006

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[nt]NIOSH funded trainee
[t]Other trainee

2006	Lacey S[nt], Conroy L, Franke J, Wadden R, Hedeker D, Forst L: Personal dust exposures at a food processing facility. J Agromedicine 11: 49-58 (2006).
2006	Lacey SE[nt], Conroy LM, Schoonover TM, Franke JE, Hedeker DR, Forst LS: Dust emission rates from food processing. Ann Agric Environ Med 13:251–257 (2006).
2006	Lacey S[nt], Conroy L, et al.: Dust emission rates from food processing. Submitted and under review, Ann Agric Environ Med (2006).
2006	Lacey S, Espinosa R, et al.: Development of a geospatial time dependent information system for industrial hygiene. Abstract and presentation accepted for the American Industrial Hygiene Conference and Exposition, Chicago, IL, May 2006.
2006	Lacey S[nt], Forst L, et al.: Eye injury in migrant farm workers and suggested hazard controls. Submitted and under review, J Ag Safety and Health (2006).
2006	Li A, Rockne KJ, Sturchio NC, Song W, Ford JC[nt], Buckley DR, Mills WJ: Polybrominated diphenyl ethers in the sediment of the Great Lakes. 4 – Influencing factors, trends, and implications. Environmental Science and Technology 40(24), 7528 - 7534, 2006
2006	Li A: Final Report: Chronology of PBDE Air Deposition in the Great Lakes from Sedimentary Records. Invited Seminar, USEPA Region 5, Chicago. June 13, 2006.
2006	Li A: Long range transport and *in-situ* degradation of PCBs in the Great Lakes. The 3rd International Symposium on Persistent Toxic Substances. Beijing, China. October 22-26, 2006.
2006	Li A, Song W, Ford JC[nt], Sturchio NC, Buckley DR, Rockne KJ, Mills WJ: Temporal trend and spatial distribution of PBDEs in the sediments of the Great Lakes. Organohalogen Compounds 67, 903-906.
2006	Liu H, Zhang Q, Cai Z, Li A, Wang Y, Jiang G: Separation of polybrominated diphenyl ethers, polychlorinated biphenyls, polychlorinated dibenzo-p-dioxins and dibenzo-furans in environmental samples using silica gel and florisil fractionation chromatography. Analytica Chimica Acta 557, 324-330, 2006
2006	Turyk M, Curtis L, Scheff P, Contrares A, Coover L, Hernandez E, Freels S, Persky, V: Environmental allergens and asthma morbidity in low income children. Journal of Asthma 43:453-457, 2006.
2006	Wang Y, Li A, Liu H, Zhang Q, Ma W, Song W, Jiang G: Development of quantitative structure gas chromatographic relative retention times models on different stationary phases for 209 polybrominated diphenyl ether congeners. Journal of Chromatography A 1103, 324-328, 2006

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[nt]NIOSH funded trainee
[t]Other trainee

2007 Anrubio Vega EJ, Bravo Alvarez H, Brezonik PL, Chan RM, Fitz D, Grosjean D, Hernández Téllez J, Kahl J, Keener TC, López Portillo M, Lu M, Paredes Maury S, Nakamura S, Ortega Morales B.O, Pescador L, Reyes Trujeque J, Sánchez Alvarez P, Scheff P, Soso Echeverria R, Soto Ayala R, Vazquez Botello, A: A summary of the international workshop on the influences of air quality on the Mayan heritage sites in Mesoamerica. Environmental Management, February, pp 24-30, 2007.

2007 Baker K and Scheff P: Photochemical model performance for PM2.5 sulfate, nitrate, ammonium, and pre-cursor species SO2, HNO3, and NH3 at background monitor locations in the central and eastern United States. Accepted for Publication, Atmospheric Environment, April, 2007.

2007 Baker K and Scheff P: Assessing meteorological variable and process relationships to modeled PM2.5 ammonium nitrate and ammonium sulfate in the central United States. Accepted for Publication, Journal of Applied Meteorology and Climatology, June, 2007.

2007 Cali S, Porter-Thomas L[t], Scheff PA, Tessier DM, Conroy LM: Exposure assessment for metals in a police department firing range while using different types of ammunition. Presentation at AIHCe Conference, June, 2007, Philadelphia PA

2007 Cali S, Wuellner S, Scheff PA: Preliminary results: time series analysis of incidents and complaints at Hartford, IL. Presentation at 2007 Region 5 – ATSDR/States Meeting, Oregon, IL, May 14 – 16, 2007

2007 Dorevitch S, Demirtas H, Scheff PA, Persky V: Bias and confounding in longitudinal measures of exhaled monoxides. Journal of Exposure Science and Environmental Epidemiology, February 7, 2007.

2007 Esmen N, Lacey S, Hancock R: The role of social concerns in public health. Submitted and under review, J Royal Soc Health (2007).

2007 Esmen NA, Kennedy KJ, Hall TA, Phillips ML, Marsh GM: Classification of worker exposures. Chemico-Biological Interactions, 166:245-253(2007)

2007 Esmen NA, Hall TA, Phillips ML, Marsh GM: Chemical process based reconstruction of exposures for an epidemiological study: I. Theoretical and Methodological issues, Chemico-Biological Interactions, 166:254-263(2007)

2007 Esmen NA, Hall TA, Phillips ML, Jones EP, Basara H, Marsh GM, Buchanich JM: Chemical process based reconstruction of exposures for an epidemiological study: II. Estimated exposures to chloroprene and vinyl chloride, Chemico-Biological Interactions, 166:264-276(2007)

2007 Hall TA, Esmen NA, Jones EP, Basara H, Phillips ML, Marsh GM, Youk AO, Buchanich JM, Leonard RC: Chemical process based reconstruction of exposures for an epidemiological study: III. Analysis of industrial hygiene samples Chemico-Biological Interactions, 166:277-284(2007)

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[nt]NIOSH funded trainee
[t]Other trainee

2007	Jacobs DE, Kelly T, Sobolweski J: Linking public health, housing and indoor environmental policy: Successes and challenges at local and federal agencies in the U.S. Environ Health Perspect. 115:976-982 (2007).
2007	Li A: PBDEs and PCBs in the sediments of the Great Lakes: Distributions, trends, influencing factors, and implications. Great Lakes Research: Environmental Issues for a Freshwater Ecosystem (CINF Division), 233rd American Chemical Society National Meeting, Chicago, IL, March 25-29, 2007
2007	Li A, Tanabe S, Jiang G, Giesy JP, Lam PKS (Eds). Persistent Organic Pollutants in Asia – Sources, Distributions, Transport, and Fate. Elsevier Publications. ISBN-13: 978-0-08-045132-9. ISBN-10: 0-08-045132-2, 2007. http://www.elsevier.com/wps/find/bookdescription.cws_home/709209/description#description
2007	Lippert JF[nt], Lacey SE, Esmen NA: Magnetic field exposure in a nondestructive testing operation. Archives of Environmental and Occupational Health (Submitted)
2007	Marsh GM, Youk AO, Buchanich JM, Cunningham M, Esmen NA, Hall TA, Phillips ML: Mortality patterns among industrial workers exposed to chloroprene and other substances: I. General mortality patterns. Chemico-Biological Interactions, 166:285-300(2007)
2007	Marsh GM, Youk AO, Buchanich JM, Erdal S, Esmen NA: Work in the metal industry may help explain nasopharyngeal cancer mortality excess among workers exposed to formaldehyde. Reg Tox and Pharm. (Accepted for Publication - 2007).
2007	Marsh GM, Youk AO, Buchanich JM, Cunningham M, Esmen NA, Hall TA, Phillips ML, Mortality patterns among industrial workers exposed to chloroprene and other substances: II. Mortality in relation to exposure. Chemico-Biological Interactions, 166:301-316 (2007)
2007	Wang Y, Zhang Q, Li A, Liu H, Li G, Jiang G, Hu J: Polybrominated diphenyl ethers in sewage sludge of wastewater treatment plants in China. Chemosphere, 68(9), 1683-1691, 2007
2007	Wu F, Karol MH, Jacobs DE, Mitchell CD, Miller D: Improving indoor environmental quality for public health: Impediments and policy recommendations. Environ Health Perspect. 115: 953-957 (2007)
in press	Erdal S and Carolla A[nt]: Assessment of the health protectiveness of the risk-based soil remediation standards of the midwestern states. Submitted to the Human and Ecological Risk Assessment. (in press)
in press	Erdal S and Berman L[nt]: Occupational exposure environment, risk factors, and hazard awareness of metal sculptors and artist welders in the U.S. Submitted to International Journal of Environmental Health Research. (in press)

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[nt]NIOSH funded trainee
[t]Other trainee

in press	Erdal S, Hryhorczuk D, Berman L[nt]: Multi-media PCB emissions inventory for the Great Lakes region in the U.S. Air and Waste Management Association Journal. Accepted for publication.
In press	Rizzo M and Scheff PA: Fine particulate source apportionment using data from the USEPA speciation trends network in Chicago, Illinois: Comparison of two source apportionment models. Accepted for publication, Atmospheric Environment, March, 2007.
In press	Rizzo M and Scheff PA: Utilizing a chemical mass balance and positive matrix factorization to determine influential species and examine possible rotations in receptor modeling results. Accepted for publication, Atmospheric Environment, May, 2007.
Submitted	Pascal L.E., D.M. Tessier: Activation of MAP kinases in by hexavalent chromium, manganese and nickel in human lung epithelial cells. Submitted to Toxicology Letters.

Occupational Health Nursing

2003	Ailey S and Miller A: Psychosocial theories of depression for individuals with intellectual and developmental disabilities: A historicist perspective. Research and Theory for Nursing Practice, 18, 127-148, 2004.
2003	Byczek L[nt], Levin PF: Developing focused wellness programs: using concept analysis to increase business value. AAOHN Journal, 51(9), 384-389, 2003.
2003	Byczek L[nt], Walton SM, Conrad KM, Reichelt PA, Samo DG: Cardiovascular risks in firefighters: Implications for occupational health nurse practice. Annual meeting of the American Public Health Association, San Franciso, CA; November, 2003
2003	Dresden E, McElmurry B J, McCreary LL: Approaching ethical reasoning in nursing research through a communitarian perspective. Journal of Professional Nursing, 19(5), 295-304, 2003.
2003	Eyler AA, Matson-Koffman D, Young DR, Wilcox S, Wilbur J, Thompson JL, Sanderson B, Evenson, KR: Quantitative study of correlates of physical activity in women from diverse racial/ethnic groups: The Women's Cardiovascular Health Network Project--introduction and methodology. American Journal of Preventative Medicine, 25(3 Suppl 1), 5-14, 2003.
2003	Hong OS[t] and Cho RC: Occupational health nursing practice, education, and research in Korea: An international update. AAOHN Journal, 51(2), 65-71, 2003.
2003	Hong OS[t] and Seetoo AD: Uncovering factors contributing to under-utilization of breast cancer screening in Chinese and Korean American women living in the United States. Ethnic Disease, 13(2), 213-219, 2003.
2003	Hong OS[t]: Guest Editorial: The globalization of occupational health nursing—Advancing education, practice, and research. AAOHN Journal, 51(2), 54,(2003).

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2003 Hong OS[t] and Raymond DM: Effectiveness of tailored intervention to increase factory workers' use of hearing protection. Nursing Research, 52(5), 289-295, (2003).

2003 McDevitt J, Havens KK, and Mundt M: Changes in wellness practices and health care utilization after an educational intervention for perimenopausal women. Women's Studies Quarterly, 31, 125-136 (2003).

2003 McElmurry BJ, Misner SJ[nt] and Buseh AG: Minority international research training program: Global collaboration in nursing research. Journal of Professional Nurses, 19, 22-31, (2003).

2003 McElmurry BJ, Park CG, and Buseh AG: The nurse-community health advocate team for urban immigrant primary health care. Journal of Nursing Scholarship, 35(3), 275-281, (2003).

2003 Miller AM, Wilbur J, Chandler PJ and Sorokin O: Cardiovascular disease risk factors and menopausal status in midlife women from the former Soviet Union. Women Health, 38(3), 19-36, (2003).

2003 Misner ST[nt] and Reynolds S: Assault of long-term care personnel. Journal of Gerontological Nursing, 29(3), 28-35 (2003).

2003 Morris JA and Wachs JE[nt]: Implementing a job hazard analysis program. AAOHN Journal, 51(4), 187-195,(2003).

2003 Twitchell KT and Wachs JE[nt]: Bloodborne pathogens: What you need to know – Part II. AAOHN Journal, 51(2), 89-99, (2003).

2003 Wachs JE[nt]: Scleraderma: living with unpredictability. AAOHN, 51(8), 353-357, 2003.

2003 Wachs JE[nt]: Preparing for smallpox: Occupational health nursing update. AAOHN Journal, 51(5), 227-235 (2003).

2003 Wachs JE[nt]: Managing occupational health information: An organizational approach. AAOHN Journal, 51(3), 135-141 (2003).

2003 Wachs JE[nt]: Triaging: common complaints in the workplace. AAOHN, 51(6), 267-273 (2003).

2003 Walton SM, Conrad KM, Furner S, Samo D: Cause, type and cost of injury to firefighters. American Journal of Industrial Medicine, 2003; 43(4):454-458.

2003 Wilbur J, Chandler P, Dancy B, Lee H[t]: Correlates of physical activity in urban Midwestern African-American women. American Journal of Preventive Medicine, 25(3 supplement 1), 45-52, (2003).

2003 Wilbur J, Chandler P, Dancy B, and Lee H[t]: Correlates of physical activity in urban Midwestern Latinas. American Journal of Preventive Medicine, 25(3 supplement 1), 69-76, (2003).

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2003 Wilbur J, Miller AM, Chandler P, McDevitt J: Determinants of physical activity and adherence to a 24-week home-based walking program in African American and Caucasian women. Research in Nursing and Health, 26(3), 213-224 (2003).

2004 Byczek L[nt], Walton SM, Conrad KM, Reichelt PA, Samo DG, Cardiovascular risks in firefighters: Implications for occupational health nurse practice. AAOHN Journal, 2004; 52(2): 66-76.

2004 Byczek L[nt], Walton SM, Conrad KM, Reichelt PA, Samo DG: Cardiovascular risks in firefighters: Implications for occupational health nurse practice. Poster at the American Occupational Health Conference, Kansas City, MO, May, 2004.

2004 Dancy BL, Wilbur J, Talashek M, Bonner G, Barnes-Boyd C: Community-based research: Barriers to recruitment of African–Americans. Nursing Outlook, 52, 234-240, 2004.

2004 Marion LN, Braun S, Anderson D, McDevitt J, Noyes M, Snyder M: Center for integrated health care: Primary and mental health care for people with severe and persistent mental illness. Journal of Nursing Education, 43(2), 71-74, 2004.

2004 McDevitt J: Primary care update for mental health nurses: Evidence-based guidelines for nursing assessment, intervention, and follow-up (article, exam questions, CEU). Journal of Psychosocial Nursing and Mental Health Services, 42 (10), 22-35, 2004.

2004 Miller AM, and Gross R: Depression and health of women from the former Soviet Union living in the United States and Israel. Journal of Immigrant Health, 6(4), 183-192, 2004.

2004 Miller AM, and Heldring M: Mental health and primary care in a time of terrorism: Psychological impact of terrorist attacks. Families, Systems & Health, 22(1), 7-30, 2004.

2004 Miller AM, Chandler PJ, Wilbur J, Sorokin O: Acculturation and cardiovascular disease risk in midlife immigrant women from the former Soviet Union. Progress in Cardiovascular Nursing, 19(2), 47-55, 2004.

2004 Miller AM, Sorokin O, Wilbur J, Chandler PJ: Demographic characteristics, menopausal status, and depression in midlife immigrant women. Women's Health Issues, 14(6), 227-234, 2004.

2004 Norr KF, Tlou SD, Norr JL, McElmurry BJ, Moeti MM: Impacts of peer group education for AIDS prevention for women in Botswana. Health Care for Women International, 25(3), 210-226, 2004.

2004 Purath J, Miller AM, McCabe G, Wilbur J: A brief intervention to increase physical activity in sedentary working women. Canadian Journal of Nursing Research, 36(1), 76-91, 2004.

2004 Semanik P, Wilbur J, Sinacore J, Chang RW: Physical activity behavior in older women with rheumatoid arthritis. Arthritis Care & Research, 51(2), 246-252, 2004.

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[nt]NIOSH funded trainee
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2004 Wilbur J: Commentary to Exercise self-efficacy, enjoyment, and feelings states among adolescents by Wilbur. Western Journal of Nursing Research, 26(7), 716-718, 2004.

2004 Zerwic JJ, Wilbur J, Larson J: The Center for Research on Cardiovascular and Respiratory Health: the development of a National Institute of Nursing Research-funded center. Heart & Lung, 33(2), 69-74, 2004.

2005 Ferrans C, Zerwic J, Wilbur J, Larson J: Conceptual model of health related quality of life. Journal of Nursing Scholarship, 37, 336-342, 2005.

2005 McDevitt J, Braun S, Noyes M, Snyder M, Marion L: Integrated primary and mental health care: Evaluating a nurse-managed center for clients with serious and persistent mental illness. Nursing Clinics of North America, 40 (4), 779-790, 2005.

2005 McDevitt J, Robinson N, Forest D: A group-based walking program at a psychiatric rehabilitation center. Psychiatric Services, 56, 354-355, 2005.

2005 McDevitt J, Wilbur J, Kogan J, Briller J: A walking program for outpatients in psychiatric rehabilitation: Pilot study. Biological Research for Nursing, 7 (2), 87-97, 2005.

2005 Purath J. and Miller AM: Predictors of improvement in women's physical activity. Women & Health, 42(3), 57-75, 2005.

2005 Richardson C, Faulkner G, McDevitt J, Skrinar GS, Hutchinson DS, Piette JD: Integrating physical activity into mental health services for individuals with serious mental illness. Psychiatric Services, 56, 324-331, 2005.

2005 Wilbur J, Miller A, McDevitt J, Wang E: Menopausal status, ovarian hormones, moderate intensity walking and African American women. Research & Theory for Nursing Practice: An International Journal, 19 (2), 33-50, 2005.

2005 Wilbur J, Vassalo A, Chandler P, McDevitt J, Miller AM: Midlife women's adherence to home-based walking during maintenance. Nursing Research 54(1), 33-40, 2005.

2006 Katula S[nt]: Domestic violence in the workplace--part I: understanding how it affects victims. AAOHN J. 2006 May;54(5):197-200.

2006 Katula S[nt]: Domestic violence in the workplace--Part II: employers' response. AAOHN J. 2006 Aug; 54(8):341-4.

2006 Lee H[t], Wilbur J, Conrad K, Miller A: Risk factors associated with work-related musculoskeletal disorders among female flight attendants: Using a focus group to prepare a survey. Journal of Occupational Health Nursing, 54(4), 154-164, 2006.

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2006 McDevitt J, Synder M, Miller A, Wilbur J: Perceptions of barriers and benefits to physical activity among outpatients in psychiatric rehabilitation. Journal of Nursing Scholarship, 38(1), 50-5, 2006.

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2006 McElmurry B, Solheim K, Kishi R, Coffia M, Woith W, Janepanish P: Ethical concerns in nurse migration. Journal of Professional Nursing, 22(4), 226-235, 2006.

2006 Miller AM, Sorokin O, Wang E, Choi M, Feetham S, Wilbur J: Acculturation, social alienation, and depressed mood in midlife women from the former Soviet Union. Research in Nursing and Health, 29(2), 134-146, 2006.

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2006 Wilbur J and Zenk S: Commentary to Determinants of older rural women's activity and eating. Western Journal of Nursing, 28(4), 469-471, 2006.

2006 Wilbur J, McDevitt J, Wang E, Dancy B, Briller J, Nicola, Ingram D, Lee H[t], Zenk S: Recruitment of African American women to a walking program: Eligibility and Attrition during screening. Research in Nursing and Health, 29, 176-189, 2006.

2006 Wilbur J, Shaver J, Buntin M, Kogan J, Wang E: Menopausal transition symptoms in midlife women living with fibromyalgia and chronic fatigue. Health Care for Women International, 27(7), 600-614, 2006.

2007 Choi J, Miller A, Wilbur J: Acculturation and Depressive Symptoms in Korean Immigrant Women. J Immigr Minor Health. 2007 Oct 9.

2007 Finnegan L, Wilkie DJ, Wilbur J, Campbell RT, Zong S, Katula S[nt]: Correlates of physical activity in young adult survivors of childhood cancers. Oncol Nurs Forum. 2007 Sep; 34(5):E60-9.

2007 Lee EE, Tripp-Reimer T, Miller AM, Sadler GR, Lee SY: Korean American women's beliefs about breast and cervical cancer and associated symbolic meanings. Oncol Nurs Forum. 2007 May; 34(3):713-20.

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2008 Lee H[t], Wilbur J, Kim MJ, Miller AM: Psychosocial risk factors for work-related musculoskeletal disorders of the lower-back among long-haul international female flight attendants. J Adv Nurs. 2008 Mar;61(5):492-502.

2008 Lizer SK, Petrea RE: Health and safety needs of older farmers: part II. Agricultural injuries. AAOHN J. 2008 Jan;56(1):9-14.

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2008	Plonczynski DJ, Wilbur J, Larson JL, Thiede K: Lifestyle physical activity of older rural women. Res Nurs Health. 2008 Apr 2.
2008	Wilbur J, McDevitt JH, Wang E, Dancy BL, Miller AM, Briller J, Ingram DL, Nicola TL, Ju S, Lee H[t]. Outcomes of a home-based walking program for African-American women. Am J Health Promot. 2008 May-Jun;22(5):307-17.
2008	Zenk SN, Wilbur J, Wang E, McDevitt J, Oh A, Block R, McNeil S, Savar N: Neighborhood environment and adherence to a walking intervention in African American women. Health Educ Behav. 2008 Jul 31.

Occupational Medicine

2003	Aguilar J, Mas P, Romero M, Garcia R, Sardinas O, Orris P: Niveles de plomo en sangre y factores asociados, en ninos del municipio de Centro Habana, Rev Cubana Hig Epidemiol 2003, 412
2003	Cohen R, Kennedy K[nt], Mukhin V, Conroy LM: Respirable coal and silica dust levels in Ukrainian coal mines. 27th ICOH International Congress on Occupational Health, Iguassu Falls, Brazil, February 23-28, 2003. Abstract.
2003	Cohen R, Basanets A, Besonova N, Latishef E, Lysenko O, Kundiev Y: Prevalence of respiratory disease in Ukrainian coal miners. 27th ICOH International Congress on Occupational Health, Iguassu Falls, Brazil, February 23-28, 2003. Abstract.
2003	Cohen R: Update on Lung Disease Due to Coal Mine and Silica Dust Exposure. Pulmonary Grand Rounds, Northwestern University, June 3, 2003, Chicago, Illinois
2003	Cohen R: Update on Pneumoconiosis. X Congreso Medico, Asociacion Medica De Occidente, El Salvador. May 14-17, 2003, Santa Ana, El Salvador.
2003	Cohen R: Advances in Pulmonary Function Testing For Occupational Medicine. Central States Occupational Medicine Association, 79th Annual Spring Seminar, March 13-16, 2003, Chicago, Illinois.
2003	Cohen R: Office Spirometry and Technology. Chicago Medical Society Midwest Clinical Conference 2003. March 22, 2003, Chicago, Illinois
2003	Cohen R: Pulmonary Rehabilitation. X Congreso Medico, Asociacion Medica De Occidente, El Salvador. May 14-17, 2003, Santa Ana, El Salvador.
2003	Dorevitch S, Persky V, Scheff P: Housing demolition and air pollution: working with a local public housing environmental task force to minimize exposure. Paper #74522 for presentation at the annual meeting of the American Public Health Association, San Francisco CA, Nov. 15-19, 2003.
2003	Dorevitch S, Scheff P, Persky V, Erdal S, Hopp K[nt], Schoonover T, Draftz R: Particulate matter air pollution and public housing demolition in Chicago. Presented at the Conference on the Environment, University of Illinois at Chicago, April 9, 2003.

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2003	Forst L, Nickels L, Zanoni J: Home health workers. Letter to the Editor. JAMA, December 2003
2003	Forst L, Skinner S, Bauer S, Zanoni J. Risk perception of Latino farm workers. Poster, Amer Pub Health Assn, San Francisco, Nov 15, 2003
2003	Forst L: Reducing eye injuries in Latino farm workers. Conference on the Environment. University of Illinois at Chicago. April 9-10, 2003. Chicago, IL.
2003	Forst L: Reducing eye injuries in Latino farm workers. American College of Occupational and Environmental Medicine. May 7, 2003. Atlanta, GA.
2003	Hryhorczuk D, Nickels L, Forst L, Zanoni J: Online training resources in occupational safety and health, Asian-Pacific Newsletter on Occupational Health and Safety, V 10, N 3, P. 76-79, November, 2003, Finnish Institute of Occupational Health, Helsinki
2003	Krantz A: Industrial Agents as Chemical Threats. Agency for Toxic Substances and Disease Registry/Central States Conference on “Preparedness for Terrorism: Chemical Agents of Opportunity”, St. Charles, Illinois, September 10-11, 2003
2003	Krantz A: Occupational Disease Surveillance in Introduction to Occupational and Environmental Health, University of Illinois School of Public Health, October, 2002, 2003
2003	Krantz A: Reproductive Toxicology in “Introduction to Teratology”, Northwestern University Graduate Program in Genetic Counseling, 2003
2003	Krantz A: Methemoglobinemia, in Rosen and Barkin's 5-Minute Emergency Medicine Consult 2nd edition. Philadelphia Lippincott William Wilkins, 2003.
2003	Krantz A: Monoamine Oxidase Inhibitor Poisoning, in Rosen and Barkin's 5-Minute Emergency Medicine Consult 2nd edition. Philadelphia Lippincott William Wilkins, 2003.
2003	Krantz A, Hershow R, Prachand N, Hayden D, Franklin C, Hryhorczuk D: Heroin insufflation as a trigger for patients with life-threatening asthma. Chest 2003;123:510-517.
2003	Orris P: Medical Consultant, in Complete Medical Encyclopedia, Leikin, JB., Lipsky, MS., Editors, American Medical Association, Random House, New York, 2003
2003	Orris P, Lecture: Privacy and Confidentiality , at Ethics of Human Research Conference, http//www.uic.edu/sph/glakes/global/conferences/sofia2003/irb/Orris (OMF)_Privacy.pdf, Sofia, Bulgaria June 3, 2003
2003	Piper D, Krantz A, Bryant S, Burda A, Restuccia R: Acute ceramic glaze resulting in lead poisoning. Annual Meeting of A.A.P.C.C., A.A.C.T., and A.C.M.T., Chicago, 2003
2003	Sing K, Hryhorczuk D, Saffirio G, Sinks T, Paschal D, Sorensen J, and Chen E. Organic mercury levels among the Yanomama of the Brazilian Amazon Basin. Ambio 2003; 32:324-439.

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2003	Sokas RK and Perrotta DM: Preparedness, where is occupational and environmental health? (editorial) JOEM 2003; 45(11)1133-35.
2003	Sokas RK and Barranco GC: Commentary on ACOEM's Position Statement on the Pre-Event Smallpox Vaccination Program. OEM Report 2003; 17(2):11-12.
2004	Berman A, and Forst L: Findings from a pilot eye screening program for Hispanic migrant farm workers in Illinois. Amer Pub Health Assn. Washington DC, Nov 2004
2004	Buchanan S, Krantz A, Wesseling C, Klempner S, Alvarado R, Fernandez E, Forst L: Use of a national reporting system for occupational injury in a developing nation. Poster presentation at American Occupational Health Conference, Kansas City, Missouri. May 2004
2004	Buchanan S, Nickels L, Morello J[nt]: Occupational health beliefs and behaviors among Latino day laborers in Chicago. Poster presentation at NIOSH Conference on the Occupational Health of Immigrant Laborers, Lowell, Massachusetts, September 2004
2004	Dent D[nt], Chen N, Forst L, Dorevitch S: Using a state trauma registry to characterize occupational violence. JOEM 2004 [Abstract], 46:999
2004	Dent D[nt], Dorevitch S, Forst L: Violence in the workplace. Presentation at Amer Coll Occup Env Med, New Orleans, April 2004
2004	Dorevitch S: Beat Asthma in Illinois: Community Health Educators As Key Personnel in Inner City Asthma Research. Illinois Public Health Association Springfield, IL. . May, 2004
2004	Dorevitch S: Sensitization to indoor but not outdoor allergens is associated with laboratory animal allergy. Submitted for publication, Annals of Allergy Asthma & Immunology, Oct, 2004
2004	Duvall K: Conference Coordinator and Presenter ,"Art Classroom Health and Safety for Art Educators," Chicago, IL January 30, 2004
2004	Forst L, Lacey S[nt], Chen HY, Jimenez R[nt], Bauer S, Skinner S, Alvarado R, Nickels L, Zanoni J, Conroy L: Effectiveness of community health workers in reducing eye injuries in Latino farm workers. Am J Ind Med 46(6):607-13. 2004
2004	Forst LS: Distance-learning in occupational health. Int J Occup Env Health 10(3);326-9, 2004
2004	Forst L, Peng L: Traumatic injuries in Hispanic workers. Presentation, Amer Pub Health Assn, Washington DC. Nov 2004
2004	Hryhorczuk DO: Heavy metal diseases. Disease-a-Month, scheduled for submission Jan. 2004
2004	Hryhorczuk D, Nickels L, Forst L, Zanoni J: Online training resources in occupational safety and health. Afr Newslett on Occup Health and Safety 2004;14:19-22

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2004	Hryhorczuk D, Nickels L, Forst L, Zanoni J: Online training resources in occupational safety and health. J. Barents Newsletter on Occupational Health & Safety, 2004, V 7, N 2, P. 45-47, Helsinki, Finland.
2004	Krantz A and Sefer V[nt]: Occupational exposures and asthma-related work disability in public hospital asthma patients. American College of Occupational and Environmental Medicine Research Symposium, American Occupational Health Conference, Kansas City, April 2004.
2004	Krantz A and Dorevitch S: Metal exposures and common chronic diseases, a guide for the clinician. Disease-a-Month 2004; 50215-262.
2004	Krantz A: Metal diseases: Mid-West Association of Toxicology and Therapeutic Drug Monitoring/Society of Hair Testing Joint Meeting, Arlington Heights, Illlinois, May 24, 2004
2004	Meeks P and Orris, P: Petrochemical production and community health (Abstract) Proceedings, Eighth World Congress on Environmental Health, Durban, South Africa, February 24, 2004
2004	Mycyk M, Amitai Y, Hryhorczuk DO, Strange GR, Dobiesz VA: Lead poisoning, in Pediatric Emergency Medicine: Just the Facts. Strange G, Ahrens, McQuillen KK, Dobiesz VA, Lee P, and Prendergast HM (eds). McGraw Hill, 2004.
2004	Orris P, Forst L: Obstacles And opportunities presented by globalization for occupational and environmental health (Abstract) Proceedings, Eighth World Congress on Environmental Health, Durban, South Africa, February 23, 2004
2004	Orris P: Fifty years of hope and concern for the future of occupational medicine (letter), JOEM, 46:6, June 2004, P. 515
2004	Sokas RK: Book Review: Terrorism and Public Health A Balanced Approach to Strengthening Systems and Protecting People. Levy BS and Sidel VW. JOEM 2004; 46602-603.
2004	Sokas, R: Viral Hepatitis. In Preventing Occupational Disease and Injury (2nd edition) Ed. JL Weeks, BS Levy, GR Wegman, KM Rest p. 243-253. APHA Press, Washington, DC, 2004.
2005	Buchanan S and Hodgson M: Fatty Liver Disease and Cirrhosis. In: Levy B, Weeks J, and Wagner G (eds). Preventing Occupational Disease and Injury. 2nd edition. Washington, DC;American Public Health Association. 2005. pp 206-207
2005	Buchanan S and Hodgson M: Hepatic Porphyrias. In: Levy B, Weeks J, and Wagner G (eds). Preventing Occupational Disease and Injury. 2nd edition. Washington, DC: American Public Health Association. 2005. pp239-240

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2005 Buchanan S, Orris P: Federal motor carrier safety administration hours of service regulations. Presentation at Occupational Medicine State of the Art (SOTAC) Conference, Chicago, Illinois. October 2005

2005 Buchanan S: Occupational safety in a Chicago day labor population. Presentation at Occupational Medicine State of the Art (SOTAC) Conference, Chicago, Illinois. October 2005

2005 Buchanan S: Toxic mold and sick building syndrome: Myth vs. reality. University of Vermont Department of Family Medicine Grand Rounds, Burlington, Vermont. May 2005

2005 Derr J[nt] and Orris P: Persistent organic pollutants (Chap. 45) in Textbook of Clinical Occupational and Environmental Medicine (Rosenstock, Cullen, Brodkin, Redlich editors), Elsevier Saunders, 2005, P. 1061-73

2005 Dhawan S. and Krantz A: Hazard-based surveillance: asthmagenic isocyanate use in Illinois industry. Illinois Public Health Association/Illinois Department of Public Health "Beat Asthma In Illinois" Conference, Springfield, Illinois, September 19, 2005

2005 Dorevitch S: Particulate matter exposure adjacent to demolition of public housing. American Thoracic Society International Conference, San Diego, CA. May, 2005

2005 Ducatman AM, Vanderploeg JM, Johnson M, Rubin J, Harber P, Sokas R, et al: Residency Training in Preventive Medicine: Challenges and Opportunities. Am J Prev Med 2005; 28 (4):403-412.

2005 Forst L, Aragon A: Occupational health training needs in Nicaragua. Poster. ICOH Education and Training Conference. Strasbourg, France. September 15-16, 2005

2005 Forst L: Distance education in occupational health. Presentation. ICOH Education and Training Conference. Strasbourg, France. September , 2005

2005 Forst L: Occupational cancer. Seminar, Haifa University. Israel. March 2005

2005 Forst L: Occupational lung diseases. 3-day course in Masters program in Occupational Health. Leon, Nicaragua. July 2005

2005 Forst L: Moderator. Hispanic workers health and safety session. Am Pub Health Assn. Philadelphia, December 2005.

2005 Forst L: Presenter and Moderator. Occupational health disparities. State of the Art Conference, Session 2301 Am Coll Occup & Environ Med. Chicago, Illinois. October, 2005

2005 Halpin J[nt]: An introduction to the field of occupational medicine and my career in this field. Presentation for the National Youth Leadership Forum to a group of 200 high school students; August, 2005.

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2005	Halpin J[nt]: Occupational health aspects of avian flu and corporate preparations for a pandemic. Presentation to McCain International Food Company executives; "." December, 2005.
2005	Halpin J[nt], Buchanan S, Orris P: Injuries among hotel housekeepers: A unique analysis of OSHA 300 log data. Report provided to the Unite-Here Union. December 2005
2005	Halpin, J[nt]: Avian flu from an occupational health perspective. Arch Environ Occup Health, 2005 Mar-Apr; 60(2):62-9.
2005	Levy BS, Wegman DH, Baron SL, Sokas RK. (Eds) Occupational and Environmental Health: Recognizing and Preventing Disease and Injury, 5th ed. Lippincott Williams and Wilkins, Philadelphia, 2005.
2005	Marder D: Bloodborne pathogens. Central States Occupational Medicine Association, March 2005
2005	Orris P, Buchanan S, Smiley A, Davis D, Dinges D, Bergoffen G: Literature review on health and fatigue issues associated with commercial motor vehicle driver hours of work, Synthesis 9. Commercial Truck And Bus Safety Synthesis Program, Transportation Research Board, National Academy of Sciences – National Research Council, for the Federal Motor Carrier Safety Administration, May 2005, Washington, DC
2005	Orris P: Dioxins and Health by Schechter and Gasiewicz, (book review), Journal of Occupational & Environmental Medicine, JOEM, 47:4, April 2005, P. 436
2005	Patel M[nt], Buchanan S, Williamson R: Acute vestibular effects of exposure to a 9.4 Tesla MRI. Poster presentation at American Occupational Health Conference, Washington DC. April 2005
2005	Sokas R: Workplace safety and health in the poultry and meat-packing industry: The US GAO report. Presentation to OSHA's Office of Occupational Medicine through the OSHA Training Institute, 10/27/05
2005	Welch LS, Acherman YIZ, Haile E, Sokas RK, Sugarbaker PH: Asbestos and peritoneal mesothelioma among college-educated men. Int J Occup Environ Health 2005; 11:254-258.
2006	Buchanan S: Overuse musculoskeletal disorders. Presented to UIC engineering students September 2006.
2006	Buchanan S[nt], Krantz A, Klempner S, Alvarado R, Wesseling C, Fernandez E, Frost L: Use of a national reporting system for occupational injury in Costa Rica. Int Journal Occ Env Health 2006;12:142-146
2006	Buchanan S: Reproductive hazards in the workplace. Oral presentation at Chicago Medical Director's Club, December 4, 2006

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2006	Dardynskaia I, Imrey PB, Okeanov A, Hryhorczuk D: Breast cancer trends in two oblasts of Belarus and the Chernobyl reactor accident. IJOEH 2006; 12(4):415-422.
2006	Dorevitch S: Science Politics and Air Quality Policy. American Public Health Association, Boston, MA. November, 2006
2006	Dorevitch S: Elemental and organic carbon in PM2.5 are associated with exhaled nitric oxide and exhaled carbon monoxide in inner-city asthmatics. American Thoracic Society International Conference, San Diego, CA. May, 2006
2006	Dorevitch S: Exhaled carbon monoxide in inner-city asthmatics is associated with ambient ozone concentrations two days earlier. American Thoracic Society International Conference, San Diego, CA. May, 2006
2006	Duvall K: Art Classroom Health and Safety for Art Educators. Conference Coordinator and Presenter. Springfield, IL April 4, 2006
2006	Forst L, Martinez-Noth I, Lacey S[nt], Bauer S, Skinner S, Zanoni J, Petrea R: Barriers and benefits of protective eyewear use by Latino farm workers. 2006: J Agromed 11(2):11-17
2006	Forst L, Zanoni J: Eye injuries in Latino farm workers. Poster Presentation. Immigration Conference. University of Illinois at Chicago. April 2006
2006	Forst L. Eye Injuries in Latino Farm Workers. Presenter, National Farm Medicine Center, Marshfield Clinic, Wisconsin. March 2006
2006	Frumin E, Moriarty J, Vossenas P, Halpin J[nt], Orris P, Krause N, Punnett L: Workload-related musculoskeletal disorders among hotel housekeepers: Employer Records Reveal a Growing National Problem, Presented to the NIOSH national NORA symposium, April, 2006
2006	Halpin J[nt], Buchanan S, Orris P: Hotel housekeeper injuries: analysis in the face of incomplete data, (Abstract) International Commission on Occupational Health, Milan, Italy June 2006
2006	Halpin J[nt], Orris P: Occupational burn injury in an acute care clinic. Abstract submitted to the Annual AOHC meeting in May, 2006.
2006	Halpin J[nt]: Clinical Aspects of Avian Flu from an Occupational Health Perspective. Presentation to the University of Illinois Department of Internal Medicine, Grand Rounds presentation, January, 2006.
2006	Halpin J[nt] and Orris P: Musculoskeletal disorders among hotel housekeepers: employer records reveal a growing national problem. Presented to the NIOSH national NORA symposium, April, 2006
2006	Hryhorczuk D, Persky V, McCann K, Piorkowski J, Davis J, Moomey CM, Runkle KD, Saxer T, and Baughman T. Residential mercury spills from gas regulators. Environmental Health Perspectives. 2006. 114:848-852.

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2006	Hryhorczuk D: The Fogarty ITREOH program: Promoting global environmental and occupational health through training and research (editorial). IJOEH 2006; 12(4):423-424.
2006	Karandikar A[t] and Sokas R: Occupational dermatitis: Controlling dermal exposures, at the Workplace OSHA Safety Day: Safety and Health Conference, Sugar Grove, IL March 16, 2006
2006	Krantz A: Work-Related asthma: What the practitioner needs to know. Illinois Department of Public Health/Illinois Public Health Association "Beat Asthma In Illinois" Conference, Decatur, Illinois, October 18, 2006
2006	Martinez O,Gangi E, Mordi D, Gupta S, Dorevitch S, Lefranc MP, Prabhakar BS: Diversity in the complementarity determining region 3 (CDR3) of antibodies from mice with evolving anti-TSHR antibody responses. Endocrinology, 2006 (e-pub ahead of print).
2006	Orris P: DDT-Malaria: When a debate is not a debate. 11th World Congress on Public Health/8th Brazilian Congress on Collective Health, August 23. 2006, Rio de Janeiro, Brazil
2006	Orris P: Asbestos, health, environment and justice. Cancer and the Environment, and the International Legislative Protection of Ecosystems, An International Web Conference of the International Academy of Environmental Sciences, Venice, Italy, November 23, 2006
2006	Pelka-Mucha A, Hryhorczuk DO, Serdyuk AM, Nakonechny JJ, Zvinchuk A, Erdal S, Caudill M, and Scheff P: Urinary 1-hydroxypyrene as a biomarker of PAH exposure in three-year-old Ukrainian children. Environmental Health Perspectives 2006; 114(4):603-9.
2006	Sokas R: Trainers' Evaluation of the SmartMark Curriculum for the OSHA 10-hour Course, APHA, Philadelphia, 12/12/06.
2006	Sokas R: Vulnerable Working Populations: A Framework, SOTAC, Chicago, 10/30/06
2007	Buchanan S: Blood lead levels in Chicago day laborers performing demolition. Presentation at American Industrial Hygiene AIHce Conference, Philadelphia, Pennsylvania. June 2007
2007	Dorevitch S, Demirtas H, Scheff P, Persky V: Bias and confounding in longitudinal measures of exhaled monoxides. Journal of Exposure Science and Environmental Epidemiology, February 7, 2007.
2007	Dorevitch S, Tharenos L[nt], Demirtas H, Persky VW, Artwohl J, Fortman J: Inverse association between rural environment in infancy and sensitization to rodents in adulthood. Annals of Allergy Asthma and Immunology. 2007 (e-pub ahead of print May 27, 2007)
2007	Forst L, Friedman L, Shapiro D, Bahrainwala M[t]: Carpal tunnel syndrome in spine surgeons. In review, 2007

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2007	Gummin D and Hryhorczuk DO: Hydrocarbons, in Toxicologic Emergencies 7th Edition. Goldfrank LR, Flomenbaum NE, Lewin NA, Howland MA, Hoffman RS, Nelson LS, (ed). McGraw Hill, 2007 (in press).
2007	Halpin J[nt], Buchanan S, Orris P: Hotel housekeeper injuries: Analysis of OSHA mandated injury log data. II Congreso Salud Del Trabajo, Havana, Cuba, March, 2007
2007	Dardynskaia I, Lukyianova E, Antipkin Y, Hryhorczuk D, Shkiriak-Nyznyk Z, Chislovska N, Matwyshyn-Fuoco M[nt]: Prevalence of symptoms of bronchial asthma among children from three Ukrainian cities with unfavorable ecological; conditions (preliminary data). Lik. Sprava, February, 2007 (in press)
2007	Krantz A, Sadowski L, Anderson, Wuellner J, Blanc P: Work disability in low-income asthma patients. American Thoracic Society International Conference, San Francisco, May 20, 2007
2007	Monaghan P, Forst L, Harris C, Luque J, Bryant C: Evaluating a community health workers program among Hispanic migrant farm workers. In review, 2007
2007	Orris P: Neurotoxicity and safer substitution of mercury in health care. II Congreso Salud Del Trabajo, Havana, Cuba, March, 2007
2007	Orris P: Occupational medicine residency training in the US: UIC/CCH Experience. 3rd Postgraduate Conference On Occupational Health, Cartagena, Colombia, May 27-8, 2007
2007	Patel M[nt], Williamson R, Dorevitch S, Buchanan S: Pilot study investigating the effect of the static magnetic field from a 9.4 Tesla MRI on the vestibular system. AJOEM, In review.
2007	Sokas RK, Messer K, Nash N, Zanoni J, Provost WD, McIntyre C: Occupational safety and health programs for nursing homes. Resources for Quality Improvement. (Submitted.)
2007	Sokas RK, Nickels L, Rankin K, Gittleman JL, Trahan C: Trainer evaluation of a union-based 10-hour safety and health hazard awareness program for U.S. construction workers. Int J Occup Environ Health 2007;13:56-63.
In press	Dorevitch S and Gummin D: Air and Water Pollution, in Toxicology Secrets. In press.
unknown	Cohen R: Panelist – Consensus Conference on Guidelines for Diagnosis, Treatment, and Rehabilitation of Black Lung Disease. U.S. Department of Health and Human Services, Health Resources and Services Administration. January 29-30th, Bethesda, Md.
unknown	Cohen R: Pulmonary Function Testing – Sixteen Hour Review Course. State of West Virginia Black Lung Clinics Program, May 11-12, Scarbro, West Virginia.

Pilot Projects Research Training

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2002	Guo L, Zhang Q, Han S: Agricultural machinery safety alert system using ultrasonic sensors. Journal of Agricultural Safety and Health, 8(4): 385-396, 2002
2003	Walton SM, Conrad KM, Furner SE and Samo D: Cause, type, and cost of injury to fire fighters. American Journal of Industrial Medicine, 2003; 43(4): 454-458
2004	O'Shaughnessy PT, Mehaffy JM, Watt J, Sigurdarson S, Kline JN: Characterization of a hooded exposure apparatus for inhalation of gases and aerosols. Am Ind Hyg Assoc J, 1:161-166, March 2004
2004	Sigurdarson ST, O'Shaughnessy PT, Watt JA, Kline JN: Experimental human exposure to inhaled grain dust and ammonia: towards a model of concentrated animal feeding operations. Am J Ind Med. 2004 Oct;46(4):345
2005	Li A, Schoonover T[nt], Zou Q, Norlock F, Conroy LM, Scheff PA, Wadden RA: Polycyclic aromatic hydrocarbons in residential air of ten Chicago area homes: concentration levels and influencing factors. Atmospheric Environment, 39(19), 3491-3501, 2005
2006	Lacey S[nt], Conroy LM, Forst L, Franke J, Wadden R, Hedeker D: Personal dust exposures at a food processing facility. J Agromedicine, 11:49-58 (2006)
2007	Dorevitch S, Tharenos L[nt], Demirtas H, Persky V, Artwohl J, Fortman J: Inverse association between rural environment in infancy and sensitization to rodents in adulthood. Annals of Allergy, Asthma, & Immunology, Volume 98(5), May 2007, pp 440-446
2008	Levin PF, Martinez MQ, Walcott-McQuigg J, Chen SP, Amann M, Guenette C: Teacher assault injuries and related compensation costs. AAOHN Journal(in press)
In preparation	Pascal LE[nt], Tessier DM: Mechanism of death in lung epithelial cells following metal exposure. In Preparation
In preparation	Wang X, Tessier DM: Activation of MAP kinases in human lung epithelial cells by the organo-phosphate insecticide chlorpyrifos. In Preparation
In press	Bzdusek P, Christensen E, Li A, Zou Q: Source apportionment of sediment PAHs in Lake Calumet, Chicago: application of factor analysis with nonnegative constraints. Environ. Sci. Technol. In press.
submitted	Lee HK[nt], Wilbur J, Conrad K, Miller A: A focus group as a final step in preparation for a survey to examine risk factors associated with work-related musculoskeletal disorders in flight attendants. AAOHN Journal (Submitted)

NORA Research Support

2003	Pascal L[nt]: Cytotoxicity of metals in welding fumes as a factor in occupational lung disease, PhD Dissertation, 2003
2004	Buchanan S: Day labor and occupational health: time to take a closer look. New Solutions 2004;14:253-260

Appendix 1: Publications and Presentations by Program Area

(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2004	Dorevitch S, Theranos L[nt]: Sensitization to indoor but not outdoor allergens is associated with laboratory animal allergy. Submitted for publication, Annals of Allergy Asthma & Immunology, Oct, 2004
2004	Pascal LE[nt], Tessier DM: Cytotoxicity of chromium(VI) and manganese to lung epithelial cells in vitro. Tox. Letters 147(2)143-151, 2004.
2004	Plavka J[nt]: An exposure assessment of welding emissions at a large manufacturing facility. MS Thesis, 2004
2004	Schnackenbeck J[nt]: Characterization of size-selective elemental composition of welding fumes by area sampling in an industrial facility. MS Thesis, 2004
2005	Berman L[nt]: Welding fume exposure assessment under isolated process conditions. PhD Dissertation, 2005
2005	Buchanan S, Nickels L, Morello J[nt]: Occupational health among Chicago day laborers: An exploratory study. Arch of Env Occ Health 2005;60:No.5 (Copyright 2006)
2005	Chen L[nt]: Mouse endotoxin and particulate matter emission factor modeling applied to a working animal facility. MS Thesis, 2005
2005	Durgam S[t]: Design, testing and validation of an exposure chamber for welding fume emission characterization studies. MS Thesis, 2005
2006	Dorevitch S, Demirtas H, Persky VW, Erdal S, Conroy LM, Schoonover TM, Scheff PA: Demolition of high-rise public housing increases particulate matter air pollution in communities of high-risk asthmatics. J. Air & Waste Manage. Assoc. 56:1022–1032 (2006).
2006	Erdal S and Berman L[nt]: Occupational exposure environment, risk factors, and hazard awareness of metal sculptors and artist welders in the U.S. Journal of Environmental Health Research April 2006.
2006	Friedman L and Forst L: Occupational injury surveillance of traumatic injuries in Illinois trauma registry: 1995-2003. J Occup Env Med, 2006.
2006	Friedman LS and Forst L: The impact of OSHA recordkeeping regulation: changes on occupational injury and illness trends in the U.S., a time series analysis. 2006 OEM
2006	Remington N[nt]: Understanding worker centers in Chicago: a qualitative analysis. MS Thesis, 2006
2007	Dorevitch S, Demirtas H, Scheff P, Persky VW: Bias and confounding in longitudinal measures of exhaled monoxides. Journal of Exposure Science and Environmental Epidemiology, 2007. (e-pub ahead of print Feb 7, 2007)

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(July 1, 2003-June 30, 2008)

[nt]NIOSH funded trainee
[t]Other trainee

2007 Dorevitch S, Tharenos L[nt], Demirtas H, Persky VW, Artwohl J, Fortman J: Inverse association between rural environment in infancy and sensitization to rodents in adulthood. Annals of Allergy Asthma and Immunology. 2007 (e-pub ahead of print May 27, 2007)

2007 Jorgensen EZ[t], Sokas RK, Nickels L, Gao W, Gittleman JL. An English/Spanish safety climate scale for construction workers. Am J Industr Med 2007;50:438-442.

Pascal LE, Tessier DM: Activation of MAP kinases in by hexavalent chromium, manganese and nickel in human lung epithelial cells. Submitted to Toxicology Letters.

Appendix 2: Tables by Program Area

Center Wide Activities

Table CWA-1: ERC Academic Training Programs

Approved Academic Program[1]	Number of Faculty		Number of Pre-doctoral Trainees3		Number of Post-doctoral Trainees
	Core[2]	Supporting	F/T	P/T	
Industrial Hygiene	7	8	65	26	0
Occupational Health Nursing	5	3	7	2	0
Occupational Medicine Residency	6	6	0	0	6
Agricultual Safety & Health	2	3	0	3	0
Hazardous Substances Academic Training	7	8	4	0	0

Refer to: Supplemental Instructions, page 7.

[1] Industrial Hygiene, Occupational Health Nursing, etc.

[2] F/T faculty member teaching within each academic program.

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

Table CWA-2: ERC Faculty Members' Research and Training Grant and Contract Support (all Sources of Support)									
Faculty Member Name	Role on Project	Active/ Pending	Grant/Contract Title	Funding Source	Grant Number	Project Start Date	Project End Date	Annual Direct Costs	If part of a larger project, identify PI of parent grant
Center Administration (CA)									
Conroy, Lorraine M	Center Director	Active	Grants For Education Programs In Occupational Safety and Health Education and Research Centers	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$1,314,303	Conroy, Lorraine
Conroy, Lorraine M	Co-investigator	Active	Fundamental Study of Welding Fume Inhalation	Natl Inst for Occupational Safety & Health	KOH008298A	08/01/05	07/31/08	$75,060	Erdal, Serap
Conroy, Lorraine M	Co-investigator	Pending	Coarse Particle Exposure and Effects On Population and Individual Levels in Harvey, Illinois	US Environmental Protection Agency (EPA)		07/01/07	6/30/08	$300,691	Dorevitch, Samuel
Conroy, Lorraine M		Pending	Development of Environmental Health Indicators Using Existing Data	US Environmental Protection Agency (EPA)		07/01/07	6/30/08	$130,951	
Conroy, Lorraine M		Pending	Defining Strategies for Adoption of Training Programs in Occupational Health.	Centers for Disease Contrlol and Prevention		10/01/07	09/30/10	$1,110,723	
Nickels, Leslie			See Continuing Education below						
Pilot Projects Research Training (PPRT)									
Sokas, Rosemary	Program Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-PPRT	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$74,074	Conroy, Lorraine
Sokas, Rosemary	PI	Project Ended	Safety And Health Intervention In The Construction Industry	Ctr To Protect Workers Rights	1020-70	01/01/04	06/30/05	$46,482	
Sokas, Rosemary	PI	Active	Blood Exposure And Primary Prevention In The Home Care Workplace	Univ of MD	S01888	08/01/04	07/31/07	$21,050	
Sokas, Rosemary	PI	Project Ended	Evaluation Of Smark Mark Safety And Health Training For Construction Workers	Ctr To Protect Workers Rights	1 U54 OH008307	07/01/06	06/30/07	$10,875	
Sokas, Rosemary	PI	Active	Illinois Public Health Research Fellowship Program	Centers for Disease Control & Prevention	TCD000189A	09/30/04	09/29/07	$927,747	

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Sokas, Rosemary	PI	Active	Cost Effective Health Promotion For Older Workers	Natl Ctr for Chronic Disease Prvntn & Hlth Promotion	RDP000094A	09/20/04	09/19/07	$288,569	
Cali, Salvatore	Associate Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-PPRT	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$74,074	Conroy, Lorraine
Cali, Salvatore	Associate Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-IH	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$157,120	Conroy, Lorraine
Cali, Salvatore	Associate Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-HSAT	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$68,917	Conroy, Lorraine
Cali, Salvatore	Co-investigator	Active	Exterior Lead Dust In Single Family Housing Demolition: A Multi-Site Investigation	US Dept of Housing & Urban Development (HUD)	ILLHT0110-06	11/01/06	04/30/09	$848,500	Jacobs, David
Cali, Salvatore	Co-investigator	Active	The Great Lakes Center Of Excellence In Enviornmental Health	Centers for Disease Control & Prevention	CCU524174-01	09/01/04	08/31/07	$116,599	Hyrhorczuk , Daniel
Cali, Salvatore	PI	Active	Sanitary Survey of 63rd Street Beach, Chicago	Illinois Department of Public Health	8530295	07/01/07	06/30/08	$10,000	
Cali, Salvatore	Co-investigator	Project Ended	Air Pollution Data Analysis Webcast Dvlpmt & Delivery (USEPA subc)	Lockheed Martin Corp	GS-35F-4863-G	07/01/04	11/30/04	$26,433	Scheff, Peter
TRT Program									
Conroy, Lorraine			See Center Administration above						
Nickels, Leslie			See Continuing Education below						
Buchanan, Susan			See Occupational Medicine below						
Dorevitch, Samuel	PI	Active	Asthma And Demolition In Chicago Public Housing	Natl Inst of Environmental Health Sciences	K8ES11302A	04/01/05	03/31/08	$116,333	
Dorevitch, Samuel	PI	Project Ended	EPA Environmental Education Grant	Grand Boulevard Federation	NE96586801	07/01/05	06/30/06	$3,000	

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Dorevitch, Samuel	PI	Active	Asthma,Obesity And Airway Oxidative Stress	Amer Lung Assn		07/01/07	06/30/08	$40,000	
Dorevitch, Samuel	PI	Active	Epidemiologic Study Of Recreational Use Of The Chicago Area Waterways	Metropolitan Water Reclamation Dist of Gtr Chicago	PURCHASE ORDER #3044368	05/01/07	12/31/09	$1,279,927	
Dorevitch, Samuel	PI	Pending	Coarse Particle Exposure And Effects On Population And Individual Levels In Harvey, Illinois	US Environmental Protection Agency (EPA)		07/01/07	06/30/08	$300,691	
Forst, Linda	PI	Project Ended	Preventing Eye Injuries In Migrant And Seasonal Farm Workers	Assn of Schools of Public Health	T3287- 22 22	10/01/03	09/30/05	$63,461	
Forst, Linda	PI	Active	IDPH Trauma System Collaboration	IL Dept of Public Health (IDPH)		05/04/07	04/30/08	$113,636	
Forst, Linda	PI	Active	Trauma and EMS Planning	IL Dept of Public Health (IDPH)		06/01/07	05/08/08	$125,000	
Forst, Linda	PI	Active	Injury Epidemiology: Development of a New Course	UIC-Center for Excellence in Teaching and Learning		08/01/07	07/08/07	$12,000	
Forst, Linda	PI	Pending	Hand Injuries in Hispanic Workers	UIC Institute for Health Research and Policy				$25,000	
Forst, Linda	PI	Pending	Preventing Amputations in Hispanic Workers (a Database Surveillance Study)	Natl Inst for Occupational Safety & Health		01/01/08	12/01/11	$475,000	
Forst, Linda	PI	Pending	Preventing Eye Injuries In Latino Farm Workers In Fruit Production	OH State Univ Research Fdn		07/01/07	06/30/08	$129,498	
Friedman, Lee	Co-investigator	Active	IDPH Trauma System Collaboration	IL Dept of Public Health (IDPH)		05/04/07	04/30/08	$113,636	Forst, Linda
Rospenda, Katherine		None							
Schoonover, Todd	Project Manager	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers- NORA Research Support	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$304,068	Conroy, Lorraine
Schoonover, Todd	PI	Project Ended	Welding Fume Exposure Characterization Methods	Natl Inst for Occupational Safety & Health (through Illinois ERC PPRT program)		07/01/05	06/30/06	$15,973	Conroy, Lorraine

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Sokas, Rosemary			See Pilot Projects Research Training						
Zanoni, Joseph	Associate Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers- CE/O	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$60,208	Conroy, Lorraine
Zanoni, Joseph	Associate Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers- ASH	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$73,334	Conroy, Lorraine
Zanoni, Joseph	Associate Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers- HST	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$55,555	Conroy, Lorraine
Zanoni, Joseph	PI	Project Ended	Radon Program Contract Sirg 13	IL Emergency Mgmt Agency	1289 UICRN	10/01/03	06/30/05	$133,015	
Zanoni, Joseph	Co-investigator	Actvie	Blood Exposure And Primary Prevention In The Home Care Workplace	Univ of MD	S01888	08/01/04	07/31/07	$21,050	
Zanoni, Joseph	Co-investigator	Active	Illinois Public Health Research Fellowship Program	US Dept of Health & Human Services (CDCP)	TCD000189A	09/30/04	09/29/07	$927,747	
Zanoni, Joseph	Co-investigator	Project Ended	Partnership To Reduce Disparities In Asthma Obesity In Latino Schools	Healthy Schools Campaign	1R25 ES11077-01	09/10/04	09/30/06	$1,850	
Zanoni, Joseph	Co-investigator	Project Ended	Natural Landscaping Conference	Chicago (IL) City (Dept of Environment)		12/01/04	12/31/04	$5,000	
Zanoni, Joseph	PI	Project Ended	Illinois Emergency Management Agency-SIRG 15 Contract	IL Emergency Mgmt Agency	1289 UICRN	10/01/05	09/30/06	$89,207	
Zanoni, Joseph	PI	Active	IEMA Indoor Radon Grant Program SIRG 17	IL Emergency Management Agency		10/01/06	09/30/07	$39,631	
Industiral Hygiene (IH)									
Scheff, Peter	Program Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-IH	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$157,120	Conroy, Lorraine
Scheff, Peter	Program Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-HSAT	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$68,917	Conroy, Lorraine

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Scheff, Peter	PI	Project Ended	Air Pollution Data Analysis Webcast Dvlpmt & Delivery (USEPA subc)	Lockheed Martin Corp	GS-35F-4863-G	07/01/04	11/30/04	$26,433	
Scheff, Peter	Co-investigator	Active	The Great Lakes Center Of Excellence In Enviornmental Health	Centers for Disease Control & Prevention	CCU524174-01	09/01/04	08/31/07	$116,599	Hyrhorczuk, Daniel
Scheff, Peter	PI	Project Ended	Intergovernmental Personal Act Mobility Program	US Environmental Protection Agency (EPA)		09/08/03	09/30/05	$98,309	
Scheff, Peter	PI	Active	Graduate Training in air Pollution	US Environmental Protection Agency (EPA)	T-83024301	08/01/05	07/31/07	$86,930	
Scheff, Peter	Co-investigator	Active	Asthma And Demolition In Chicago Public Housing	Natl Inst of Environmental & Health Sciences	K8ES11302A	04/01/05	03/31/08	$116,333	Dorevitch, Samuel
Scheff, Peter	Co-investigator	Project Ended	Comparative Life Cycle Impacts Of Bio And Petro Based Lubricants	NSF/Natl Science Fdn	DMI-0400277	06/01/04	06/30/06	$13,720	Theis, Thomas
Scheff, Peter	PI	Active	Graduate Training In Air Pollution	Lake Michigan Air Directors Consortium		10/01/06	09/30/07	$41,768	
Scheff, Peter	Co-investigator	Active	Epidemiologic Study Of Recreational Use Of The Chicago Area Waterways	Metropolitan Water Reclamation Dist of Gtr Chicago	PURCHASE ORDER #3044368	05/01/07	12/31/09	$1,279,927	Dorevitch, Samuel
Scheff, Peter	Co-investigator	Pending	Development of Environmental Health Indicators Using Existing Data	US Environmental Protection Agency (EPA)		07/01/07	6/30/08	$130,951	Conroy, Lorraine
Scheff, Peter	Co-investigator	Pending	Coarse Particle Exposure And Effects On Population And Individual Levels In Harvey, Illinois	US Environmental Protection Agency (EPA)		07/01/07	6/30/08	$300,691	Dorevitch, Samuel
Cali, Salvatore			See Pilot Projects Research Training above						
Conroy, Lorraine M			See Center Administration above						
Erdal, Serap	PI	Project Ended	Intergovernmental Personnel Act Mobility Program	US Environmental Protection Agency (EPA)		08/01/03	7/31/05	$35,471	
Erdal, Serap	Co-investigator	Active	Peer Education in Pregnancy Study	Natl Inst of Environmental & Health Sciences	R1ES11377A	02/01/04	01/31/08	$274,378	Persky, Victoria
Erdal, Serap	PI	Active	Fundamental Study Of Welding Fume Inhalation	Natl Inst for Occupational Safety & Health	KOH008298A	08/01/05	07/31/08	$75,060	

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Erdal, Serap	Co-investigator	Active	SPORE 2-Genetic/Environmental Risk & Outcomes For Brain Tumors	Duke Univ	1P50 CA108786-03	09/01/04	08/31/07	$118,744	Davis, Faith
Erdal, Serap	Co-investigator	Active	Exterior Lead Dust In Single Family Housing Demolition: A Multi-Site Investigation	US Dept of Housing & Urban Development (HUD)	ILLHT0110-06	11/01/06	04/30/09	$848,500	Jacobs, David
Erdal, Serap	Co-investigator	Pending	Coarse Particle Exposure And Effects On Population And Individual Levels In Harvey, Illinois	US Environmental Protection Agency (EPA)		07/01/07	06/30/08	$300,691	Dorevitch, Samuel
Erdal, Serap	Co-investigator	Pending	Investigation Of Association Between Solvent Exposures And Alzheimer's/Dementia: A Pilot Study	Rush Univ Medical Ctr		07/01/07	06/30/08	$0	
Erdal, Serap	Co-investigator	Pending	Development of Environmental Health Indicators Using Existing Data	US Environmental Protection Agency (EPA)		07/01/07	06/30/08	$130,951	Conroy, Lorraine
Erdal, Serap	Co-investigator	Pending	Assessment Of Differential Capacity To Repair DNA Damage Caused By Alkylating Agents	Natl Brain Tumor Fdn		07/01/07	06/30/08	$50,000	
Esmen, Nurtan A.	PI	Project Ended	UIC And Chicago State MS/PHD Bridge To Future	Natl Inst of General Medical Sciences	RGMM071959A	08/16/04	07/31/05	$150,462	
Esmen, Nurtan A.	PI	Active	UIC And Chicago State MS/PHD Bridge To Future	Natl Inst of General Medical Sciences	RGMM071959A	08/01/04	07/31/07	$205,218	
Esmen, Nurtan A.	PI	Active	Exposure Reconstruction For A brain Cancer Epidemilogical	Pratt & Whitney		08/15/03	08/14/08	$1,617,934	
Esmen, Nurtan A.	Co-investigator	Active	Fundamental Study Of Welding Fume Inhalation	Natl Inst for Occupational Safety & Health	KOH008298A	08/01/05	07/31/08	$75,060	Erdal, Serap
Esmen, Nurtan A.	PI	Pending	Tungsten Industry Pilot Study	Univ of Pittsburgh		06/01/07	05/31/08	$90,000	
Esmen, Nurtan A.	Co-investigator	Pending	Development of Environmental Health Indicators Using Existing Data	US Environmental Protection Agency (EPA)		07/01/07	06/30/08	$130,951	Conroy, Lorraine
Esmen, Nurtan A.	PI	Pending	Molecular Toxicity and Health Effects of Dioxin in Chlorophenol Workers in Ufa	Natl Inst for Occupational Safety & Health		01/01/07	12/31/11	$520,677	
Franke, John		None							
Jacobs, David	PI	Active	Exterior Lead Dust In Single Family Housing Demolition: A Multi-Site Investigation	US Dept of Housing & Urban Development (HUD)	ILLHT0110-06	11/01/06	04/30/09	$848,500	
Lacey, Steven	Co-investigator	Active	Exposure Reconstruction For A brain Cancer Epidemilogical	Pratt & Whitney		08/15/03	08/14/08	$1,617,934	

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Lacey, Steven	Co-investigator	Pending	Tungsten Industry Pilot Study	Univ of Pittsburgh		06/01/07	05/31/08	$90,000	
Li, An	PI	Active	Analysis Of PBDEs In Human Placenta: Enhancing Sensitivity And Reducing Cost	Natl Inst of Environmental & Health Sciences	ES015698	04/01/07	03/31/09	$71,659	
Li, An	PI	Pending	Collaborative Research: Modeling Transformations Of Polybrominated Diphenyul Ethers (PDBDEs) In The Great Lakes	NSF/Natl Science Fdn		04/01/07	03/31/08	$25,737	
Li, An	PI	Pending	Emerging Halogenated Flame Retardants In The Great Lakes From Sedimentary Records	US Environmental Protection Agency (EPA)		07/01/07	06/30/08	$15,502	
Li, An	Co-investigator	Pending	Development of Environmental Health Indicators Using Existing Data	US Environmental Protection Agency (EPA)		07/01/07	06/30/08	$130,951	Conroy, Lorraine
Selway, Michael		None							
Standard, John		None							
Tessier, Daniel	Co-investigator	Pending	Development of Environmental Health Indicators Using Existing Data	US Environmental Protection Agency (EPA)		07/01/07	06/30/08	$130,951	Conroy, Lorraine
Occupational Health Nursing (OHN)									
Miller, Arlene		Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-OHN	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$80,234	Conroy, Lorraine
Miller, Arlene		Active	Adherence to Walking: Strategies for Midlife Minority Women	NIH, National Institute of Nursing Research	Snp 5 R01 NR04134-08	2001	2008	$2,197,566 (Total award)	Wilbur, JoEllen
Miller, Arlene		Active	Neighborhood Influences on Acculturation: S ocial Alienation and Depressed Mood for Immigrants from the Former Soviet Union	UIC College of Nursing, Center for Reducing Risks in Vulnerable Populations	P30 NR009014	10/15/05	10/15/07	$10,000	
Miller, Arlene		Active	Culture Specific Intervention for Breast Cance r Screening in Korean-American Women	UIC College of Nursing, Center for Reducing Risks in Vulnerable Populations	P30 NR009014	05/01/07	04/30/08	$10,000	Lee, Eunice
Miller, Arlene		Project Ended	The Meaning of Health: Chronic Disease and Injury to Farmers and Spouses	UIC College of Nursing, Internal Research Support Program		07/01/05	12/31/06	$10,000	Lizer, Shannon

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Miller, Arlene		Project Ended	Post-Migration Health and Behavior Change in Midlife Women	NIH, National Institute of Child Health and Human Development	HD038101	09/07/99	08/31/05	$1,515,960 (Total award)	
Miller, Arlene		Project Ended	Acculturation: Social Ties: and Health Literacy among Immigrant Home Care Workers	UIC College of Nursing, Internal Research Support Program		11/01/04	10/31/05	$10,000	
Wuellner, Jacqueline	Deputy Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-OHN	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$80,234	Conroy, Lorraine
Wuellner, Jacqueline	Co-investigator	Active	Epidemiologic Study Of Recreational Use Of The Chicago Area Waterways	Metropolitan Water Reclamation Dist of Gtr Chicago	PURCHASE ORDER #3044368	05/01/07	12/31/09	$1,279,927	Dorevitch, Samuel
Hughes, Tonda		Project Ended	CVD Risk Factors and Sexual Identity in Women	National Heart, Lung, and Blood Institute	RO1: HL067052	03/05/03	02/28/07	$44,151	
Hughes, Tonda		Project Ended	Sexual Identity and Drinking: A Longitudinal Follow-Up	National Institute of Alcohol Abuse and Alcoholism	RO1: AA13328	06/01/02	05/31/07	$1,479,783	
Lizer, Shannon		Active	Determining Health Status and Disparities for an Embedded Rural Workforce			2005	2007	$3,400	
Lizer, Shannon	Co-investigator	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-OHN	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$80,234	Conroy, Lorraine
Lizer, Shannon	PI	Project Ended	The Meaning of Health: Chronic Disease and Injury to Farmers and Spouses	UIC College of Nursing, Internal Research Support Program		07/01/05	12/31/06	$10,000	
McDevitt, Judith		Active	Reducing Health Disparity in African American Women: Walking Adherence Intervention	NIH, National Institute of Nursing Research	RO1NR04134-05	2002	2008	$244,727 (Total award)	Wilbur, JoEllen
McDevitt, Judith		Active	Environmental Correlates of Adherence to Home-Based Walking in African-American Women	Robert Wood Johnson Foundation Active Living Research	RWJ 052934	2005	2008	$150,000 (Total award)	Wilbur, JoEllen
McDevitt, Judith		Active	Adherence to Walking: Strategies for Midlife Minority Women	National Institutes of Health, National Institute of Nursing Research	Snp 5 R01 Nr04134-08	2001	2008	$2,197,566 (Total award)	Wilbur, JoEllen
McElmurry, Beverly	Co-investigator	Active	Bridges to the Doctorate for Minority Nursing Studetns	NIH, National Institute of General Medicine	R25: GM67590	05/01/03	04/30/09	$1,326,999	Kim, Mi Ja
McElmurry, Beverly	PI	Active	Champions for Healthy Kids	General Mills Foundation		07/01/06	09/30/07	$10,000	

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McElmurry, Beverly	PI	Active	Chicago Health Corps Outreach Services	Lloyd A. Fry Foundation		08/17/06	08/16/07	$15,000	
McElmurry, Beverly	PI	Active	Chicago Health Corps Outreach Services	Polk Brothers Foundation		10/01/06	09/30/07	$35,000	
McElmurry, Beverly	PI	Active	Chicago Health Corps: An AmeriCorps Program	Health Federation of Philadelphia		09/01/04	08/31/07	$480,388	
McElmurry, Beverly	PI	Active	China Nursing Leadership Initiative for HIV/AIDS Risk Reduction	Catholic Medical Mission	RESEARCH CONTRACT	04/06/04	04/05/09	$107,652	
McElmurry, Beverly	PI	Active	IHEC Services	Illinois Health Education Consortium		07/01/04	06/30/07	$32,000	
McElmurry, Beverly	PI	Active	International Leadership Project	Kellogg Foundation	RESEARCH CONTRACT	04/01/03	12/31/07	$270,000	
McElmurry, Beverly	PI	Active	Josephinum Health Center	Josephinum High School		01/01/04	06/30/07	$67,000	
McElmurry, Beverly	PI	Active	UIC AIDS International Training and Research Program	NIH, Fogarty International Center	RESEARCH CONTRACT	06/01/06	05/31/11	$1,732,918	Levy, Judith
McElmurry, Beverly	PI	Active	UIC AIDS International Training and Research Program: Chile, Indonesia, and Malawi	NIH, Fogarty International Center	D43 TW01419	06/01/06	05/31/08	$474,805	Levy, Judith
McElmurry, Beverly	PI	Project Ended	ALA Asthma Initiative	Illinois Health Education Consortium		01/01/04	09/30/04	$25,500	
McElmurry, Beverly	PI	Project Ended	Americorps Community Services	Polk Brothers Foundation	RESEARCH CONTRACT	06/01/05	05/31/06	$35,000	
McElmurry, Beverly	PI	Project Ended	Americorps Community Services	Prince Charitable Trust		02/01/05	01/31/06	$15,000	
McElmurry, Beverly	PI	Project Ended	Americorps Community Services (HRSA)	Allegheny County Health Department		07/01/04	08/31/05	$36,000	
McElmurry, Beverly	PI	Project Ended	Asthma Community-Based Educational Services	Environmental Protection Agency	EPA X-97582001	02/01/02	09/30/04	$34,056	
McElmurry, Beverly	PI	Project Ended	Chicago Health Corps	Lloyd A. Fry Foundation		09/01/04	02/15/04	$15,000	
McElmurry, Beverly	PI	Project Ended	Chicago Health Corps: Children and Asthma Education Initiative	Environmental Protection Agency	97544001	10/01/00	09/30/04	$116,000	
McElmurry, Beverly	PI	Project Ended	Chicago Spanish Immersion: Bridges to Health Program	Illinois Health Education Consortium	D56MP01009	01/01/02	09/30/04	$110,025	
McElmurry, Beverly	PI	Project Ended	China Nursing Leadership	Josephinum High School	RESEARCH CONTRACT	10/04/99	06/30/05	$5,000	
McElmurry, Beverly	PI	Project Ended	China Nursing Leadership Initative	Catholic Medical Mission	CO-OP	09/01/02	12/31/06	$160,000	
McElmurry,	PI	Project	China Nursing Leadership Initative	Mary Knoll China Service		11/01/03	12/31/06	$61,632	

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Beverly		Ended		Project					
McElmurry, Beverly	PI	Project Ended	China: AIDS/HIV Nurses	World Health Organization	CO-OP	08/15/03	12/31/04	$17,699	
McElmurry, Beverly	PI	Project Ended	Healthy Eating by Design	Illinois Health Education Consortium	CO-OP	06/01/05	12/31/06	$6,072	
McElmurry, Beverly	PI	Project Ended	LSNA Community Initiative	Illinois Health Education Consortium	RESEARCH CONTRACT	11/01/03	10/31/04	$15,347	
McElmurry, Beverly	PI	Project Ended	LSNA Community Initiative	Logan Square Neighborhood Assn.	RESEARCH CONTRACT	04/15/04	06/30/04	$2,500	
McElmurry, Beverly	PI	Project Ended	Minority International Research Training	NIH, Forgarty International Center	T37 TW00057 RESEARCH CONTRACT	09/01/94	02/28/07	$1,438,620 (Total award)	
McElmurry, Beverly	PI	Project Ended	MR: Community Health Services	Illinois Health Education Consortium		01/01/03	12/31/04	$51,000	
McElmurry, Beverly	PI	Project Ended	New Models of Care in the Americas: Challenges and Perspectives	Panamerican Health Organization		05/15/00	12/31/05	$10,000	
McElmurry, Beverly	PI	Project Ended	Primary Health Care Development Services	Illinois Health Education Consortium	RESEARCH CONTRACT	06/01/98	06/30/04	$176,958	
McElmurry, Beverly	PI	Project Ended	Training in Primary Health Care Nursing Research	NIH, National Institute of Nursing Research	T37: NR07079	09/30/94	03/31/05	$1,982,250	
McElmurry, Beverly		Project Ended	UIC AITRP: Chile, Indonesia, and Malawi	NIH, Fogarty International Center	T37: TW01419	09/30/00	05/30/06	$208,449	Levy, Judith
Mischak, Rebecca		None							
Opacich, Karen		None							
Wilbur, JoEllen	PI	Active	Environmental Correlates and Adherence of Home-based Walking in African American Women.	Robert Wood Johnson Foundation Active Living Research	RWJ 052934	2005	2008	$150,000 (Total award)	
Wilbur, JoEllen	PI	Active	Reducing Health Disparity in African American Women: Walking Adherence Intervention	NIH, National Institute of Nursing Research	RO1NR04134-05	2002	2008	$244,727 (Total award)	
Wilbur, JoEllen	PI	Active	Adherence to Walking: Strategies for Midlife Minority Women	NIH, National Institute of Nursing Research	Snp 5 R01 NR04134-08	2001	2008	$2,197,566 (Total award)	
Wilbur, JoEllen	Co-investigator	Active	Planning Grant for Institutional CTSA	National Center for Research Resources	RR023411	2006	2007	$232,500 (Total award)	Mazzone, Theodore
Wilbur, JoEllen	Co-investigator	Active	Measurement of Activity Space and Health Behaviors in African American and White Adults	UIC College of Nursing, Center for Reducing Risks in Vulnerable Populations	P30 NR009014	2007	2009	$15,000	Zenk, Shannon
Wilbur,	PI	Project	Understanding the Mysteries of Fibromyalgia	Falk Medical Foundation		1999	2005	$771,800	

Table CWA-2: ERC Faculty Members' Research and Training Grant and Contract Support (all Sources of Support)									
Faculty Member Name	Role on Project	Active/ Pending	Grant/Contract Title	Funding Source	Grant Number	Project Start Date	Project End Date	Annual Direct Costs	If part of a larger project, identify PI of parent grant
JoEllen		Ended						(Total award)	
Wilbur, JoEllen	Co-investigator	Project Ended	Strategic Translational Research (STAR) Intercollege Program at UIC	UIC Research Development Services	2010 Seed	2006	2006	$199,598 (Total award)	Beam, Craig
Yingling, Charles		None							
Occupational Medicine (OM)									
Buchanan, Susan	Program Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-OM	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$200,567	Conroy, Lorraine
Buchanan, Susan	PI	Active	Reproductive Health in Minority Communities	Hektoen Institute for Medical Research		01/01/07	12/30/08	$10,000	
Buchanan, Susan	PI	Active	Occupational Hazard and Injury Surveillance in Chicago Temporary Agency Workers	National Institute for Occupational Safety and Health (through Illinois ERC Pilot Project program)	T42/OH008672	07/01/07	06/30/08	$7,991	
Buchanan, Susan	Co-investigator	Pending	Defining Strategies for Adoption of Training Programs in Occupational Health.	Centers for Disease Contrlol and Prevention		10/01/07	09/30/10	$1,110,723	
Buchanan, Susan	PI	Pending	Teaching Prenatal Environmental Health to Patients and Providers- Demonstration of an Innovative Curriculum: Avoid PLUMES- Pesticides, Lead, Mercury, and Environmental Tobacco Smoke	US Environmental Protection Agency (EPA)		09/01/07	08/30/09	$99,000	
Forst, Linda			See TRT Program above						
Cohen, Robert	PI	Active	Community Spirometry Initiative for the Greater Chicago Region	American Lung Association of Metropolitan Chicago		07/01/05	06/30/05	$25,620	
Cohen, Robert	PI	Active	Black Lung Clinics Grant	DHHS	2 H37 RH00055	07/01/07	06/30/08	$258,770	
Duvall, Katherine	PI	Pending	Knowledge, Attitudes and Practices of Travelers and Travel Health Practitioners	Centers for Disease Control					
Dorevitch, Samuel			See TRT Program above						
Hinkamp, David		None							
Holmes, Joye		None							
Hryhorczuk, Daniel O	PI	Project Ended	The Illinois Center Of Excellence In Environmental Health	Assn of Schools of Public Health	S1944 21 23	10/01/03	09/30/04	$216,748	
Hryhorczuk, Daniel O	PI	Active	UIC-NaUKMA Partnership in Public Health	Assn Liaison Office for Univ Cooperation in Dev		07/15/04	07/31/06	$51,133	
Hryhorczuk,	PI	Active	The Great Lakes Center Of Excellence In	US Dept of Health &	CCU524174-01	09/01/04	08/31/07	$116,599	

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Faculty Member Name	Role on Project	Active/ Pending	Grant/Contract Title	Funding Source	Grant Number	Project Start Date	Project End Date	Annual Direct Costs	If part of a larger project, identify PI of parent grant
Daniel O			Enviornmental Health	Human Services (Centers for Disease Control & Prevention)					
Hryhorczuk, Daniel O	PI	Project Ended	Data Base Support For The Chornobyl Thyroid Study In Ukraine	Natl Cancer Inst		12/31/04	12/30/06	$115,089	
Hryhorczuk, Daniel O	PI	Project Ended	International Training & Research in Environmental And Occupational Health	Fogarty (John E) Intl Ctr	D3TW00653B	05/01/05	04/30/07	$32,593	
Hryhorczuk, Daniel O	Co-investigator	Active	Illinois Public Health Research Fellowship Program	US Dept of Health & Human Services (Centers for Disease Control & Prevention)	TCD000189A	09/30/04	09/29/07	$927,747	Sokas, Rosemary
Hryhorczuk, Daniel O	PI	Active	International Training And Research inEnvironmental And Occupational Health (ITREOH)	Fogarty (John E) Intl Ctr	DTW000653C	05/01/07	02/29/08	$132,037	
Hryhorczuk, Daniel O	PI	Active	Database Support For The Chrnobyl Thyroid Study In Ukraine	Natl Cancer Inst	ADB CONTRACT # N02-CP-75500	12/31/06	12/30/07	$161,141	
Hryhorczuk, Daniel O	Co-investigator	Active	Epidemiologic Study Of Recreational Use Of The Chicago Area Waterways	Metropolitan Water Reclamation Dist of Gtr Chicago	PURCHASE ORDER #3044368	05/01/07	12/31/09	$1,279,927	Dorevitch, Samuel
Hryhorczuk, Daniel O	PI	Pending	t(14;18) Translocations in Dioxin Exposed Workers from Ufa	Natl Inst for Occupational Safety & Health		01/01/08	12/31/12	$1,238,661	
Krantz, Anne	PI	Active	Work-Related Asthma Surveillance and Work Disability in Low-Income Asthma Patients in Illinois	CDC/IDPH	U59/CCU522472-01	04/05			
Marder, David	Co-investigator	Pending	Knowledge, Attitudes and Practices of Travelers and Travel Health Practitioners	Centers for Disease Control					
Orris, Peter		None							
White, Herb		None							
Hazardous Substance Academic Training (HSAT)									
Scheff, Peter			See Industrial Hygiene above						
Cali, Salvatore			See Pilot Projects Research Training above						
Conroy, Lorraine			See Center Administration above						
Franke, John		None							
Lacey, Steven			See Industrial Hygiene above						
Agricultural Safety and Health- Academic Program									
Aherin, Robert		Active	AgrAbility Program	State of Illinois	597068	07/01/06	06/30/07	$200,000	

Table CWA-2: ERC Faculty Members' Research and Training Grant and Contract Support (all Sources of Support)									
Faculty Member Name	Role on Project	Active/ Pending	Grant/Contract Title	Funding Source	Grant Number	Project Start Date	Project End Date	Annual Direct Costs	If part of a larger project, identify PI of parent grant
Aherin, Robert		Active	Safe Operation of Farm Equipment on Public Roadways	Successful Farming Magazine		07/01/07	06/30/08	$4,500	
Aherin, Robert		Pending	AgrAbility Program	State of Illinois	597068	07/01/07	06/30/08		
Petrea, Robert		None							
Continuing Education Outreach (CEO)									
Nickels, Leslie	Program Director	Project Ended	Grants For Education Programs In Occupational Safety And Health Education And Research Centers-CE/O	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/05	$60,208	
Nickels, Leslie	Program Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers- CE/O	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$60,208	Conroy, Lorraine
Nickels, Leslie	Program Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers- ASH	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$73,334	Conroy, Lorraine
Nickels, Leslie	Program Director	Active	Grants For Education Programs In Occupational Safety And Health Education And Research Centers- HST	Natl Inst for Occupational Safety & Health	T42/OH008672	07/01/03	06/30/08	$55,555	Conroy, Lorraine
Nickels, Leslie	Co-investigator	Project Ended	Blood Exposure And Primary Prevention In The Home Care Workplace	Univ of MD	S01888	08/01/04	07/31/07	$21,050	Sokas, Rosemary
Nickels, Leslie	Co-investigator	Active	Illinois Public Health Research Fellowship Program	US Dept of Health & Human Services (Centers for Disease Control & Prevention)	TCD000189A	09/30/04	09/29/07	$927,747	Sokas, Rosemary
Nickels, Leslie		Pending	Defining Strategies for Adoption of Training Programs in Occupational Health.	Centers for Disease Contrlol and Prevention		10/01/07	09/30/10	$1,110,723	Conroy, Lorraine
Nickels, Leslie	PI	Active	Dissemination of a Program and Toolkit for Local Health Departments: Partnering with Retailers and Communities on a Primary Prevention Campaign to Promote Lead Safe Work Practices	US Environmental Protection Agency (EPA)		08/16/07	08/15/08	$79,106	
Zanoni, Joseph			See TRT Program above						
Agricultural Safety and Health-CE Program									
Nickels, Leslie			See Continuing Education above						
Zanoni, Joseph			See TRT Program above						
Aherin, Robert			See Agricultural Safety and Health- Academic						

Table CWA-2: ERC Faculty Members' Research and Training Grant and Contract Support (all Sources of Support)									
Faculty Member Name	Role on Project	Active/ Pending	Grant/Contract Title	Funding Source	Grant Number	Project Start Date	Project End Date	Annual Direct Costs	If part of a larger project, identify PI of parent grant
			above						
Petrea, Robert			See Agricultural Safety and Health- Academic above						
Hazardous Substance Training (HST)									
Nickels, Leslie			See Continuing Education						
Zanoni, Joseph			See TRT Program above						
Aydt, Symantha		None							

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Primary Faculty Advisor Name[2]	Trainee Name	P or C[3]	Pre or Post[4]	Training Start Date mm/yy	Training End Date mm/yy	Title of Research Project	Current Trainee: Source of Support Past Trainee: Current Position
IH Program							
NIOSH supported IH Trainees							
Esmen, Nurtan/ Lacey, Steven	Alcazar, Tara	P	Pre	08/05	08/07	Thesis: Worker Recall for Epidemiology	University of Iowa
Esmen, Nurtan/ Lacey, Steven	Barr, Maya	P	Pre	08/04	12/06	Thesis: Retrospective Analysis of Hexavalent Chromium Exposures in Electrochemical Milling in Jet Engine Workers	Frisco Sanitation District
Erdal, Serap	Berman, Laurel (PhD)	P	Pre	08/99	12/05	Thesis: Welding Fume Exposure Assessment under Isolated Process Conditions	ATSDR Region 5 brownfields coordinator
Esmen, Nurtan/ Lacey, Steven	Bigger, Samuel	P	Pre	01/06	08/08	An Industrial Process Classification Scheme for Exposure Analysis	US Dept. of Energy
Erdal, Serap	Breskey, John (MS)	P	Pre	08/05	12/07		NIOSH
Erdal, Serap	Breskey, John (PhD)	C	Pre			TBA	NSF
Conroy, Lorraine	Brima, Sanobeia	P	Pre	08/03	05/06	Capstone: A Noise Assessment at Amtrak's Diesel Facility	
Erdal, Serap	Brown-Ellington, Lezah (MS)	P	Pre		05/04	Thesis: A Field Comparison of Thoracic Size-Selective Exposure Assessment Techniques	NIOSH
Li, An	Butler, Gwennetta M.	P	Pre	08/00	12/03	Thesis: Co-Solvent Effect on Aqueous Solubility of 4-Chlorobiphenyl at Different Temperatures	Underwriter's Laboratory
Erdal, Serap	Carollo, Amy	P	Pre	08/00	07/02	Thesis: Evaluation of the public health protectiveness of the risk based remediation standards for Midwestern hazardous waste sites	Kent School of Law
Erdal, Serap	Catalin, Bogdan (PhD)	C	Pre	01/07		TBA	HUD

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Scheff, Peter/Conroy, Lorraine	Chen, Lilia	P	Pre	08/03	12/05	Thesis: Mouse Endotoxin and Particulate Matter Emission Factor Modeling Applied to a Working Animal Facility	NIOSH HHE program
Conroy, Lorraine	Doughty, Dyan	P	Pre	08/05	05/08	Thesis: Personal Exposure to Dust and Allergens in an Animal Research Facility	Loyola University Medical Center
Scheff, Peter	Ford, Justin (PhD)	C	Pre	01/06		TBA	CDC
Scheff, Peter	Hopp, Kimberly	P	Pre	08/02		TBA	
Forst, Linda/Conroy, Lorraine	Jimenez, Rocio	P	Pre	08/00	12/03	Thesis: Evaluation of the Promotores de Salud Peer-Health Education Model as an Occupational Health and Safety Intervention Tool in Latino Farm Workers	
Scheff, Peter	Kasuba, Roxolana	P	Pre	08/01	12/03	Thesis: Characterization of Short-Term Fine Particulate Matter in Region 5	PhD student, UNC
Conroy, Lorraine	Kennedy, Kathleen	P	Pre	06/00	12/02	Thesis: Occupational dust exposure in Ukrainian coal miners	Pratt and Whitney project coordinator
Conroy, Lorraine	Lacey, Steven	P	Pre	08/99	12/02	Thesis: Dust exposure monitoring at a food processing facility	UIC Assistant Professor
Esmen, Nurtan	Lippert, Julia	P	Pre	08/04	12/06	Thesis: Electromagnetic field exposure in a nondestructive testing operation	Environ
Conroy, Lorraine	Malcolm, Robert	C	Pre	08/03		Thesis: Personal Esposure to Dust, Endotoxin and Ammonia in a Swine Confinement Facility	Simms Metal Recovery
Scheff, Peter	Matwyshyn-Fuoco, Marta	P	Pre	08/04	07/05	Thesis: Prevalence of Wheezing and Rhinitis in Three Cities Ukraine	USEPA Region 5 air monitoring
Tessier, Daniel	Murray-Larry, Danita	P	Pre	08/03	05/07	Thesis: Endotoxin concentrations in settled dust sample from homes and schools in the Chicago metropolitan area	USEPA Region 5 Laboratory
Scheff, Peter	Palmer, Jennifer	P	Pre	08/04	05/06	Thesis: Metalworking Fluid Exposure Reconstruction Methodology for Jet Engineering Manufacturing	Sullair Corp, IH

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Tessier, Daniel	Pascal, Laura	P	Pre	08/98	12/03	Thesis: Cytotoxicity of Metals in Welding Fumes as a Factor in Occupational Lung Disease	University of Washington post doctoral fellow
Esmen, Nurtan	Patel, Chirag	C	Pre	08/06		TBA	Pratt and Whitney project
Tessier, Daniel	Paulin, Jamie	P	Pre	08/00	12/03	Thesis: Hormonally active pesticides alter cellular regulatory proteins in the prostate cancer cell line LNCaP	USEPA Region 5 Waste Pesticides and toxics
Conroy, Lorraine	Priester, Carolina	P	Pre	01/06	05/08	Thesis: Performance of a Modified Variable Air Voume Hood	Abbott Laboratories
Conroy, Lorraine	Remington, Nadine	P	Pre	08/04	08/07	Thesis: Understanding Worker Centers in Chicago: A Qualitative Analysis	OAI Inc.
Li, An	Schoonover, Todd (MS)	P	Pre	01/04	12/02	Thesis: Polycyclic aromatic hydrocarbons in residential air of 10 Chicago area homes	UIC Research Industrial Hygienist
Erdal, Serap	Shimek, Joanna	C	Pre	08/04		TBA	NIOSH
Forst, Linda	Vinson, David	P	Pre	08/02	NA		
Esmen, Nurtan	Wagner, Julie	P	Pre	08/07	06/08		Transferred to U. Washington
Conroy, Lorraine	Waterman, Fanta	P	Pre	08/05			Transferred to Temple University
Scheff, Peter	Welch, Alison	P	Pre	08/06		Thesis: Lead Dust and Total Dust Emissions During Demolition of Single Family Homes	Chemrisk
Non-NIOSH Supported IH Trainees							
Hallenbeck, William	Bisinger, Jr., Edwin	P	Pre	08/98	05/04	Thesis: Prediction of Human Percutaneous Absorption of Chemical Substances from Laboratory Animal Data	Environmental Consultant
Erdal, Serap	Abelmann, Par Anders	C	Pre	08/06		TBD	NIOSH K award
Scheff, Peter	Ali, Hussain	P	Pre	08/01	05/04		

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Conroy, Lorraine	Amuwo, Shakirudeen A.	P	Pre	08/02	05/04	Capstone: An analysis of Carbon Monoxide Exposure: Cases and Surveillance in the State of Wisconsin	UIC PhD student
Scheff, Peter	Baker, Kirk	P	Pre	08/03	07/06	Dissertation: Performance of a Regulatory Modeling System for PM2.5 Sulfate and Nitrate and Relationships to Performance of Meteorological Variables and Deposition Processes	LADCO
Hryhorczuk, Daniel	Bhooma, Thanikacualam	P	Pre	08/99	12/02	Capstone: USEPA environmental pollution	USEPA Region 5 toxicology
Sokas, Rosemary	Brown, Todd	P	Pre	08/05	05/07	Capstone: Outcomes of Interfaith Workers' Center's Case Referrals to OSHA	PhD student
Rospenda, Kathleen/ Sokas, Rosemary	Brown-Ellington, Lezah (PhD)	P	Pre	08/03	08/07	Dissertation: Psychosocial Issues as Predictors of Occupational Injury, Illness and Assault	CDC
Scheff, Peter	Caudill, Motria	C	Pre	08/03		Dissertation: Multivariate receptor modeling applied to PM2.5 and air toxics monitoring data in the urban and industrial Midwest	USEPA Region 5
Scheff, Peter	Colledge, Michelle	C	Pre	08/02		Dissertation: Estimating emissions and ambient concentrations of hydrogen sulfide from a C&D waste facility: Warren Recycling Landfill, Warren Twsp, Ohio	ATSDR Environmental Scientist
Erdal, Serap	Creggett, Dion	P	Pre	08/01	12/04	Capstone: Abatement of an Asbestos-Containing Material in Chicago Public School	
Scheff, Peter	Dibblee, David Seth	P	Pre	08/02	05/04	Thesis: School Day Exposures to Airborne Allergens	USEPA Region 5 toxics division
Conroy, Lorraine	Dimos, John	C	Pre	01/92		TBD	IH consultant
Scheff, Peter	Draper, Peter	P	Pre	08/99	07/03	Capstone: Environmental Health Education in Charles Darwin Elementary School, Chicago	Rockford Memorial Hospital

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Erdal, Serap	Durgam, Srinivas	P	Pre	08/01	12/05	Thesis: Design, Testing and Validation of an Exposure Chamber for Welding Fume Emission Characterization Studies	NIOSH Internship, Cincinnati
Boulos, Badi	Fashola, Ademolakeli	C	Pre	08/06		TBD	
Scheff, Peter	Ford, Justin (PhD)	C	Pre	08/02		TBD	MWRDGC study
Scheff, Peter	Gaughan, Megan	P	Pre	05/04	05/07	Capstone: Effect of Noise Monitoring Criteria on Dose Measurements	
Tessier, Daniel	Gawde, Pralhad	P	Pre	08/03	05/05	Thesis: Activation of Map Kinases by Chlorpyrifos in Bronchial Epithelial Cells- A Potential Mechanism of Respiratory Injury	Pharmacist, State of Washington
Esmen, Nurtan	Gutierrez, Maria	C	Pre	08/04		TBD	Pratt study
Conroy, Lorraine	Harden, Shaney	P	Pre	08/99	12/03	Capstone: Environmental Health and Safety-evaluate health issues	
Scheff, Peter	Javor, Margit	C	Pre	08/04		TBD	UIC, EOHS lab manager
Scheff, Peter	Klein Banai, Cynthia	C	Pre	08/03		TBD	UIC, Environmental Health and Safety
Hryhorczuk, Daniel	Laskey, Lara	P	Pre	08/01	12/04	Capstone: Asbestos Evaluation at Illinois Beach State Park	USEPA
Scheff, Peter	Lawrin, Terrance	C	Pre	08/02		Capstone: Development of a Bio-Hazard Safety Manual	U of WI Madison
Conroy, Lorraine	Lynn, Kristine	C	Pre	08/07		TBD	NIH
Hryhorczuk, Daniel	Maher, El Bayoumi	P	Pre	08/02	05/04	Capstone: Implementation of Protocol for Assessing Community Excellence in Environmental Health (PACE EH) in Oak Park	
Scheff, Peter	Melton, Jeffery J.	C	Pre	08/05		Capstone: Development of a Safety Protocol for LASERs at UIC	UIC TA

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Scheff, Peter	Mesones, Mauricio	P	Pre	08/04	05/06	Thesis: Organic Emissions From Biological and Petroleum Based Lubricants in the Aluminum Rolling Process	ENVIRON International, 707 Wilshire Blvd., Suite 4950, Los Angeles, CA 90017
Hryhorczuk, Daniel	Murphy, Elizabeth	P	Pre	08/01	07/03	Capstone: Soil Lead Contamination in Child Play Areas Near Chicago Transit Authority (CTA) Elevated Train Lines	USEPA Region 5 GLNPO
Hryhorczuk, Daniel	Pelka Mucha, Amy	P	Pre	08/97	05/04	Dissertation: Assessment of Environmental Exposures and Immune Health Status of Three Year Old Children in Ukraine	Post Doc Fellow, UIC, SPH
Tessier, Daniel	Porter-Thomas, LaTrice	P	Pre	08/03	05/06	Capstone: Exposure Assessment for Metals in a Police Department Firing Range	Cook Co Dept of Public Health, Environmental Quality Manager
Erdal, Serap	Remingler, Jean-Paul	P	Pre	08/01	05/03	Capstone: Undergraduate students are not aware of degree programs in the environmental and occupational health sciences offered through graduate school of public health	
Lacey, Steven	Rodriguez, Angelica M.	C	Pre	08/06		TBD	BOT waiver
Erdal, Serap	Saldana, Andres	C	Pre	01/07		TBD	SPH
Conroy, Lorraine	Schoonover, Todd (PhD)	C	Pre	01/04		TBD	NIOSH NORA
Li, An	Song, Wenlu	P	Pre	08/01	07/05	Thesis: Temporal and Spatial Air Distribution of PBDEs and PCBs from Sedimentary Samples in the Great Lakes Region	Michigan St. Univ. Post Doc Fellow
Tessier, Daniel	Tong, Sania	P	Pre	08/00	05/04	Thesis: Prostate cancer as a model of hormonal carcinogenesis: Impact of hormonally active pesticides in vitro	USEPA ORD/NERL

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Esmen, Nurtan/ Nickels, Leslie	Trinidad, Diana (MPH)	P	Pre	08/06	05/08	Evaluating Home Care Worker Occupational Health and Safety Curricula	
Li, An	Vij, Rajiv	P	Pre	08/02	05/05	Capstone: Effect of PM2.5 Exposure on Kidney Function in Patients with Chronic Kidney Disease	
Scheff, Peter	Wuellner, Sara	C	Pre	08/05		TBD	USEPA APTI and HUD; MWRDGC
Scheff, Peter	Yoshida, Azusa	P	Pre	08/02	12/04	Capstone: Plant Noise Survey and Various Other Small Projects Conducted at Hospira Inc.	
NIOSH supported HSAT trainees							
Erdal, Serap	Berman, Laurel	P	Pre	08/99	07/02	Thesis: Analysis of fish uptake and bioaccumulation of polychlorinated biphenyl's from western lake Erie sediments.	ATSDR Region 5 brownfields coordinator
Tessier, Daniel	Catalin, Bogdan (MS)	P	Pre	08/04	12/06	Thesis: MAP kinase activation in human bronchial epithelial cells in vitro following exposure to mild steel welding fumes	NIOSH, HUD, UIC PhD student
Scheff, Peter/ Esmen, Nurtan	Dula, Charles	C	Pre	08/04	08/07	Thesis: Sensitivity Analysis For Exposure Reconstruction Using Task Performance Time Study Data	NIOSH
Conroy, Lorraine/Li, An	Ford, Justin (MS)	P	Pre	08/02	12/05	Thesis: Recent Sedimentation Patterns of the Laurentian Great Lakes as Determined by Alpha Spectroscopy	NIOSH, UIC PhD candidate
Esmen, Nurtan/ Lacey, Steven	Horvatin, Shanna	C	Pre	08/06	08/08		
Conroy, Lorraine	Lopez, Ramon	C	Pre	08/07		TBD	MWRDGC
Scheff, Peter/ Forst, Linda	Nevarez, Juan	P	Pre	08/04	05/07	Thesis: Occupational Surveillance of Pesticide Poisonings from the Illinois Poison Center Database	OSHA Region 5 Madison office
Scheff, Peter	Piatek, James	C	Pre	08/07		TBD	MWRDGC
Li, An	Plavka, Julie A.	P	Pre	08/01	05/04	Thesis: An Exposure Assessment of Welding Emissions at a Large Manufacturing Facility	Teamsters IH

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Li, An	Ruiz-Sanchez, Lymari	P	Pre	08/01	05/04	Thesis: Optimization of High Performance Liquid Chromatography Method for Analysis of Mycotoxins in House Dust.	UIC Biology PhD student
Tessier, Daniel/ Erdal, Serap	Schnackenbeck, Joy	P	Pre	08/02	12/04	Thesis: Characterization of Size-Selective Elemental Composition of Welding Fumes by Area Sampling in an Industrial Facility	USEPA Washington DC
OHN Program							
Wuellner, Jacqueline	Bowling, Amy	C	Pre	08/06		TBD	Great Lakes Center
Marion, Lucy	Bycek, Lance	P	Pre	08/00	05/04	Thesis: Cardiovascular Risks in Firefighters	Manager, Global Occupational Health Wrigley Co.
Miller, Arlene	Connor, Jorgia	C	Pre	08/03		Dissertation: Health of Immigrant Filipina Nurses	NIOSH
Wuellner, Jacqueline	Dahalig, Mary	P	Pre			TBD	
Lizer, Shannon	English, Airn	P	Pre	08/03	05/05	Thesis: Hepatitis C and Healthcare Workers	University Health Services OHNP
Opacich, Karen	Fearn, Cynthia	P	Pre	08/02	05/07	Thesis: Pilot Study: BP Knowledge Assessment of Workers in a Midwestern Manufacturing Plant	
McDevitt, Judith	Johnson, Kathryn	P	Pre	08/02	05/05	Thesis: Predictors of Adherence to Exercise Programs in Employed American Women: An Integrative Literature Review	OHNP/ Mass General Hospital
Hughes, Tonda	Katula, Sarah	C	Pre	08/03		Dissertation: Domestic Abuse and Workplace Violence Against Women	NIOSH
Wilbur, JoEllen	Kim, G.	P	Pre	08/03	05/05	Dissertation: Relationship of Work Stress and Family Stress to Self-rated Health of Women Employed in the Industrial Sector of Korea	
Wuellner, Jacqueline	Laird-Wilson, Joshua	C	Pre	08/07		TBD	
Wuellner, Jacqueline	Lara, Silvia	P	Pre	08/06		TBD	

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Wilbur, JoEllen	Lee, H.	P	Pre	08/00	05/06		University of Illinois at Chicago-Research Specialist
Wuellner, Jacqueline	MacNeil, Sheon	C	Pre	08/06		TBD	UIC UHS
Lizer, Shannon	Masters, Deborah	P	Pre	08/04		TBD	NIOSH
Marion, Lucy	Muller, Susan	P	Pre	08/98	05/04	Thesis: Needlestick and Sharps Injuries in an Urban Teaching Hospital	OHN Specialist at Automatic Data Processing (ADP)
Wuellner, Jacqueline	Persaud, David	C	Pre	08/07		TBD	US VA
Baldwin, Kathy	Strode, Denise	P	Pre	08/02	05/04		OHNSpecialist CNH Manufacturing, Goodfield, IL
Lizer, Shannon	Walls, Malik	P	Pre	08/02	05/06	Thesis: Prevention of Obesity in African American Males	Clinical Educator Pfizer
Lizer, Shannon	Yingling, Charles	P	Pre	08/02	05/05	Thesis: Patterns and Predictors of Violence on Inpatient Medical/Surgical Units: An Integrative Literature Review	UIC Clinical Instructor
OMR Program							
Buchanan, Susan	Amir, Tabasum	P	Post	07/04	06/06	Capstone: Profile of Multiple Chemical Sensitivity in an academic occupational medicin clinic	Occ Physician, Chicago
Rubin, Rachel	Arora, Jaspal	P	Post	07/03	06/05	Capstone: Non-fatal occupational injuries presenting to a level I urban Trauma and Burn Unit	Occ Physician, Wi
Dorevitch, Samuel	Chey, Howard	P	Post	07/06	06/08	Capstone: Patterns of GI Illness in the CHEERS Data Set	
Forst, Linda	Dent, David	P	Post	07/02	06/04	Capstone: Traumatic occupational injuries in the state of Illinois	Sports Med Fellowship

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Krantz, Anne	Engelland, Emily	P	Post	07/05	06/07	Capstone: Asthma related work disability in low income asthma patients	Occ Physician, Wi
Forst, Linda	Halpin, John	P	Post	07/04	06/06	Capstone: Epidemiology of occupational burns in an outpatient setting	EIS - Atlanta
Duvall, Kathy	Holmes, Joye	P	Post	07/03	06/05	Capstone: The benefit adequacy of vocational rehabilitation in the state of Illinois	Regional Med Director, Amer Air
Dorevitch, Samuel	Karandikar, Abhijay	P	Post	07/05	06/07	Capstone: Efficacy of community interventions in the area of air pollution	Occ Physician, La
Buchanan, Susan	Larson, Susan	C	Post	07/07		TBD	UICMC
Buchanan, Susan	Morello, Joseph	P	Post	07/06	06/08		US Army
Buchanan, Susan	Onyewuchi, Otuonye	C	Post	07/07		TBD	UICMC
Buchanan, Susan	Patel, Mita	P	Post	07/03	06/05	Capstone: Pilot Study Investigating the Effect of the Static Magnetic Field from a 9.4 Tesla MRI on the Vestibular System	Occ Physician, Chicago
Buchanan, Susan	Song, Francis	p	Post	07/05	06/07	Capstone: Nasopharyngeal Cancer and Occupational in Chengdu, China	Prison Health, Arizona
Dorevitch, Samuel	Tharenos, Leslie	P	Post	07/03	06/05	Capstone: Comparison and Prevalence of sensitization to common allergens in worker exposed and unexposed to laboratory animal allergens	Occ Physician, St. Louis
Dorevitch, Samuel	Thomas, Bilue	P	Post	07/06	06/08		
Dorevitch, Sam	Zhou, Cong	P	Post	07/03	06/05	Capstone: Measuring Asthma severity in Chicago public housing projects using exhaled breath condensate pH	Occ Physician, Kansas
Agricultural Safety & Health Program							
Aherin, Robert	Cole, Jennifer	P	Pre MS	08/03	05/05	N/A (undergratduate)	Ag Sales
Aherin, Robert	Downs, Michelle	C	Pre MS	08/06		TBD	

Table CWA-3							
Current and Past Trainees - Since Beginning of Current Project Period[1]							
Aherin, Robert	Hallam, Daniel	P	Pre MD	08/02	05/04	Ind. Stdy.: Analysis of Selected Swine Confinement Workers	Rural Medicine Doctor
Aherin, Robert	Maurer, Aaron	P	Pre BS	08/03	12/05	N/A (undergratduate)	Ag Consultant
Aherin, Robert	Morehouse, Emily	P	Pre MS	01/04	05/06	Thesis: Injury experiences of farm women over 50	Youth Education Program Director
Aherin, Robert	Morgan, Kristen	P	Pre BS	08/06	06/07	N/A (undergratduate)	Ag Sales Representative
Aherin, Robert	Nevarez, Juan	P	Pre BS	05/02	05/04	N/A (undergratduate)	MS Ind Hyginest
Aherin, Robert	Nevin, Nevada	p	Pre MS	01/04	05/04	Dropped out of the University for Personal Reasons	Turf Business Management
Aherin, Robert	Pruemer, Jacob	C	Pre Vet	08/06		TBD	
Aherin, Robert	Saldana, Andres	P	Pre BS	01/04	05/06	N/A (undergratduate)	MS Ind Hyginest
Aherin, Robert	Sauder, Josh	C	Pre BS	08/05		N/A (undergratduate)	
Aherin, Robert	Sauder, Steven	P	Pre BS	01/04	05/07	N/A (undergratduate)	Farm Manager
Aherin, Robert	Wilson, Beth	P	Pre BS	08/03	05/04	N/A (undergratduate)	Ag Educator

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

[2] Group faculty members by academic program. Only count each faculty member once (with primary program).

[3] P = Past, C = Current

[4] Pre = Pre-doctoral, Post = Post-doctoral

Table CWA-4: Roles and Responsibilities in the Illinois ERC.

Activities/Tasks	Director (L. Conroy)	Deputy Director (L. Nickels)	Program Directors	Administrator (B. Harper-Smith)
Center Activities	Monitor center activities Attend center directors' meeting (AUPOSH) Communicate with NIOSH on grant content	Assist Director with core activities		Assist Director with core activities
Strategic Planning	Coordinate planning process;	Assist director with planning and program evaluation	Participate in strategic planning;	Scheduling; Minutes
Program Evaluation			Conduct individual program evaluation; Participate in Center-wide evaluation; Prepare program reports	Scheduling; Minutes
Advisory Committee	Identify chair Work with chair to develop agendas Implement new initiatives	Work with chair to develop agendas Implement new initiatives	Recommend membership Attend meetings Implement new initiatives	Keep advisory committee list Scheduling; Minutes
Continuing Education			Work with CE on discipline-specific CE programs	
Outreach		Coordinate outreach activities	Summarize outreach activities for programs; Work with outreach director to fulfill outreach plan	
Interdisciplinary Activities	Coordinate activities Develop plan and evaluate activities	Assist with coordination of activities	Assist Director with implementation of interdisciplinary activities Participate in program/activity evaluation	
PP Research Training	Communicate with NIOSH		Assist PPRT Director with outreach and advertising; Serve on research review committee Collaborate on research and training activities within Center	

Table CWA-4: Roles and Responsibilities in the Illinois ERC.

Activities/Tasks	Director (L. Conroy)	Deputy Director (L. Nickels)	Program Directors	Administrator (B. Harper-Smith)
Research Training	Direct the NORA Research Support Interdisciplinary Research Training program	Assist the Director	Participate in NORA Research Support Research Training activities	
Recruitment/ Publicity	Web site/ directory contact person		Program recruiting	
Grant Submission	Leadership and management of grant preparation Coordinate grant submissions Budget preparation		Write program area sections	Develop revised budgets- with program directors Assist program directors and center director Maintain grant records
Budget Management	Overall responsibility for budget management		Responsible for managing program budgets	Maintain financial records Faculty/staff/student appointments Communication with University business officials

Table CWA-5. Advisory Board Membership

Linda Murray, MD, MPH (Chair) Medical Director, Cook County Department of Public Health Oak Park, IL	Eugene Goldfarb, JD Great Lakes Environmental Planning Chicago IL
Susan Bauer Health Resources Coordinator Community Health Partnership of Illinois Chicago IL	James Buskus UAW (Retired) Tinley Park IL
Kenneth Lewis, JD Lewis, Davidson & Hetherington, Ltd. Chicago IL	Thomas Broderick Executive Director Construction Safety Council Hillside IL
Patricia Bertsche, PhD, RN Abbott Laboratories Abbott Park IL	Maryann Suero Team Leader Children's Environmental Health USEPA, Region 5
Sharon D. Kemerer, RN, MSN, COHN-S Baxter	Margie Skimina Art Institute of Chicago
Nancy Quick, CIH, CSP Compliance Assistance Officer U.S. Department of Labor- OSHA North Aurora IL	David Sanchez Truman Community College
Robert D. Safe, CIH, LIH, QEP Envir Hlth and Safety Consultant Safe Technology, Inc. Representing Chicago-AIHA	Rick Vulpitta Illinois Safety Council.

Recently Retired Members

Tim Leahy Chicago Federation of Labor Chicago, IL	Chief John J. Robberson Fire Chief Glenview Fire Department
Roy Lacey, MD Medical Director GM Electromotive LaGrange, IL	Stanley R. Fryzel Illinois OSHA Consultation Program Department of Commerce and Community Affairs Chicago, IL
Mary Amman, RN, MS, COHN-S/CM, FAAOHN American Board of Occupational Health Nurses Hinsdale, IL	James F. Smith, Safety and Training Manager Alberto-Culver Melrose Park IL Representing Chicago-ASSE

Table CWA-6. Seminar Schedule for Previous Project Period.

Date	Topic	Speaker
	Fall 2002	
09/04/02	Case Study	Lorraine Conroy
09/18/02	Cytotoxicity of Heavy Metals in Welding Fumes as a Factor in Occupational Lung Disease	Laura Pascal[t]
10/02/02	Dean's Forum: Comparing Classical Test Theory and Rasch Analysis on a Measure of Post-Traumatic Stress Disorder	Ken Conrad
10/08/02	Forensic Exposure Assessments	Ted Hogan
10/16/02	(1) OSHA Internship: Young Worker Outreach Activities (2) PAHs In Residential Indoor Air	(1) Lance Byczek[t] (2) Todd Schoonover[t]
10/23/02	Video and Discussion: Can't Take No More	Video
11/6/02	Computer Databases in Air Pollution	Peter Scheff
11/13/02	NORA Seminar Series: Asbestos Exposures to Truck Drivers During the World Trade Center Clean-Up Activities	Pat Breysse
11/20/02	Participating in Scientific Conferences	Joe Zanoni
12/04/02		Rosemary Sokas
	Spring 2003	
01/22/03	Issues With APHA	Leslie Nickels
01/29/03	Journal Club	Linda Forst
02/5/03	Video and Discussion: Trade Secrets	Lorraine Conroy
02/12/03	Video and Discussion: Trade Secrets (continued)	Lorraine Conroy
02/26/03		Daniel Tessier
03/12/03	NORA Seminar Series: Beryllium Disease: Genetic and Environmental Contributions to Pathogenesis	Lee Newman
04/02/03	NORA Seminar Series: Social Factors in the Recognition of Occupational Disease: the Case of Byssinosis	Charles Levenstein
04/16/03	NORA Seminar Series: Polycyclic Aromatic Hydrocarbons	Steven Myers
04/23/03	World Trade Center	Sherry Baron
	Fall 2003	
08/27/03	Introduction To ERC, Seminar, Etc/ Case Study	L. Conroy
09/03/03	Performance of Available Thoracic Dust Samplers in Woodworking Shops	Lezah Brown-Ellington[t]
09/10/03	Overview of the BP Naperville Complex Intracranial Tumor Investigation	Fred Tremmel
09/17/03	PACE EH: Protocol for Assessing Community Excellence in Environmental Health	Gerry Castro
09/24/03	Mapping Risk	Joe Zanoni, Leslie Nickels
10/01/03	Journal Club	Lorraine Conroy
10/08/03	Dean's Forum: The Precautionary Principle in Public Health And The Environment: A Cautionary Approach	Bernard Goldstein
10/15/03	Information Extraction and Decision Making Using Sensor Fusion Approach	David He
10/22/03	Childhood Lead Poisoning Prevention in Chicago	Anne Evens

Table CWA-6. Seminar Schedule for Previous Project Period.

Date	Topic	Speaker
10/29/03	Hormonal Effects of Chemical Pollutants: The Research and Medical Implications of Endocrine Disruptors	Gina Solomon
11/05/03	Optimization of High Performance Liquid Chromatography Based Method for Analysis of Home Dust Samples	Lymari Ruiz-Sanchez[t]
11/12/03	TOPOFF2 Report: Lessons Learned From a Local Public Health Department	Stephen Martin Richard Scott
11/19/03	Case Study	Peter Orris
11/26/03	PDBEs in the Sediments of Great Lakes	An Li
12/03/03	Abbott Laboratories Multidisciplinary Groups in EHS	Pat Bertsche Dan Hryhorczuk Lauren Bauerschmidt
	Spring 2004	
01/14/04	Case Study	Peter Orris
01/21/04	Video and Discussion: Can't Take No More	Lorraine Conroy
01/28/04	Physical Activity, Obesity and Cancer Prevention	Graham Colditz
02/04/04	Health and Safety Issues in Swine Confinement Facilities	Lorraine Conroy
02/11/04	Occupational Health Ethics and Globalization	Linda Forst
02/18/04	Journal Club: Asthma and Demolition Work	Todd Schoonover
02/25/04	Dean's Forum: Domestic Violence	
03/03/04	Dean's Forum: Around the World in 60 Minutes	
03/10/04	Emerging Issues in Children's Health: Brominated Flame Retardants	Maryann Suero
03/17/04	Exposure Reconstruction for the September 2001 Pentagon Attack	Steve Lacey
03/31/04	Everything Environmental and Occupational Health Researchers Wanted to Know About Immunology but Were Afraid to Ask	Sam Dorevitch
04/07/04	Agricultural Injury and Farmers Aged 55 and Older	Shannon Lizer
04/14/04	Hearing Loss Intervention for Carpenters	Robert Malcolm[t]
04/21/04	Dean's Forum: The Immigrant Worker: Occupational Safety and Health	Susan Scrimshaw
04/28/04	NIOSH Opportunities in the Epidemic Intelligence Service	Rosemary Sokas
	Fall 2005	
08/24/05	Education and Research: NIOSH Protecting Workers Health and Safety	Lorraine Conroy
08/31/05	Health Hazard Evaluation: Determination of Asbestos Contamination in Beach Nourishment Sand at Illinois Beach State park	Salvatore Cali
09/14/05	Risk Mapping Activity	Joseph Zanoni
09/21/05	Using the Environment for Building Capacity in Occupational and Environmental Health: A Global Electronic Library of Training Materials in Occupational and Environmental Health	Leslie Nickels
10/28/05	Brick by Brick: Building the Public Health Research Agenda for Healthy Homes and Healthy Communities	David Jacobs
10/12/05	Video: History of OSHA	Lorraine Conroy
10/19/05	Case Studies in Occupational Medicine: Fatality Investigations	Patricia Bray John Piacentino
10/26/05	Eye Injury Prevention in Latino Farm Workers	Linda Forst

Table CWA-6. Seminar Schedule for Previous Project Period.

Date	Topic	Speaker
11/09/05	Measurement of Hazardous Air Pollutants in Region 5	Peter Scheff
11/16/05	Assessment of Exposure of Artist Welders to Welding Fume in Field and Under Laboratory-controlled Conditions	Laurel Berman[t]
	Spring 2006	
01/11/06	Dean's Forum: Entering the Body Via the Lungs: From Toxic Metals to Insulin	Joseph Brain, PhD
01/18/06	Employee Health, Productivity and the Bottom Line	Wayne Burton, MD
01/25/06	Hospital Laboratory Ergonomics	Theodore Hogan, PhD, CIH
02/01/06	International Occupational and Environmental Health	Peter Orris, MD, MPH
02/08/06	Dean's Forum	Dean's Forum
02/15/06		
02/22/06	No seminar; NORA Seminar on 21-Feb-06	
03/01/06		Gary Hutter
03/08/06	Dean's Forum	Dean's Forum
03/15/06	Children's Environmental Health	Myrtis Sullivan, MD, MPH
03/22/06	Spring Break	Spring Break
03/29/06	Labor History	Peter Orris, MD, MPH
04/05/06	American Lung Association of Metropolitan Chicago: 100 Years of Breathing Life Into the Community	Dean's Forum
04/12/06		
04/19/06	Community-Based Mass Prophylaxis	Theodore Hogan, PhD, CIH
04/26/06		Serap Erdal, PhD
	Spring 2007	
01/17/07	Dean’s Forum	
01/24/07	Health Disparities and Water Resources	Sylvia Hood Washington
01/31/07		
02/7/07		
02/14/07	Dean’s Forum	
02/21/07	NORA Seminar Series: Occupational Safety and Health Issues for Day Laborers in Seattle	Noah Seixas
02/28/07		
03/7/07	Dean’s Forum	
03/14/07		
03/21/07		
04/04/07	Current Issues in Asbestos Disease Epidemiology	Leslie Stayner
04/11/06	Dean’s Forum	
04/18/06	NORA Seminar Series: Acute and Chronic Poisoning from Exposure to Chlorpyrifos Impregnated in Plastic Bags for Use on Banana Plantations	Inike Wessling
	Fall 2007	
08/29/07	Interdisciplinary Graduate and Research Training in the Illinois Occupational and Environmental Health and Safety Education and Research Center (Illinois ERC)	Lorraine M. Conroy, ScD, CIH

Table CWA-6. Seminar Schedule for Previous Project Period.

Date	Topic	Speaker
09/05/07	Stop Silicosis, Part 1 Presentation: Movie Title, a 1938 film on the hazards of silica exposure was shown as the first in a four part module focusing on the history of silicosis control and prevention effort	Lorraine M. Conroy, ScD, CIH
09/19/07	The clinical effects of silica dust exposure	Bob Cohen, MD
09/27/07	Lead Poisoning in Chicago: Old and New Sources of Exposure	Patrick MacRoy
10/03/07	Ethics in Occupational Health Research	Sam Dorevitch, MD, MPH
10/10/07	Peru-The Curse of Inca Gold An investigative journalism film describing corruption surrounding the operation of the Yanacocha gold mine in Peru by the Newmont Mining Co. of Denver was shown. The video was made by PBS-Frontline/New York Times and originally aired in 2005.	Lorraine M. Conroy, ScD, CIH
10/17/07	QuantiFERON TB-Gold: A new option in TB Surveillance Presenter:	Airn English, MSN, APN-CNP
10/31/07	Conflicts of Interest : A Brief Overview	Rebecca Ann Lind, PhD
11/07/07	Cosecha Peligrosa: Occupational Health Risks of Migrant Farm Workers	Susan Bauer, MA, MPH
11/14/07	Contingent workers	Rosemary Sokas, MD MOH
11/21/07	Ethics of occupational health practice: industrial hygiene, occupational nursing, and occupational medicine	Peter Orris, MD
11/28/07	A brief overview of OSHA's jurisdiction, inspection procedures, resources and an update of injury/ illness recordkeeping requirement	William Coulehan
12/05/07	How risky are current exposure limits for silica?	Leslie Stayner, PhD
	Spring 2008	
01/16/08	Global occupational medicine surveillance at Abbott Laboratories	Livia Krzeminski RN, FNP-BC, COHN-S
01/23/08	Dean’s Forum: Celebrating 35 Years of Educating Tomorrow's Public Health Leader SPH Race and Health Disparities Forum: Shaking the Foundations of an "Uneasy" Relationship	
01/30/08	Threshold Limit Values (TLVs), The Development Process: A Method of Risk Characterization	Rachel Rubin, MD, MPH
02/06/08	Understanding EPA's High Production Volume Chemicals Information System (HPVIS)	Seth Dibblee, MS
02/13/08	Those who know, don't tell' A lively documentary tracing the history of the struggle to rid the workplace of occupational hazards. Narrated by Studs Terkel	Joseph Zanoni, MILR
02/20/08	Exposure Assessment for Metals in a Police Department Firing Range while Using Different Types of Metals	Salvatore Cali, MPH CIH
02/27/08	Health in the Arts	David Hinkamp, MD MPH
03/05/08	Immigrants and Health at Work	Linda Forst, MD MPH
03/12/08	Occupational Bronchiolitis-Lessons from the food flavoring industry	Robert Cohen, M.D., F.C.C.P.
03/19/08	Estimating Impacts of Hydrogen Sulfide Gas Emissions from	LCDR Michelle A. Colledge,

Table CWA-6. Seminar Schedule for Previous Project Period.

Date	Topic	Speaker
	Construction and Demolition Debris Landfill	MPH PhD
04/02/08	Respiratory and other industrial hazards of copper miners in Cananea Mexico	Robert Cohen, M.D., F.C.C.P.
04/09/08	Introduction to the High Production Volume (HPV) Chemicals Information System	Seth Dibblee MS
04/16/08	Preliminary results: Time Series Analysis of Vapor Intrusion Incidents and Complaints at Hartford, IL	Salvatore Cali, MPH, CIH
04/23/08	Laundry Workers and the CDC - Extreme Exposures/No Protection	Belinda Thielen, MS
04/30/08	Masters of Public Health Program at St. Petersburg State University	Prof. Igor Gorlinsky

[t]trainee

Pilot Projects Research Training

Table PPRT-1: Breakdown of Institutional Pilot Project (PPRT) Applications and Awards

	# of applicants	# funded	% with successful awards
Total	64	43	67.2%
Within ERC	42	30	71.4%
Within UIC	46	33	71.7%
Outside UIC and ERC	12	7	58.3%

Table PPRT-2: Pilot Project (PPRT) Applications and Awards

Fiscal Year	Applications	Awards	Available Award Funds
2000	7	4	$43,840
2001	4	3	$43,468
2002	5	5	$74,533
2003	5	4	$66,311
2004	10	5	$63,244
2005	11	5 (4)*	$66,795 ($50,894)*
2006	5	5*	$79,139*
2007	8	7 (5)**	$58,750**
2008	9	5	$59,975
Totals: 9 years	64	43 (40)	$540,154

Notes:

*One FY 2005 proposal awarded $15,901was later withdrawn by the PI. These funds were carried over to FY 2006 for award.

**One FY 2007 proposal awarded $2,854 was later withdrawn by the PI, and one proposal awarded $4,439 did not receive IRB approval from NIOSH. These funds were carried over to 2008 for award.

Table PPRT-3: Application Title, PI, and Institution of all PPRT Applications Received

FUNDED PROPOSALS			PROPOSALS NOT FUNDED		
Project Title	Principal Investigator	Institution	Project Title	Principal Investigator	Institution
		FY 2000			
Teacher Assaults: Risk Factors and Compensation Costs	Pamela Levin Faculty	UIC Dept. of Public Health, Mental Health, and Administrative Nursing	Factors Affecting Seeking and Use of Health Risk Information	Andrew Garman Faculty	Rush University, Health Systems Management
An Exposure Assessment Method to Simulate Coughing in a Workplace	John Franke Faculty	UIC Environmental & Occupational Health Sciences	Ergonomic Evaluation as an Intervention in the Sheet Metal Trade	Chris Zimmerman Faculty	Concordia University, Wisconsin, Physical Therapy
An Analysis of the Prevalence, Cause, and Cost of Injury to Fire Fighters	Surrey Walton Faculty	UIC College of Pharmacy	Truck Drivers' Health, Health Barriers, & Health Environment	Debby A. Renner PhD Student	University of Iowa, College of Nursing
Intelligent Safety Sensing and Controls for Off-road Equipment	Qin Zhang Faculty	UI-Urbana/Champaign Department of Agricultural Engineering			
		FY 2001			
Human Exposure to a Mixture of Dust and Ammonia	Patrick T. Shaughnessy Faculty	U. of Iowa, Dept. of Occupational and Environmental Health	Development and Pilot Testing of a Questionnaire to Study Lower Back Pain in Nurses	George Byrns Faculty	Illinois State University, Dept. of Health Sciences
Intelligent Safety Sensing and Controls for Off-road Equipment	Qin Zhang Faculty	UI-Urbana/Champaign Department of Agricultural Engineering			
Occupational Lung Disease in Ukrainian Coal Miners	Robert Cohen Faculty	UIC Environmental & Occupational Health Sciences			
		FY 2002			
Occupational Lung Disease in Ukrainian Coal Miners	Robert Cohen Faculty	UIC Environmental & Occupational Health Sciences			
Immunologic Risk Factor for Laboratory Animal Allergy	Samuel Dorevitch Faculty	UIC Environmental & Occupational Health Sciences			
Enhancing the Detection of PAH Metabolites	An Li Faculty	UIC Environmental & Occupational Health Sciences			

Table PPRT-3: Application Title, PI, and Institution of all PPRT Applications Received

FUNDED PROPOSALS			PROPOSALS NOT FUNDED		
Project Title	Principal Investigator	Institution	Project Title	Principal Investigator	Institution
Investigation of Sampling Performance of Thoracic Size-selective Sampling	Serap Erdal Faculty	UIC Environmental & Occupational Health Sciences			
Characterization and Modeling of Dust Exposures at an Agricultural Facility	Steve Lacey Research Trainee, PhD candidate	UIC Environmental & Occupational Health Sciences			
FY 2003					
Source Apportionment of PAHs in Chicago Residence Homes	An Li Faculty	UIC Environmental & Occupational Health Sciences	Impact of Development on Occupational Health & Safety in Micro Firms	Debby Mir Senior Research Associate	UIC College of Urban Planning & Public Administration
Study of the Effect of Welding Processing Parameters on Fume Composition and Emission Rate	Serap Erdal Faculty	UIC Environmental & Occupational Health Sciences			
Mechanisms of Lung Epithelial Cytotoxicity due to Metal Exposure	Daniel Tessier Faculty	UIC Environmental & Occupational Health Sciences			
Immunologic Risk Factor for Laboratory Animal Allergy	Samuel Dorevitch Research Assistant Professor	UIC Environmental & Occupational Health Sciences			
FY 2004					
Adaptive Tractor Overturn Prediction System (ATOPS)	Tony Grift Assistant Professor	UI-Urbana/Champaign Department of Agricultural Engineering	The Impact of the Organization of Police Work on Morbidity	David Marder Faculty	UIC University Health Services
Laboratory Animal Allergen Production and Transport in a Working Animal Research Facility	James Artwohl Research Veterinarian	UIC Biological Resources Laboratory	Prevalence and Risk Factors for Wheezing Among 6 & 7 yr old Children in Ukraine	Marta Matwyshyn MS Student, HSAT Trainee	UIC Environmental & Occupational Health Sciences
Pesticide Toxicity to Lung Epithelium as a Factor in Chemically-Induced Asthma	Daniel Tessier Assistant Professor	UIC Environmental & Occupational Health Sciences	Farm Injuries, Chronic Diseases, and Health Status of Farmers	Shannon Lizer Clinical Assistant Professor	UIC Dept. of Public Health, Mental Health, and Administrative Nursing
Effectiveness of Standing Conditions in Reducing Fatigue & Discomfort	Stephanie Opel Graduate Research Student	University of Wisconsin, Milwaukee	Characterization and Quantification of Food Processing Work Environments	Kurt A. Rosentrater Faculty	Northern Illinois University, Department of Engineering Technology

Table PPRT-3: Application Title, PI, and Institution of all PPRT Applications Received

FUNDED PROPOSALS			PROPOSALS NOT FUNDED		
Project Title	Principal Investigator	Institution	Project Title	Principal Investigator	Institution
Enhancing the Detection of PAH Metabolites	An Li Assistant Professor	UIC Environmental & Occupational Health Sciences	Testing and Validation of an Exposure Chamber	Serap Erdal Assistant Professor	UIC Environmental & Occupational Health Sciences
		FY 2005			
Comparison of the prevalence of sensitization to common allergens in workers exposed and unexposed to animal allergens	Leslie M. Tharenos OM Resident	UIC Environmental & Occupational Health Sciences	Occupational Safety Beliefs and Behaviors in Latino Day Laborers	Susan Buchanan Research Assistant Professor	UIC Environmental & Occupational Health Sciences
Assessment of Exposure of Artist Welders to Welding Fumes	Laurel Berman PhD candidate, IH Trainee	UIC Environmental & Occupational Health Sciences	Characterizing Exposure to ergonomic risk factors in physical therapy	Kathleen Rockefeller Associate Professor Physical Therapy	UIC College of Applied Health Sciences
Risk factors associated with trunk musculoskeletal disorders in female flight attendants	Hyeonkyeong Lee PhD candidate, OHN student	UIC College of Nursing Public Health, Mental Health, and Administrative Nursing	Assessing the Environmental Fate and Potential Human Exposure of PBDEs in the Great Lakes Region	Wenlu Song, PhD Candidate	UIC Environmental & Occupational Health Sciences
Non-Cholinergic Effects of Chlorpyrifos on Lung Epithelium	Daniel M. Tessier Assistant Professor	UIC Environmental & Occupational Health Sciences	Congerner specific PCB analysis for IH air samples	William Mills Adjunct Faculty	UIC Environmental & Occupational Health Sciences
Effect of Occupational Exposure to Welding Particulates on Autonomic Heart Regulation*	Frank Rosenthal Associate Professor for Brent L. Yeagy PhD Candidate	Purdue University School of Health Sciences	Testing and Validation of an Exposure Chamber for Particulate Matter Emission and Exposure Studies	Serap Erdal Assistant Professor	UIC Environmental & Occupational Health Sciences
			Chronic Disease, Perceived Health, and Farm Injury In Older Illinois Farmers	Shannon Lizer Clinical Assistant Professor	UIC Dept. of Public Health, Mental Health, and Administrative Nursing
		FY2006			
Welding Fume Exposure Characterization Methods	Todd Schoonover PhD candidate	UIC-SPH, EOHS			
Exposure to ergonomic risk factors in physical therapy	Kathleen Rockefeller Associate Professor Physical Therapy	UIC College of Applied Health Sciences			
Risk Assessment of health outcomes in workers with past	Irina Dardynskaia Research Associate Professor	UIC-SPH, EOHS			

Table PPRT-3: Application Title, PI, and Institution of all PPRT Applications Received

FUNDED PROPOSALS			PROPOSALS NOT FUNDED		
Project Title	Principal Investigator	Institution	Project Title	Principal Investigator	Institution
exposure to dioxins in UFA Russian Federation (pilot phase)					
Workers' Centers Role in Accessing Occupational Health Services	Leslie Nickels Lecturer	UIC-SPH, EOHS			
Quantification of Musculoskeletal Loading and Its Subjective Perception in the Health Care Profession	John Dzissah Assistant Professor	Department of Industrial Management, University of Wisconsin–Stout			
		FY2007			
Biomechanical Analysis of Performing Ultrasounds*	Darcie Olson PhD Student	University of Wisconsin - Milwaukee Occupational Therapy	Airborne Pollutant Dispersion Characteristics in Working Environments	Aijun Wang PhD Candidate	University of Illinois at Urbana-Champaign Agricultural and Biological Engineering
Evaluate Occupational Exposure to Contaminants in Truck Cabins	Xinlei Wang Assistant Professor	University of Illinois at Urbana-Champaign Ag. and Bio. Engineering			
Shift rotation and risk of acute injury among healthcare workers	Douglas J. Myers Postdoctoral Research Fellow	Duke			
Demonstrating Effectiveness of Informed Informal Interaction	Joseph Zanoni PhD Student	UIC College of Education, Curriculum and Instruction			
Occupational Surveillance in Illinois: A Pilot Project Using Work Comp Data	Lee Friedman (Previously Ben-Michael) PhD Candidate	UIC, SPH, EOHS			
Nasopharyngeal Cancer and Occupation in Chengdu, China**	Francis Song OM Resident	University of Illinois at Chicago Occupational Medicine			
Association of H. pylori IgG antibodies and allergic sensitization	Linda Rosul PhD Student	UIC School of Public Health, Epidemiology and Biostatistics			
FY2008					
Cognitive Stress, Mental Attentiveness and Muscle Fatigue	Sandra K. Hunter Assistant Professor	Marquette University Physical Therapy	Characterization of heated metalworking fluid aerosol	Chirag Patel PhD Candidate, IH Trainee	Univ. of IL.- Chicago School of Pub. Health,

Table PPRT-3: Application Title, PI, and Institution of all PPRT Applications Received

FUNDED PROPOSALS			PROPOSALS NOT FUNDED		
Project Title	Principal Investigator	Institution	Project Title	Principal Investigator	Institution
Biological Exposure Assessment in a Brain Cancer Case-Control Study	Jo Anna M. Shimek PhD Candidate, IH Trainee	University of Illinois at Chicago, EOHS	Role of Medical Interpreters in Traumatic Occupational Injuries	Deborah Masters MS Student, OHN Trainee	Environmental and Occup. Health Sci. University of Illinois at Chicago, College of Nursing – Dept of PMA
Occupational Hazard and Injury Surveillance in Chicago Temporary Agency workers	Susan Buchanan Research Assistant Professor	Univ. of Illinois at Chicago, Occupational Medicine	Collecting and Translating Incident and Injury Data in the Horseracing Industry	Karin J. Opacich, PhD,MHPE, OTR/L, FAOTA Project EXPORT Director	University of Illinois-Rockford, National Center for Rural Health Professions
Falls Prevention among Home Care Workers in Illinois: Needs Assessment	Naoko Muramatsu Associate Professor	UIC SPH, CHS Community Health Sciences	VPTV Technique for Measuring the Exhaled Droplet Movements	Yigang Sun Senior Research Engineer	University of Illinois at Urbana-Champaign Agricultural and Biological Engineering
Work and Adaptation Experiences of Registered Nurses from the Philippines	Jorgia Briones Connor PhD Candidate, OHN Trainee	University of Illinois at Chicago, College of Nursing			
Counts	43		21		

* Investigator withdrew project after award

**Applicant was unable to obtain adequate IRB approvals

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Title	Abstract
Teacher Assaults: Risk Factors & Compensation Costs	Although school violence has received much attention, little is known about factors that precipitate an assault, the nature of resulting injuries, or consequences of the assault. The purpose of the study is to describe the magnitude and costs of assaults to a high-risk group of workers, teachers in Chicago Public Schools (CPS). Project objectives include: 1) describe the frequency, cost, outcome, and nature of injuries associated with teacher assaults; 2) identify contributing factors in terms of teacher, school, and environmental/community characteristics; 3) identify predictors of teacher assault. The sample will consist of all cases of intentional assaults that occurred to CPS teachers over the last three years (n ~ 225). Existing data will be used and sources include CPS internal reports, police and health department records. The data collection instrument will be refined during the study and reliability established. Descriptive statistics, analysis of variance, chi-square analysis, and logistic regression procedures will be used. This study will increase knowledge about contributing factors of assault in an understudied population, as well as provide initial data about claim costs. Knowledge gained from this study will serve as a basis to develop interventions to reduce the incidence and severity of assault-related injuries to teachers.
An Exposure Assessment Method to Simulate Coughing in a Workplace	The project will develop an exposure assessment method for a burst source of air contaminants, namely an infectious cough, using tracer particles that are detectable at very low concentrations in a room. The research product is an exposure assessment method that can be applied in work environments to simulate the hazard of viable or non-viable aerosol sources. The method is needed (1) to validate exposure assessment models of particle emissions in workplaces, (2) to evaluate sources and pathways of airborne infection in healthcare settings and to augment ventilation control strategies, and (3) to trace suspected sources of particulate air contaminants in other indoor environments. A portable device that simulates the expulsive phase of a human cough will be built to emit a burst of droplet nuclei. It will use respirable-size fluorescent microspheres propelled by a pressurized air and tracer gas mixture to simulate the hazard. The device will be tested in a wind tunnel using an air sampling strategy to characterize the dispersion and residence time of the tracer particles and gas. The particles will be collected on filters and counted with epi-fluorescent microscopy. The cough simulation device and air sampling array experiments will determine the limits of quantitation and detection for the new method.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

An Analysis of the Prevalence, Cause, and Cost of Injury to Fire Fighters	The objective of the project is to study the prevalence, costs, and causes of occupational injuries among fire fighters. The analysis will take advantage of a unique data set provided by IRMA that contains detailed information regarding type, cause, and complete workman's compensation costs of injury to fire fighters in Northeastern Illinois. Changes in the prevalence, costs, and causes of injury will be examined across demographic characteristics of the workers and time. Costs of injury will also be examined across common types and causes of injury. The data will also be used to distinguish injuries that may be preventable through improved physical fitness. Total workman's compensation costs for fitness related injuries will be analyzed to evaluate potential economic benefits from programs designed to improve fitness levels. The cost of injury to firefighters has not been studied beyond single department analyses. Hence, the main contribution to improved work safety will be a detailed analysis of the costs of injury to fire fighters across type and cause as well as demographic characteristics and time. More generally, this analysis will help inform policies and programs designed to prevent injury, and help to efficiently allocate resources for reducing injury.
Intelligent Safety Sensing & Controls for Off-road Equipment (Received initial and continuing funding in a subsequent year)	This research will address the specific topic of intelligent safety sensing and control technology for off-road equipment. Off-road equipment is designed to perform operations while in moving. This often results in an unsafe working environment around the equipment for human-machine interaction while in operation. The long-term goal of this research is the development of an intelligent safety sensing and control technology to provide an automated safety assurance for off-road equipment. The principal objectives are to develop an intelligent safety sensing technology for detecting human presence and to develop a safety measure method for identifying safety index around the operating equipment. The information of human presence in area with different safety indexes will be used to support automated safety assurance function for off-road equipment. Interest exists at the commercial level in developing technologies along the line of this proposal. This proposal will cover the initial phase of developing intelligent safety sensing and control technology for off-road equipment. Funding to complete the final phases of the project will be sought from Federal agencies and industry. A project advisory committee, including experts from both agricultural safety and equipment automation areas, will be established to provide advice in conducting this research.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Human Exposure to a Mixture of Dust and Ammonia	Through the National Occupational Research Agenda (NORA), the National Institute for Occupational Safety and Health (NIOSH) has emphasized the need for research related to occupationally-related airway diseases such as asthma and chronic obstructive pulmonary disease (COPD). With that agenda as its primary emphasis, this research will investigate the health hazards associated with both airborne dust and ammonia gas concentrations typically found in modern swine confinement buildings by clinical trial. To that end, a novel human exposure apparatus will be tested for its ability to provide consistent, and easily monitored, levels of dust and ammonia to human subjects without constraining the subject's ability to breath normally through the nose and mouth. The apparatus consists of a small air-blower that moves air through a steel drum and into a hood worn over the subject's head. An aerosol and/or gas is injected into the drum where it is mixed with the main air supplied by the blower. Sample ports are available to measure aerosol and gas concentrations. Human subjects will be recruited and initially given a standard histamine challenge test. Subjects will then be exposed to low and high levels of an organically-derived dust (ground corn plant), ammonia, and a combination of the two. Results from this study will be used as preliminary data in support of a larger grant developed to determine threshold levels of airborne contaminant concentration levels in swine confinements.
Occupational Lung Disease in Ukrainian Coal Miners (Received initial and continuing funding in a subsequent year)	This pilot surveillance project will study occupational lung disease among Ukrainian coal miners. This population is ideal since they undergo a mandatory annual physical examination with 97% participation rates. Work, smoking , and clinical history will be obtained by face to face interview. Spirometry will be performed according to ATS guidelines. Lung function results will be compared to exposure and smoking history. Chest radiographs will be taken using Ukrainian equipment and the films read by NIOSH certified B-readers using ILO 1980 standards. Data on concentrations of coal mine dust will be obtained from MSHA sampling studies obtained in Ukraine as well as pilot dust samples from the specific mines where the study population works. Data will be analyzed for relationships between dust and tobacco smoke exposure and indicators of occupational lung disease. This study will aid evaluation of lung function measurements in medical surveillance as recommended by NIOSH in the 1995 Criteria Document. The results of this study of would have important implications for our domestic coal industry since spirometry surveillance has yet to be implemented. Outcomes for this project will be: presence of respiratory symptoms, category of pneumoconiosis on CXR, and lung function impairment.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Immunologic Risk Factor for Laboratory Animal Allergy (Received initial and continuing funding in a subsequent year)	This project seeks to prevent occupational asthma, allergic dermatitis (such as contact urticaria), and allergic rhino-conjunctivitis. Laboratory animal allergy (LAA) affects about 30% of all laboratory animal workers. The proposed study seeks to identify risk factors for LAA. The risks we will study are those of the "hygiene hypothesis" of allergic diseases, which postulates that the risk of allergic diseases increases as childhood exposure to infectious agents decreases. Information regarding these risk factors will be obtained by questionnaire and blood testing. A cross-sectional study of current laboratory animal workers, with and without LAA, will be performed as will a prospective cohort study. In the cohort study we will obtain baseline historical and immunologic profiles of new workers with laboratory animals. Over time and we will identify variables that predict the development of LAA. This work has the potential to make several contributions to occupational health. Occupational allergic diseases are common yet there are currently no variables that consistently identify workers as being high risk for the development of these illnesses. The identification of such variables would allow greater protection of these workers in the workplace control measures that may otherwise not be implemented.
Enhancing the Detection of PAH Metabolites (Received initial and continuing funding in a subsequent year)	The overall objective of this proposed work is to enhance the detection of PAH metabolites in urine samples. Compared with the methods published previously, improvement will be made regarding the number of PAH metabolites to be analyzed, and the detection limits. Both GC/MS and HPLC/FLD will be used, and compared for their sensitivity, accuracy, precision, and reproducibility. The method will be validated using raw or spiked urine samples. The urine will be obtained from the study team, and other characteristics of the urine will not be studied. The identity of the metabolites detected will be confirmed using MS spectrum matching, and, if needed, by nuclear magnetic resonance spectroscopy (NMR). This work will establish our expertise at UIC SPH in analyzing PAH metabolites in urine and probably other biological samples as well. Realizing the high research priority of various funding agencies on cancer and risk assessment of PAHs, such expertise will enhance our ability in competing for external funding on occupational safety and environmental exposure to PAHs. It may also enhance our collaboration with other UIC units with research on the health effect of PAHs. This pilot project addresses a fundamental need in exposure assessment. Because of the state-of-the-art feature of our instruments, it is possible that the detection limits obtained from this work be the lowest ever achieved. This work has the potential to contribute significantly to the occupational safety and environmental exposure and risk assessments. With what we have established here at UIC during the past years, it is my desire to expand our capability and contribute to the progress in this challenging field.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Investigation of Sampling Performance of Thoracic Size-Selective Sampling Devices	Improved criteria for sampling biologically-relevant aerosol in the inhalable, thoracic, and respirable size ranges have achieved international acceptance, and have been established in the U.S. by the ACGIH. The focus of this study, the thoracic size fraction, is intended to provide a conservative estimate of particles capable of reaching the portion of the respiratory system below the larynx, i.e., the lungs, during the mouth breathing. The thoracic fraction is biologically-relevant in the case of substances having a local effect on the conductive respiratory airways, like irritation, or in the case of toxic substances, which can slowly diffuse into the blood through the tracheo-bronchial walls. In recent years, a few thoracic samplers have been constructed and made commercially available but no extensive evaluation or field measurements with these samplers have been reported in the literature to date. The purpose of this study is to test the performance of commercially available thoracic samplers against commonly used 37-mm sample for wood dust exposure; and to determine how well each thoracic sampler mimics the ACGIH thoracic convention. The results of this study will serve to advance our understanding of thoracic dust exposure assessment methods, and eventually facilitate practical implementation of the ACGIH standards.
Characterization and Modeling of Dust Exposures at an Agricultural Facility	The overall objective of this proposed study is to examine dust exposure in an agricultural produce sorting and packing operation in an ultimate effort to control such exposures, thereby reducing eye and respiratory injuries and illnesses. Specifically, the proposed study intends to: 1) To quantify exposure to total and respirable dust; 2) To develop emission factors for sorting/packing operations; 3) To characterize the composition of the dust samples, including: Particle size distribution, Allergens, Metals, Pesticide residue, Percent silica, Percent plant fiber. Basic exposure data are limited, and there are no emission factors for any agricultural processes noted in the literature. This proposed study is to develop an emission factor for dust exposure in a produce sorting and packing facility. Development of such a factor will permit proximate estimation of exposures in similar facilities, will provide exposure estimates for historical epidemiological studies, and will allow for better design in the control of agricultural dust hazards. By characterizing the composition of dust, we will better understand possible health implications from such exposures in agriculture, specific to the Midwest region of the United States.
Source Apportionment of PAHs in Chicago Residence Homes	The overall objective of this work is to quantitatively apportion the sources of polycyclic aromatic hydrocarbons (PAHs) found in urban homes. This objective will be achieved by applying a chemical mass balance (CMB) to measured PAH concentrations in residential indoor air. Major indoor sources will be sampled and characterized for their molecular profiles, or fingerprints, of PAHs. The proposed study will take the advantage of a large database obtained from our recently completed indoor PAH study. All data sets contain PAH concentrations in indoor and outdoor air samples collected simultaneously from non-smoker homes, and detailed information on other air quality parameters and household activities. Using this data base and other data obtained from the literature, the CMB model will be evaluated for its performance on indoor PAHs source identification and apportionment. The computer software CMB8.2 developed by USEPA will be used as the major computation tool. Source identification and apportionment are important components of exposure assessment, and key steps in the development of intervention strategies. Such efforts will foster our ability to assess human exposure and risk without the need of costly measurement, and provide scientific guidelines for intervention plans.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Study of the Effect of Welding Processing Parameters on Fume Composition and Emission Rate	Our objective is to evaluate and establish the relationships between the welding processing parameters such as composition of base metal, composition of the filler material (i.e., electrode), current, voltage, weld travel speed on welding emissions (composition, particle size, and morphology) and consequently on welding exposures. Welding emissions are complex mixtures of various elemental compounds (e.g., Mn, Ni, Cr, Si, Mo, V), gaseous compounds (ozone, nitrogen dioxide), and hydrocarbons (e.g., dioxins, PAHs). The complexity of evaluating welding exposures is partly due to many different welding processing employing various base and filler materials, shielding gases for materials and metallurgical processing applications. By selecting two welding processes, which build on top of another, we will be able to isolate filler emissions from base metal emissions, which has not been reported in the literature to our knowledge. Construction of semi-empirical relationships for the emissions of elements as a function of welding processing variables (our literature review did not reveal such relationships already established) will be very beneficial in predicting emissions from other base and filler materials used in the same two welding processes and under various welding processing conditions.
Mechanisms of Lung Epithelial Cytotoxicity due to Metal Exposure	Occupational asthma occurs as a result of exposure to specific respiratory hazards in the workplace, and is currently the most common form of work-related lung disease. Welding is a common job function in many workplace settings, and is a significant risk factor in the development of occupational asthma. Condensed metal vapors of chromium and manganese stand out as putative causes of welding-associated occupational asthma, based on epidemiological studies. Current understanding of the biochemical mechanisms by which metal vapors cause occupational asthma is very limited. Toxicologic rather than immunologic processes may be primarily responsible for the development of occupational asthma following exposure to metal vapors. Epithelial damage is common to all forms of asthma, so the direct toxic effects of respiratory hazards to lung epithelium are significant. Chromium and manganese are cytotoxic to lung epithelial cells in vitro. The current proposal will determine the mode of cellular death following exposure to these metals (i.e., apoptosis vs. necrosis), and the initiation of toxic stress responses in epithelial cells. This mechanistic information may help explain individual susceptibilities to the development of occupational asthma, provide a rationale for workplace prevention and clinical treatment options, and provide an experimental framework for the characterization of other respiratory toxicants.
Adaptive Tractor Overturn Prediction System (ATOPS)	It is proposed to fit a ¼ scale tractor with load cells that indicate the forces on all wheels in real time. The tractor will also be modeled in a mechanical systems simulation tool called ADAMS. The tractor and model will be used to run classical tractor overturn scenario's such as 1) gradual lateral overturn on a hill slope, 2) gradual backward overturn on a hill slope, 3) high draft force backward overturn. The results will be used to show that the proposed method is superior compared to alternative sensors such as tilt or acceleration sensors. These sensors can only detect an overturn as it is happening, whereas the proposed force measurement sensor can give an indication of the proximity of the overturn occurrence. The objectives are to 1) develop the instrumented tractor, 2) to model the overturn behavior in mechanical systems simulation software (ADAMS) and to 3) validate the model using the ¼ scale tractor.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Laboratory Animal Allergen Production and Transport in a Working Animal Research Facility	Allergy to laboratory animals is a common problem in research facilities and can cause rhinoconjunctivitis, contact urticaria or occupational asthma. Controlling allergen exposure is key to preventing the development of allergies and reducing disease severity among those sensitized. Prior research has described allergen concentrations in animal rooms of research facilities but little is known about the transport of allergens within the facility, which is useful in planning control measures to reduce allergen exposures of all workers, both sensitized and non-sensitized. We propose a study that has two components: 1) allergen production and transport modeling within the facility, and 2) an intervention to reduce exposure. Mouse allergen concentrations will be measured over a twelve hour period daily for five consecutive days, both inside a mouse room, in the adjacent corridor, and in an administrative office where animals are not present. This will be repeated following the implementation of micro-isolator cage cover use. Measures of ventilation and real-time particle counts will be obtained throughout the study. Samples will also be obtained in the rooms, corridor and office for endotoxin analysis. We expect to model the production and transport of the allergen and to measure the effectiveness of the intervention.
Pesticide Toxicity to Lung Epithelium as a Factor in Chemically-Induced Asthma	Exposure to chemical sensitizers in the home, school and workplace contributes to the steady increase in asthma incidence observed over the last twenty years. Exposure to pesticides in both occupational and home settings has been associated with asthma. Toxicologic, rather than immunologic, mechanisms may be most important in the induction of asthma via low molecular weight chemical agents such as pesticides, but the nature of these toxicologic mechanisms is unknown. We hypothesize that chronic, low level exposure to certain pesticides results in toxicity to lung epithelium, and that this in turn leads to the initiation of cellular signaling and inflammatory mediator release to effect further responses in the lung, one manifestation of which is asthma. Lung epithelial cells in vitro will be used to study the mechanisms of toxicity of pesticides associated with chemically induced asthma. Pesticide treated epithelial cell cultures will be used to determine: 1) direct toxic effects; 2) the initiation of cellular signaling cascades; and 3) the release of inflammatory mediators (i.e., GM-CSF, IL-6, IL-8, IL-10, TNF-α). Understanding pesticide toxicity in lung epithelium will clarify the mechanisms through which these and other low molecular weight chemicals act in the lung, ultimately enabling better prevention and treatment strategies for chemically-induced asthma and other respiratory diseases.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Effectiveness of Standing Conditions in Reducing Fatigue & Discomfort	The objectives of this study are: 1) Compare the effects of wearing safety shoes, standing on a floor mat, and wearing shoe in-soles on workers' perceptions of tiredness, fatigue and discomfort following eight-hours a day of standing for two weeks of exposure to each condition; and 2) Determine the strength of the relationships between age, gender, height, weight, and job tenure and fatigue and discomfort experiences when exposed to each of the three different standing conditions.Thirty workers from a manufacturing company will be divided into three groups of ten, stratified by age. Each will be exposed to the three standing conditions for two weeks and rotated by a Latin square design. After each eight-hour shift, the worker will fill out a questionnaire, which rates the standing condition used. Determining the influence of flooring conditions on discomfort and fatigue, and correlating these conditions with age, gender and job tenure addresses one of NORA's top research priority areas: intervention effectiveness. The findings of this research will advance efforts in determining the most effective interventions to reduce fatigue and discomfort from prolonged standing in the workplace.
Comparison of the Pevalence of Sensitization to Common Allergens in Workers Exposed and Unexposed to Animal Allergens	Background: It is known that exposure to high molecular weight occupational allergens is associated with a high prevalence of sensitization to these allergens. Preliminary work suggests that sensitization to occupational allergens may promote sensitization to common, non-occupational allergens. Goal/Objective: To compare the prevalence of allergy to common aeroallergens among laboratory animal workers to that of a demographically similar worker group unexposed to high molecular weight sensitizing agents. Design: Cross-Sectional Study Methods: Questionnaire to determine demographic, occupational and medical variables; skin prick testing for laboratory animal allergens and common aeroallergens (mold, ragweed, dust mite, etc.). Selection bias and confounding will be addressed in subject recruitment and data analysis. Potential for improving safety/health in work environment: If exposure to high molecular weight sensitizing agents in the workplace puts individuals at risk for becoming sensitized to common allergens (such as ragweed or mold), the implications and costs of occupational allergies are not limited to those directly related to the workplace. This would imply that greater emphasis should be placed on controlling occupational exposures to sensitizing agents.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Assessment of Exposure of Artist Welders to Welding Fumes	We intend to characterize the exposure profile of artists exposed to welding fumes through three research goals: 1) Assessment of Isolated Personal Exposures of Artist Welders to Respirable Particles in Welding Fumes in Field Conditions; 2) Assessment of Isolated Personal Exposures of Artist Welders to Elemental Compounds in Welding Fumes in Field Conditions; and 3) Development of Emission Factors Unique to Artist Welders' Practices under Laboratory-controlled conditions. These goals will be reached through this process: 1) Administration of a questionnaire to artist welders leading to selection of two or three Illinois artists to overall represent the respondents; 2) Personal exposure monitoring of the two to three selected artists. Samples will be analyzed for total mass and elemental composition of welding fume; and 3) Use of experimental data from welding exposure chamber experiments to develop emission factors unique to artist welders. This study may help to assess the need to control welding fume exposures by process and materials. In particular, we can link specific welding processes and welding materials with our experimentally derived emission factors. The results of the personal exposure monitoring may also yield total mass and elemental concentrations of welding fume that may indicate the need to assess current exposure standards.
Risk Factors Associated with Trunk Musculoskeletal Disorders in Female Flight Attendants	The purpose of the study is to examine the relationships among risk factors (workplace [job tasks, organizational factors, and physical environmental factors], external environmental and personal factors) for trunk work-related musculoskeletal disorders (WMSDs) in female flight attendants. Two focus groups (6 flight attendants per group) will be conducted to identify flight attendants' job tasks, associated perceived exertion and pain/discomfort, and to evaluate the applicability of measures of organizational and environmental factors for use with this occupational group. Focus groups will be transcribed and a transcript-based analysis conducted. This will be followed by a mailed survey to 530 female flight attendants randomly selected from the membership list of the Association of Flight Attendants. Two follow-up mailings will occur (1 and 2 months). Expected response rate is 75% (n=398). Measures include: Job Task (Borg's CR-10, Pain Intensity Number Scale), Karasek's Job Content Questionnaire, Physical Work Environment, BMI, years of employment, age, and Nordic/NIOSH Symptom survey. Descriptive statistics will be calculated. Bi-variate and multiple logistic regression will be performed to examine the relationships among risk factors and trunk WMSDs. Findings will provide workplace (job tasks, organizational, physical environmental factors), external environmental factors, and personal factors be targeted for interventions to decrease flight attendants' risk for WMSDs.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Non-Cholinergic Effects of Chlorpyrifos on Lung Epithelium	Organophosphate insecticides such as chlorpyrifos (CPF) have been associated with asthma. The principle mode of action of these neurotoxicants is the inhibition of acetylcholinesterase. It has been proposed that these cholinergic effects result in hyperresponsiveness in the lung and explains the association of these compounds with asthma. Recent interest has developed in non-cholinergic effects of organophosphates that may have wide-ranging implications for exposure-related health effects such as asthma and neurodegenerative diseases. The hypothesis of this proposal is that chlorpyrifos (CPF) and its major metabolite chlorpyrifos-oxon (CPF-oxon) initiate intracellular signaling cascades associated with stress responses in lung epithelial cells, and that these non-cholinergic effects occur either through action at specific receptors or through oxidative stress. This hypothesis will be tested in lung epithelial cells in vitro through a proteomic analysis of membrane, cytosolic and nuclear proteins involved in cellular responses to CPF and CPF-oxon exposure. This will describe completely the extent of cellular signaling events initiated as a result of exposure to these compounds. We will further attempt to distinguish oxidative stress or interaction with specific receptor proteins as the mechanism of action of CPF and CPF-oxon in initiating cellular signaling.
Effect of Occupational Exposure to Welding Particulates on Autonomic Heart Regulation	Previous studies have found increased risk of heart disease in welders. This study will determine whether welders' exposure to airborne particulates adversely affects autonomic heart regulation, as assessed by heart rate variability (HRV). Objectives: 1) In a welder population, we will quantify exposure to fine particulates (PM2.5), metals and co-contaminants (CO, ozone, NO2). On the same day, we will measure the welder's HRV by heart-rate monitoring; 2) We will investigate the correlation between occupational exposure to fine particulate matter, airborne metals, and HRV, accounting for covariates (co-contaminants, age, sex, heart rate); and 3) Using real-time aerosol monitoring, we will study the role of exposure duration in the relationship of fine particulate exposure to HRV. A repeated measures study will determine the association between PM2.5, metallic exposure, and HRV. Statistical analyses will evaluate both individual (within-subject) and aggregate (all subjects) responses using multiple regressions and mixed models regressions, respectively. The results of this study will advance the understanding of how welding fume effects autonomic heart regulation, which may aid in understanding the role of particulate exposure in welders' occupational health... The study will also contribute to NORA research priorities on mixed exposures, exposure assessment methods, and special populations at risk.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Welding Fume Exposure Characterization Methods	The goal of the project is to investigate newly formed (NFF) and aged (AF) welding fume characteristics and the hypothesis that differences may have implications on welder exposure and related health effects. Underlying this welder health related hypothesis is the fact that welding fume is reported to change in terms of particle size distribution as a function of time (Zimmer, 2001) and that NFF is more biologically reactive and produces more lung inflammation in rats than AF (Antonini, 1998). This hypothesis will be investigated by designing and constructing a dilution system that will complement the existing welding fume chamber and allow for sampling of NFF and AF simultaneously from the same welding source. The system will facilitate isokinetic sampling to obtain representative samples of NFF and AF. Samples of NFF and AF will be collected and analyzed for mass concentrations, constituent metals concentrations, and particle size distributions. Investigation will be done with two types of shielded metal are welding electrodes, NFF and AF, and three types of sample analysis. Welding electrodes will be common SMAW classified by the American Welding Society in terms of reference number and diameter. NFF will be sampled closest to the welding source and AF sampled at system residence times corresponding to ten and one hundred times dilution ratios. Samples will be collected on 37 mm filters and impinger for gravimetric and metals analysis and by impaction method and analyzed gravimetrically for particle size distributions. Samples collected via impinger will also be investigated for applicability in in-vitro lung epithelial cell toxicity research. By obtaining the requisite sample sizes and maintaining tight quality control, this research will yield answers about NFF and AF with a high degree of statistical certainty.
Exposure to Ergonomic Risk Factors in Physical Therapy	The overall goal of the project is to characterize exposure to risk factors for work-related musculoskeletal disorders in the practice of physical therapy. The primary objective is to use a work-sampling methodology to observe physical therapists at work and collect data on the frequency of exposure to specific risk factors. The PATH (Posture, Activities, Tools, Handling) method of ergonomic work sampling observations will be utilized for data collection. Therapists will be observed in a variety of practice settings at UIC. Observations will provide an estimate to the frequency of exposure to tasks and risk factors. The data collected will provide the first estimate of exposure to ergonomic risk factors in physical therapy practice. This pilot data can be used for a number of purposes. The study might be expanded to include other settings and other methods of characterizing exposure. The information might be utilized to design, implement, and evaluate interventions to decrease the risks of work-related musculoskeletal disorders among physical therapy practitioners.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Risk Assessment of Health Outcomes in Workers with Past Exposure to Dioxins in UFA Russian Federation (pilot phase)	Goals: 1) To collect and process health outcomes data among workers exposed to chlorinated dioxin and dibenzofuran contaminants at the Khimprom plant in Ufa; 2) To assess the risk for development of diabetes in the exposed and comparison population; and 3) To assess prevalence of chloracne in the exposed population. Aims: 1) Recruit a cohort of workers with occupational exposure to CDDs and CDFs contaminants at the Khimprom plant; 2) Assess the degree of occupational exposure to CDDs and CDFs by reviewing length and type of exposure, plant industrial hygiene records, and chloracne data; 3) Identify and recruit a comparison group of working neighbor controls; 4) Develop and administer a health outcomes questionnaire to the study and comparison groups; and 5) Perform statistical analyses of pilot data collected. The health outcomes for the workers will be compared to that of an unexposed cohort, matched to the exposed cohort on gender, nationality and age. Exposure will be ascertained through plant employee records, the chloracne registry and exposure questionnaire. Health outcomes will be assessed through administration of health outcomes questionnaire. The Ufa cohort gives us the rare opportunity to study association of adverse health outcomes with occupational exposure to CDDs and CDFs.
Workers' Centers Role in Accessing Occupational Health Services	The focus of this project is on understanding staff perceptions, at four Chicago workers' centers, of how they currently address work environment issues and what interventions are needed to enable workers to develop and implement solutions for creating safe working environments. The centers are "community–based mediating institutions that provide support to low-wage immigrant [workers]…and have some features that are suggestive of earlier U.S. Civic institutions, including settlement houses, fraternal organizations, local civil rights organizations and unions." (Fine) This case study of four workers' centers in Chicago will use a framework that draws upon workers' center organizational structure theory; basic occupational health services policy; and participatory action research methodology. Data collection methods include interviews, observations, daily logs and records for documenting workers' center staff perspectives of exposure to hazards, hazard avoidance, and occupational health resources available to workers. The proposed methodology will use a participatory action research model for the collection and analysis of data over a 6-month period. The results from this project will be used to inform the development of a model for intervention research to increase immigrant workers access to occupational health and safety information and services. Results from this project will be used a data for the development an intervention effectiveness proposal.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Quantification of Musculoskeletal Loading and Its Subjective Perception in Health Care Profession	Musculoskeletal disorders (MSD) are injuries and disorders of the muscles, nerves, tendons, ligaments, joints, cartilage and spinal discs. MSD hazards are physical work activities and/or physical work conditions, in which ergonomic risk factors are present. Work related musculoskeletal injuries or disorders, currently account for one third of all occupational injuries and illnesses reported by employers each year. Also low back injuries and other musculoskeletal disorders continue to be the leading and most costly problems affecting nurses (ANA 2001). This study will involve conducting surveys on work factors, work characteristics, individual work effects and musculoskeletal symptoms targeting registered nurses, licensed practical nurses, nursing aides, nursing technicians, and nursing managers. The purpose of the study is to examine the interaction of work factors and their risk related musculoskeletal complaints in nursing personnel. The results of the finding will be used for competitive extramural funding opportunities such as OSHA to further the research in conducting biomechanical studies on tasks performed by health care professionals at health care organizations in continuous time frame in order to increase the understanding of quantification of musculoskeletal loading and the chance of developing methodology to detect early symptoms of work related injuries and their prevention. This will improve the health and performance of the health care professional thereby minimizing the cost of compensation paid due to work related injuries.
Biomechanical Analysis of Performing Ultrasounds	The purpose of this study is to determine and analyze the levels of exertion experienced by medical sonographers while conducting ultrasound studies. Current literature supports an extraordinarily high prevalence of musculoskeletal injuries among sonographers. The existing research has determined that prolonged awkward postures and forceful exertions contribute to these injuries, however, specific risk factors have not been clearly identified. This study will measure trunk and upper extremity postures, pushing forces exerted on the transducers and the duration of these efforts while sonographers conduct ultrasound scans on volunteers. The study will determine the levels of exertion exhibited by the sonographers by utilizing existing data on maximum pushing forces in the various postures. By comparing the measured forces with the existing data on maximum forces, the level of exertion can be determined as a percent of maximum voluntary contraction. The ergonomic literature provides guidelines for recommended levels of exertion to prevent musculoskeletal injury. Currently there are no studies that quantify the pushing forces exerted by sonographers. Clarifying whether or not ergonomic hazards exist in the pushing tasks will guide further investigations and interventions for sonographers.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Evaluate Occupational Exposure to Contaminants in Truck Cabins	The goal of this proposed project is to study the air quality in truck cabins to improve the understanding of a major occupational health and safety issue confronting truck drivers. The objectives of this project are: 1) to quantify the air quality in the truck cabin by measuring various airborne contaminants in city delivery and long distance trip; 2) to evaluate the existing HVAC system in the truck cabin; and 3) to make recommendations to improve air quality and the safety and health in truck cabins. Firstly, a questionnaire survey will be designed and will be conducted to collect the opinions of truck drivers regarding the air quality and its impact on their health and safety. These data will be helpful to understand the drivers' attitude to the cabin air quality and how they try to keep the air fresh. A portable air quality monitoring system will be developed in the laboratory. The air quality in the truck cabin will be evaluated by measuring various airborne contaminants (CO, CO2, NO2, and PM) in city and long distance driving. Data will be analyzed and potential useful recommendations for improving safety and health in the cabin will be made.
Shift Rotation and Risk of Acute injury among Healthcare Workers	The purpose of this proposed exploratory epidemiologic study is to investigate the hypothesis that shift rotation among healthcare workers creates fatigue and increases the risk of acute work-related injury. While little is known about exactly what shift patterns may cause fatigue-related injuries, sudden changes in stable work schedule patterns as well as highly variable work schedules are hypothesized to disrupt circadian rhythms, cause fatigue and interfere with workers' ability to perform job tasks safely. These patterns will be analyzed using previously gathered staff schedule records for all nurses and nurse aides working in a long-term care facility to explore whether work schedules that precede injury events predict risk. Sixteen months of previously gathered staff schedule records for all nurses and aides working in a dual diagnosis (psychiatric and medical) long-term care facility data offer an opportunity to explore which patterns may increase risk to workers in the healthcare setting. These daily shift records offer a unique opportunity to investigate this hypothesis as these are very precise records of work patterns and may be used to explore the impact of this aspect of work organization on the risk of workplace injuries. These data will be merged with data previously gathered including injury reports, demographic data such as age and job title, and physical exposure data in the form of patient lifting. Logistic regression will be used to test the hypotheses that shift rotation measured in the staff schedule records is associated with the risk of injury among the healthcare workers. This technique will allow for the effect of confounding variables to be controlled. Results of this study will be useful for additional research as well as for healthcare administrators. Researchers may use patterns observed to increase risk as a guide to additional work on shift rotation in other workplaces and other industries. Healthcare administrators may use these results to better staff and schedule their workers to prevent fatigue related injuries.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Demonstrating Effectiveness of Informed Informal Interaction	The hypothesis of this proposal is: Interaction between informed informal dialogue of a first-language Spanish labor/health specialist, worker leaders and workers, worker leadership development and worker problem-solving of hazardous exposures demonstrates prevention of workplace injury and illness of immigrant workers associated with workers' centers. The objectives for the proposal utilizes the findings of Nickels' 2005 pilot: 1) Continue community-based participatory research (CBPR) relationships of the previous pilot, to plan, implement and validate findings; 2) Provide financial and curriculum resources on health and safety to workers' centers; 3) develop an interactive model of "informed informal" dialogue of a first-language Spanish labor/health specialist, worker leaders and workers, worker leadership development and worker problem-solving; 4) Establish a planning and reflection cycle between worker leaders and first language Spanish labor/health specialist based on Gramscian curriculum; 5) Schedule and document periodic "informed informal" sessions at workers' centers; 6) Qualitatively analyze interactive discourse of specialist and leaders in terms of a train-the-trainer and Gramscian curriculum, and 7) Disseminate findings and create future proposals. We will build upon the relationships developed in our 2005 project to cooperatively explore our model as a type of workplace intervention effectiveness research.
Occupational Surveillance in Illinois: A Pilot Project Using Work Comp Data	The purpose of occupational surveillance is to gain knowledge of the pattern of workplace injury and illness in order to control and prevent fatalities, injuries, and diseases related to work. The Illinois Workers Compensation Commission collects injury and illness reports from employers according to State law. The overall goal of this project is to prevent fatal and non-fatal occupational illnesses and injuries in the State of Illinois and to contribute information that will inform preventive activities across the U.S. To this end, the Illinois Workers Compensation Commission's First Reports of Injury (IL Form 45) will be evaluated for use in statewide occupational surveillance. Specific aims are: 1) To develop a scheme for sorting, computerizing, and merging paper-based Illinois First Report of Injury Form 45s (45% of total) with the electronic dataset (55% of total); 2) To compare the distribution of injury types among the electronic and hard copy Form 45s, in order to assess the accuracy, completeness and representativeness of the electronic form dataset; and 3) To develop a weighting protocol for samples from the merged dataset (contingent on objective 2). This pilot project will provide us critical information about the IWCC dataset to subsequently develop extramural research applications and conduct research analyses on the basis of the findings from this project.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Nasopharyngeal Cancer and Occupation in Chengdu, China	Nasopharyngeal cancer (NPC) is extremely common in Southeast Asia. Genetic factors and exposure to Epstein-Barr virus have both been implicated in the etiology of the incidence of this cancer among Southeast Asians and Pacific Islanders. Occupational exposures to hazardous substances such as nickel, wood dust, and formaldehyde have been linked to NPC. Chengdu in Sichuan, China is large metropolitan city that is also a base of boot and shoe manufacturing. Many workers are likely exposed to substances that put them at risk for NPC. But the occupational distribution of NPC in Chengdu is unknown. This study, to be performed by an investigator who is a native of Chengdu and spent a portion of his career in the public health sector of Sichuan Province, will characterize the occupational risk factors for NPC in Chengdu. Dr. Song will access the tumor registration database which contains demographic information as well as information on occupation and smoking history for all cases of NPC occurring in the city. He will collect the de—identified cases on a computer database that he will analyze upon return to the US. He will also access the Chinese biomedical literature in order to perform comparisons of NPC incidence to other areas of China. He will access the Chinese population census data, for use as denominator data for comparison purposes. Results of this research will be used to design a case-control study of NPC in Chengdu. It will also be used by public health and occupational medicine professionals in China as they design further studies and plan exposure interventions. This study will add to the current literature regarding the association between occupation and NPC.
Association of H. pylori IgG Antibodies and Allergic Sensitization	Background: Workers in animal research facilities are at risk for occupational allergies and may be at risk for occupational transmission of Helicobacter pylori. H. pylori infection can lead to serious health consequences. The hygiene hypothesis suggests that a lack of such exposures, including to H. pylori infection, may lead to increased risk of laboratory animal sensitization (LAS). Goals/Objectives: To characterize the association between H. pylori IgG seroprevalence and prevalence of LAS, compare H. pylori IgG antibody seroprevalence among laboratory animal workers to that of a similar worker group unexposed to laboratory animals, and evaluate prior H. pylori infection relative to the demographic variables identified in this cohort as associated with LAS. Design/Methods: A cross-sectional epidemiological study of the association of the seroprevalence of Helicobacter pylori antibodies and sensitization to common allergens in an occupational cohort. Risk factors related to H. pylori infection will be assessed by questionnaire. H. pylori IgG seroprevalence will be assessed. Potential for improving safety/health in work environment: Contributions to prevention strategies for LAS by identifying those who might be at increased risk under the hygiene hypothesis. If results suggest that occupational transmission of H. pylori occurs, control measures will need to be instituted.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Cognitive Stress, Mental Attentiveness and Muscle Fatigue	Work-related injury, disorder and pain of upper limb muscles are associated with fatigue experienced during static low-force contractions, stress, and mental attentiveness. This proposal investigates the impact of stress and mental attentiveness on fatigue and muscle activation patterns during low-force fatiguing contractions in men and women. We hypothesize that fatigue is increased when men and women are exposed to a cognitive stressor during a low-force fatiguing contraction due to changes in muscle activation patterns. Aim 1 determines if exposure to a cognitive stressor influences the magnitude of fatigue for low-force fatiguing contractions with the elbow flexor muscles. Subjects will perform a fatiguing contraction in the presence and absence of a cognitive stressor (mental math task) designed to increase mental attentiveness and stress. Aim 2 determines if the strategies used by the central nervous system differ when men and women perform a low-force fatiguing task and a stressful mental math task. The outcomes of this study have direct application to understanding the cause of work-related injuries. Results will be published and form the foundation of an RO1 application further exploring the mechanisms of fatigue and pain experienced during different types of postural low-force fatiguing contractions of the arm muscles.
Biological Exposure Assessment in a Brain Cancer Case-Control Study	Although a number of animal neurocarcinogens have been well-established in the toxicology literature none of these chemicals are demonstrated as human neurocarcinogens in epidemiological investigations. It is possible that the absence of associations and conflicting results regarding occupational/environmental exposures from previous human studies of brain tumors is, in part, due to inadequate exposure assessment tools and poor characterization of human exposures. The proposed study are expected to reduce this significant data gap and to further our understanding of exposure assessment by relating two known animal neurocarcinogen exposures (l,3-butadiene and acrylamide) to development of brain cancer in humans. Specifically, we are proposing to evaluate the validity of using self-reported work histories reported by the subjects enrolled in a case-control brain cancer epidemiology study funded by the NCI to estimate comprehensive workplace exposures to these neurocarcinogens. The occupational exposure matrix derived from the self-reported work histories will be validated by use of the hemoglobin adduct assays for 1,3-butadiene and acrylamide. We hypothesize that occupational exposure matrix scores are correlated with hemoglobin adduct estimates. The findings of this study may allow us to identify particular occupations and industrial processes where further investigations should be conducted to better understand the causes of brain cancer.

Table PPRT-4: Titles and Abstracts for all Funded PPRT Projects

Occupational Hazard and Injury Surveillance in Chicago Temporary Agency workers	Day labor and temporary agency work is a growing phenomenon as our economy continues to shift towards informal labor markets and contract work. Previous work with Chicago worker centers and day laborers has revealed that this population of workers faces hazardous exposures and injury rates higher than their full-time counterparts. As part of a longitudinal research agenda at the UIC School of Public Health aimed at decreasing occupational injuries to day laborers and temporary workers, this project has three goals: 1. Explore opportunities for interaction with temporary agency workers, 2. Perform surveillance on the types of work temporary agency workers are hired for, the hazards they face, their injuries and access to occupational health care, and 3. Collect in-depth narratives on workers' occupational injuries. The San Lucas worker center will facilitate visits to temporary agencies where the PI will perform surveys on types of jobs, hazards and injuries. Workers who have been injured will be invited to the worker center for an in-depth interview describing the circumstances of their injury and medical care. Results of this study will be used for a multi-city R01 proposal assessing injury prevention interventions at worker centers.
Falls Prevention among Home Care Workers in Illinois: Needs Assessment	Home care for the elderly is one of the fastest growing industries in the United States. In Illinois approximately 20,000 home care aides provide services to close to 40,000 older clients (aged 60 or older) who receive homemaker services in the Illinois Department on Aging Community Care Program. However, data and research on occupational hazards among home care workers are scant. The goal of the proposed research is to explore risks for falls and feasibility of falls prevention programs among home care workers in Illinois. Specific objectives include: (a) Understand risks for slips, trips, and falls and related injuries among home care workers; (b) Identify evidence-based intervention programs and tools for falls prevention among home care workers; and (c) Understand factors that would facilitate or impede successful implementation of falls prevention programs among home care workers. These objectives will be addressed via a combination of personal interviews, focus groups, and literature reviews. We will systematically analyze focus group data to derive theory (a grounded theory approach), rather than starting with an a priori theory. The results will help us develop future research into falls prevention programs for home care workers and their clients.
Work and Adaptation Experiences of Registered Nurses from the Philippines	In order to stem the unrelenting nursing shortage in the US, health care facilities have increased the hiring of nurses from other countries, such as the Philippines. Little is known about the experiences of this workforce including the affects of occupational stress on their health. The goal of this pilot study is to explore the challenges that migrant women nurses from the Philippines experience at work and in their personal lives. The specific aims are to: 1) describe the adaptation experiences of migrant nurses; 2) describe the migrant nurses' workplace experiences in the US, and 3) identify the stressors that impact the health and well-being of migrant nurses. This exploratory study will use a qualitative descriptive design and qualitative analysis methods to analyze data from six focus groups. The eligibility criteria will be: 1) female over 21 years; 2) migrants or contract workers from the Philippines; and 3) registered nurses with a Diploma, Associates, or Baccalaureate degree and currently working in any healthcare facility. Information gathered from this study will be used to develop culturally relevant tools that will be used on a larger sample of this population in the ensuing segment of the dissertation study.

Table NRS-1. Output Measures for NRS program.

Trainee Measures
Number of trainees on Interdisciplinary Teams
Number of student theses or dissertations resulting from Interdisciplinary Teams
Number of projects involving students in all aspects of the research
Number of publications with trainee authors
Interdisciplinary Measures
Number and discipline of ERC faculty, staff and students on work group
Level of involvement of non-ERC faculty, staff, and students on work group
Research Measures
Number of proposals written
Number of papers delivered at conferences
Number of papers published
Number of grants submitted
Partnership, Collaboration Measures
Number of partnerships
Activities with partners
Proposals with community partners
Papers with community partners

Table NRS-2. Trainee Involvement in the NRS Program					
Trainee Name	Degree /Discipline	Status	Research Mentor(s)	Research Project	Other Trainees Involved
Lilia Chen	MS/IH	Graduated	Conroy/ Dorevitch	Laboratory Animal Exposure	Vinson, Hopp
David Vinson	MS (IH)	Left program	Conroy	Respiratory Health Effects in Production Welders and Non-welders	Berman, Hopp, Schnackenbeck, Ford, Matwyshyn, Kalra, Plavka, Koshuba, Murphy
Srinivas Durgam	MS/IH	Graduated	Erdal	Welding Fume Characterization	Berman
Laurel Berman	PhD/IH	Graduated	Erdal	Welding Fume Characterization	Durgam
Kimberly Hopp	MS/IH	On Leave	Erdal	Respiratory Health Effects in Production Welders and Non-welders	Berman, Vinson, Schnackenbeck, Ford, Matwyshyn, Kalra, Plavka, Koshuba, Murphy
Anjali Kalra	MPH/OM	Graduated	Forst	Respiratory Health Effects in Production Welders and Non-welders	
Joy Schnackenbeck	MS/HSAT	Graduated	Erdal	Respiratory Health Effects in Production Welders and Non-welders	Berman, Vinson, Hopp, Ford, Matwyshyn, Kalra, Plavka, Koshuba, Murphy
Julie Plavka	MS/HSAT	Graduated	Conroy	Respiratory Health Effects in Production Welders and Non-welders	Berman, Vinson, Schnackenbeck, Ford, Matwyshyn, Kalra, Hopp, Koshuba, Murphy
Laura Pascal	PhD/IH, Tox	Graduated	Tessier	Molecular Responses on Lung Epithelial Cells In Vitro Following Chromium and Manganese Exposure	
Bogdan Catalin	MS/HSAT	Graduated, in PhD program	Tessier	Molecular Responses on Lung Epithelial Cells In Vitro Following Chromium and Manganese Exposure	
Robert Malcolm	MS/IH	In training	Conroy	Agriculture Exposure	Hopp, Vinson, Berman, Schnackenbeck, Malcolm, Nevarez, Ford, Connor,
Tara Ooms, DVM	Post-doc/	Completed	Fortman	Laboratory Animal Exposure	Hopp, Vinson

Table NRS-2. Trainee Involvement in the NRS Program					
Trainee Name	Degree /Discipline	Status	Research Mentor(s)	Research Project	Other Trainees Involved
	Veterinary Medicine	fellowship			
Cong Zhao, MD	MPH/OM	Graduated	Dorevitch	Respiratory Health Effects Associated with Demolition	
Leslie Tharenos, MD	MPH/OM	Graduated	Dorevitch	Laboratory Animal Exposure	
Dyan Doughty,	MS/IH	In training	Conroy	Laboratory Animal Exposure	Breskey, Malcolm, Ford, Schimik, Alcazar, Horvatin, Abelman, Bigger, Patel, Welch
Kyong-Wu Lee,	PhD/IH, Tox	In training	Conroy	Laboratory Animal Exposure	
Nadine Remington	MS/IH	Graduated	Conroy/ Nickels	Occupational injuries and hazards among immigrant and minority workers in Chicago	Lippert
Butch DeCastro, PhD	Post-doc/ EOHS	Completed fellowship	Sokas	Integration of Clinical Occupational Services and Labor Rights Training and Prevention	Fujishiro, Cho, Brown
Kaori Fujishiro, PhD	Post-doc/ EOHS	Completed fellowship	Sokas	Integration of Clinical Occupational Services and Labor Rights Training and Prevention	DeCastro, Cho, T. Brown, L. Brown
Julia Lippert	MS/IH	Graduated	Nickels	Occupational injuries and hazards among immigrant and minority workers in Chicago	Remington
Lezah Brown-Ellington	PhD/IH	In training	Rospenda/ Sokas	Integration of Clinical Occupational Services and Labor Rights Training and Prevention	DeCastro, Fujishiro, T. Brown, Cho
Todd Brown	MPH/IH			Integration of Clinical Occupational Services and Labor Rights Training and Prevention	DeCastro, Fujishiro, L. Brown, Cho
Chris Cho	MS/Biostatistics			Integration of Clinical Occupational Services and Labor Rights Training and Prevention	DeCastro, Fujishiro, T. Brown, L. Brown

Table NRS-2. Trainee Involvement in the NRS Program					
Trainee Name	Degree /Discipline	Status	Research Mentor(s)	Research Project	Other Trainees Involved
Joseph Morello	MPH/OM			Blood lead levels and clothing dust wipes for lead in day laborers	
John Halpin	MPH/OM	Graduated	Forst	Intervention Research to Reduce Burns in Food Vendors	
Douglas Myers	Post-doc/OEE	Completed fellowship	Stayner	Berman, Vinson, Schnackenbeck, Ford, Matwyshyn, Kalra, Plavka, Koshuba, Murphy	
Emile Jorgensen	PhD/OEE	In training	Stayner/ Sokas		
Justin Ford	PhD/IH	In training	Forst	Occupational Injuries in Hispanic Workers	

Table NRS-3. Interdisciplinary Research Seminar Series

Date	Topic	Speaker
11/13/02	NORA Seminar Series: Asbestos Exposures to Truck Drivers During the World Trade Center Clean-Up Activities	Patrick Breysse
3/12/03	NORA Seminar Series: Beryllium Disease: Genetic and Environmental Contributions to Pathogenesis	Lee Newman
4/2/03	NORA Seminar Series: Social Factors in the Recognition of Occupational Disease: the Case of Byssinosis	Charles Levenstein
4/16/03	NORA Seminar Series: Polycyclic Aromatic Hydrocarbons	Steven Myers
11/4/03	Influence of Metallurgy on the Formation of Welding Aerosols	Anthony Zimmer
	Intervention Effectiveness in Small Businesses	Lisa Brosseau
2/24/04	Hearing Conservation Program Effectiveness	Sally Lusk
3/16/04	Welding Fume Characterization	Anthony Ghio
4/13/04	Particulate Exposure and Health Effects in Boilermakers	David Christiani
4/05/05	Pesticide poisoning, depression and self-harm among farmers	Lorann Stallones, MPH, PhD
2/21/06	Daily Indignities and Occupational Hazards: Results from the National Day Labor Survey	Abel Valenzuela, Jr., MCP, PhD
		Nik Theodore, MUPP, PhD
4/04/06	Who is "Community" in Workplace Community Based Participatory Research?	Jane Lipscomb PhD, MS, BSN, FAAN, RN
02/21/07	Occupational Safety and Health Experience of Day Laborers in Seattle	Noah Seixas, PhD, CIH
04/18/06	Acute and Chronic Poisoning from Exposure to Chlorpyrifos Impregnated in Plastic Bags for Use on Banana Plantations	Ineka Wesseling, PhD

Industrial Hygiene

Table IH-3. Contributing Faculty to the Industrial Hygiene Program			
Faculty	Position	Research Area	Contribution to IH Program, % (Teaching, Research, Other)
Steven E. Lacey, Ph.D., CIH (#16269), CSP	Assistant Professor and Director of Industrial Hygiene	Exposure reconstruction; exposure assessment; injury prevention.	Time commitment – 25% - Teaches IE341 Ergonomics and Human Factors, and IE461 Safety Engineering, and co-teaches EOHS 408 Biological, Chemical, Explosives, and Nuclear Weapons as Public Health Threats; research advisor.
Peter A. Scheff, Ph.D., CIH (#3197), QEP	Professor Emeritus	Characterization and modeling of ambient and workplace air quality; bio-aerosol characterization; environmental modeling and exposure assessment.	Time commitment - 60% - Teaches, EOHS405 Environmental Calculations and EOHS431 Air Quality Management; research advisor; short courses; Director of Air Pollution Training Institute program at UIC.
Lorraine M. Conroy, Sc.D., CIH (#5500)	Associate Professor	Design of ventilation systems; TB control criteria; determination of workplace exposure to toxic chemicals; industrial welding.	Time commitment - 50% - Director of ERC; Teaches EOHS421 Fundamentals of IH); Co-Teaches EOHS523 Eng. Control/Ventilation; research advisor; short courses)
Nurtan A. Esmen, Ph.D.,	Professor	Application of engineering principles and mathematics to occupational and environmental health problems with special emphases on aerosol physics, exposure estimation and characterization.	Time commitment - 25% - teaches EOHS 557, Design and Analysis of Experiments, senior research mentor and research advisor.
Rosemary Sokas, M.D., MOH	Professor and Director, EOHS	Applied, translational occupational safety and health organizational work targeting small businesses and vulnerable populations	Time commitment – 10% Teaches EOHS400 Introduction to Environmental Health Sciences; Field research; Director of the academic program.
Salvatore Cali, MPH CIH (#7423)	Senior Research Specialist	Indoor and Industrial air quality, bio-aerosols, lead and asbestos.	Time commitment - 25% - Deputy Director of Industrial Hygiene; teaches EOHS428 IH Laboratory; contributes to short courses and outreach activities.

Table IH-3. Contributing Faculty to the Industrial Hygiene Program			
Faculty	Position	Research Area	Contribution to IH Program, % (Teaching, Research, Other)
John E. Franke, Ph.D., PE, CIH (#1464)	Research Assistant Professor	Workplace characterization and estimation of personal exposure; TB confinement; emission factors.	Time commitment – 25% - Teaches EOHS570 Hazardous Materials Management and co-teaches EOHS523 Engineering Controls; field research advisor.
John Standard, M.S., MPH, CIH (#2164), CSP	Lecturer	Hazard evaluation and safety control	Time commitment - 10% - Teaches EOHS482 Occupational Safety Science.
Michael Selway, M.S., CIH (#2695)	Lecturer	Noise evaluation and control; field studies.	Time commitment - 20% - Teaches EOHS424 Environmental Acoustics and EOHS529 IH Lababoratory II.
Daniel O. Hryhorczuk, M.D., MPH	Professor	Occupational and environmental epidemiology and toxicology.	Time commitment - 10% - Teaches, IPHS554 Occup. & Environ. Epi.; research advisor; short courses.
An Li, Ph.D.	Associate Professor	Environmental Chemistry	Time commitment - 10% - Research advisor; Teaches EOHS440 Chemistry for Environmental Professionals
Dan Tessier, Ph.D.	Assistant Professor	Environmental and Occupational Toxicology	Time commitment -10% - Research advisor; Teaches EOHS455 Environmental and Occupational Toxicology and EOHS 555 - Advanced Topics in Toxicology.
Serap Erdal, Ph.D.	Associate Professor	Exposure assessment, risk analysis	Time commitment - 25% - Research advisor; Teaches EOHS438 Air Quality Lab and EOHS556 Risk Assessment
Linda Forst, MD, MPH	Professor	Worker health; epidemiology of workplace disease, safety and injury.	Time commitment - 10% - Research advisor; Faculty of Occupational Medicine at UIC; teaches EOHS551 Occupational Diseases

Table IH-4. Student Awards, Scholarships, and Funding Proposals Accepted

Student Name	Award	Date of Award
Alison Welch	Student poster award at UIC School of Public Health Student Research Forum and Awards Day "Lead Dust and Total Dust Emissions During Demolition of Single Family Homes"	April, 2008
	Professional Development, AIHA Leadership Workshop	2008
Anders Abelmann	Chicago Section Scholarship, presented by the American Industrial Hygiene Foundation	June, 2008
	ASSE Northeastern Illinois Chapter Scholarship	2008
Bogdan Catalin	Best Poster in Aerosol Science in the graduate student section, American Industrial Hygiene Conference & Exposition in Minneapolis	June, 2008
Chirag Patel	AAAS Scholarship	2008
Jennifer S. Pierce	Liberty Mutual Scholarship, presented by the American Industrial Hygiene Foundation	June, 2008
Jo Anna Shimek	Research Proposal "Biological Exposure Assessment in a Brain Cancer Case-Control Study" approved for competitive funding for Illinois ERC NIOSH Pilot Project Research Training Program	2007
John Breskey	UIC Institute for Environmental Science and Policy Fellowship	2008
	Professional Development, AIHA Leadership Workshop	2008
	Michael Bruton Workplace Safety Foundation Scholarship at the University of Illinois at Chicago	2006
Maria Gutierrez	Michael Bruton Workplace Safety Scholarship	2008
	Scrimshaw Latino Health Scholarship	2008
	James P. Keogh Memorial Scholarship	2008
	AAAS Scholarship	2007
Lezah Brown-Ellington	Special Recognition Award - American Industrial Hygiene Association's Minority Special Interest Group – American Industrial Hygiene Conference and Exposition, Chicago, IL	May, 2006
	Best Poster Award – American Industrial Hygiene Association's Occupational Epidemiology Committee – American Industrial Hygiene Conference and Exposition, Anaheim, CA	May, 2005
	American Industrial Hygiene Association Endowed Scholarship	2004-05
	Michael Bruton Workplace Safety Scholar at the University of Illinois at Chicago	2002-03
Mauricio Mesones	1st place in the Masters Student paper/poster Competition, Air and Waste Management Association Annual Conference	June, 2006
	1st Place in the Sustainable Development Pollution Prevention Student Paper/Poster Competition Air and Waste Management Association Annual Conference	June, 2006
Robert Malcolm	Professional Development, AIHA Leadership Workshop	2007
	Best in Session for the Graduate Student Posters, American	May, 2006

Table IH-4. Student Awards, Scholarships, and Funding Proposals Accepted

Student Name	Award	Date of Award
	Industrial Hygiene Conference and Exposition, Chicago, IL	
	Professional Development, AIHA Leadership Workshop	2006
	Chicago Chapter Scholarship, Presented By AIHF	2006
Sam Bigger	Chicago Chapter Scholarship, Presented By AIHF	2007
	Professional Development, AIHA Leadership Workshop	2007
Shanna Horvatin	Best Poster Occupational Epidemiology in the graduate student section, American Industrial Hygiene Conference & Exposition in Minneapolis	June, 2008
Tara Alcazar	Travel Award from the International Society of Exposure Analysis for travel to International Society of Exposure Analysis 2007 Conference at Durham, NC	October, 2007

ERC Applicant Institution: University of Illinois
Program Director: Peter Scheff
Discipline: Industrial Hygiene & HSAT

Table IH-4b
Academic Training Report
Since Beginning of Current Project Period July 2003-June, 2008

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							
IH: MS	MS in Public Health Science	47	34	1			29
IH: MPH	Master of Public Health	16	1	5			18
Doctorate degree							
IH: PhD	PhD in Public Health Science	13	5	8			8
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.

Table IH-5: Tracking Graduates-Academic Training Report[1], Since Beginning of Current Project Period; July 2003 - June, 2008						
Trainee Name (if supported by a NIOSH training grant, denote with *)	Date Entered Program (mm/yy)	Date Degree Awarded (only if at your institution) (mm/yy)	Degree Awarded (also specialty area as noted on degree)	Date of Certificate of Completion (for Occ Med and other Certificate programs) (mm/yy)	Current Employment (Job Title/Employer)	Employed in OS&H Field or Enrolled in OS&H Academic Program? Y/N
Year 1: July 1, 2003 to June 30, 2004						
Gwennetta Butler *	08/00	12/03	MS (ABET)		Underwrighter's Laboratory	Y
Jamie Paulin *	08/00	12/03	MS (ABET)		USEPA R5 Waste, Toxics and Pesticides	Y
Laura Pascal *	08/98	12/03	PhD		U of Washington Post Doc Fellow	Y
Lezah Brown-Ellington *	08/00	05/04	MS (ABET)		CDC pre-doctoral fellow	Y
Rocio Jimenez *	08/00	12/03	MS (ABET)			
Roxolana Kasuba *	08/01	12/03	MS (ABET)		UESPA office of inspector general	Y
Julie Plavka *	08/01	05/04	MS (ABET)		Teamsters	Y
Lymari Ruiz-Sanchez *	08/01	05/04	MS (ABET)		UIC PhD student	Y
Hussain Ali	08/01	05/04	MPH			
Shakirudeen Amuwo	08/02	05/04	MPH		UIC PhD student	Y
Edwin Bisinger	08/98	05/04	PhD		Consultant	Y
David Seth Dibblee	08/02	05/04	MS (ABET)		USEPA R5 toxics division	Y

Table IH-5: Tracking Graduates-Academic Training Report[1], Since Beginning of Current Project Period; July 2003 - June, 2008						
Trainee Name (if supported by a NIOSH training grant, denote with *)	Date Entered Program (mm/yy)	Date Degree Awarded (only if at your institution) (mm/yy)	Degree Awarded (also specialty area as noted on degree)	Date of Certificate of Completion (for Occ Med and other Certificate programs) (mm/yy)	Current Employment (Job Title/Employer)	Employed in OS&H Field or Enrolled in OS&H Academic Program? Y/N
El Bayoumi Maher	08/02	05/04	MPH			
Amy Pelka Mucha	08/97	05/04	PhD		CDC post doc fellow	Y
Sania Tong	08/00	05/04	MS (ABET)		USEPA ORD/NERL	Y
Peter Draper	08/99	07/03	MPH		Rockford Memorial Hospital	Y
Elizabeth Murphy	08/01	07/03	MPH		USEPA R5 GLNPO	Y
Shaney Harden	08/99	12/03	MPH			
Year 2: July 1, 2004 to June 30, 2005						
Joy Schnackenbeck *	08/02	12/04	MS (ABET)		USEPA Washington DC	Y
Pralhad Gawde	08/03	05/05	MS (ABET)		Pharmacist	N
Rajiv Vij	08/02	05/05	MPH			
Dion Ceggett	08/01	12/04	MPH			
Lara Laskey	08/01	12/04	MPH		USEPA Region 5	Y
Azusa Yoshida	08/02	12/04	MPH			
Year 3: July 1, 2005 to June 30, 2006						
Jennifer Palmer *	08/04	05/06	MS (ABET)		Sullair Corp.	Y

Table IH-5: Tracking Graduates-Academic Training Report[1], Since Beginning of Current Project Period; July 2003 - June, 2008						
Trainee Name (if supported by a NIOSH training grant, denote with *)	Date Entered Program (mm/yy)	Date Degree Awarded (only if at your institution) (mm/yy)	Degree Awarded (also specialty area as noted on degree)	Date of Certificate of Completion (for Occ Med and other Certificate programs) (mm/yy)	Current Employment (Job Title/Employer)	Employed in OS&H Field or Enrolled in OS&H Academic Program? Y/N
Laurel Berman *	08/99	12/05	PhD		ATSDR R5 Brownfields coordinator	Y
Lilia Chen *	08/03	12/05	MS (ABET)		NIOSH intern	Y
Marta Matwyshyn-Fuoco *	08/01	07/05	MS (ABET)		USEPA R5 Air Monitoring	Y
Sanobeia Brima *	08/03	05/06	MPH (ABET)			
Justin Ford *	08/02	12/05	MS (ABET)		UIC PhD student	Y
Mauricio Mesones	08/04	05/06	MS		ENVIRON International, 707 Wilshire Blvd., Suite 4950, Los Angeles, CA	Y
LaTrice Porter-Thomas	08/03	05/06	MPH (ABET)		Cook Co Dept of Public Health	Y
Wenlu Song	08/01	07/05	PhD		Michigan St U post doc fellow	Y
Srinivas Durgam	08/01	12/05	MS		NIOSH intern	Y
Year 4: July 1, 2006 to June 30, 2007						
Danita Murray-Larry *	08/03	05/07	MS (ABET)		USEPA Laboratories, Chicago	Y

Table IH-5: Tracking Graduates-Academic Training Report[1], Since Beginning of Current Project Period; July 2003 - June, 2008						
Trainee Name (if supported by a NIOSH training grant, denote with *)	Date Entered Program (mm/yy)	Date Degree Awarded (only if at your institution) (mm/yy)	Degree Awarded (also specialty area as noted on degree)	Date of Certificate of Completion (for Occ Med and other Certificate programs) (mm/yy)	Current Employment (Job Title/Employer)	Employed in OS&H Field or Enrolled in OS&H Academic Program? Y/N
Julia Lippert *	08/04	12/06	MS (ABET)		Industrial Hygienist, Environ Corp, 333 W. Wacker Suite 2700 Chicago, IL 60606	Y
Maya Barr *	08/04	12/06	MS (ABET)		Frisco Sanitation District	Y
Nadine Remington *	08/04	05/07	MS (ABET)		OAI Inc.	Y
Juan Nevarez *	08/04	05/07	MS (ABET)		OSHA R5 Madison office	Y
Bogdan Catalin *	08/04	12/06	MS (ABET)		UIC PhD student, HUD	Y
Todd Brown	08/05	05/07	MPH		UIC PhD student	Y
Kirk Baker	08/03	07/06	PhD		Lake Michigan Air Directors Consortium (LADCO)	Y
Megan Gaughan	05/04	05/07	MPH			
Year 5: July 1, 2007 to June 30, 2008						
Carolina Priester *	01/06	05/08	MS		Abbott Labs, IH	Y
Charles Dula*	08/04	08/07	MS		Industrial Hygiene Intern U.S Department Of Veteran Affairs	Y
Diana Trinidad	08/06	05/08	MPH			

Table IH-5: Tracking Graduates-Academic Training Report[1], Since Beginning of Current Project Period; July 2003 - June, 2008						
Trainee Name (if supported by a NIOSH training grant, denote with *)	Date Entered Program (mm/yy)	Date Degree Awarded (only if at your institution) (mm/yy)	Degree Awarded (also specialty area as noted on degree)	Date of Certificate of Completion (for Occ Med and other Certificate programs) (mm/yy)	Current Employment (Job Title/Employer)	Employed in OS&H Field or Enrolled in OS&H Academic Program? Y/N
Dyan Doughty *	08/05	05/08	MS		Loyola Medical Center	Y
John Breskey *	08/05	5/08	MS		UIC IH PhD student	Y
Tara Alcazar *	08/05	12/07	MS		University of Iowa Research Specialist	Y
Jeffery J Melton	08/05	05/08	MPH			
Lezah Brown-Ellington	06/04	08/07	PhD		UIC Post Doctoral Fellow	Y
Michelle Colledge	08/02	05/08	PhD		ATSDR Region 5	Y

Refer to: Supplemental Instructions, page 8.

[1] Graduate counts include all trainees graduated from the approved programs.

Table IH-6: Trainee Summary Data, Since Beginning of Current Project Period; July 2003 - June, 2007								
Level[1]	# Applicants Applied	# Applicants Offered Admission	# Trainees Entering Training[2]	# Trainees Who Left Program	# Trainees Currently in Training	# Trainees Completed Training	# Post Doc MDs	# Post Doc PhD
Masters 2003-04	43	43	7	0	21	15		
Masters 2004-05	70	68	9	1	14	6		
Masters 2005-06	49	49	8	1	14	8		
Masters 2006-07	42	39	6	0	24	7		
Masters 2007-08								
Doctoral 2003-04	17	17	3	0	6	3		
Doctoral 2004-05	23	16	3	0	8	0		
Doctoral 2005-06	10	8	2	0	11	2		
Doctoral 2006-07	12	6	3	0	10	1		
Doctoral 2007-08								

Refer to: Supplemental Instructions, page 9.

1 Masters, doctoral, etc.

2 Trainee counts include all students in the approved programs.

Table 9: NIOSH Positions Awarded Since Beginning of Current Project Period, Progress Report for Competing Applications						
Total # NIOSH Positions Awarded[1]	# Pre-Doc Trainees Appointed	Pre-Doc degrees/level	Total # of Months of Support[2]	# Post-Doc Trainees Appointed	Post-Doc degrees/level	Total # of Months of Support[2]
Year 1: July 1, 2003 to June 30, 2004						
10	10	MS	90			
2	2	PhD	20			
Year 2: July 1, 2004 to June 30, 2005						
9	9	MS	81			
1	1	PhD	12			
Year 3: July 1, 2005 to June 30, 2006						
13	13	MS	117			
1	1	MPH	12			
2	2	PhD	20			
Year 4: July 1, 2006 to June 30, 2007						
11	11	MS	99			
3	3	PhD	32			
Year 5: July 1, 2007 to June 30, 2008						
12	12	MS	108			
2.5	2.5	PhD	30			

Refer to: Supplemental Instructions, page 12.

[1] Full-time, full-year NIOSH awards since last competing renewal application.

[2] Total for all months of support for all supported trainees in this category.

Table IH-10: Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Year 1; 07/03-06/04							
Danita Murray-Larry **	08/03	University of Illinois at Chicago, Chicago, IL	Bachelor in Chemistry	Jul-99	none	Tessier	Endotoxin concentrations in settled dust sample from homes and schools in the Chicago metropolitan area
Robert Malcolm **	08/03	Bowling Green State University	BS/Environmental Health	May-07	State, CE Revolving, NIOSH	Conroy	Personal Esposure to Dust, Endotoxin and Ammonia in a Swine Confinement Facility
Lilia Chen **	08/03	Tufts University, Medford, MA	BS in Biology and Environmental Science	May-99	NIOSH, Campus Safety, Pratt & Whitney	Conroy	Mouse Endotoxin and Paticulate Matter Emission Factor Modeling Applied to a Working Animal Facility
Sanobeia Brima	08/03	Illinois State, Normal, IL	BS Safety	May-00	NIOSH, State Acct	Scheff	A Noise Assessment at Amtrak's Diesel Facility
Todd Schoonover	01/04	UIC	MS/Public Health	May-02		Conroy	
Megan Gaughan	05/04	Northwestern University	BA/Environmental Science	May-01	none	Scheff	Effect of Noise Monitoring Criteria on Dose Measurements
Motria Caudill	08/03	UIC	MS/Public Health	May-99	none	Scheff	Multivariate receptor modeling applied to PM2.5 and air toxics monitoring data in the urban and industrial Midwest
Cynthia Klein-Banai	08/03	Hebrew University Jerusulem	MA/Environmental Science	May-84	none	Scheff	

Table IH-10: Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
LaTrice Porter-Thomas	08/03	Purdue University, West Lafayette, IN	BS Industrial Hygiene	May-93	none	Tessier	Exposure Assessment for Metals in a Police Department Firing Range
Pralhad Gawde	08/03	Bharati Vidyapeeth's College of Pharmacy, Navi Mumbai, Maharashtra, India	Bachelor of Pharmacy	May-00	Tessier ICR	Tessier	Activation of Map Kinases by Chlorpyrifos in Bronchial Epithelial Cells- A Potential Mechanism of Respiratory Injury
Kirk Baker	08/03	University of Illinois at Chicago, Chicago, IL	MS	Aug-99	Board of Trustee Waiver	Scheff	Performance of a Regulatory Modeling System for PM2.5 Sulfate and Nitrate and Relationships to Performance of Meteorological Variables and Deposition Processes
Lezah Brown-Ellington	06/04	UIV	MS/Public Health	May-02	State Acct, NIOSH, CDC	Sokas	Psychosocial Issues as Predictors of Occupational Injury, Illness and Assault
Year 2; 07/04-06/05							
Charles Dula	08/04	Prairie View A & M University	BS/Engineering	May-93	NIOSH, CE Revolving, Campus Safety	Esmen	Sensitivity Analysis For Exposure Reconstruction Using Task Performance Time Study Data

Table IH-10: Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Maya Barr **	08/04	Emory University, Atlanta, GA	BS in Neuroscience and Behavioral Biology	May-03	NIOSH, Pratt & Whitney	Lacey	Retrospective Analysis of Hexavalent Chromium Exposures in Electrochemical Milling in Jet Engine Workers
Juan Nevarez	08/04	University of Illinois at Urbana-Champaign, Urbana-Champaign, IL	BS in Engineering	May-04	NIOSH, CDC, CPWR Grant	Forst	Occupational Surveillance of Pesticide Poisonings from the Illinois Poison Center Database
Nadine Remington **	08/04	DePaul University, Chicago, IL	BS in Environmental Science	Jun-01	NIOSH, Tessier ICR, CE Revolving	Conroy	Understanding Worker Centers in Chicago: A Qualitative Analysis
Jennifer Palmer **	08/04	University of Texas, Houston, TX	MS Industrial Hygiene	Jun-05	NIOSH, Pratt & Whitney	Esmen	Metalworking Fluid Exposure Reconstruction Methodology for Jet Engineering Manufacturing
Bogdan Catalin	08/04	UIC	MS/Public Health	Dec-06	NIOSH, CE Revolving, Demolition Grant	Tessier	MAP kinase activation in human bronchial epithelial cells in vitro following exposure to mild steel welding fumes
Julia Lippert **	08/04	University of Michigan, Anna Arbor, MI	BS in Biology	Apr-02	NIOSH, Pratt & Whitney, CE Revolving	Esmen	Electromagnetic field exposure in a nondestructive testing operation

Table IH-10: Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Margit Javor	08/04	UIC	MS/Public Health	May-99	none	Scheff	
Maria Gutierrez	08/04	University of Oklahoma	MS/Industrial Hygiene	May-04	Pratt & Whitney	Esmen	
Mauricio Mesones	08/04	Cayetano Heredia Peruvian University	BS in Chemistry	Mar-03	IDPH	Scheff	Organic Emissions From Biological and Petroleum Based Lubricants in the Aluminum Rolling Process
Year 3; 07/05-06-06							
Carolina Priester **	01/06	UIC	BS/Biological Sciences	Dec-05	NIOSH, Graduate College	Conroy	Performance of a Modified Variable Air Voume Hood
John Breskey **	08/05	Oberlin College	BA/Biology	Jun-02	NIOSH, Ce Revolving, Erdal Welding Fume	Erdal	
Sam Bigger **	01/06	UIC	BS/Engineering	Dec-05	NIOSH, Pratt & Whitney	Lacey	Process Characterization to Inform a Job Dictionary
Dyan Doughty **	08/05	Grand Valley State	BS/Biology	May-99	NIOSH, Ce-Revolving, State Acct	Conroy	Personal Exposure to Dust and Allergens in an Animal Research Facility
Tara Alcazar **	08/05	Cornell College	BA/Biology	May-05	NIOSH, Pratt & Whitney	Esmen	Worker Recall for Epidemiology
Todd Brown	08/05	UIC	BA/Architecture	May-05	CDC	Sokas	Outcomes of Interfaith Workers' Center's Case

Table IH-10: Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
							Referrals to OSHA
Jeff Melton	08/05	UIC	MS/Chemistry	Dec-05	none	Scheff	Development of a Safety Protocol for LASERs at UIC
Sara Wuellner	08/05	UIC	MPH/Public Health	May-04	APTI	Scheff	
Year 4; 07/06-06/07							
Joanna Shimek **	08/04	Univ of Pittsburg	MS/Industrial Hygiene	May-91	NIOSH, CE Revolving	Erdal	
Alison Welch **	08/06	St. Olaf College	BS/Biology	May-06	NIOSH, HUD	Scheff	
Chirag Patel **	08/06	Univ of South California	MS/Biological Chemistry	Dec-05	NIOSH, Pratt & Whitney	Esmen	
Shanna Horvatin	08/06	Depaul	BA/Communication	Oct-03	NIOSH, Pratt & Whitney	Esmen	
Andres Saldana	08/06	Univ of IL at Urbana	BS/Technical Systems Management	Dec-05	State Acct	Scheff	
Anders Ablemann	08/06	Chalmers University	MS/Automation Mechanics	May-05	Serap Welding Fume	Erdal	
Angelica Rodriguez	08/06	UIC	BS/Engineering	May-06	Board of Trustee Waiver	Lacey	

Table IH-10: Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Diana Trinidad	08/06	UIC	BS/Engineering	May-94	State Acct	Lacey/Esmen	
Andres Saldana	01/07	Univ of IL at Urbana	BS/Technical Systems Management	Dec-05	NIOSH, State Acct	Erdal	
Bogdan Catalin **	01/07	UIC	MS	Dec-06	NIOSH, CE Revolving, Demolition Grant, Cali Grant	Erdal	
Year 5							

Refer to: Supplemental Instructions, page 12.

[1] List trainees supported since the last competing renewal application, by year.

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

[3] Use additional lines as needed for multiple sources of support.

** supported by IH Traineeship

Table IH-13: Minority Recruitment Data1, Since Beginning of Current Project Period						
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
Year 1: July 1, 2003 to June 30, 2004						
13	13	13	1	graduated	none	
			2	graduated	NIOSH/Campus Safety/Pratt & Whitney	NIOSH intern
			3	graduated	none	
			4	graduated	none	Environmental Quality Manager; Cook Co. Dept of Public Health
			5	in training	CDC grant/State Acct	Ph.D. candidate
Year 2: July 1, 2004 to June 30, 2005						
11	11	11	6	in training	NIOSH/Campus Safety	
			7	graduated	NIOSH/CDC grant	OSHA Region 5 Madison office
Year 3: July 1, 2005 to June 30, 2006						
6	6	5	8	in training	NIOSH/Graduate College	
			9	in training	NIOSH/Pratt & Whitney	

Table IH-13: Minority Recruitment Data1, Since Beginning of Current Project Period						
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
			10	left program	NIOSH/Ce revolving	
			11	graduated	CDC grant	Ph.D. student
Year 4: July 1, 2006 to June 30, 2007						
8	8	8	12	in program	State Acct	
			13	in program	NIOSH/Pratt & Whitney	
			14	in program	State Acct	

Refer to: Supplemental Instructions, page 11.

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

Occupational Health Nursing

Table OHN-4b. Academic Training Report, Since Beginning of Current Project Period							
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							
MS Nurse Practioner Track	Masters of Science in Nursing	9	9	1	1	0	3
MS Administrative Track	Masters of Science in Nursing	0	0	8	8	0	5
Doctorate degree							
PhD	PhD in Nursing	4 (includes 2 international students)	2	0	0	0	1
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.

Table 5. Tracking Graduates-Academic Training Report[1], Since Beginning of Current Project Period						
Trainee Name (if supported by a NIOSH training grant, denote with *)	Date Entered Program (mm/yy)	Date Degree Awarded (only if at your institution) (mm/yy)	Degree Awarded (also specialty area as noted on degree)	Date of Certificate of Completion (for Occ Med and other Certificate programs) (mm/yy)	Current Employment (Job Title/Employer)	Employed in OS&H Field or Enrolled in OS&H Academic Program? Y/N
Year 1: July 1, 2003 to June 30, 2004						
Byczek, Lance*	08/00	05/04	MS in Nursing (MSMPH)		Manager Global Occupational Health Wrigley Co.	Y
Muller, Susan*	08/00	05/04	MS in Nursing (OHNP/FNP)		lost to follow-up	
Year 2: July 1, 2004 to June 30, 2005						
English, Airn *	08/03	05/05	MS in Nursing (OHNP/FNP)		OHNP University Health Services, UIC	Y
Johnson, Kathryn*	08/02	05/05	MS in Nursing (OHNP/FNP)		OHNP, Mass General Hospital	Y
Yingling, Charles*	08/02	05/05	MS in Nursing (OHNP/FNP)		UIC Clinical Instructor	Y
Year 3: July 1, 2005 to June 30, 2006						
Lee, Hyeonkeong (International student not NIOSH supported)	08/00	05/06	PhD		research assistant, University of Illinois at Chicago	Y
Sternhagen, Dee	08/00	05/06	MS in Nursing (OHN/CNS)		lost to follow-up	
Walls, Malik *	08/02	05/06	MS in Nursing (OHN/CNS)		Educator/Pfizer Pharmaceuticals	N
Year 4: July 1, 2006 to June 30, 2007						
Fearn, Cynthia *	08/02	05/07	MS in Nursing (OHN/CNS)		OHN Specialist contracted to industry	Y
Year 5: July 1, 2007 to June 30, 2008						
no OHN graduates this year						

Refer to: Supplemental Instructions, page 8.

[1] Graduate counts include all trainees graduated from the approved programs.

Table OHN-6. Trainee Summary Data, Since Beginning of Current Project Period								
Level[1]	# Applicants Applied	# Applicants Offered Admission	# Trainees Entering Training[2]	# Trainees Who Left Program	# Trainees Currently in Training	# Trainees Completed Training	# Post Doc MDs	# Post Doc PhD
Masters	19	14	14	3	6	10		
Doctoral	4	4	4	0	3	1		

Refer to: Supplemental Instructions, page 9.

[1] Masters, doctoral, etc.

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

Table OHN-9. NIOSH Positions Awarded Since Beginning of Current Project Period, Progress Report for Competing Applications						
Total # NIOSH Positions Awarded[1]	# Pre-Doc Trainees Appointed	Pre-Doc degrees/level	Total # of Months of Support[2]	# Post-Doc Trainees Appointed	Post-Doc degrees/level	Total # of Months of Support[2]
Year 1: July 1, 2003 to June 30, 2004						
9	9	MS	98	0		
2	2	PhD	20			
Year 2: July 1, 2004 to June 30, 2005						
5	5	MS	58	0		
2	2	PhD	24			
Year 3: July 1, 2005 to June 30, 2006						
3	3	MS	36	0		
2	2	PhD	24			
Year 4: July 1, 2006 to June 30, 2007						
6	6	MS	72	0		
2	2	PhD	20			
Year 5: July 1, 2007 to June 30, 2008						
6	6	MS	72	0		
2	2	PhD	20			

Refer to: Supplemental Instructions, page 12.

[1] Full-time, full-year NIOSH awards since last competing renewal application.

[2] Total for all months of support for all supported trainees in this category.

Table OHN-10. Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Year 1, 07/03-06/04							
Byczek, Lance	2000	Johns Hopkins University	BSN	07/99	NIOSH	Dr. JoEllen Wilbur	Cardiovascular Risk in Firefighters
Connor, Jorgia	2003	University of Illinois at Chicago	BSN	05/87	NIOSH	Dr. Arlene Miller	TBD: Focus on physical and emotional health as well as job performance/satisfaction of recent nurse immigrants
English, Airn	2003	Miliken University	BSN	05/01	NIOSH	Dr. Shannon Lizer	Hepatitis C and Healthcare Workers
Fearn, Cynthia	2003	Alverno College	BSN	05/95	NIOSH	Dr. Karen Opacich	Pilot Study: BP Knowledge Assessment of Workers in a Midwestern Manufacturing Plant
Johnson, Kathryn	2002	University of Connecticut	BSN	05/98	NIOSH	Dr. Judith McDevitt	Predictors of Adherence to Exercise Programs in Employed American Women: An Integrative Literature Review
Katula, Sarah	2003	Rush University	MSN	05/99	NIOSH	Dr. Tonda Hughes	Domestic Abuse and Workplace Violence Against Women
Muller, Susan	1998	University of St. Francis	BSN	08/97	NIOSH	Dr. Lucy Marion	Needlestick and Sharps Injuries in an Urban Teaching Hospital
Sternhagen, DeeAnn	2000	University of Iowa	BSN	12/86	NIOSH	Dr. JoEllen WIlbur	Integrated Literature Review of the Efficacy of Ergonomic Training Programs for Office Workers Using Computers
Walls, Malik	2002	Chicago State University	BSN	05/99	NIOSH	Dr. Shannon Lizer	Prevention of Obesity in African American Males Ages 25-35

Table OHN-10. Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Yingling, Charles	2002	Loyola University	BSN	05/99	NIOSH	Dr. Shannon Lizer	Patterns and Predictors of Violence on Inpatient Medical/Surgical Units: An Integrative Literature Review
Year 2, 07/04-06/05							
Connor, Jorgia	See Above						
English, Airn	See Above						
Fearn, Cynthia	See Above						
Johnson, Kathryn	See Above						
Katula, Sarah	See Above						
Masters, Deborah	2004	Northern Illinois University	BSN	05/03	NIOSH	Dr. Arlene Miller	Role of Medical Interpreters in Traumatic Occupational Injuries
Walls, Malik	See Above						
Yingling, Charles	See Above						
Year 3, 07/05-06/06							
Connor, Jorgia	See Above						
Fearn, Cynthia	See Above						
Katula, Sarah	See Above						
Masters, Deborah	See Above						

Table OHN-10. Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Sternhagen, DeeAnn	See Above						
Walls, Malik	See Above						
Year 4, 07/06-06/07							
Bowling, Amy	2006	Wright State College	BS	05/08	NIOSH	TBD	TBD
Connor, Jorgia	See Above						
Fearn, Cynthia	See Above						
Katula, Sarah	See Above						
Lara, Silivia	2006	University of Illinois at Chicago	BSN	05/06	NIOSH	TBD	TBD
MacNiell, Sheon	2006	University of Illinois at Chicago	BSN	05/06	NIOSH	TBD	TBD
Masters, Deborah	See Above						
Rubio, Lilliana	2006	University of Illinois	MPH	05/06	NIOSH	TBD	TBD
Year 5 07/07-06/08							
Bowling, Amy	See Above						
Connor, Jorgia	See Above						
Dahilig, Mary	2007	University of Illinois at Chicago	BS	05/97	NIOSH	TBD	TBD
Katula, Sarah	See Above						
Laird-Wilson, Joshua	2007	St. Francis Xavier University	BA	05/00	NIOSH	TBD	TBD

Table OHN-10. Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
MacNiell, Sheon	See Above						
Masters, Deborah	See Above						
Persaud, David	2007	University of Illinois	BS	05/99	VA/NIOSH	TBD	TBD

Refer to: Supplemental Instructions, page 12.

[1] List trainees supported since the last competing renewal application, by year.

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

[3] Use additional lines as needed for multiple sources of support.

Table OHN-13. Minority Recruitment Data[1], Since Beginning of Current Project Period						
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
Year 1: July 1, 2003 to June 30, 2004						
1	1	1	1	in training	NIOSH + RA position	
Year 2: July 1, 2004 to June 30, 2005						
0						
Year 3: July 1, 2005 to June 30, 2006						
0						
Year 4: July 1, 2006 to June 30, 2007						
4	4	3	1	deferred entrance for 1 year		
			2	in training		
			3	withdrew 06/07		
			4	withdrew 06/07		
Year 5: July 1, 2007 to June 30, 2008						
2	2	3	1	withdrew 06/08	NIOSH	
			2	in training	NIOSH + VA funds	
			3	in training	NIOSH	

Refer to: Supplemental Instructions, page 11.

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

Table OM-4b. Academic Training Report, Since Beginning of Current Project Period							
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							
UIC OMR	MPH	16	11	0	0	0	16
Doctorate degree							
Post-doctoral (Include formally registered Occupational Medicine residents in all years of the residency.)[3]							
N/A	N/A	16	11	0	0	0	16
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.

Table OM-5. Tracking Graduates-Academic Training Report[1], Since Beginning of Current Project Period						
Trainee Name (if supported by a NIOSH training grant, denote with *)	Date Entered Program (mm/yy)	Date Degree Awarded (only if at your institution) (mm/yy)	Degree Awarded (also specialty area as noted on degree)	Date of Certificate of Completion (for Occ Med and other Certificate programs) (mm/yy)	Current Employment (Job Title/Employer)	Employed in OS&H Field or Enrolled in OS&H Academic Program? Y/N
Year 1: July 1, 2003 to June 30, 2004						
David Dent*	7/02	5/04	MPH	6/04	Sports Med/Occ Health, Houston	y
Year 2: July 1, 2004 to June 30, 2005						
Jaspal Arora*	7/03	5/05	MPH	6/05	Occ Med Staff Physician/ Aurora Health Care	y
Mita Patel	7/03	5/05	MPH	6/05	Med Director/Lutheran Gen Employee Health	y
Joye Holmes*	7/03	5/05	MPH	6/05	Regional Med Dir/ Amer Airlines	y
Leslie Tharenos*	7/03	5/05	MPH	6/05	Lead Physician/BJC Corporate Health Services	y
Cong Zhao*	7/03	5/05	MPH	6/05	Occ Physician/Kansas	y
Year 3: July 1, 2005 to June 30, 2006						
Tabasum Amir*	7/04	5/06	MPH	6/06	Occ Physician/ Advocate Occ Health	y
John Halpin*	7/04	5/06	MPH	6/06	EIS Officer/USPHS, CDC/Atlanta	y
Year 4: July 1, 2006 to June 30, 2007						
Abhijay Karandikar	7/05	5/07		6/07	Occ Physician/LA	y
Francis Song*	7/05	5/07	MPH	6/07	Correctional Physician/ Correctional Corporation of America	y
Emily Engelland*	7/05	5/07	MPH	6/07	Occ Physician, Franciscan Skemp Mayo Health System	y
Year 5: July 1, 2007 to June 30, 2008						
Howard Chey	7/06		MPH	6/08		y
Joseph Morello	7/06			6/08	US Army	y
Bilue Thomas	7/06			6/08		y

Refer to: Supplemental Instructions, page 8.

[1] Graduate counts include all trainees graduated from the approved programs.

Table OM-6. Trainee Summary Data, Since Beginning of Current Project Period								
Level[1]	# Applicants Applied	# Applicants Offered Admission	# Trainees Entering Training[2]	# Trainees Who Left Program	# Trainees Currently in Training	# Trainees Completed Training	# Post Doc MDs	# Post Doc PhD
Masters	88	27	17	1	6	11	11	0

Refer to: Supplemental Instructions, page 9.

[1] Masters, doctoral, etc.

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

Table OM-9. NIOSH Positions Awarded Since Beginning of Current Project Period, Progress Report for Competing Applications						
Total # NIOSH Positions Awarded[1]	# Pre-Doc Trainees Appointed	Pre-Doc degrees / level	Total # of Months of Support[2]	# Post-Doc Trainees Appointed	Post-Doc degrees/level	Total # of Months of Support[2]
Year 1: July 1, 2003 to June 30, 2004						
5 (one of the six residents was non-citizen)				6	MD/1 PG-3, 5 PG-2	60
Year 2: July 1, 2004 to June 30, 2005						
6 (one of the seven was a non-citizen)				7	MD/5 PG-3, 2 PG-2	72
Year 3: July 1, 2005 to June 30, 2006						
5 (one of the six residents was non-citizen				6	MD/3 PG-3, 3 PG-1	60
Year 4: July 1, 2006 to June 30, 2007						
5 (one of the six residents was non-citizen				6	MD/3 PG-3, 3 PG-2	60
Year 5: July 1, 2007 to June 30, 2008						
5 (one of the six residents was non-citizen				6	MD/3 PG-3, 3 PG-2	60

Refer to: Supplemental Instructions, page 12.

[1] Full-time, full-year NIOSH awards since last competing renewal application.

[2] Total for all months of support for all supported trainees in this category.

Table OM-10. Trainees Supported Since Beginning of Current Project Period[1],Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Year 1							
David Dent	2002	University of Mississippi	DO	05/00	NIOSH/UIC	Linda Forst	Traumatic occupational injuries in the state of Illinois
Jaspal Arora	2003	University of Rajasthan	MBBS	02/92	NIOSH/UIC	Rachel Rubin	Non-fatal occupational injuries presenting to a level I urban Trauma and Burn Unit
Joye Holmes	2003	George Washington University	MD	05/80	NIOSH/UIC	Kathy Duvall	The benefit adequacy of vocational rehabilitation in the state of Illinois
Leslie Tharenos	2003	University of Missouri	MD		NIOSH/UIC	Sam Dorevitch	Comparison and Prevalence of sensitization to common allergens in worker exposed and unexposed to laboratory animal allergens
Cong Zhou	2003	Shandong Medical University	MD	05/85	NIOSH/UIC	Sam Dorevitch	Measuring Asthma severity in Chicago public housing projects using exhaled breath condensate pH
Year 2							
Jaspal Arora	2003	see above	MBBS		NIOSH/UIC		
Joye Holmes	2003	see above	MD		NIOSH/UIC		
Leslie Tharenos	2003	see above	MD		NIOSH/UIC		
Cong Zhou	2003	see above	MD		NIOSH/UIC		
Tabasum Amir	2004	Kasturba Medical College	MBBS	05/00	NIOSH/UIC	Susan Buchanan	Profile of Multiple Chemical Sensitivity in an academic occupational medicine clinic
John Halpin	2004	Loyola School of Medicine	MD	05/95	NIOSH/UIC	Linda Forst	Epidemiology of occupational burns in an outpatient setting
Year 3							
Tabasum Amir	2004	see above	MBBS		NIOSH/UIC		
John Halpin	2004	see above	MD		NIOSH/UIC		
Emily Engelland	2005	Washington University	MD	05/01	NIOSH/UIC	Anne Krantz	Asthma related work disability in low income asthma patients

Table OM-10. Trainees Supported Since Beginning of Current Project Period[1],Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Francis Song	2005	West China University of Medical Sciences	MD	12/82	NIOSH/UIC	Susan Buchanan	Nasopharyngeal Cancer and Occupation in Chengdu, China
Kurt Reintjes	2005	Jagiellonian University	MD		NIOSH/UIC		left program
Year 4							
Emily Engelland	2005	see above	MD		NIOSH/UIC		
Francis Song	2005	see above	MD		NIOSH/UIC		
Howard Chey	2006	Medical College of Wisconsin	MD		NIOSH/UIC	Samuel Dorevitch	
Bilue Thomas	2006	University of Texas Health Sciences Center	MD	05/05	NIOSH/UIC	Peter Orris	
Joseph Morello	2006	Saba University School of Medicine	MD	08/04	NIOSH/UIC	Linda Forst	
Year 5							
Howard Chey	2006	see above	MD	05/08	NIOSH/UIC		
Bilue Thomas	2006	see above	MD		NIOSH/UIC		
Joseph Morello	2006	see above	MD		NIOSH/UIC		
Susan Larson	2007		MD		NIOSH/UIC		
Otuonye Onyewuchi	2007		MD		NIOSH/UIC		

Refer to: Supplemental Instructions, page 12.

[1] List trainees supported since the last competing renewal application, by year.

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

[3] Use additional lines as needed for multiple sources of support.

Table OM-13. Minority Recruitment Data[1], Since Beginning of Current Project Period						
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
Year 1: July 1, 2003 to June 30, 2004						
8	4	4	1	Graduated	NIOSH/UIC	Occ Med Staff Physician/Aurora Health Care
All applications are not accessible for this year			2	Graduated	NIOSH/UIC	Regional Med Dir/ Amer Airlines
			3	Graduated	UIC	
			4	Graduated	NIOSH/UIC	Occ Physician/Kansas
Year 2: July 1, 2004 to June 30, 2005						
8	4	1	5	Graduated	NIOSH/UIC	Occ Physician/Advocate Occ Health
All applications are not accessible for this year			6			
Year 3: July 1, 2005 to June 30, 2006						
37	2	2	7	Graduated	NIOSH/UIC	Correctional Physician/ Correctional Corporation of America
			8	Graduated	UIC	Occ Physician/LA
Year 4: July 1, 2006 to June 30, 2007						
19	3	3	9	Graduated	NIOSH/UIC	
			10	Graduated	NIOSH/UIC	US Army
			11	Graduated	NIOSH/UIC	
Year 5: July 1, 2007 to June 30, 2008						
	3	1	12	In training	NIOSH/UIC	

Refer to: Supplemental Instructions, page 11.

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

Table ASH-4b. Academic Training Report, Since Beginning of Current Project Period							
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							
Technical Systems Management	Bachelor of Science in Technical Systems Management				5	42	47
Ag Education	Bachelor of Science in Agricultural Education				1	2	1
Animal Science	Bachelor of Science in Animal Science				1	3	1
Master's degree							
Human & Community Development	Master of Science in Human & Community Development						
Agricultural &Consumer Economics	Masters of Science in Agricultural & Consumer Sciences				3		3
Natural Resources & Environmental Sciences	Bachelor of Science in Natural Resources & Environmental Sciences				3		3
Doctorate degree							
Veterinary Medicine	Doctor of Veterinary Medicine				1		1
Post-doctoral (Include formally registered Occupational Medicine residents in all years of the residency.)[3]							
Other (specify, e.g., undergraduate Certificate program trainees)							
Crop Sciences	Bachelor of Science in Crop Sciences					4	4
Agricultural Engineering	Bachelor of Sciences in Agricultural Engineering					3	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.

Table ASH-5. Tracking Graduates-Academic Training Report[1], Past 5 Years						
Trainee Name (if supported by a NIOSH training grant, denote with *)	Date Entered Program (mm/yy)	Date Degree Awarded (only if at your institution) (mm/yy)	Degree Awarded (also specialty area as noted on degree)	Date of Certificate of Completion (for Occ Med and other Certificate programs) (mm/yy)	Current Employment (Job Title/Employer)	Employed in OS&H Field or Enrolled in OS&H Academic Program? Y/N
Year 1: July 1, 2003 to June 30, 2004						
Hallam, Dan*	2002	2004	Doctor of Medicine		General Surgeon University of Iowa Hospital and Clinic	N
Nevarez, Juan*	2002	2004	BS In Technical Systems Management		Industrial Hygienest	Y
Wilson, Beth*	2003	2004	BS in Agricultural Education		Vocational Agricultural Instructor	N
Year 2: July 1, 2004 to June 30, 2005						
Cole, Jennifer*	2003	2005	MS in Agricultural and Consumer Sciences		Manager with an agricultural company	N
Maurer, Aaron*	2003	2005	BS In Technical Systems Management		Consultant with an Agricultural Consulting Company	N
Year 3: July 1, 2005 to June 30, 2006						
Morehouse, Emily*	2004	2006	MS in Human and Community Development		Extension Youth Educator, Kansas State University	N
Saldana, Andres*	2004	2006	BS in Technical Systems Management		MS Student in Industrial Hygiene, University of Illinois at Chicago	Y
Year 4: July 1, 2006 to June 30, 2007						
Sauder, Steven	2004	2007	BS in Technical Systems Managementqq		Co-Manager of Sauder Farms	N
Morgan, Kristen	2006	2007	BS in Animal Sciences		Sales Representative with Monsanto Corporation	N

Refer to: Supplemental Instructions, page 8.

[1] Graduate counts include all trainees graduated from the approved programs.

Table ASH-6. Trainee Summary Data, Since Beginning of Current Project Period								
Level[1]	# Applicants Applied	# Applicants Offered Admission	# Trainees Entering Training[2]	# Trainees Who Left Program	# Trainees Currently in Training	# Trainees Completed Training	# Post Doc MDs	# Post Doc PhD
Bachelors	14	7	7	1	1	5		
Masters	9	5	5	1	1	3		
Medical	1	1	1			1		
Veterinnary Medicine	3	1	1		1			

Refer to: Supplemental Instructions, page 9.

[1] Masters, doctoral, etc.

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

Table ASH-9. NIOSH Positions Awarded Since Beginning of Current Project Period
Progress Report for Competing Applications
Only reporting on Graduate Trainees Appointed

Total # NIOSH Positions Awarded[1]	# Pre-Doc Trainees Appointed	Pre-Doc degrees/level	Total # of Months of Support[2]	# Post-Doc Trainees Appointed	Post-Doc degrees/level	Total # of Months of Support[2]
Year 1: July 1, 200x to June 30, 200x						
	1	Medicine	18	0	0	0
Year 2: July 1, 200x to June 30, 200x						
	3	MS	22	0	0	0
Year 3: July 1, 200x to June 30, 200x						
	2	MS	18	0	0	0
Year 4: July 1, 200x to June 30, 200x						
	1	Veterinary Medicine	9	0	0	0
	1	MS	10	0	0	0

Refer to: Supplemental Instructions, page 12.

1 Full-time, full-year NIOSH awards since last competing renewal application.

2 Total for all months of support for all supported trainees in this category.

**No full time Stipends were Awarded only patial stipends

Table ASH-10. Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Year 1							
Hallam, Dan	2002	University of Illinois	PhD	2002	NIOSH	Aherin	Pulmonary Analysis of Selected Swine Confinement Workers
Nevin, Nevada	2004	University of Illinois	BS	2003	NIOSH	Aherin	left program
Cole, Jennifer	2003	University of Illinois	BS	2003	NIOSH	Aherin	Transferred to another program
Willson, Beth	2003	University of Illinois	NA	NA	NIOSH	Aherin	NA
Navarez, Jaun	2002	NA	NA	NA	NIOSH	Aherin	Migrant Worker Pesticide Exposure
Year 2							
Maure, Aaron	2003	NA	NA	NA	NIOSH	Aherin	NA
Sauder, Steven	2004	NA	NA	NA	NIOSH	Aherin	NA
Morehouse, Emily	2004	University of Illinois	BS	2004	NIOSH	Aherin	Injury experiences of farm women over 50
Saldana, Andres	2004	NA	NA	2006	NIOSH	Aherin	NA
Year 3							
Sauder, Josh	2005	NA	NA	NA	NIOSH	Aherin	NA
Year 4							
Morgan, Kristen	2006	NA	NA	NA	NIOSH	Aherin	NA
Downs, Michelle	2006	University of Illinois	BS	2006	NIOSH	Aherin	Lighting, Marking and Safe Operation Behaviors of Farm Machinery Operators
Pruemer	2006	University of Illinois	MS	2005	NIOSH	Aherin	Not yet determined but will be a topic related to animal safety

Refer to: Supplemental Instructions, page 12.

[1] List trainees supported since the last competing renewal application, by year.

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

[3] Use additional lines as needed for multiple sources of support.

Table ASH-13. Minority Recruitment Data[1], Since Beginning of Current Project Period						
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
Year 1: July 1, 2003 to June 30, 2004						
2	1	1	#1	Graduated	NIOSH	Entered the MS Industrial Hygiene Program at UIC
Year 2: July 1, 2004 to June 30, 2005						
1	1	1	#2	Graduated	NIOSH	Entered the MS Industrial Hygiene Program at UIC
Year 3: July 1, 2005 to June 30, 2006						
Year 4: July 1, 2006 to June 30, 2007						

Refer to: Supplemental Instructions, page 11.

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

Hazardous Substances Academic Training

Table HSAT-2. Contributing Faculty to the Hazardous Substances Academic Training Program			
Faculty	Position	Research Area	Contribution to HSAT Program, % (Teaching, Advising, Other)
Peter A. Scheff, Ph.D., CIH (#3197), QEP	Professor and Director of IH and HSAT	Characterization and modeling of ambient and workplace air quality; bio-aerosol characterization; environmental modeling and exposure assessment.	Time commitment - 20% - Teaches, EOHS405 Environmental Calculations and EOHS431 Air Quality Management; research advisor; short courses; Director of Air Pollution Training Institute program at UIC.
Lorraine M. Conroy, Sc.D., CIH (#5500)	Associate Professor	Design of ventilation systems; TB control criteria; determination of workplace exposure to toxic chemicals; industrial welding.	Time commitment - 10% - Director of ERC; Teaches EOHS421 Fundamentals of IH); Co-Teaches EOHS523 Eng. Control/Ventilation; research advisor; short courses)
Nurtan A. Esmen, Ph.D.,	Professor	Application of engineering principles and mathematics to occupational and environmental health problems with special emphases on aerosol physics, exposure estimation and characterization.	Time commitment - 10% - teaches EOHS 557, Design and Analysis of Experiments, senior research mentor and research advisor.
Rosemary Sokas, M.D., MOH	Professor and Director, EOHS	Applied, translational occupational safety and health organizational work targeting small businesses and vulnerable populations	Time commitment – 5% Teaches EOHS400 Introduction to Environmental Health Sciences; Field research; Director of the academic program.
Salvatore Cali, MPH CIH (#7423)	Senior Research Specialist	Indoor and Industrial air quality, bio-aerosols, lead and asbestos.	Time commitment – 10% - Deputy Director of HSAT; teaches EOHS428 IH Laboratory; contributes to short courses and outreach activities.
John E. Franke, Ph.D., PE, CIH (#1464)	Research Assistant Professor	Workplace characterization and estimation of personal exposure; TB confinement; emission factors.	Time commitment – 20% - Teaches EOHS570 Hazardous Materials Management and co-teaches EOHS523 Engineering Controls; field research advisor.
Steven E. Lacey, Ph.D., CIH	Research	Exposure reconstruction; exposure modeling;	Time commitment – 20% - Teaches IE341 Ergonomics

Table HSAT-2. Contributing Faculty to the Hazardous Substances Academic Training Program			
Faculty	Position	Research Area	Contribution to HSAT Program, % (Teaching, Advising, Other)
(#16269)	Assistant Professor	injury prevention.	and Human Factors, and IE461 Safety Engineering, and co-teaches EOHS 408 Biological, Chemical, Explosives, and Nuclear Weapons as Public Health Threats; research advisor.
John Standard, M.S., MPH, CIH (#2164), CSP	Lecturer	Hazard evaluation and safety control	Time commitment – 10% - Teaches EOHS482 Occupational Safety Science.
Michael Selway, M.S., CIH (#2695)	Lecturer	Noise evaluation and control; field studies.	Time commitment – 10% - Teaches EOHS424 Environmental Acoustics and EOHS529 IH Lababoratory II.
Daniel O. Hryhorczuk, M.D., MPH	Professor	Occupational and environmental epidemiology and toxicology.	Time commitment – 10% - Teaches, IPHS554 Occup. & Environ. Epi; research advisor; short courses.
An Li, Ph.D.	Associate Professor	Environmental Chemistry	Time commitment – 10% - Research advisor; Teaches EOHS440 Chemistry for Environmental Professionals
Dan Tessier, Ph.D.	Assistant Professor	Environmental and Occupational Toxicology	Time commitment -10% - Research advisor; Teaches EOHS455 Environmental and Occupational Toxicology and EOHS 555 - Advanced Topics in Toxicology.
Serap Erdal, Ph.D.	Associate Professor	Exposure assessment, risk analysis	Time commitment - 20% - Research advisor; Teaches EOHS438 Air Quality Lab and EOHS556 Risk Assessment
Linda Forst, MD, MPH	Associate Professor	Worker health; epidemiology of workplace disease and safety.	Time commitment - 10% - Research advisor; Faculty of Occupational Medicine at UIC; teaches EOHS551 Occupational Diseases

Table HSAT-3. Awards, Scholarships, and Research Grants		
Student Name	Award	Date of Award
Bogdan Catalin	Best Poster in Aerosol Science in the graduate student section, American Industrial Hygiene Conference & Exposition in Minneapolis	June, 2008
Shanna Horvatin	Best Poster Occupational Epidemiology in the graduate student section, American Industrial Hygiene Conference & Exposition in Minneapolis	June, 2008

Table HSAT-4b. Academic Training Report, Since Beginning of Current Project Period July 2003-June, 2008							
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							
MS	MS in Public Health Science	14	14	0	0	0	12
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.

Table HSAT-5. Tracking Graduates-Academic Training Report[1], Since Beginning of Current Project Period; July 2003 - June, 2008						
Trainee Name (if supported by a NIOSH training grant, denote with *)	Date Entered Program (mm/yy)	Date Degree Awarded (only if at your institution) (mm/yy)	Degree Awarded (also specialty area as noted on degree)	Date of Certificate of Completion (for Occ Med and other Certificate programs) (mm/yy)	Current Employment (Job Title/Employer)	Employed in OS&H Field or Enrolled in OS&H Academic Program? Y/N
Year 1: July 1, 2003 to June 30, 2004						
Gwennetta Butler *	08/00	12/03	MS (ABET)		Underwrighter's Laboratory	Y
Jamie Paulin *	08/00	12/03	MS (ABET)		USEPA R5 Waste, Toxics and Pesticides	Y
Julie Plavka *	08/01	05/04	MS (ABET)		Teamsters	Y
Lymari Ruiz-Sanchez *	08/01	05/04	MS (ABET)		UIC PhD student	Y
Year 2: July 1, 2004 to June 30, 2005						
Joy Schnackenbeck *	08/02	12/04	MS (ABET)		USEPA Washington DC	Y
Year 3: July 1, 2005 to June 30, 2006						
Justin Ford *	08/02	12/05	MS (ABET)		UIC PhD student	
Year 4: July 1, 2006 to June 30, 2007						
Juan Nevarez *	08/04	05/07	MS (ABET)		OSHA R5 Madison office	Y
Bogdan Catalin *	08/04	12/06	MS (ABET)		UIC PhD student, HUD	Y
Maya Barr *	08/04	12/06	MS (ABET)		Frisco Sanitation District	Y
Danita Murray-Larry *	08/03	05/07	MS (ABET)		US EPA Region 5 Laboratory	Y
Year 5: July 1, 2007 to June 30, 2008						
Tara Alcazar *	08/05	12/07	MS (ABET)		U of Iowa Research Specialist	Y
Charles Dula	08/04	08/07	MS (ABET)		US VA	Y
Carolina Priester *	01/06	05/08	MS (ABET)		Abbott Labs, IH	Y

Refer to: Supplemental Instructions, page 8.

1 Graduate counts include all trainees graduated from the approved programs.

Table HSAT-6. Trainee Summary Data, Since Beginning of Current Project Period; July 2003 - June, 2008								
Level[1]	# Applicants Applied	# Applicants Offered Admission	# Trainees Entering Training[2]	# Trainees Who Left Program	# Trainees Currently in Training	# Trainees Completed Training	# Post Doc MDs	# Post Doc PhD
Masters 2003-04			1	0	7	4		
Masters 2004-05			4	0	7	1		
Masters 2005-06			2	0	8	1		
Masters 2006-07			1	0	8	4		
Masters 2007-08			2	0	6	3		

Refer to: Supplemental Instructions, page 9.

[1] Masters, doctoral, etc.

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

Table HSAT-9. NIOSH Positions Awarded Since Beginning of Current Project Period, Progress Report for Competing Applications						
Total # NIOSH Positions Awarded[1]	# Pre-Doc Trainees Appointed	Pre-Doc degrees/level	Total # of Months of Support[2]	# Post-Doc Trainees Appointed	Post-Doc degrees/ level	Total # of Months of Support[2]
Year 1: July 1, 2003 to June 30, 2004						
7	1	MS	56.5			
Year 2: July 1, 2004 to June 30, 2005						
7	4	MS	71			
Year 3: July 1, 2005 to June 30, 2006						
7	1	MS	70.5			
Year 4: July 1, 2006 to June 30, 2007						
6	0	MS	68.5			
Year 5: July 1, 2007 to June 30, 2008						
5	2	MS	61.5			

Refer to: Supplemental Instructions, page 12.

[1] Full-time, full-year NIOSH awards since last competing renewal application.

[2] Total for all months of support for all supported trainees in this category.

Table HSAT-10. Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Year 1; 07/03-06/04							
Danita Larry	08/03		BS	05/01	NIOSH, EPA	Scheff	Endotoxin Concentrations in Settled Dust Samples from Homes and Schools in the Chicago Metropolitan Area
Year 2; 07/04-06/05							
Charles Dula	08/04	Prairie View A & M University	BS Engineering	05/93	NIOSH, CE Revolving, Campus Safety	Esmen	Sensitivity Analysis For Exposure Reconstruction Using Task Performance Time Study Data
Juan Nevarez	08/04	University of Illinois at Urbana-Champaign, Urbana-Champaign, IL	BS Engineering	05/04	NIOSH, CDC, CPWR Grant	Forst	Occupational Surveillance of Pesticide Poisonings from the Illinois Poison Center Database
Bogdan Catalin	08/04	UIC	BS	12/06	NIOSH, CE Revolving, Demolition Grant	Tessier	MAP kinase activation in human bronchial epithelial cells in vitro following exposure to mild steel welding fumes
Maya Barr	08/04		BS	5/04	NIOSH, P&W	Esmen	
Year 3; 07/05-06-06							
Tara Alcazar	08/05	UIC	BS	05/05	NIOSH, P&W	Lacey	
Carolina Priester	01/06	UIC	BS	12/05	NIOSH, UIC	Conroy	

Table HSAT-10. Trainees Supported Since Beginning of Current Project Period[1], Progress Report for Competing Applications							
Trainee Name[2]	Year Entered Program (yyyy)	Trainee's Previous Institution	Highest Degree at Program Entry	Year Awarded Previous Degree (mm/yy)	Source of Support for Each Year[3]	Name of Research Mentor	Title of Research Project
Year 4; 07/06-06/07							
Shanna Horvatin	08/06	Depaul	BA Communication	10/03	NIOSH, Pratt & Whitney	Esmen	
Year 5: 07/07-06/08							
James Piatek	08/07	UIC	BS, IE	05/07	NIOSH, MWRDGC	Scheff	
Ramon Lopez	08/07	UIUC	BS, Math	05/07	NIOSH, MWRDGC	Conroy	

Refer to: Supplemental Instructions, page 12.

[1] List trainees supported since the last competing renewal application, by year.

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

[3] Use additional lines as needed for multiple sources of support.

Table HSAT-13. Minority Recruitment Data[1], Since Beginning of Current Project Period						
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
Year 1: July 1, 2003 to June 30, 2004						
13	13	1	1	graduated	NIOSH/ EPA	USEPA Region 5 Laboratory
Year 2: July 1, 2004 to June 30, 2005						
11	11	2	2	graduated	NIOSH Pratt & Whitney	US VA
			3	graduated	NIOSH/ UIC	OSHA Region 5 Madison office
Year 3: July 1, 2005 to June 30, 2006						
6	6	2	4	graduated	NIOSH Graduate College	Abbott Laboratories
			5	graduated	NIOSH Pratt & Whitney	University of Iowa
Year 4: July 1, 2006 to June 30, 2007						
8	8	0				
Year 5: July 1, 2007 to June 30, 2008						
		1	6	in training	NIOSH/ MWRDGC	

Refer to: Supplemental Instructions, page 11.

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

Continuing Education

Table CE-11. Continuing Education Faculty *

Faculty Name	Primary Departmental Affiliation	Role in Proposed CE Program
Robert Aherin	University of Illinois at Urbana Champaign	Speaker
Tony Anthony		Speaker
Chike Anyaegbunam	University of Kentucky	Speaker
Marc Applebaum	Rehabiliation Institute of Chicago	Speaker
Symantha Aydt	University of Illinois	Coordinator, Instructor
Laurel Berman	ATSDR Region 5	Speaker
David Birr	Synchronous Energy Solutions	Speaker
Glen Blahey	Manitoba Ag. Food and Rural Iniative	Speaker
Bill Bleich	Champaign Fire Department	Instructor
Larry Boress	Midwest Business Group on Health	Speaker
Ron Bowers		Speaker
Susan Buchanan	UIC SPH	Speaker
Frank Buraski	Buraski Builders	Instructor
Wayne Burton	JP Morgain Chase	Speaker
Salvatore Cali, MPH, CIH	UIC SPH	Speaker
Margaret Cassey	College of Nursing	Speaker
Bogdan Catalin	UIC-EOHS	Speaker
Jim Cavallo	Kouba Cavallo Associates	Speaker
Becca L. Cerf	Conservation Design Forum	Speaker
Robert Cohen	John Stroger Hospital, Divison of Occupational and Pulmonary Medicine	Speaker
Henry Cole	Emeritus Professor Ed.Psych. And Prev. Med	Speaker
Michelle Watters	ATSDR Region 5	Speaker

Table CE-11. Continuing Education Faculty *

Faculty Name	Primary Departmental Affiliation	Role in Proposed CE Program
Lorraine Conroy	UIC-EOHS	Speaker
Bill Coulehan	OSHA	Speaker
Irina Dardynskaia	UIC-School of Public Health	Instructor
Seth Dibblee	US EPA Region 5	Speaker
Lisa DiChiera	Landmarks Preservation Council of IL	Speaker
Samuel Dorevitch	University of Illinois	Speaker
Matthew Dumstorf	United Airlines	Speaker
Don Dyson, MS	John Stroger Hospital, Divison of Occupational Medicine	Speaker
Gary Erisman	Illinois State University (ret.)	Speaker
Greg Evans	University of Illinois	Specialist, Lead Instructor
Doug Farr	Farr & Associates	Speaker
Bill Field	Purdue University	Speaker
Justin Ford	UIC-EOHS	Speaker
Linda Forst, PhD	School of Public Health	Speaker
David Gerard	Advanced Radon Technologies, Inc.	Instructor
Eugene Goldfarb	Independent	Speaker
Jay Goldstein		Speaker
Jame Gregory	University of Texas	Speaker
Igor Grorlinsky	St. Petersburg State University	Speaker
John Halpin	Uic School of Public Health	Speaker
Chris Hanson	Champaign Fire Department	Lead Instructor
Gail Harris, CRTT, CPFT	John Stroger Hospital, Divison of Pulmonary Medicine	Speaker
Thomas Hesterburg	International Trucking and	Speaker

Table CE-11. Continuing Education Faculty *

Faculty Name	Primary Departmental Affiliation	Role in Proposed CE Program
	Engine Corp	
David Hinkamp	UIC SPH Health in the Arts	Speaker
Todd Hitt	Champaign Fire Department	Lead Instructor
Joye Holmes	United Airlines	Speaker
Howard Honig	University of Illinois	Instructor
Brian Houska	Champaign Fire Department	Instructor
Daniel Hryhorczuk	University of Illinois	Speaker
JoAnn Hurd	John H. Stroger Hospital	Presenter
David Jacobs	National Center for Healthy Housing	Instructor
Jon Jenkins	Champaign Fire Department	Lead Instructor
Sarah Katula	College of Nursing	Speaker
Ray Kay	Chicago Fire Department	Lead Instructor
Tracey Keninger	Iowa Easter Seals and Drake Univeristy	Speaker
Tom Kirby	Champaign Fire Department	Instructor
John Q. Knight	Safer Pest Control Project	Speaker
Paul Knight	Domus Plus	Speaker
Anne Krantz	John Stroger Hospital	Speaker
Livia Krzeminski	Abbott Laboratories	Speaker
Julia Lippert	UIC-EOHS	Speaker
Shannon Lizer	Nursing (OHN)	Instructor
David Marder	University of Illinois	Speaker
Terry Mason	Chicago Dept. of Public Health	Speaker
Kevin McAndrew	Champaign Fire Department	Instructor

Table CE-11. Continuing Education Faculty *

Faculty Name	Primary Departmental Affiliation	Role in Proposed CE Program
Joel McCallough	University of Illinois	Instructor
Beverly McElmurry	Nursing (PMA, OHN)	Instructor
Steve Merwise	JP Morgain Chase	Speaker
Vince Michael		Speaker
Deane Mickle	ABE Link	Instructor
Arlene Miller	Nursing (PMA, OHN)	Instructor
Barry Miller	Champaign Fire Department	Instructor
Rebecca Mischak	Nursing (OHN)	Instructor
Jim Mitchell	East Carolina University	Speaker
Amy Pelka Mucha	UIC-EOHS	Speaker
Calvin Murphy	Radon Mitigation, Inc.	Instructor
John Myers	NIOSH	Speaker
Ted Ned	National Center for Healthy Housing	Instructor
Dorval Norwood	Champaign Fire Department	Lead Instructor
Dan O'Connell	UIC-EOHS	Speaker
Peter Orris	John Stroger Hospital	Speaker
Moises Ortega, RCPT, ASCP	John Stroger Hospital, Division of Pulmonary Medicine	Speaker
Bill Painter	Champaign Fire Department	Lead Instructor
James Patchett	Conservation Design Forum	Speaker
Karen Peters	UIC-School of Public Health	Speaker
Robert Petrea	University of Illinois at Urbana Champaign	Speaker
Deborah Reed	University of Kentucky	Speaker
Mike Rosmann	AgriWellness	Speaker
Rachel Rubin	John Stroger Hospital	Speaker
Kevin Rund	Illinois Farm Bureau	Speaker

Table CE-11. Continuing Education Faculty *

Faculty Name	Primary Departmental Affiliation	Role in Proposed CE Program
Marc Schenker	UC Davis	Speaker
Todd Schoonover	UIC-EOHS	Speaker
Noah Sexias	University of Washington	Speaker
Leslie Stayner	University of Illinois SPH	Speaker
Maryanne Suero, PhD	EPA	Speaker
Daniel Tessier, PhD	UIC-EOHS	Speaker
Belinda Thielen	UNITE HERE	Speaker
David Tomlinson	Champaign Fire Department	Lead Instructor
Michelle Umbarger-Mackey	University of Iowa	Speaker
Jim Van der Kloot	US EPA	Speaker
Keith Volsted	VSI Environmental Service	Instructor
Sylvia Hood Washington	UIC-EOHS	Speaker
Michelle Watters	EPA	Speaker
Caharina Wesseling	Puerto Rico	Speaker
Ryan Wild	City of Bloomington, IL	Instructor
Jacqueline Wuellner	Nursing (PMA, OHN)	Instructor
Joseph Zanoni	UIC-School of Public Health	Speaker

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
EOHS Seminar - Brownfields and Public Health	IH	8	0.2	1.6	3		2	2	1				1		7	
EOHS Seminar - Folk Remedies and Public Health	IH	10	0.2	2	4		4	2							10	
SRA Symposium on Land Resuse	IH	15	0.5	7.5			10		5	4	6				5	
EOHS Seminar - Occupational Hazards Among Chicago Day Laborers	IH	6	0.2	1.2	2	1	1	2							6	
NORA Seminar - Occupational Saftey and Health Experience for Day Laborers	IH	13	0.2	2.6	6		5		2						8	5
Society for Environmental Toxicology Midwest Chapter 2007 Seminar	IH	94	2.5	235			74		20	23	29	4			32	6
AIIHA Chicago - Occupational Exposure to Isocyanates	IH	24	1	24			24			20	2		1		1	
EOHS Seminar - Risk Mapping	IH	7	0.2	1.4	2		2	3							7	
NORA Seminar - Acute and Chronic Poisonings from Exposure to Chlorpyrifos	IH	10	0.2	2	4	1	3		2						8	2
EOHS Seminar - Epidemiological Study of Asbestos Fiber Dimensions and Respiratory Disease	IH	11	0.2	2.2	4		4	3							11	
Disease & Vector Management-West Nile Virus	IH	5	0.2	1	1		1		3				2		2	1
Mold and fungi	IH	9	0.2	1.8					9	2			1		3	3

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
Performing an Environmental Audit at Your School	IH	2	0.2	0.4					2	1						1
Taking an Environmental History	IH	13	0.2	2.6	1	2	7		3	1			3		9	
Taking an Occupational History	IH	10	0.2	2	1	7	2			3			1		2	4
Principles of Environmental Health	IH	11					8		3					11		
IDPH Safe Chemicals in School Projects	IH	6	0.2	1.2					6				1			5
Conducting an Exposure Assessment	IH	7	0.2	1.4	3	2			2	4					1	2
Subtotal IH		**261**	**6.8**	**289.9**	**31**	**13**	**147**	**12**	**58**	**58**	**37**	**4**	**10**	**11**	**112**	**29**
NIOSH Approved Spirometry	OHN	31	2	62	1	17			13	20	1		1		8	1
IL Occupational Health Nursing Association 31st Annual Conference	OHN	55	3	165		55				33			11		11	
NIOSH Approved Spirometry	OHN	19	2	38		16			3	7					6	6
Nurses and Unions	OHN	18	1	18		18				11			5		2	
Subtotal OHN		**123**	**8**	**283**	**1**	**106**	**0**	**0**	**16**	**71**	**1**	**0**	**17**	**0**	**27**	**7**
In Flight Medical Emergencies	OM	12	0.2	2.4	12					3		4	5			
Occupational Medicine - USPSTF Guidelines	OM	5	0.2	1	5										5	
Occupational Medicine - Forging	OM	5	0.2	1	5										5	
Occupational Medicine - Occupational Toxicology	OM	7	0.2	1.4	7										7	
Medication Compliance - It's Impact on Short Term Disability Absences	OM	13	0.2	2.6	13					3		5	5			

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
Occupational Medicine - Occupational Toxicology	OM	7	0.2	1.4	7										7	
EOHS Seminar - Occupational Aspects of Avian Flu	OM	11	0.2	2.2	4	2	1	4					1		10	
Occupational Medicine - Ethics in Occupational Medicine	OM	4	0.2	0.8	4										4	
Occupational Medicine - Health Hazards In the Arts	OM	7	0.2	1.4	7										7	
Occupational Contact Dermatitis	OM	19	0.2	3.8	19										19	
Occupation Medicine - Brain Tumors and the Environment	OM	7	0.2	1.4	7										7	
Benchmark year results of a Study of the Effect of the Structure of Benefit Pkgs	OM	14	0.2	2.8	14					3		6	5			
Occupational Medicine - Acute and Chronic Effects of Arsenic	OM	2	0.2	0.4	2										2	
Occupational Med - DDT/Malaria	OM	4	0.2	0.8	4										4	
Reproductive Hazards in the Workplace	OM	10	0.2	2	10					3		5	2			
Occupational Medicine - Environmental Disasters	OM	4	0.2	0.8	4										4	
Occupational Medicine - Workers Lung	OM	5	0.2	1	5										5	

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
Climate Change: Current Understanding of the Causes and Potential Ways to Mitigate	OM	14	0.2		14					3		5	4		2	
Occupational Medicine - Occupational Toxicology	OM	7	0.2	1.4	7										7	
Medical Directors - Therapies for Acute and Chronic Pain	OM	21	0.2	4.2	21					8		6	5		2	
Occupational Medicine - Beryllium Testing	OM	5	0.2	1	5										5	
Occupational Medicine - Environmental Lead	OM	7	0.2	1.4	7										7	
Occupational Medicine - Risk Assessment	OM	6	0.2	1.2	6										6	
Medical Directors - FMLA and ADA	OM	13	0.2	2.6	13					8		3	2			
Occupational Medicine - Assessment of Dermal Pesticide exposure	OM	7	0.2	1.4	7										7	
Medical Directors - Challenge of Chronic Disease in Chicago	OM	13	0.2	2.6	13					8		4			1	
Occupational Medicine - TLVs	OM	6	0.2	1.2	6										6	
EOHS Seminar - Occupational Medicine Physicians and the US	OM	3	0.2	0.6	1			2							3	
Occupation Medicine - Biomarkers	OM	4	0.2	0.8	4										4	
Occupational Medicine - COPD and	OM	7	0.2	1.4	7										7	

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
Occupation from an Epi Perspective																
Cancer Clusters	OM	5	0.2	1	1	1			3				3		1	1
Medical Waste	OM	3	0.2	0.6	2	1							3			
Spotlight on Children's Environmental Health	OM	2	0.2	0.4					2						2	
High blood lead identification and screening	OM	2	0.2	0.4		1			1				2			
West Nile Virus Update	OM	3	0.2	0.6					3				2			1
Subtotal OM		**264**	**7**	**50**	**243**	**5**	**1**	**6**	**9**	**39**	**0**	**38**	**39**	**0**	**146**	**2**
Essentials of Healthy Homes	OS	19	2	38		3		10	6	6			13			
Healthcare Workers Train the Trainers	OS	10	0.2	2			2		8	8					2	
Addus Homecare Training - Bloodborne Pathogens	OS	367	1	367				4	363	363					4	
Addus Homecare Training- Bloodborn Pathogens	OS	299	1	299					299	299						
Addus Homecare Training - Bloodborne Pathogens	OS	180	1	180					180	180						
Essentials of Healthy Homes Oakbrook	OS	18	2	36			10		8	8			10			
Addus Homecare Training- Bloodborn Pathogens	OS	340	1	340					340	340						
EOHS Seminar - The Ongoing Battle for Worker's Health	OS	7	0.2	1.4	3		2	2					1		6	
EOHS Seminar - Health and Safety Among South African Miners	OS	9	0.2	1.8	5		2	2					2		7	
OSHA 10 Hour General Industry (Spanish)	OS	13	2	26					13	13						
Addus Homecare	OS	384	1	384					384	384						

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
Training - Infectious Diseases																
Essentials of Healthy Homes Contract	OS	31	2	62		5	5		21	4	3		16			8
Essentials of Healthy Homes Contract	OS	21	2	42		3	2		16				21			
EOHS Seminar - OSHA Overview	OS	5	0.2	1	2		1	2					2		3	
OSHA 511 Occ. Safety and health Standards for General Industry	OS	11	4	44				11		8					3	
Addus Homecare Training - Infectious Diseases	OS	302	1	302					302	302						
Addus Homecare Training - Infectious Diseases	OS	122	1	122					122	122						
Addus Homecare Training - Infectious Diseases	OS	100	1	100					100	100						
Addus Homecare Training - Infectious Diseases	OS	100	1	100					100	100						
Addus Homecare Training - Infectious Diseases	OS	125	1	125					125	125						
Illinois Safety Council (ISC) - Making Safety Committees Effective	OS	13	0.3	3.9				13		13						
ISC - Planning Safety Meetings	OS	10	0.3	3				10		10						
Addus Homecare Training-Infectious Diseases	OS	80	1	80					80	80						
ISC - Material Handling and Storage Issues	OS	6	0.3	1.8				6		6						
Addus Homecare Training - Infectious Diseases	OS	60	1	60					60	60						
Illinois Safety Council	OS	34	2	68				34		20		2	11		1	

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
Seminar and Expo																
UIC- Radon Measurement	OS	49	2.5	122.5					49	49						
UIC- Radon Measure CE	OS	2	1	2				2		2						
UIC- Radon Mitigation	OS	32	2.5	80					32	32						
UIC- Radon Mitigation CE	OS	3	1	3				3		3						
Radon Best Practices: Murphy's Law	OS	7	0.2	1.4				7		7						
Radon Best Practices: Measurement and Mitigation	OS	3	0.2	0.6				3		3						
Radon Science CE Series: The Basics of Radon	OS	6	0.2	1.2				6		6						
Radon Science: Epidemiology Of Radon	OS	3	0.2	0.6				3		3						
Radon in School and Commercial Buildings	OS	3	0.2	0.6				3		3						
Passive to Active Mitigation Systems	OS	8	0.5	4				8		8						
Radon Best Practices: Measurement	OS	2	0.2	0.4				2		2						
Radon Resouces for Public Health Professionals	OS	13	0.2	2.6	1	2	2		8	4			3			6
Collaborative IRB Training Initiative	OS	1	0.5	0.5			1			1						
Lead Poisoning Prevention and Removal	OS	4	0.2	0.8	1				3				2			2
Subtotal OS		**2802**	**39.3**	**3010.1**	**12**	**13**	**27**	**131**	**2619**	**2674**	**3**	**2**	**81**	**0**	**26**	**16**
Emergency Response Refresher	HST	15	5	75				15					15			
40 hour Technician Training	HST	1	4	4				1					1			
40 hour Hazwoper	HST	4	5	20				4					3		1	

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																	
					# Trainees by Profession					# Trainees by Employer							
Course/Seminar Title*	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	
Class																	
8 hour Hazwoper Refresher	HST	10	1	10				10					10				
8 hour Hazwoper Refresher	HST	2	1	2				2					2				
8 hour Hazwoper Refresher	HST	1	1	1				1					1				
40 hour technician Training	HST	10	5	50				10					8			2	
Industrial Emergency Response	HST	1	3	3				1							1		
8 hour Hazwoper Refresher	HST	5	1	5				5					5				
8 hour Hazwoper Refresher	HST	20	1	20				20				20					
8 hour Hazwoper Refresher	HST	20	1	20				20					20				
8 hour Hazwoper Refresher	HST	2	1	2				2				2					
8 hour Hazwoper Refresher	HST	4	1	4				4				4					
8 hour Hazwoper Refresher	HST	17	1	17				17				17					
8 hour Hazwoper Refresher	HST	4	1	4				4				4					
8 hour Hazwoper Refresher	HST	4	1	4				4				4					
40 hour Technician Training	HST	10	5	50				10					10				
Subtotal HST		**130**	**38**	**291**	**0**	**0**	**0**	**130**	**0**	**0**	**0**	**51**	**75**	**0**	**2**	**2**	
Overview of Hazards in Illinois Production Agriculture	Ag S&H	7	0.2	1.4	1	3			3	2					5		
Attempting to Understand Agricultural Safety and Health Behaviors	Ag S&H	1	0.2	0.2	1										1		
Energy Safety	Ag S&H	50	0.1	5					50			50					
Agricultural Trauma	Ag S&H	15	0.1	1.5		15				15							

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
and Hazards																
Agricultural Respiratory Illness Diseases and Symptoms	Ag S&H	12	0.1	1.2		12				12						
Common Agricultural Hazards and Illnesses	Ag S&H	25	0.1	2.5	13	12				21					4	
Overview of Illinois Agriculutural Hazards	Ag S&H	16	0.1	1.6	16										16	
Everday Influences on Safety and Health Behaviors	Ag S&H	40	1	40					40	40						
The Aging Farm Community- Using Current Health and Safety to Map the Future	Ag S&H	37	2	74	4	3		16	14	4	2	3	3		22	3
Factors Affecting Mental Health	Ag S&H	42	0.1	4.2					42	42						
Ag Youth Safety	AS&H	96	16	192		15			81	24	6				41	25
Farm Machinery Safety Certification	AS&H	92	1	58					92	15					24	53
Amish Ag Safety	ASH	25	.2	6					19	10						15
Subtotal Ag S&H		**362**	**5**	**195.6**	**35**	**45**	**0**	**16**	**260**	**161**	**2**	**53**	**3**	**0**	**72**	**71**
	Other (specify- i.e. Toxicology, Occ Epi, Ergonomics, Biostatistics, etc.)															
Sustainable Development Panel Series - Financing Green Development Projects	HUD	61	0.5	30.5					61	22	17	4	9		8	1
EOHS Seminar - Sedimentation in the Great Lakes Determined by Spectroscopy		8	0.2	1.6	3		1	4					1		7	
Health and Safety in Theatre Education	HART	29	1	29					29						1	28
Orientation to	HUD	35	4.5	157.5					35	5	4	1	25			

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
Environmental Assessment																
EOHS Seminar - Electromagnetic Field Exposure in Non-destructive Testing		6	0.2	1.2	3		1	2							6	
EOHS Seminar - Asbestos Litigation		10	0.2	2	4		2	4							10	
EOHS Seminar - Occupational Health and Safety and Domestic Violence		7	0.2	1.4	4			3					3		4	
Pullman Tour	Gen	19	0.5	9.5					19						6	13
Green Engineering and Bronwfields Redevelopment	HUD	73	1.5	109.5					73	26	6	2	7		32	
EOHS Seminar - GIS and Public Health		6	0.2	1.2	2		1	3							6	
EOHS Seminar - Environmental Health Disparities in the Great Lakes		3	0.2	0.6	2			1					1		2	
EOHS Seminar - Human Bronchial Epithelial CellsRresponse to Welding Fumes		6	0.2	1.2	3		1	2					1		5	
Elder Abuse Prevention Curriculum Train the Trainer Program		35	1	35		14			21	35						
EOHS Seminar - Occupational Health Issues in Disaster Response		4	0.2	0.8	4										4	
Stormwater Management Training	HUD	36	1	36			7		29	18	7		11			
Orientation to Environmental Assessment	HUD	23	4.5	103.5					23				23			

Table CE-12a. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
Kendall County Stormwater Management Training	HUD	19	1	19					19	10		1	6		2	
Brownfields		1	0.2	0.2			1						1			
Safer Pest Control for Children		1	0.2	0.2					1	1						
Ins and Outs of Integrated Pest Management		5	0.2	1					5	4						1
Sustainable Development Panel Series - Green Highways and Transportation	HUD	31	0.2	6.2					31	11	16		4			
Subtotal Each Other Category		**418**	**17.9**	**547.1**	**25**	**14**	**14**	**19**	**346**	**132**	**50**	**8**	**92**	**0**	**93**	**43**
GRAND TOTALS (All Program Areas		**4360**	**122**	**4666.7**	**347**	**196**	**189**	**314**	**3308**	**3135**	**93**	**156**	**317**	**11**	**478**	**170**
*Group together by Program Area and Provide Sub-Totals for Each Program Area- You may add or delete rows as necessary																

Table CE-12b. CE Course Offerings by Program Area, July 1, 2003-June 30. 2008																
					# Trainees by Profession					# Trainees by Employer						
Course/Seminar Title*	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
Subtotal IH		261	6.8	289.9	31	13	147	12	58	58	37	4	10	11	112	29
Subtotal OHN		123	8	283	1	106	0	0	16	71	1	0	17	0	27	7
Subtotal OM		264	7	50	243	5	1	6	9	39	0	38	39	0	146	2
Subtotal OS		2802	39.3	3010.1	12	13	27	131	2619	2674	3	2	81	0	26	16
Subtotal HST		130	38	291	0	0	0	130	0	0	0	51	75	0	2	2
Subtotal Ag S&H		362	5	195.6	35	45	0	16	260	161	2	53	3	0	72	71
Subtotal Each Other Category		418	17.9	547.1	25	14	14	19	346	132	50	8	92	0	93	43
GRAND TOTALS (All Program Areas		4360	122	4666.7	347	196	189	314	3308	3135	93	156	317	11	478	170
*Group together by Program Area and Provide Sub-Totals for Each Program Area- You may add or delete rows as necessary																

Table CE-12c. CE Course Offerings - Summary by Program Area, Since Beginning of Current Project Period 7/01/03 to 6/30/08															
				# Trainees by Profession					# Trainees by Employer						
Program Area	Total # of Trainees	Number of Courses	Total Pers Days	MD	NURS	HYG	SAFETY	OTHER	Private Industry	Fed Gov	State Gov	Local Gov	Foreign Country	Academic	Other
Industrial Hygiene (IH)	849	48.25	1459.25	59	32	521	105	132	166	189	131	55	21	214	73
Occupational Health Nursing (OHN)	1021	36	1788	48	581	0	31	361	375	63	146	310	0	89	38
Occupational Medicine (OM)	1950	148.8	1413.3	1372	25	47	123	383	457	129	603	181	30	408	142
Occupational Safety (OS)	5655	128.05	7138.95	178	126	194	1794	3363	4501	143	181	402	0	144	284
Hazardous Substance Training (HST)	607	110	980	0	0	0	607	0	73	4	164	232	0	2	132
Agricultural Safety and Health (Ag S&H)	1351	34.9	515.9	104	54	22	149	1022	954	20	90	42	0	204	41
Other OS&H, e.g. Tox, Epi, Ergo, Biostat (OT)	4668	105.1	5761.4	218	44	83	362	3961	620	403	357	623	5	411	2249
TOTAL	**16101**	**611.1**	**19056.8**	**1979**	**862**	**867**	**3171**	**9222**	**7146**	**951**	**1672**	**1845**	**56**	**1472**	**2959**

Appendix 3: Exhibits

Exhibit PPRT-1: Technical Report

Because there is no NIH counterpart to NIOSH, extramural research funding for occupational safety and health is extraordinarily competitive, with success rates much lower than that for other health-related fields, and approaching those traditionally seen for National Science Foundation grants. Accessible pilot funding is critically important to prepare doctoral students, post-doctoral trainees and entry-level faculty members for this challenging climate, and to attract researchers already established in other biomedical disciplines into the field. There are few 'seed' sources of funding available for pilot research ideas developed by new faculty, doctoral students, and post-doctoral researchers. Among post-doctoral trainees in the Illinois Public Health Research Fellowship, a program that trains future public health research scientists, the only successful grant application among the nine applications submitted in the first two years of the program was awarded through the Illinois ERC Pilot Project Research Training Program. Pilot data that can be developed into peer-reviewed publications and to more formal extramural grant applications is critical to career development. The experience gained by the applicants, geared towards preparing them for future extramural grant applications, is extremely important, as is the feedback provided through the rigorous review process. However, it is ultimately the relatively high success rate afforded by the program that engenders the enthusiasm required to sustain the intellectual enterprise.

The Research Coordinator, Program Director and Research Review Committee provide informal outreach throughout the year to individuals and institutions for whom pilot research funding may be appropriate. This takes place both within traditional OSH disciplines at regional and local meetings as well as through interdisciplinary collaborations throughout the UIC School of Public Health and through the UIC Institute for Environmental Science and Policy and the UIC Great Cities Commitment.

In the past nine years, 81% (52 of 64) of PPRTP applications have been submitted by researchers at UIC or UIUC, and ten (10) of those were in departments outside of the ERC, such as the Biological Resources Laboratory or the Department of Pharmacy. The departments outside the ERC are not usually associated with occupational safety and health research. As would be expected, the success rate for departments whose focus is occupational safety and health had a slightly higher funded proposal success rate (71%) than other departments and institutions (58%), but the success rate is good in all categories.

A basic consideration for this program is that the funding should be used to explore new and creative research approaches that will generate pilot data that can provide the basis for full-scale research grant proposals. Pilot grant proposals are evaluated for relevance to NORA objectives, for the clarity of the identified research goal, the significance of the question to be addressed, approach, feasibility, and plans for subsequent use of the pilot data to develop a more complete approach to the question that would result in an application for further research funding through a formal investigator-initiated grant process. Other considerations that factor into scoring include multi-disciplinary and multi-stakeholder approaches and workplace interventions. The latest (FY2009) set of application instructions and further details about the process are available at: http://www.uic.edu/spha/glakes/funding.html. The application process and instructions are reviewed for clarity and modified as needed from year to year.

The Research Coordinator, Salvatore Cali, MPH, CIH, serves as the primary contact for program applicants. He answers questions about the application process and provides advice regarding budgeting and human subjects issues, and works with business personnel to establish UIC accounts or sub-contracts with non-UIC entities for new awards.

After the award, Mr. Cali tracks the progress of projects, especially in regard to difficulties that new researchers may encounter, including sub-contract or sub-account completion, protocol approval

completion, and revisions to budgets. He also maintains records of all grants submitted, reviewer comments, final priority scores, grants awarded, and amounts awarded.

Each successful grantee is required to submit both programmatic and financial progress reports to Mr. Cali at least annually. In addition, Mr. Cali and Ms. Jennifer Rios, the Outreach Coordinator for future PPRTP rounds, will track publications or presentations based on the grant; new products or processes; and full grant submissions based on pilot data collected through the PPRTP award.

Program competition

The ERC Research Committee has prepared a Request for Proposal (RFP), including forms and instructions, in electronic formats that are easily downloaded from web pages or e-mailed as attachments. Based on committee discussion during past years' selection process, additional guidance and updates are provided in application instructions. These include requesting a more explicit description of research goals and objectives, and a letter of support from a more experienced research advisor. The latest versions of the instructions and application forms are attached in the PPRTP Appendix to this proposal. The RFP forms include:

- Background about the Program;
- Eligibility of Applicants;
- Types and Categories of Support;
- Format of Application;
- Budget Guidelines;
- Review Process;
- Review Criteria;
- Administration of Awards;
- Instructions for IRB review or animal research
- Scientific merit review process and criteria

The proposals are compiled the day after the proposal deadline and briefly reviewed by the project coordinator to ensure that they are complete and appear to meet the basic application criteria. Copies of the proposals are distributed to the Research Committee for review. Committee members are assigned primary and secondary review responsibilities, and complete written evaluations of the proposals prior to a formal grant review meeting.

The Committee Chair assigns each proposal to two members of the ERC Research Committee as primary reviewers. The Chair may also invite reviewers from outside the ERC Research Committee, especially if the technical aspects of the proposal are outside the expertise of our Committee. The proposals are scored using the NIH ranking system according to pre-set evaluation criteria. The Chair convenes a meeting of the entire ERC Research Committee to review all of the proposals. The primary reviewers present their scores, and following discussion by the entire Committee, all members score each proposal. At the full meeting, the Committee has the right to triage proposals that do not have the scientific merit to be considered for award (reviewed but not discussed). The Committee makes the final decision as to which proposals will be funded and the amount of funding that will be granted. Applicants receive the written comments of the reviewers as well as their priority score.

The following criteria are used to evaluate the applications:

1) Significance: Extent to which the project, if successfully carried out, will make an original, important and/or novel contribution to the relevant field;

2) Approach: Extent to which the conceptual framework, design, methods, and analyses are properly developed, well-integrated, and appropriate to the aims of the project;

3) Feasibility: The likelihood that the proposed work can be accomplished by the investigators, given their documented experience and expertise, past progress, preliminary data, requested and available resources, institutional commitment, and (if appropriate), and documented access to other research or technologies;

4) Submission: Plan for submission to external funding agency (specify) and expected submission date.

Preference is given to applications that display scientific merit and develop one or more of the following:

- Research capacity building in trainees and new investigators;
- Regional occupational safety & health needs;
- Participation of multiple stakeholders, including employers, employees, labor unions, professional trade associations, private non-for-profit organizations, and academia;
- Workplace intervention and intervention effectiveness;
- Scientific merit; and,
- Multi-disciplinary approaches.

Preference is given to proposals from the following states in this ERC region: Illinois, Wisconsin, Indiana, and Missouri.

Collaboration with Regional Research Training Institutions, Including TPGs

The program collaborated with the University of Iowa's TPGs, until that institution established its own Education and Research Center in 2002. Nancy L. Sprince, MD, MPH, a Professor of Occupational and Environmental Health and Internal Medicine at University of Iowa College of Public Health, served on the Research Committee during its first years. Richard Steffen, PhD, Associate Professor in the Agriculture Department at Illinois State University and Dr. Robert Aherin, Professor in the College of Agricultural, Consumer, and Environmental Sciences and is the Director of the Agricultural Safety and Health Program at UIUC provide a strong agricultural safety vision to the committee.

Outreach to the local TPGs resulted in two proposals received from the TPGs at Purdue University in Indiana and University of Wisconsin-Stout, which were successful in the competitive review and received awards. The award at Purdue was withdrawn by the PI.

The PPRTP has also reached out to other institutions, including successful awards to the University of Iowa and the Department of Physical Therapy at Marquette University and the Department of Occupational Therapy at the University of Wisconsin-Milwaukee.

Outreach has included all Divisions within the UIC School of Public Health, all Colleges in UIC, as well as the two additional campuses within the University of Illinois system. Pilot grants have been awarded to investigators in Community Health Sciences, Epidemiology/Biostatistics, Applied Health Sciences, Pharmacy, and the Biological Resources Laboratory. Awards were also made to the Agricultural and Biological Engineering Department at the University of Illinois Urbana-Champaign, in addition to awardees in the Illinois ERC, both industrial hygiene and occupational medicine trainees as well as faculty members, and the College of Nursing. In addition to enhancing the research capacity of the principal investigators, these awards funded graduate students at the Master's and Doctoral levels to work as Research Assistants on the research projects, amplifying the impact of the research training.

On April 21, 2004, Illinois ERC hosted a symposium of nine presentations by NIOSH funded Pilot Project Research Training Grantees, with the participation of the Heartland Center for Occupational Health &

Safety at the University of Iowa. The Heartland Center presenters participated via televised distance conference technology. Twenty-six persons attended the symposium at UIC. The symposium generated a great deal of interest from participants and served to highlight the research training opportunities offered by the PPRT program. Plans are currently underway to schedule a second NORA pilot project research symposium for Spring, 2008, to highlight recently completed projects and to encourage follow-up grant applications, with a particular focus on the relationship between the pilot project and subsequent career development (K award) or formal pilot project (R-03) award applications. The addition of the Illinois Public Health Research Fellowship to UIC SPH has enhanced the mentoring capabilities of UIC faculty and has overall increased interest in research career development.

Exhibit PPRT-2: Pilot Project Announcement and Instructions

The University of Illinois at Chicago
Occupational & Environmental Health & Safety
Education and Research Center (Illinois ERC)
School of Public Health
2121 West Taylor St. (M/C 922)
Chicago, IL 60612-7260

DATE: February 1, 200…

The Occupational and Environmental Health and Safety Education and Research Center at the University of Illinois at Chicago (Illinois ERC) is soliciting proposals for the next round of Pilot Project Research Training funds. The funds are intended for new occupational safety & health investigators in Fiscal Year 200…-200… The availability and amount of funding for this initiative is contingent on the Pilot Project award provided by NIOSH.

The purpose of the awards is to:

1. Develop research expertise and capacity in ERC research trainees and new investigators;
2. Support new investigators in establishing new research areas; and,
3. Encourage established investigators from other fields to apply their expertise to NORA topics. For more information, go to: www.cdc.gov/niosh/nora/

The awards are intended to provide investigators with the resources needed to develop pilot information about a research hypothesis, with the expectation that investigators will subsequently develop fully formed extramural research applications on the basis of this pilot information.

Questions concerning the applications and funding may be addressed to:

Salvatore Cali, Project Coordinator
Illinois ERC
School of Public Health
2121 West Taylor St. (M/C 922)
Chicago, IL 60612-7260
Phone 312/996-5722
E-mail: scali@uic.edu (Inquiries by e-mail preferred).

DEADLINE AND COPIES REQUIRED

Illinois ERC requires ONE ORIGINAL, signed by the department head and principal investigator, PLUS 8 COPIES (of the entire application, proposal, and attachments) AND ONE ELECTRONIC COPY (of the application, budget, budget justification, & proposal narrative). Applications must be received on or before Monday, April …, 200… at the address above. Late applications will not be accepted. Application forms and instructions may be downloaded from the following web site:

http://www.uic.edu/spha/glakes/funding.html

ELIGIBILITY

Eligible: New occupational safety & health investigators; investigators from other disciplines who have recently begun targeting occupational safety & health topics; pre-doctoral students and post-doctoral trainees; new faculty, assistant professors, research scientists, academic professionals, or faculty associates are eligible for these awards. NIOSH has traditionally defined research training as being at the doctoral level with the objective of helping to prepare trainees for research careers.

Not eligible: Tenured faculty, RO1 investigators, and investigators with greater than 10 years of post-doctoral research experience are not eligible as principal investigators, unless this is a first-time application for research in occupational safety and health. Established investigators in behavioral sciences and in economics are especially encouraged to apply.

TYPES AND CATEGORIES OF SUPPORT

Three to six awards ranging from $6,000 to a maximum of $20,000 are available for one year of funding. A total of approximately $80,000 is expected to be available for the year. Future funding may be available for research showing merit, depending on availability of funds. The awards are contingent on NIOSH funding.

FORMAT OF APPLICATION

The application and budget forms attached to these instructions must be completed. In addition, a maximum of ten pages of text for the full research proposal must be attached to the application forms. No more than ten pages of proposal narrative will be accepted.

The narrative should be organized as follows:

- Introduction/background
- Objectives
- Methods
- Expected outcomes/contribution to field/significance
- Anticipated difficulties and approaches to overcoming them

The Appendices should include

- Budget (A generic budget calculation spreadsheet is available on this web site)
- Budget justification
- Timeline
- Curriculum Vitae of the Principle Investigators and other relevant documentation may also be attached to the application as appendices. Incomplete applications or applications including more than ten pages of proposal narrative will be returned without review.
- A letter of support from a senior-level faculty project advisor will strengthen most applications.

Applicants must also identify and complete arrangements for a research mentor who will provide guidance for the research. A signed agreement to mentor from a senior investigator is required (see application). Further information on the role of a research mentor is available at:

http://grants1.nih.gov/grants/guide/pa-files/PAR-04-105.html under the Special Requirements section.

RESEARCH INVOLVING HUMAN SUBJECTS

If the proposed project involves research on human subjects, the applicant must comply with the Department of Health and Human Services Regulations (45 CFR Part 46) regarding the protection of human research participants. Assurance must be provided to demonstrate that the project will be subject to initial and continuing reviews by an appropriate institutional review board. Please see Illinois ERC's Research Policy at:

http://www.uic.edu/spha/glakes/funding.html

It is strongly recommended that applicants familiarize themselves with the policy statement and with the human subjects review process at their sponsoring organization. Award funds cannot be released until we receive documentation of human subjects review or exemption and NIOSH reviews the documentation, including OMB Form 310. Previous awards under this program have been delayed because grantees did not begin their human subjects review application promptly.

PROPOSALS FOR RESEARCH AT FOREIGN PERFORMANCE SITES

Such projects are discouraged for a number of reasons including IRB approvals required at both your institution and in the performance site country, as well as prior PGO approval of any foreign travel involved. Review of such projects has proven to be very time-consuming and not consistent with the usual short time frame for pilot projects. Proposed projects also must have a clear justification of the relevance to worker protection issues in the U.S. given the focus of the OSH Act on the U.S. workforce.

OTHER SPECIAL REQUIREMENTS

Research funded by Illinois ERC must also meet DHHS and NIH requirements regarding inclusion of women, minorities, and children, and use of animal subjects, and use of funds for lobbying activities. Please see Illinois ERC's Research Policy at:

http://www.uic.edu/spha/glakes/funding.html

BUDGET GUIDELINES

Request the minimum amount of funds that will allow you to conduct the research. Justify each item clearly. Indirect costs will be allowed to a maximum of 8% of each item. A maximum of $500 of this funding may be requested for equipment costs, with matching funds required for equipment costing more than $500. Equipment costing more than $2,000 will not be funded in whole or in part, due to the limited funds available under this program. Applications that include matching funds should detail those funds on the application budget worksheet. Be sure to include personnel fringe benefits and indirect costs as part of the budget. Check with your employer's business office to confirm fringe rates; indirect costs are capped at 8% for these awards. It is not necessary to add tuition remission charges to the budget for research assistants at UIC for these awards.

All fund awards must be utilized in full by June 30, 200…, the end of the fiscal year. There is no mechanism to extend the award beyond June 30, 200….

REVIEW PROCESS

Proposals will be reviewed by a subcommittee of occupational safety and health professionals. The full committee includes representatives from Industrial Hygiene, Occupational Health Nursing, Occupational

Medicine, and Agricultural Safety and Health. The subcommittee reviewing individual proposals in detail will include representatives most appropriate to the proposal.

REVIEW CRITERIA

The following criteria will be used to evaluate the structure of the proposal applications:

4. Significance: The extent to which the project, if successfully carried out, will make an original, important and/or novel contribution to the relevant field.
5. Approach: The extent to which the conceptual framework, design, methods, and analyses are properly developed, well integrated, and appropriate to the aims of the project.
6. Feasibility: The likelihood that the proposed work can be accomplished by the investigators, given their documented experience and expertise, past progress, preliminary data, requested and available resources, institutional commitment (if appropriate), and documented access to other research or technologies.
7. External Funding Plan: A description of how the results will be leveraged into external applications, a time-line for proposal grant submission to external funding agency (specify), and a plan for expanding the work as a line of research.

The following questions may be helpful in addressing the criteria described above:

- Will the information be relevant to the field, represent novel research or have apparent applications?
- Will results allow the investigator to be more competitive in generating other research funding?
- Is the rationale easily understood, ideas easy to follow?
- Are the hypothesis, objectives and experimental approach concise and logical?
- Is the time frame realistic for the one-year objectives of the investigator?

Preference will be given to proposal applications that address a NORA priority area and include one or more of the following:

- Research capacity building in trainees and new investigators;
- Regional occupational safety & health needs;
- Participation of multiple stakeholders, including employers, employees, labor unions, professional trade associations, private non-for-profit organizations, and academia;
- Workplace intervention and intervention effectiveness;
- Scientific merit; and,
- Multi-disciplinary approaches.

Preference will be given to proposals from the following states in the Illinois Center's region: Illinois, Wisconsin, Indiana, and Missouri.

Previous award recipients may apply for continuation funding by indicating previous award, explaining current project progress, and indicating the purpose of the additional funding. However, priority will be given to new applicants.

ADMINISTRATION OF AWARDS

The amount of funding will be noted in an award letter or e-mail. UIC will establish award accounts for UIC recipients and subcontracts for non-UIC recipients. Accounts will be managed by award recipients

and/or their business offices. Recipients will be required to provide periodic reporting of research progress and expenditures. Prior written approval must be obtained from the Research Committee before modifications are made to the budget or research focus. Allowable expenditures must be incurred only within the project period. Award decisions will be announced by July 1, 200… or earlier. It should be noted that in previous years, the official notice of award has been delayed pending notice of award from NIOSH to UIC.

Please note that progress reports may be requested periodically after projects are awarded, and post-project completion reports on publications, presentations, and other project outcomes will be requested semi-annually.

End of Exhibit 1