

FINAL PROGRESS REPORT

**UNIVERSITY OF PITTSBURGH
GRADUATE SCHOOL OF PUBLIC
HEALTH
PITTSBURGH, PA 15261**

**OCCUPATIONAL MEDICINE
GRADUATE
TRAINING GRANT
7/1/01-6/30/06**

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**Final Performance Report
Training Grant T01/OH008616**

**2001 - 2006
University of Pittsburgh
Pittsburgh, PA 15261**

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Final Performance Report Training Grant T01/OH008616

ABSTRACT

NIOSH support for the Occupational Medicine Residency at the University of Pittsburgh, Graduate School of Public Health remains instrumental in maintaining the strength of the program. These Training Grant funds have been used exclusively for trainee expenses, stipends and support throughout the period of the grant. There remains strong institutional support for the program. The program remains strongly focused on producing well-trained Occupational Physicians.

During the five-year training period from July 1, 2001 to June 30, 2006, the Occupational Medicine Residency graduated 18 residents. All are employed in the specialty of Occupational Medicine, serving in industry, academia, hospital-based and freestanding clinics. 92% of those taking the Board Examinations passed the exam. Several more are planning to take the exam in the near future. Two new resident physicians began the residency in August, 2006.

The Academic Program has retained its essential character, with the addition of a new course and extended seminars, while the Practicum Training has been upgraded to include more clinical training and more Public Health exposure for the residents. The program continues to attract residents locally, nationally and internationally.

SIGNIFICANT FINDINGS

The NIOSH Training Grant for Training Physicians in Occupational Medicine has provided continuous support to the Occupational Medicine Residency at the University of Pittsburgh, Graduate School of Public Health during the reporting period July 1, 2001 through June 30, 2006. This support has been used exclusively for trainee expenses, stipends, and support during the grant period.

During the reporting period, 18 physicians (Appendix A) successfully completed the Occupational Medicine Residency.

92% graduates taking the Board Exam in the period from July 1, 2001 to June 30, 2006 have passed the Specialty Board Exam in Occupational Medicine. Other graduates are planning to take the exam this coming fall

Joseph J. Schwerha, M.D., M.P.H. is the Director of the program. Dr. Schwerha brings a wealth of experience, having been the Corporate General Manager of Health Services, and Medical Director for U.S. Steel Corporation. Dr. Jay Harper takes an active role as a part-time faculty member in the department. Dr. Michael Kuniak serves as a clinical faculty member.

Dr. Luis Ortiz is an Associate Professor of Environmental and Occupational Health and Director, Division of Occupational and Environmental Medicine. He is an NIH -funded researcher in the field of particle induced-lung fibrosis. Dr. Ortiz devotes his clinical time to the Dorothy P. and Richard P. Simmons Center for Interstitial Lung Disease and is responsible for the study of individual affects of interstitial lung diseases in response to environmental exposures. He also directs an Occupational Pulmonary Disease Clinic which the residents can attend. Dr. Ortiz contributes greatly to the program with substantial knowledge in pulmonary medicine and basic research. He contributes 10% of his time.

Dr. Bernard Goldstein, former Dean Graduate School of Public Health, has worldwide recognition in occupational and environmental health and also contributes to our education program. He contributes 5% of his time.

Dr. Robbie Ali contributes 25% of his time and helps with the teaching and field work and is very interested in and devotes much of his time to Environmental Medicine which expanded our teaching in this area.

PROGRAM DESCRIPTION AND ACCOMPLISHMENTS

Background

Occupational medical education and training has strong historical roots at the University of Pittsburgh. As a major industrial center since the turn of the century, the Pittsburgh business community recognized the need for a regional resource and training center for prevention oriented Occupational Physicians. The Department of Occupational Medicine was one of four original academic departments when the Graduate School of Public Health (GSPH) was founded in 1948. The University of Pittsburgh Occupational Medicine Residency Program was one of the first training programs to be accredited by the Accreditation Council on Graduate Medical Education (ACGME).

The modern era of the residency training program began in 1983, when Dr. William McClellan reinitiated Occupational Medicine residency training at the University. Dr. Roy Gibson and Dr. Bertram Dinman were recruited as co-Directors of the Program in 1985 and were joined by Dr. William Gauss, 1987. The reborn residency, downsized due to limited funding, successfully acquired a NIOSH Training Grant in 1986, which provided critical support during the growth and development of the program. Building on the NIOSH funding, the program received strong Institutional support, as well as support from the Industrial Community.

Occupational Medicine continues to play an important role at the University of Pittsburgh. In the late 1980's, the University of Pittsburgh Medical Center began a major initiative to promote and develop 4 broad disciplines for the 1990's: Cancer Treatment and Research; Transplantation; Human Genetics; and Environmental and Occupational Health (EOH). Dr Bruce Pitt is now the department chairman of EOH and is supportive of the program

Achievements

Over the years, the field of Occupational Medicine has evolved and matured. The historical predominance of industry-based practice and "plant physicians" have been joined by a growing number of private, small-group, and hospital-based practitioners who provide Occupational Medicine services for the business community. As such, the Residency Training Program has evolved to include more clinical training sites.

In 1998, the American College of Occupational and Environmental Medicine (ACOEM) developed and defined a list of learning competencies for residents in Occupational and Environmental Medicine. A similar list of competencies for Occupational Medicine Residents has been encouraged by the ACGME. As such, the Occupational Medicine Residency Program has taken efforts to assure that the resident's training encompasses all of these fundamental competencies. A continual tracking of the resident's competencies in Occupational Medicine is done from the time they enter the residency. A base line list of their competencies is established and periodically updated as they continue in the program. Additional time has been allocated to seminars during the year to allow for exposure to areas of competency that might otherwise not be addressed in the Residency Training Program. These efforts provide the appropriate breadth and depth of knowledge, the effective application of which will provide the skills necessary for competency in the practice of Occupational Medicine.

Dr. Joseph Schwerha began as Program Director in February 1998. In the year 2000, Dr. Bruce Pitt was named as the Chairman of the Department of Environmental and Occupational Health. In 2001, Dr. Bernard Goldstein was named as the new Dean of GSPH. Dr. Goldstein is both a nationally and internationally renowned physician in Occupational and Environmental Medicine.

Under the direction of Dr. Schwerha, the Residency Program has continued to flourish. Two of the areas of focus for Dr. Schwerha have been in the areas of Competencies for Occupational Medicine physicians and expanding the role of the department in Research. Dr. Schwerha has expanded the role of Seminars, Journal Club, Grand Rounds and board review sessions for the purpose of providing a well-balanced education and occupational medicine program, which will encompass all the competencies recommended by ACOEM. The University of Pittsburgh Occupational Medicine Residency Program has a long history of close ties with the community in terms of Practicum Rotation sites for the residents. Dr. Schwerha has worked closely with the local preceptors to upgrade the evaluation process and provide meaningful feedback to the residents. There has been a

concerted effort to broaden the resident's Public Health training, especially with regards to practical training, by way of an enhanced involvement with the Allegheny County Health Department. Dr. Bruce Dixon, who is the Director of the Allegheny County Health Department, is also the Director of the Residency Advisory Committee. Dr. Dixon has been quite influential in continuing to provide meaningful practical experience for the residents in rotations with the Health Department.

Dr. Schwerha has also initiated efforts to upgrade the research capabilities of the department in terms of Occupational and Environmental Medicine. Residents develop a thesis based on a research project and some of these have been or are in the process of being published.

The Practicum year (PGY3) enjoys strong support and commitment from local medical directors who hold faculty appointments in the division as well as serving on the Residency Advisory Committee. The residents gain valuable practical experience by rotating through several local industries with the medical directors, including the Bayer Corporation and U.S. Steel Corporation. The residents also learn valuable clinical Occupational Medicine through rotations at Washington Hospital which has very experienced Occupational Medicine physicians. Similarly, the residents gain valuable clinical experience by working at the Concentra Medical Center locations, as well as the UPMC Work Partners Employee Health service, which is under the direction of Dr. Harper. As noted above, there is a renewed commitment to provide an exceptional experience at the Allegheny County Health Department for the residents. The program is also proud to be able to offer the residents rotations with the local OSHA Office, as well as the national OSHA Headquarters in Washington, D.C. US Steel offers a rotation in their plants in the USA and Slovakia.

Mr. Lawrence Keller, former Director of Environmental Health and Safety for the University of Pittsburgh and a former graduate of the Industrial Hygiene Program at the Graduate School of Public Health has been instrumental in teaching Industrial Hygiene courses in the Occupational Medicine Program.

The Academic course work for the residents has remained similar to that in the past. "Issues in Occupational Medicine", which addresses issues and concerns encountered in real-life Occupational Health settings. Various subjects covered include: hazard recognition and control, disability management, independent medical evaluations, budget, staff, equipment, shift work, design of an occupational medical facility, psychological aspects of Occupational Medicine, health problems of health care workers, and financial concepts of Occupational Health clinics. This course compliments the introductory course in Occupational Medicine, which deals mainly with clinical aspects of Occupational Medicine and Toxicology. The faculty of the department teaches the course "Environmental and Occupational Processes, Practices and Programs", which acquaints students with current Environmental and Occupational Health programs and Environmental and Industrial practices and processes through lectures and field trips to select industrial, environmental, and government facilities. This course offers the students the opportunity to see a variety of working conditions that address health and safety

issues. The success of these courses is seen by the large numbers of students from outside the department of Environmental and Occupational Health that are attending classes. These courses have been well received by Master of Public Health students in the Multidisciplinary MPH Program at GSPH. Many of the students are dentists and physicians who are in the process of obtaining their MPH degrees.

As hospital based and group practice programs in Occupational Medicine continue to grow, the practicum rotations for clinical Occupational medicine rotations at Washington Hospital provide more exposure for residents to hospital based comprehensive Occupational Health Services.

The Academic, clinical, research and teaching activities offer exceptional opportunities for integrating all aspects of Occupational and Environmental Medicine into an effective, integrated training program. This program enjoys strong institutional support and has achieved widespread recognition regionally and nationally. NIOSH funding has played a critical role in program development. This grant has laid the foundation for plans to expand the program, utilizing additional faculty and resources to meet regional and national needs for Occupational Health physicians.

Program Description

Leadership and Faculty

The Director of the Program is Dr. Joseph J. Schwerha. He is a Professor in the Department of Environmental and Occupational Health, in the Graduate School of Public Health, and is director of Public Health Preparedness and Disaster Response Certificate Program. Administrative support is currently provided by Dr. Bruce Pitt, Chairman of the Department. A new dean of the Graduate School of Public Health is starting in August 2006

Primary Training Faculty

JOSEPH J. SCHWERHA, M.D., M.P.H. – Director

Dr. Schwerha is a full-time faculty member who devotes 100% of his time to the Residency Training Program. He is Board-Certified in Occupational Medicine by the American Board of Preventive Medicine. Dr. Schwerha has been active within the department's curriculum committee in developing new courses and seminars. Prior to coming to the University, he was General Manager, Health Services and Corporate Medical Director for U.S. Steel Corporation with worldwide responsibility for Medical, Safety, Industrial Hygiene, and Worker's Compensation and the Employee Assistance Programs. He is active with numerous committees both locally and nationally. With a broad background in both Environmental and Occupational Medicine, and extensive experience in Industry, he brings Clinical expertise, organizational skills, Academic focus and a practical experience to the Director's position.

JAY D. HARPER, M.D., M.P.H. – Adjunct Assistant Clinical Professor
Dr. Harper is Board-Certified in Occupational Medicine and is Medical Director of Employee Health for the UPMC Health System. His previous experience includes work in Corporate Medicine and directing Hospital-based Occupational Medicine Programs. Dr. Harper served as President of the Tri-State Occupational Medicine Association

Supporting Occupational and Environmental Medicine Faculty

BRUCE DIXON, M.D. – Medical Director (Allegheny County Health Department)
Dr. Dixon is the energetic Director of the Allegheny County Health Department and close collaborator with the Graduate School of Public Health. Dr. Dixon has supported the involvement of Graduate students into the field of Public Health practice. Dr. Dixon also serves as Chairman of the Residency Advisory Committee.

LAWRENCE W. KELLER, M.S., C.I.H., C.S.P. – Adjunct Assistant Professor of EOH
Mr. Keller was Director of Environmental Health and Safety for the University of Pittsburgh and a former graduate of the Industrial Hygiene Program at the Graduate School of Public Health. Prior to coming to the University of Pittsburgh, Mr. Keller had extensive experience as the leading Industrial Hygienist at PPG Incorporated. Capitalizing on his corporate experience, Mr. Keller has been instrumental in teaching Industrial Hygiene at the Graduate School of Public Health.

LUIS ORTIZ, MD - Associate Professor of Environmental and Occupational Health and Director, Division of Occupational and Environmental Medicine.
He is an NIH -funded researcher in the field of particle induced-lung fibrosis. Dr. Ortiz devotes his clinical time to the Dorothy P. and Richard P. Simmons Center for Interstitial Lung Disease and is responsible for the study of individual affects of interstitial lung diseases in response to environmental exposures. He also directs an Occupational Pulmonary Disease Clinic which the residents can attend. Dr. Ortiz contributes greatly to the program with substantial knowledge in pulmonary medicine and basic research. He contributes 10% of his time.

BERNARD GOLDSTEIN, MD – Professor and Former Dean Graduate School of Public Health.
Has worldwide recognition in occupational and environmental health and also contributes to our education program. He contributes 5% of his time.

ROBBIE ALI, MD, MPH, MPPM – Visiting Assistant Professor and Director, Center for Healthy Environments and Communities.
Contributes 25% of his time and helps with the teaching and field work and is very interested in and devotes much of his time to Environmental Medicine which expanded our teaching in this area.

Other Training Faculty

Milton H Black, M.D., M.P.H.	Adjunct Clinical Associate Professor
Richard P. Bonfiglio, M.D.	Adjunct Assistant Professor
Russellyn S Carruth, Esq.	Adjunct Assistant Professor
Alberto Colombi, M.D.	Adjunct Assistant Professor
Dexter Forbes, M.D.	Adjunct Assistant Professor
Brian S Gordon, M.D.	Adjunct Assistant Professor
Jay Harper, M.D., M.P.H.	Adjunct Assistant Professor
Lawrence Keller, M.P.H.	Adjunct Assistant Professor
Michael P Kuniak, M.D., M.P.H.	Adjunct Assistant Professor
Anna Mathew, M.D., M.P.H.	Adjunct Clinical Assistant Professor Envl & Occ Hlth
Donald J McGraw, M.D.	Adjunct Clinical Associate Professor Envl & Occ Hlth
Lawrence Milchak, Ph.D.	Adjunct Assistant Professor
Donald M. Molenaar, M.D.	Adjunct Assistant Professor
Charles Prezzia, M.D.	Adjunct Assistant Professor
J. David Pipozar, M.P.H.	Adjunct Assistant Professor
Reza Raji, M.D., M.P.H.	Adjunct Assistant Professor
George Schmieler, M.D.	Adjunct Assistant Professor
Teresa Silvaggio, M.D., M.P.H.	Adjunct Assistant Professor
Mary C. Townsend, Dr. P.H.	Adjunct Assistant Professor
Roger Westman, Dr.P.H.	Adjunct Assistant Professor PHP
Robert Wheeler, M.S.	Adjunct Assistant Professor

Program Plan

The overriding purpose of the Occupational and Environmental Medicine Residency at the University of Pittsburgh has always been to prepare physicians for the full-time practice of Occupational and Environmental Medicine. The program emphasizes prevention as the cornerstone of Occupational and Environmental Medicine practice. Common themes which are reiterated throughout the didactic, clinical and practicum rotations include the need for occupational physicians to be familiar with the workplace and job activities of the workers; techniques for hazard identification and exposure prevention; the need for data acquisition skills and problem-solving ability; and development of clinical and diagnostic skills related to occupational diseases and injuries.

Occupational & Environmental Medicine differs from most specialties in its unique position at the interface between society, industry, government and the legal system. The University of Pittsburgh OEM Program stresses real-life application of the cognitive skills acquired during the academic year. A major focus of the training is to instill in the residents the perception that the physician must be capable of investigating workers' exposure to chemical, physical and biologic agents. The program addresses this need by observation and understanding of the work processes.

The Occupational and Environmental Medicine Residents are integrated into the teaching program in toxicology and risk assessment in the Department of Environmental and Occupational Health. This integration, combined with their participation in courses such as Epidemiology, Biostatistics, Health Services Administration, and Environmental Law ensures that the physicians gain an appreciation for inter-disciplinary approaches to occupational and environmental health problems. Participation in classes with students from a variety of backgrounds also engenders an appreciation for other critical elements in Occupational Medicine practice: communication skills and the ability to interact effectively with a broad range of professional colleagues.

The training program has an important mandate to prepare physicians to meet the requirements of the American Board of Preventive Medicine (ABPM) for certification in Occupational Medicine. The Academic and Practicum training schedule is reviewed continually to assure that all general and special requirements of the Board are met, both in name and content. The Program has been extremely successful in this regard as indicated by the fact that 92% of the residents taking the board examination have passed the examination.

The University of Pittsburgh Occupational and Environmental Medicine Residency was given full accreditation in June 2002 for five years by the Accreditation Council on Graduate Medical Education (ACGME) as a two year program: an Academic Year (PGY2) and Practicum Year (PGY3). Currently, the Program is approved for five residents in each year. Physicians entering the program must have, at a minimum,

already successfully completed an acceptable clinical year (PGY1) in a direct patient-care specialty such as Family Practice or Internal Medicine. The Program actively seeks candidates who have additional clinical training or practical experience, and many of the residents are already Board-eligible or certified in another specialty prior to entering the Program.

Our training program is highly committed to increasing the representation of minority groups in our program. Efforts to increase our training of individuals from underrepresented racial/ethnic groups are made by the University of Pittsburgh and our Training Program. The diversity of the training program is exemplified by the fact that the trainees chosen of the past 5 years include the following diverse minority groups: 6 female and 1 Black. The recruitment plan includes the following components.

1. All underrepresented racial/ethnic groups who apply to our program and are qualified are considered for the program.
2. Funds have been set aside to advertise in Minority Journals.
3. We will work closely with our "Center for Minority Health in the Graduate School of Public Health at the University of Pittsburgh" to attract qualified minority candidates.
4. All qualified candidates are interviewed.

Academic Year

The PGY2 year consists of a two to four week orientation period in August, followed by an academic year conducted in the GSPH and leading to the MPH degree. The orientation consists of an overview and introduction to Occupational and Environmental Medicine, with emphasis on the "real -life" practice of Occupational Medicine. Activities in this orientation period include lectures, group discussions, seminars, computer demonstrations and field trips. Residents are also introduced to the UPMC Clinics.

The academic year consists of courses, seminars, individual projects, field trips and a thesis preparation and presentation. Course work in the academic year addresses all cognate areas specified in the general and specific requirements of the American Board of Preventive Medicine. Courses in Toxicology, Safety, Ergonomics, Radiation Health, Biostatistics, Epidemiology, Health Administration, Risk Sciences, Behavioral Sciences, Occupational Medicine, and Environmental and Occupational Health Law prepare the trainees for entrance into the Practicum year and ultimately for the practice of the specialty.

A significant element to the resident teaching program is the course EOH 2111 Environmental and Occupational Health: Processes, Practices and Programs. In this course, Occupational Medicine Residents and other students in the Department of Environmental and Occupational Health participate in field trips to sites in the Greater Pittsburgh area, which illustrate the breadth and depth of Occupational and Environmental Health practice. Field trips are preceded by a lecture, demonstration or discussion of the health aspects of the site to be visited. Following the field trip, students

prepare reports and discuss issues, which were brought out during the field trip experience. This required course, which is given in the summer term, provides a unique opportunity for residents and other graduate students to experience first-hand industrial settings in which Occupational and Environmental Medicine is practiced. This experience also lays the foundation for the programmatic emphasis on work site visits as a fundamental part of the practice of Occupational Medicine. Throughout the year, residents participate in weekly division seminars. Topics of current interest in Occupational and Environmental Health are presented and discussed, ranging from highly technical research presentations to broad discussions of occupational and environmental health practice.

A weekly Journal Club, Grand Rounds, board review and/or clinical conference provides an additional forum for discussion of OEM literature and case studies. These meetings are attended by Occupational Medicine residents and faculty and provide unique opportunities for more in-depth discussions of the literature and the practical implications of scientific findings.

MPH students are required to prepare and present a thesis or essay during their residency program. The topic may range from a laboratory research experience to clinical research or a comprehensive state-of-the art literature review and analysis. This is usually accomplished during the academic year, which is 12 months in duration (August-July).

Practicum Year

The Practicum Year is designed to build upon the concepts developed during the academic year and to emphasize the application of these new cognitive skills to the practice of Occupational Medicine. The faculty monitors the Program to assure that it satisfies the training requirements of the American Board of Preventive Medicine (in Occupational Medicine). In addition, faculty members spend a great deal of time tailoring the Practicum Program to the background and needs of each individual resident physician. A weekly Journal Club, Grand Rounds, Board Review and/or clinical conference provides an additional forum for discussion of OEM literature and case studies. These meetings are attended by Occupational Medicine residents and faculty and provide unique opportunities for more in-depth discussions of the literature and the practical implications of scientific findings.

MPH students are required to prepare and present a thesis or essay during their residency program. The topic may range from a laboratory research experience to clinical research or a comprehensive state-of-the art literature review and analysis. This is usually accomplished during the academic year, which is 12 months in duration (August-July). In addition to industrial rotations, each of which usually lasts 1-4 months, the Practicum Year includes rotations in the Allegheny County Health Department, Washington Hospital, Industrial Hygiene at the University of Pittsburgh and OSHA both in Pittsburgh and in Washington, D.C., Bayer Corporation, US Steel (USA and Slovakia), and elective rotations. Currently, all Practicum sites with the exception of OSHA in Washington, D.C. and US Steel in Slovakia, are located in the Greater Pittsburgh area, facilitating

close coordination of Program components and allowing detailed monitoring of residents' progress.

All Practicum experiences are supervised by a Board-Certified Occupational Physician, either faculty or on site or both, and include: opportunities for clinical management of occupationally-related disease and injury; pre-placement evaluations emphasizing knowledge of specific job requirements and medical examination results; investigation of patterns of work-related illness; issues and practical aspects of workers' compensation; rehabilitation evaluation and practice; health promotion and employee assistance; preparation of reports and recommendations based on work site evaluation in conjunction with industrial hygiene and safety professionals; and direct participation in organizational planning and administration of health programs and policies. Formal reports based on assigned projects and investigations during Practicum Year rotations may result in institutional policy statements and lead to publication in professional journals. Practicum rotations in the industrial site include a unique opportunity for residents to work hand-in-hand with a Corporate Medical Director of a major industrial firm for a prolonged period of time. These experiences have proven invaluable to the residents both for current academic value and future professional advancement, and have uniformly received enthusiastic evaluations from the residents.

Appendix B lists all the courses and rotations the residents take during the two years. The courses listed for the academic year are all required and are taken in the semester stated and that is independent of the starting date of August or January. In the practicum year the rotations are taken in a random order with only one resident at a site at a time with the exception of the health department where all the residents in the practicum year take the rotation at the same time at the request of the health department. The electives are selected by the resident with the program director's concurrence that will best improve the knowledge of the resident. A thesis is required and is supervised by a member of the Graduate Faculty and defended by the resident.

Preceptor Programs

USS CORPORATION, Pittsburgh, PA. Preceptor: Charles Prezgia, M.D., M.P.H., General Manager Health Services & Medical Director.

The residents have in-plant experience at the Mon Valley and Clairton locations. Clairton involves the world's largest coke plant and the integrated steel facility at Edgar Thompson-Irvin includes blast furnaces, the BOP shop and various rolling and coating facilities. This includes but is not limited to the following areas:

A. Medical. There is experience in direct patient care which includes treating individuals immediately following an accident, injury or diagnosis of illness, and the development of liaison with local physicians and nurses located at 3 medical facilities. Workers compensation with relationship to these accidents as well as the total rehabilitation process is included. Protocols for the medical unit are reviewed as well as medical monitoring procedures. Where appropriate, audits of the medical facilities in the

Pittsburgh area, and other locations, are conducted. Review of BLS guidelines for OSHA record ability of accidents and injuries as well as medical monitoring requirements by corporate policy is included. These activities are performed within the corporate guidelines and with liaison with the corporate office. The Residents become familiar with HIMS (Health Information Management System) a computerized system managing data generated by Medical, Safety and Industrial Hygiene activities.

B. Safety. Daily safety activities include, but are not limited to, safety audits, safe job procedures, safety contracts and extensive accident investigations.

C. Industrial Hygiene. Industrial hygiene monitoring responsibilities of industrial hygiene personnel are experienced particularly in the coke oven area at the Clairton Works, as well as monitoring requirements of the Corporation not covered by Federal, State or Local legislation.

D. Litigation. Direct experience is gained in the area of arbitration, workers' compensation hearings, and OSHA hearings. This enables residents to have first hand experience with what is required when testimony is given in these situations.

PPG INDUSTRIES Pittsburgh, PA Preceptor: Alberto Columbi, M.D., M.P.H.
Preceptor: Joseph J. Schwerha, M.D., M.P.H.

Pittsburgh Corporate Headquarters, four research and development facilities, several automotive glass manufacturing plants, and two paint manufacturing facilities any of which may be used during the resident rotation. Many other similar manufacturing facilities in adjacent states, and further a field, may also be used.

Supervision: the PPG Corporate Medical Director will supervise the resident. The precise structure, schedule, and objectives of an individual practicum will be established by the Director, Division of Occupational and Environmental Medicine, or the Director's representative, and the PPG Corporate Medical Director. A formal review of the resident's performance and accomplishments will be held at the practicum's conclusion.

The practicum may include involvement in any of the following:

Medical Consultation on issues of importance to business managers: Appreciation and communication of competent scientific analysis and advice for use in the development, refinement, and application of company policies. The scope of issues may include but it is not limited to reproductive health, health promotion, workers compensation, substance abuse, employee assistance, ergonomics, safety programs, epidemiologic medicine, and medical benefits design.

Occupational Medicine Program Development and assessment, planning, refinement, maintenance, and data management for periodic examination programs, clinical laboratory studies, audio metrics, ergonomics, regulatory compliance, occupational Epidemiology, or other similar programs.

Medical Due-Diligence Activities:

Development and application of methods for scrutiny of plant-based medical systems and functions to assure conformance to good medical practices, regulatory requirements, and principles of efficiency are covered.

BAYER CORPORATION. Pittsburgh, PA, Preceptor: Donald Molenaar, M.D., M.P.H.
Vice President, Corporate Medical Services

Bayer Corporation is a research-based company with major businesses in healthcare and life sciences, chemicals and imaging technologies. Headquartered in Pittsburgh, Pennsylvania, Bayer Corporation has over 25,000 employees and sales of approximately nine billion dollars. Bayer is committed to environmental protection and to the health and safety of employees, customers and the communities in which they work and live.

At a glance, Bayer Corporation has three main business groupings and nine production divisions. They are:

Healthcare and Life Sciences Group

- . Pharmaceutical Division
- . Consumer Care Division
- . Diagnostics Division
- . Agriculture Division

Chemicals Group

- . Polymers Division
- . Industrial Chemicals Division
- . Fibers, Additives and Rubber Division

Performance Products Division

Imaging Technologies Group

- . Agfa Division

In addition to the nine production divisions, there are two staff divisions: Administration and Finance Division and Technology Division of which the Health, Environment and Safety Organization (HES) is an integral component.

Facilities: Bayer's Corporate Medical Department is located on the Parkway West in Pittsburgh, Pennsylvania. There are several nearby satellite facilities, which may be used in New Martinsville, West Virginia, a distance of two hours from Pittsburgh. Other facilities accessible by air travel may also be utilized.

Supervision: The resident will be supervised by the Vice President of corporate medical Services joined by the Manager of Corporate Medical Services.

The structure and schedule of the resident will evolve dynamically from the activities and processes of the Corporate Medical organization. These may include:

ALLEGHENY COUNTY HEALTH DEPARTMENT, (Rotation) Pittsburgh, PA

Bruce W. Dixon, M.D. and Staff

Preceptor: Joseph J. Schwerha, M.D., M.P.H.

This rotation, under the auspices of the Allegheny County Health Department, will provide opportunities for the Resident to gain practical experience in managing clinical, social, scientific, and administrative matters in the public health area, working directly with the Director and Staff of the Department on issues involving environment quality, air quality, and human health services.

OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) Pittsburgh,

PA Preceptor: Bob Szymansky and Joseph Schwerha, M.D., M.P.H.

The Pittsburgh Area Office is located in Room 1428 of the Federal Building at 1000 Liberty Avenue, Pittsburgh, PA. The resident will be given a workstation, and will have free access to the library and computerized databases. He/she will be working under the direct supervision of the Industrial Hygiene Supervisor, who will provide a written evaluation at the end of the rotation. This will be discussed in detail with the resident, and shared with the resident. The OSHA supervisor will work closely with the faculty throughout this assignment to assure that the rotation is serving its intended purpose. In turn the resident will prepare a written evaluation of the practicum rotation, which will in turn be shared with this office.

It is anticipated that the resident will assist the industrial hygienists in conducting workplace inspections where Occupational Health problems are alleged to exist. The candidate will assist in all facets of the inspection from doing research to calibrating and utilizing air-sampling apparatus. Other duties may include assisting this office in training duties related to Occupation Health, assisting in analyzing OSHA 200 logs, and collecting background information on issues pertaining to occupational health.

OSHA, Washington, D.C. Preceptor: John Piacentino, M.D., M.P.H.

The Occupational Safety and Health Administration (OSHA) have provided a number of occupational and preventive medicine residents with supervised training at its Office of Occupational Medicine (OOM) over the last several years. During their 2 month rotation at OSHA, residents participate in all aspects of OOM activities. Residents are supervised by staff occupational medicine physicians and actively participate in OOM staff meetings, discussing office issues and priorities. They work with OOM staff on health and safety standards, compliance directives and guidelines. Residents meet with personnel from various OSHA directorates and gain an understanding of OSHA's organizational structure and function. They participate in answering inquiries from

professionals and the public concerning occupational health related issues. The residents participate with OSHA field personnel in an OSHA inspection, where they gain experience in the OSHA inspection process. Residents consistently name the field inspections as the highlight of their OSHA rotation.

Washington Hospital Preceptor: George Schmieler, MD and Joseph J. Schwerha, M.D., M.P.H.

A one or two month block rotation under the direction of the Director of The Washington Hospital Occupational Medicine Center is offered as a practicum site for Occupational Medicine residents. The resident will develop more extensive knowledge in the field of Occupational Health and become familiar with some of the regulations and health standards the industries must follow. The resident will understand the role of an Occupational Medicine Physician and will evaluate, examine and outline a treatment plan for a variety of patients with specific occupational disorders

ADMISSION REQUIREMENTS

The minimum qualifications for physicians seeking admission to the residency, in accordance with requirements for certification by the American Board of Preventive Medicine, is an earned degree of Doctor of Medicine or Doctor of Osteopathy or equivalent from a U.S. or foreign medical school acceptable to the Board. In the case of foreign medical graduates, an ECFMG Certificate is required, and passage of FLEX is desired. Additionally, since this residency program is approved to offer PGY2 and PGY3 only, PGY1 in a direct clinical care specialty such as family practice or internal medicine acceptable to the American Board of Preventive Medicine must have been completed satisfactorily. Candidates must pass USMLE 1, 2, 3 and be eligible for appropriate training licensure required by the PA State Board of Medicine. In addition to documentation of past training records, three letters of recommendation from physicians familiar with candidates' academic record and work experience are required. Personal interviews are arranged with EOH Department faculty members and with members of the Residency Advisory Committee. Previous experience in occupational medicine or a related field and research experience are not required but are considered in evaluating an applicant.

Methods Used to Evaluate Residents

Residents are regularly evaluated in a formal, documented fashion in accordance with procedures established by the University. During the Academic Year, residents are evaluated by their course instructors and academic advisors at GSPH. Class performance and grades are included in the evaluation. The supervising occupational physician on-site and the preceptor during the resident's Practicum year are expected to monitor and provide a written report of the progress. The residents are also evaluated on the basis of

the American College of Occupational and Environmental competencies and the ACGME six competencies.

Training Resources

UNIVERSITY OF PITTSBURGH GRADUATE SCHOOL OF PUBLIC HEALTH (GSPH)

The University of Pittsburgh campus is situated in the heart of the city's Oakland area. The Graduate School of Public Health (GSPH) is one of 38 institutions in the United States accredited by the Council on Education for Public Health. It is conveniently located among the other schools and the hospitals of the University Health Center and the large University campus. The GSPH is an important part of the University's total program for its Schools of the Health Professions: Medicine, Dental, Nursing, Pharmacy, and the Health related professions.

A grant of \$13.6 million was provided from the A.W. Mellon Educational and Charitable Trust, to establish the GSPH on September 22, 1948, by official action of the University's Board of Trustees. In September, 1950, the GSPH was fully accredited by the American Public Health Association and this status has continued to the present.

GSPH remains committed to its founding principle. A major concern of the School was and is, to put an emphasis on occupational and environmental medicine (OEM).

Department of Environmental and Occupational Health (DOEH)

The mission of Department of Environmental and Occupational Health is to study and elucidate the health effects of exposure to chemical, physical and biological agents encountered in the workplace or general environment. To accomplish this goal the department supports a broad range of research, training, and clinical service activities. The department is at the forefront of research on molecular dosimetry and toxicology.

Training activities include a comprehensive curriculum in environmental and occupational health. (UP Bulletin, GSPH, 1997-1999)

Division of Occupational and Environmental Medicine

The Division of Occupational and Environmental Medicine and the Occupational Medicine Residency Training Program is part of the Department of Environmental and Occupational Health. It is situated in the GSPH on the Oakland Campus. This location provides faculty offices and teaching resources in close proximity to the Medical Center and the UPMC Clinics. Research laboratories and non-medical faculty in the Department of Environmental and Occupational Medicine are located in the Cellomics facility.

Department of Epidemiology

The Department of Epidemiology at the Graduate School of Public Health has a central theme "Teaching and Prevention through Quality Research", and is thus heavily involved in both Research and Prevention activities which are incorporated into the teaching experience to provide a practical and clinically relevant educational experience. The Department has 50 faculty and over 125 students and in FY 2003, received approximately \$35 million in research funds.

The Department of Epidemiology is also host to three major centers. The University of Pittsburgh Prevention Center is a central focus for prevention activities throughout the institution and is developing a series of demonstration Prevention Programs. The Center for Healthy Aging (funded by the CDC) is also out in the community and evaluating methods to improve the health of the elderly population by focusing attention on 10 goals. The third center, the Epidemiology Data Center, coordinates a large number of multicenter clinical trials and registries, and is a focus of expertise in data management and analysis. The department also houses the Global Health Network and its innovative Supercourse. This resource involves the availability of over 1000 lectures concerning Public Health via the Internet (or CD), and is a leading example of international collaboration and education.

Department of Biostatistics

The Department of Biostatistics was one of the original departments of Public Health when it was founded in 1949. Faculty members in the department continue to make important contributions to the development of new statistical methodology and to provide the quantitative component to public health and biomedical research efforts that have had a major impact on the prevention and treatment of disease. Collaborative research efforts in the areas of breast cancer, colon cancer, health services and outcomes research, occupational health and otolaryngology are internationally recognized. Graduates from the program have assumed leadership roles in academia, industry, and government. The Department currently has 26 full-time faculty members, and more than 80 students currently enrolled in one of the academic degree programs. In addition, more than 90 research and support staff participates in our educational and research programs.

In addition to an extensive collaborative effort the Department of Biostatistics is committed to the development of statistical methodology in order to better analyze and interpret studies in public health and medicine. Areas of methodological development include survival analysis, missing data analysis, sampling techniques, interrater reliability, exploratory data analysis, clinical trials design, ROC analysis, stochastic modeling, and sequential methods. The academic program provides doctoral students with the necessary tools to subsequently develop an area of independent methodological research.

Department of Behavioral and Community Health Sciences (BCHS)

The Department of Behavioral and Community Health Sciences (BCHS) prepares individuals to apply theories, concepts, and methods developed within various social and behavioral science disciplines to the development of programs that prevent illness and promote health. In recent years, there has been growing recognition that the social and behavioral sciences play a critical role in public health practice and in public health academics and training. Disciplines such as anthropology, psychology, sociology, and health education have emerged as important and essential sub-specialties in both public health practice and research educational and training programs.

The academic programs in BCHS are based on a strong theory and knowledge base in the social and behavioral sciences, with a heavy emphasis on social ecology, and are guided by the principles set out in the 2002 Institute of Medicine report on Educating Public Health Professionals for the 21st Century. The department is committed to competency-based education that directly addresses the core functions of public health—assessment of health and need for public health programs, assurance and implementation of quality public health programs, and policy development. BCHS collaborates extensively with other departments and centers in GSPH and throughout the University to carry out the teaching, research, and service mission. Currently, the department's faculty members are improving the public health knowledge base in such areas as: assessing the needs of communities and populations for the purpose of guiding policy and program development; initiating a range of culturally appropriate community-based chronic disease prevention and management initiatives; assisting in the development, implementation, and evaluation of local and regional tobacco control efforts; assessing health and welfare needs of the elderly; and assisting local provider organizations in streamlining their services.

University of Pittsburgh Medical Center (UPMC)

Patient care, research, and medical education come together at UPMC. In addition to serving its own geographic region, UPMC has gained national and international recognition for many of its specialized programs and services, including those related to occupational health, cancer diagnosis and treatment, genetic diagnosis and gene therapy, neurology, and transplantation.

UPMC encompasses a host of affiliated hospitals, clinical facilities, and specialized medical programs as well as University of Pittsburgh School of Medicine. The medical center is affiliated with the University's first health science schools – Dental Medicine, Health and Rehabilitation Sciences, Nursing, Pharmacy and Public Health and creates an environment for multi disciplinary research in the diagnosis, treatment, and prevention of a broad spectrum of diseases and health problems.

Medical facilities with either cooperative agreements or managed by UPMC include Children's Hospital, Veteran's Medical Centers, Magee Women's Hospital, UPMC

Presbyterian, UPMC Shadyside, UPMC Montefiore, UPMC Passavant, UPMC St. Margaret, UPMC South Side, UPMC Beaver Valley, UPMC Braddock, UPMC Rehabilitation Hospital, UPMC McKeesport, UPMC Lee Regional, Eye and Ear, Western Psychiatric Institute and Clinic, UPMC Horizon (Shenango and Greenville locations), Bradford Regional Medical Center, and forty or more out-patient care facilities as well as 7 in-patient units for rehabilitation services.

Work Partners/Concentra Joint Venture

UPMC Work Partners has entered into a joint venture with Concentra Medical Centers to allow Concentra to manage some of the UPMC Health System outpatient and on-site clinical occupational health care services. These are presently four local Concentra sites, which are part of the nation's largest network of occupational health care centers. The Concentra sites provide the clinical care for occupational injuries and illnesses of the employees of the UPMC Health System.

University of Pittsburgh School of Medicine, Department of physical medicine and Rehabilitation

The ACGME-approved residency program in physical medicine and rehabilitation offers an opportunity for occupational medicine residents to gain further insights into musculoskeletal disorders and rehabilitation services.

University of Pittsburgh, Department of Environmental Health and Safety

The University of Pittsburgh Department of Environmental Health and Safety is responsible for maintaining a safe work environment at the University. Its specific responsibilities include: administering the general health and safety program as well as similar University programs including the chemical hygiene plan, the biosafety program, the laser safety program, and others; developing regulatory compliance efforts as required by federal, state, and local laws and regulations; and assisting faculty, staff and students in maintaining a safe work environment. Objectives of the general health and safety program are to: identify potential hazards to health and safety at the University; prescribe suitable means for the evaluation and control of hazards; investigate all accidents and institute corrective actions to prevent reoccurrence; provide guidance for compliance with federal, state, and local regulations and make specific reference to such regulations where appropriate; and promote health and safety awareness among University faculty, staff, and students by developing and implementing effective training programs to minimize the impact of workplace hazards. Residents have the opportunity to spend time in the department to develop knowledge and skills related to safety and industrial hygiene.

Falk Library of Health

Falk Library serves as the flagship of the Health Sciences Library System.

The collection includes:

- More than 2,600 electronic journals
- More than 300 electronic books
- 45 electronic databases
- 300,000 print books
- 2,000 print journal subscriptions
- 1,000 videotapes and 500 audiotapes
- 300 computer software packages

The Health Sciences Library System (HSLS) at the University of Pittsburgh offers a wide array of information services, educational opportunities, and resources in print and electronic format to faculty, medical staff, students, and researchers in the schools of the health sciences (Medicine, Dental Medicine, Pharmacy, Nursing, Health and Rehabilitation Sciences, and Public Health) and the University of Pittsburgh Medical Center (UPMC).

Center for Environmental and Occupational Health & Toxicology

The Center for Environmental and Occupational Health and Toxicology is housed in the Cellomics building. This facility is intended to support the basic research endeavors of the Center.

CONCLUSION

The University of Pittsburgh Residency Training Program in Occupational Medicine continues to grow and mature, building on its historical strengths and close association with regional industries and healthcare facilities. The NIOSH training grant funds have played a major role in supporting this training process and substantially facilitate the acquisition of substantial institutional funds. To this solid foundation, the program has added academic and clinical faculty. This has enabled trainees to become familiar with state of the art occupational and environmental research in clinical and molecular technology. Continued training grant support will strengthen the program significantly in achieving its mission to train the occupational physicians of tomorrow.

PUBLICATIONS

Politi, Barry, J., Arena, Vincent, J., Schwerha, Joseph, Sussman, Nancy, "Occupational Medical History Taking: How Are Today's Physicians Doing" A Cross-Sectional Investigation of the Frequency of Occupational History Taking by Physicians in a Major U.S. Teaching Center", *Journal of Occupational and Environmental Medicine*, 46(6): 550- 555, June 2004.

Terence W. Starz, M.D., Joseph J. Schwerha, M.D. and Molly T. Vogt, M.D.
"Osteoarthritis of the Knee in Women". *The Female Patient* Vol. 30, pages 40-44, August 2005.

Vincent C. Arena, Ph.D., Sati Mazumdar, Jeanne V. Zborowski, Evelyn O. Talbott, Shui He, Ya-Hsiu Chuang and Joseph J. Schwerha.

"A Retrospective Investigation of PM₁₀ in Ambient Air and Cardiopulmonary Hospital Admissions in Allegheny County, Pennsylvania: 1995-2000." *Journal of Occupational and Environmental Medicine*, Vol. 47, Number 12, pages 1-10, December 2005.

Patel A, Talbott E, Zborowski J, Rychek JA, Dell D, Xu X, Schwerha J.
Risk of cancer as a result of community exposure to gasoline vapors. *Arch Env Health*, 2004;59(10):497-503.

APPENDIX A

JULY 1, 2001 – JUNE 30, 2006

PROGRAM GRADUATES

Andrew Greenwood, MD
2004 – 2005 PGY2
2005 – 2006 PGY3

John Petrisko, MD
2004 – 2005 PGY2
2005 – 2006 PGY3

Hardy Bang, MD, MPH
2003 – 2004 PGY2
2004 – 2005 PGY3

Heather Lampel, MD, MPH
2003 – 2004 PGY2
2004 – 2005 PGY3

Guy Zimbardi, MD, MPH
2003 – 2004 PGY2
2004 – 2005 PGY3

Krishna Padiyar, MD, MPH
2002 – 2003 PGY2
2003 – 2004 PGY3

Aimin Zhang, MD, MPH
2002 – 2003 PGY2
2003 – 2004 PGY3

Bruce Hoang, DO, MPH
2001 – 2002 PGY2
2002 – 2003 PGY3

Timothy LeDean, DO, MPH
2001 – 2002 PGY2
2002 – 2003 PGY3

Barry Politi, MD, MPH
2001 – 2002 PGY2
2002 – 2003 PGY3

Venkataramana Adapa, MD, MPH
09-18-01 to 09-17-02

Louise Banks, MD, MPH
2000 – 2001 PGY2
2001 – 2002 PGY3

Mary Yee Chow, MD, MPH
2000 – 2001 PGY2
2001 – 2002 PGY3

Laurie Kardon, MD, MPH
August, 2000 – December, 2000 PGY2
January, 2001 – December, 2001 PGY3

Philip Majewski, MD, MPH
2000 – 2001 PGY2
2001 – 2002 PGY3

Katherine Blum, MD, MPH
1999 – 2000 PGY2
2000 – 2001 PGY3

Louise Sheffield, MD, MPH
1999 – 2000 PGY2
2000 – 2001 PGY3

Ata Ulhaq, MD, MPH
1999 – 2000 PGY2
2000 – 2001 PGY3

APPENDIX B

JULY 1, 2001 – JUNE 30, 2006

Curriculum

Academic Year

Semester	Department	Course No.	Credits	Title
*EOH	EOH	2515	0	EOH Preparedness
Fall	EOH	2021	1	Special Studies: Research
Fall	EOH	2175	3	Organ Systems Toxicology
Fall	EOH	2505	3	Intro to Environmental and Occupational Health
Fall	EPIDEM	2110	3	Principles of Epidemiology
Fall	HPM	2135	2	Health Policy
Fall	BIOST	2011	3	Principles of Statistical Reasoning
Spring	EOH	2022	1	Industrial Ergonomics
Spring	EOH	2107	3	Environmental and Occupational Health Law
Spring	EOH	2509	2	Noise Assessment and Reduction
Spring	HPM	2000	1.5	Intro to Health Services Administration
Spring	BCHS	2502	1.5	Social and Behavioral Aspects of Public Health Practice
Spring	EOH	2510	3	Introduction to Occupational Medicine
Spring	EOH	2180	2	Introduction to the Risk Sciences
Spring	PUBHLT	2008	1	Public Health Case Series
Summer	EOH	2512	3	Issues in Occupational Medicine
Summer	EOH	2111	2	Environmental & Occupational Practices & Programs
Fall, Spring, Summer	EOH	2021	3	Special Studies (Need 2 credits for Thesis Presentations)
Fall, Spring, Summer	EOH	2021	0	Environmental and Occupational Health Colloquium

Total **36**

*The residents will audit and not register for EOH Preparedness

Practicum Year

Site	Time in months
- Health Department	1
- United States Steel	2
- Washington Hospital Occupational Medicine Clinic	2
- Bayer Corporation	2
- OSHA	1 or 2
- Electives	3 or 4



Memorandum

Date December 22, 2006

From Principal Engineer, OEP, NIOSH

Subject Final Progress Report for entry into NIOSHTIC2/NTIS for
NIOSH Training Grant No. T01 OH 008616

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

The enclosed report has been received from the Program Director to document work performed during the specified grant project period. The following information applies to the designated Training Project Grant (TPG):

Title: Occupational Medicine Graduate Training Grant

Project Director: Joseph J. Schwerha, M.D., MPH
Graduate School of Public Health
University of Pittsburgh
Pittsburgh PA 15261

Grant No.: T01 OH 008616

Project Period: 7/1/2001 - 6/30/2006

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

Thanks for your assistance.

John T. Talty, P.E., DEE

Enclosure