

Goals and Responsibilities of the Administrative Core for NIEHS Center in Urban Environmental Health

The goals and responsibilities of the *Administrative Core* for the Center in Urban Environmental Health include:

- A. To provide the administrative infrastructure to support the coordination and integration of the research goals, facility cores, pilot projects and outreach activities in the Center.
- B. To provide the administrative infrastructure to support the enrichment of the intellectual environment at Johns Hopkins in the environmental health sciences through seminar programs, focused research retreats and the recruitment of outstanding students and faculty.
- C. To coordinate the administrative activities of this Center with those of other NIEHS funded Core centers and the leadership at the National Institute of Environmental Health Sciences.

Institutional Setting for the NIEHS Center in Urban Environmental Health at Johns Hopkins

The NIEHS Center in Urban Environmental Health is based within the Johns Hopkins Medical Institutions, consisting of the Bloomberg School of Public Health, School of Medicine, School of Nursing and the Johns Hopkins Hospital, all located on 42 acres in east Baltimore. At the present time, this complex comprises about 6.5 million square feet of laboratory, educational and patient care facilities. By 2010, new clinical care facilities for pediatrics and women's health will be opening and this will complete a 15-year program to completely replace all of the former hospital buildings with state-of-the-art patient care infrastructure. In addition to the construction of the new clinical facilities on this campus, the University has engaged in a partnership with Baltimore City and private developers to build a biotechnology park adjacent to the medical institutions. The first of these buildings will open in 2008 and this Center has been involved in the environmental impact assessments of the demolitions needed to prepare these sites (described in the *Strategic Vision and Impact on Environmental Health* section of this application).

All centers at Johns Hopkins University are required to be based within an academic department or division to provide a clear reporting structure to a Chair and then to the Dean. Further, there is a formal approval process for the creation of a new center and at the School of Public Health; this action is discussed at the

advisory board attended by all department chairs and Deans. The Johns Hopkins NIEHS Center in Urban Environmental Health is based in the Department of Environmental Health Sciences in the Bloomberg School of Public Health. The other nine Departments in the School are Biochemistry and Molecular Biology, Biostatistics, Epidemiology, Health Policy and Management, Molecular Microbiology and Immunology, International Health, Mental Health, Health, Behavior and Society and Population and Family Reproductive Sciences.

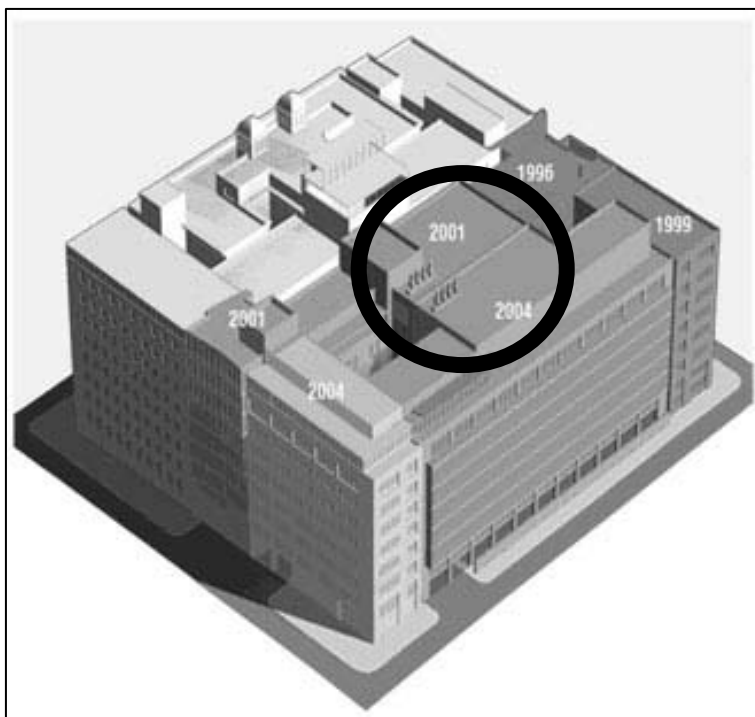


Figure 1: School of Public Health's Wolfe Street Building

Since 1996, the Bloomberg School of Public Health's has added nearly 400,000 square feet of laboratory, instructional and office space to the Wolfe Street complex (Figure 1). At least half of the laboratory space is dedicated to faculty who are major participants in the Center's programs. The laboratory towers are shown by the black circle in Figure 1. By 2004, with the completion of three new buildings including two eight story laboratory towers, the School of Public Health complex collectively consists of nearly 1,300,000 square feet of laboratory, office and classroom/teaching space. Thus, since 1994, the

School and University will have invested nearly \$250 million in the renovation and new construction for the

School of Public Health. The new additions and renovations of existing laboratory space means that over 95% of the laboratory space dedicated to environmental health sciences research at Johns Hopkins is no more than 5 years old. The Department of Environmental Health Sciences, the base department for this Center, has over 70 faculty and 120 students. In 2006, the research/laboratory space is 58,284 square feet, instructional space is 9,682 square feet and other administrative space totals 2,571 square feet for a net amount of 70,537 square feet. The four major participating departments in this Center are located on the 3rd, 6th, 7th and 8th floors of this complex. Thus, the Center members are in nearly contiguous laboratory and office space.

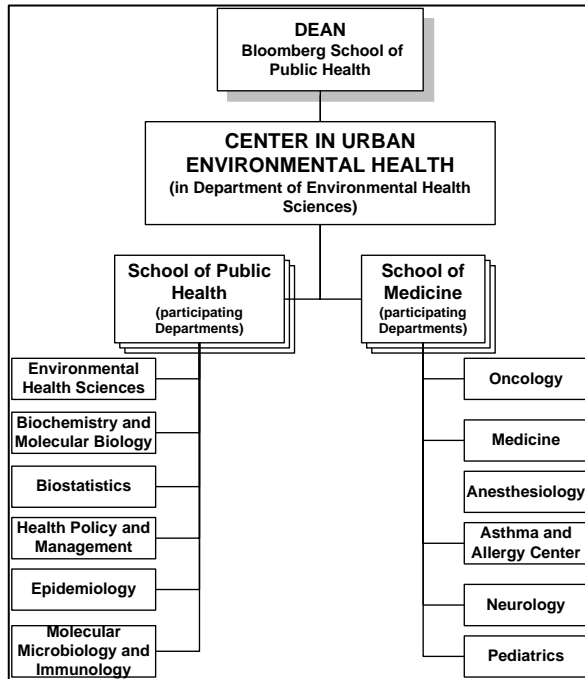


Figure 2: Center Member Departments

Reflective of our multidisciplinary nature, our Center draws its membership not only from a subset of researchers in the Department of Environmental Health Sciences, but from five other Departments in the School of Public Health as well as from six Departments in the School of Medicine. The participating departments in the Schools of Public Health and Medicine and the reporting structure of our Center to the Dean is shown in Figure 2. A requirement for membership in the Center is that the prospective member has a research interest in environmental health consistent with the goals and theme of the Center. All Center members also must hold a faculty position at Johns Hopkins University or are sponsored by a member of this University and have active participation in peer reviewed research grants and/or contracts. In the case of newly recruited assistant professors, this requirement for active funding is waived. A temporary lapse in funding of a member does not result in any immediate loss of participation in the Center; indeed, we encourage members to utilize Center resources to broaden research opportunities that lead to sustained, collaborative research enterprises. All Center members are expected to attend Center-wide seminars and group meetings, including the yearly training program symposium. Anyone awarded a pilot project grant automatically

becomes a member of the Center during their funding period. While the final decision for appointment to the Center lies with the Center Director, these decisions occur only after discussion with the Deputy Director and the Internal Advisory Board.

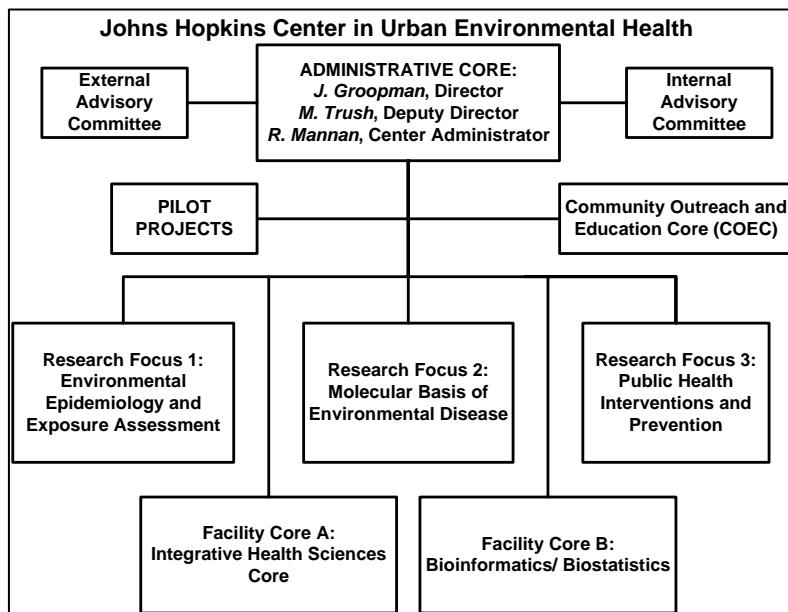


Figure 3: NIEHS Center Structure (2008-2013)

(*Research Focus 1: Environmental Epidemiology and Exposure Assessment*), Dr. Valeria Culotta (*Research*

Focus 2: Molecular Basis of Environmental Disease) and Dr. Paul Strickland (*Research Focus 3: Public Health Interventions and Prevention*). Each of these leaders have been in similar leadership positions in this Center for the past ten years and therefore there will be continuity in the transition to this new Center structure. The

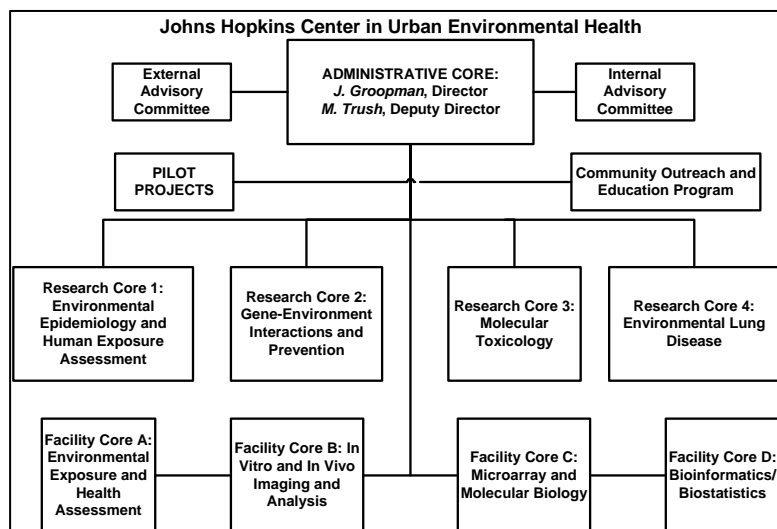


Figure 4: NIEHS Center Research and Facility Core Structure (2002-2007)

The *Community Outreach and Education Core* is being maintained and enhanced in this renewal period (see description in the COEC section). There have been significant structural changes in the facility core support in this renewal application. The major changes include the implementation of the *Integrative Health Sciences Facility Core* (described in greater detail in that section of the grant) that have incorporated and expanded focused activities from three of the existing facility cores (*Facility Core A: Environmental Exposure and Health Assessment, Facility Core B: In Vitro and In Vivo Imaging and Analysis, and Facility Core C: Microarray and Molecular Biology*) and developed a new capacity in epigenetics. We feel that this new facility core structure will streamline the provision of services and planning for the future needs in the Center.

The management of the Center is facilitated by using both an Internal and External Advisory Board structure. The Internal Advisory Board is composed of the Director, Deputy Director, the Business Manager, the leadership of the research foci and facility cores and the director of COEC (at the present time both the Deputy Director and COEC is Dr. Michael Trush). The structural changes shown in transition from the Center in Figure 4 to the new structure in Figure 3 were vetted with the Internal Advisory Board and the *ad hoc* review group that was headed by Dr. Michael Trush (*ad hoc* review group included Drs. Culotta, Jakab and Zirkin). The charge to this review group was to examine in detail the utilization and usage of each of the four facility Cores currently supported by the Center (Figure 4). This review group individually met with the leadership of each of the facility cores and reviewed their progress and strategies for the future. This process occurred over an eight-month period starting in September, 2005 (Survey results in the appendix). We then convened an all-day retreat of all the facility core directors, this review group, and the Director and Deputy Director of the Center to review past accomplishments and future directions. This culminated in a reorganization of our facility cores, shown in Figure 3, and a focus on the development of the *Integrative Health Services Facility Core*.

NIEHS Center Leadership

The leadership of this Center has been stable since 1996. The Director, Dr. John Groopman and Deputy Director, Dr. Michael Trush, have led the Center during this period. Since the inception of the NIEHS Center in 1985 the Business Manager, Mr. Ramesh Mannan, has been responsible for all of these financial activities. Mr. Brian Fitzek is responsible for the communications interface between this Center and the public health community; he maintains the web-site, works with the COEC and edits the newsletters. Ms. Kay Castleberry is the Administrative Assistant for the Center and she has over 20 years of work experience at Johns Hopkins University. The specific responsibilities of these individuals are outlined in the following descriptions.

- Dr. John D. Groopman, Center Director, will devote 20% time and effort as Director of the Center. Dr. Groopman is ultimately responsible for the final decision making, including the appointment and discontinuance of Center members, and implementing the agreed upon recommendations of the Internal and External Advisory Boards and the agenda of the retreats. He works with the Business Manager of the Center to insure appropriate fiscal oversight. Dr. Groopman represents the Center in its interactions with the Dean of the School of Public Health and also represents the Center at the annual meetings of the NIEHS Center Directors.

- Dr. Michael A. Trush, Deputy Director, will devote 20% time and effort as the Deputy Director of the Center. In addition, Dr. Trush will continue to devote an additional 10% time and effort as the Director of the *Community Outreach and Education Core (COEC)*. This is described and the justification of that aspect of the budget is found in the COEC section. Dr. Trush chairs the *Pilot Project program* and also serves in the absence of the Director to represent the Center both inside and outside the University. Dr. Trush participates in all *Internal and External Advisory Board* meetings.
- Mr. Ramesh Mannan, Budget Manager, will devote 20% time and effort to manage the Centers financial accounts. Mr. Mannan has a Masters degree in Business Administration and has been with the Johns Hopkins University since 1967. He is responsible for all aspects of the financial management of the Center and reports directly to the Center Director.
- Mr. Bryan Fitzek, Public Health Communications, will devote 20% time and effort to the Center. He is a senior communications specialist, with over 15 years of experience working in academic and nonprofit settings. His responsibilities include working with the leadership of the Center on the development of all of our communications, newsletters and Web presence. He also devotes time and effort to the COEC program and works with the Deputy Director on community-based interactions.
- Ms. Kay Castleberry, Administrative Assistant, will devote 50% time and effort to this Center. She is a senior administrative coordinator at Johns Hopkins. Ms. Castleberry has over 20 years of experience at this University and has been involved with the Center since its inception. Ms. Castleberry attends all of the internal and external advisory meetings as well as the meetings for the review of the pilot project grants. Ms. Castleberry is responsible for all of the minutes and works with Mr. Brian Fitzek to link the work in the Center with the newsletters.
- Ms. Rita Rawlinson, Financial Analyst, will devote 15% time and effort to this Center. She is a senior financial analyst in the University and is responsible for the coordination and tracking of all finances on a day-to-day basis. She will monitor budget expenditures and statements, prepare budgetary documents, in addition to the annual budget continuations and reports.

Contingency Plans for Center Director Transition

In accordance with NIEHS policy, we have developed specific plans for the transition to a new Center Director, should the need arise. These plans are consistent with the policies of the Johns Hopkins School of Public Health, and they were last implemented in 1995 when the previous director, Dr. Morton Corn, retired from the University. At the time of that retirement, the Deputy Director, Dr. Michael Trush, assumed the position of interim Director. In consultation with NIEHS, following discussions with the Dean of the School of Public Health, a consensus was reached that Dr. John Groopman would assume the role of Director of the Center. In the future, a similar consultative process with senior leadership at NIEHS and the School of Public Health would also occur to identify appropriate internal and external candidates for this position.

Structural Issues Related to the Organization of the Center

The overarching goal of Center leadership is to facilitate the development of a community of scholars in environmental health sciences at Johns Hopkins. To accomplish this goal, we must employ many strategies to develop formal and informal scientific relationships. Foremost, the Center sponsors an extensive series of seminars (detailed in the Appendix), either separately or in conjunction with the various academic units, from which the Center derives its membership. Over the past five years, each of the four research cores was provided funds through the *Administrative Core* to invite speakers in the fields represented by that Core. In the future, we will employ a slightly different mechanism by using the disease focus interests of the Center to guide the invitations for this seminar program. The Center also co-sponsors the speaker for the joint NIEHS Training Program and Center workshop each year. This workshop involves the Training Program in Environmental Health Sciences (T32 ES007141) and the Pre-Doctoral Training in Environmental Biostatistics (T32 ES012871) training grants from NIEHS. As part of this workshop, a poster session is held with all Center members, and their graduate and post-doctoral students being invited to present. Recipients of pilot project

grants are required to have posters at this workshop. The goal of this poster session is to further communication and opportunity for collaboration among Center members. Aside from these research goals, members are involved in the teaching of environmental health scientists, professionals and practitioners.

As shown in Figure 3, the Center supports a number of centralized resources and facilities which enable Center members to increase their productivity and interactions. Each Facility Core provides service and developmental work to at least three funded investigators. To enhance communication and leadership, each Facility Core is under the management of a Director and Co-Director(s) who are responsible for the day-to-day operation of their respective Facility Core's, for ensuring that the needs of Center members are addressed and for maintaining records of Facility Core usage. The day-to-day oversight of all Facility Cores is under the coordination of the Deputy Director, Dr. Michael Trush, whose responsibility is to meet with Facility Core Directors and Center members to facilitate their respective needs and to report to the Internal Advisory Board any concerns that need addressing. If necessary, the Internal Advisory Board may request that other users of a facility core attend their monthly meeting to discuss facility usage or a new direction in Center research that may require implementation of new techniques. Facility Core Directors also attend and make presentations at the External Advisory Board meeting.

Use of the Internal Advisory Board to Achieve Goals

The Center has both *External* and *Internal Advisory Board*. The external advisory board provides us with strategic guidance on the development of the Center, while the *Internal Advisory Board*, addresses the day-to-day operations and planning for the Center's mission. To ensure that the responsibilities of the *Internal Advisory Board* (in the renewal the board members are Drs. Groopman, Trush, Samet, Breysse, Culotta, Strickland, Biswal and Zeger) are carried out, this group meets monthly. Prior to the release of the new guidelines for NIEHS Centers last year, we held meetings as a research council. Each meeting devoted significant time to the science of the Center. In the future funding period, as will be detailed in the *Integrated Health Sciences Facility Core* section, we will enhance the activities of the Internal Advisory function by having key members serve on the steering committee of the *Integrated Health Sciences Facility Core*. Since we will be using the Director's Fund to help support the translational research agenda, it makes sense within our organization to have a clear strategy of communication between the *Internal Advisory Board* and this new, required Core to assure both planning and implementation responsibilities. In addition to the regular meetings we have had retreats and focus sessions of Center leadership (described in following sections). Indeed, it was out of these discussions and retreats that the framing of the theme of the Center in Urban Environmental Health emerged 10 years ago and the commitment to invest resources in the DNA microarray technology and heavy metals analysis evolved. It is a goal of these advisory meetings to discuss the scientific issues that cut across the multidisciplinary research base so that opportunities for collaborations can be increased and that collectively our Center becomes focused on our long-term goals. It is within the advisory committee's that the issues of risk and benefit for the investment of our finite resources are discussed. Further, strategies for cost-sharing these risks and benefits with other funded Centers and programs at Johns Hopkins University are raised. Other topics routinely discussed at internal advisory meetings include the pilot projects program, candidates for seminar speakers, coordination of the seminar speaker for the jointly sponsored NIEHS Training Program and Center Workshop, various cross departmental faculty recruitments and their impact on our Center. Collectively, the *Internal Advisory Board* is best able to provide the tactical input to achieve the goals of the Center while the *External Advisory Board* is best able to provide strategic advice. In addition, with the new construction at this School (Figure 1), the leaders of this Center are now in very close geographic proximity and this facilitates the many informal interactions that facilitate rapid decision making to address day-to-day issues. For example, if an emergency repair or procurement of a small item in a facility core is required we can make the decision without having to spend days scheduling meetings. Thus, the functions of the *Internal Advisory Board* include: advising the Director and Deputy Director to coordinate interdisciplinary and translational research; reviewing the policy and procedures of the Center and advising the Director on these issues; annually reviewing the status of proposed and current Center members as presented by the internal advisory board members and recommending changes in member status; reviewing the functioning of the Facility Cores and making recommendations to the Director and Deputy Director; making funding recommendations of Pilot Projects following presentation of the reviews by the Deputy Director and setting the agenda for issues to be presented to the External Advisory Board.

Transition to Research Foci from Research Cores

Over the years, the Center has used a number of strategies to facilitate the development of our research agenda and mission. Historically, we have been organized in a number of different research cores (see Figure 4). These research cores served a very important role in setting the stage for strategic collaborations that often resulted in Pilot Projects. These research cores also contributed to the request for and implementation of services and instrumentation. One example was the widespread consensus in the research cores that we needed to invest pilot project funds to encourage the use of DNA micro-arrays when that technology was in its developmental stages. Given the tightness of our budgets and constraints of the cap on the overall Center we have worked to restructure our research foci to broaden the base across Center membership and coalesce around the three major areas of translational research. Thus, *Research Focus 1: Environmental Epidemiology and Exposure Assessment* under the leadership of Dr. Jonathan Samet addresses the exposure component of urban environmental health; *Research Focus 2: Molecular Basis of Environmental Disease* under the leadership of Dr. Valeria Culotta addresses the molecular underpinnings of environmental disease, irrespective of target organ site and *Research Focus 3: Public Health Interventions and Prevention* under the leadership of Dr. Paul Strickland provides a comprehensive forum for the translation to community and population in the Center. Each of these leaders has been directors and leaders in this Center for the past 10 years and we anticipate continuity in success of these research foci while enhancing our intellectual capacity for multidisciplinary research opportunities. Each of these research foci will continue to be provided with funds from the *Administrative Core* to bring in outside speakers for program enrichment.

Role of the Internal Advisory Board in the Pilot Project Program to Achieve Goals

Johns Hopkins is a research intensive university and grant support is expected to provide 80% of a faculty member's support. Therefore, the opportunity to delve into new areas of enquiry and develop new collaborations is essential to remain competitive in our research environment. The NIEHS Center *Pilot Project Program* is essential to meet this goal and these resources provide seed funding of new ideas which can result in the generation of preliminary data in support of a subsequent grant application. In the case of pilot grants in the community outreach and education area, product other than grants/publications may result. This program has also been very important in the development of collaborations that has led to new research grant submissions. Thus, this competitive peer-reviewed program provides funding to (a) investigators beginning an independent research program; (b) established investigators in environmental health research exploring new areas; and (c) investigators in other fields interested in applying their expertise to environmental health problems. Over the existence of this Center, this program has been most effective in facilitating the development of new research ideas that can be developed into full research applications for external funding. The *Internal Advisory Board* has served as an advisory council for the funding recommendations following the peer-review of pilot applications. This board also serves to provide a discussion forum when difficult decisions need to be made when two grants are similar in scientific merit but might differ with respect to relevance to the Center's mission.

Role of the Internal Advisory Board in the Strategic Planning for Faculty Recruitment

As stated in the *Strategic Vision and Impact on Environmental Health* section of this grant application, the major focal areas for assistant professor recruitment for environmental health sciences over the past five years have been to enhance: a) water research, b) molecular sciences in environmental health, c) biostatistics/bioinformatics and d) environmental epidemiology. These focal areas emerged through the combination of Center retreats, Departmental retreats and discussions among faculty. The Center has played a major role in the recruitment process by co-sponsoring seminars and providing candidates with extensive descriptions of available core facilities both within and outside the Center. Many members of the *Internal Advisory Board* have served as members or chairs of the national searches that are required for the recruitment of these professorial faculty. For example, the recruitment of Dr. Sining Chen to expand the base in bioinformatics was a joint recruitment between the Departments of Environmental Health Sciences and Biostatistics and Dr. Scott Zeger (Director of *Facility Core B: Bioinformatics/Biostatistics*) served as an integral member of this search committee. Once a newly recruited assistant professor arrives there is an orientation by the Center Director and Deputy Director to work with this person and encourage an application for pilot funds

from this Center. As described in the pilot project section of this grant, priority is given to new investigators to the Center and the review process is also an important early introduction to grant writing and peer review.

Director's Fund

In August 2006 there was a meeting of the Institute Director of NIEHS, Dr. David Schwartz, and all of the NIEHS Center Directors in North Carolina. One of the proposals made at that meeting that has now been implemented in the new Center guidelines is the opportunity to create a Director's Fund for an NIEHS Center. For this renewal cycle, we will devote \$100,000 to this fund. These monies will primarily be used for the rapid response to opportunities that emerge from the *Integrated Health Sciences Facility Core*. The *Internal Advisory Board* will also be engaged in the use of these funds. These funds will also support the acquisition of small pieces of equipment or supplies that can help facilitate translational research. These funds are not meant to be supplements for the existing pilot Project program, but they may serve as enabling funds that will then lead to pilot project applications in the center.

External Advisory Board: Responsibilities and Charge

At the start of the current funding period of this grant in 2003, the *External Advisory Board* members were: Dr. Fred F. Kadlubar, Associate Director for Research, National Center for Toxicological Research; Dr. Dan Liebler, Director of the NIEHS Center at University of Arizona; Dr. John Spengler, Professor of Environmental Health, Harvard University School of Public Health; and Dr. Philip Bromberg, Professor & Director, Pulmonary Disease Division, Department of Medicine, University of North Carolina School of Medicine who chaired the external advisory committee meetings. In late 2003, Dr. Spengler cycled off the committee because of pressing issues at his university and Dr. Gerald Wogan, MIT, assumed the role of an external advisor. In 2005, Dr. Liebler also requested that he be replaced on the committee since he felt that his appointment to the Advisory Council of NIEHS could pose a perceived conflict of interest. In his place, we asked Dr. Deborah Cory-Sleeta, Director of the NIEHS Center at UNDMJ, to serve on the external advisory committee. In addition, we have used Dr. Michael Gallo, UMDNJ, as an *ad hoc* advisor since he has had a long-standing interaction with this Center. In the renewal grant, Dr. Wogan will be cycling off the board and he will be replaced by Dr. Peter Dedon, MIT, who is the Associate Director of the NIEHS Center at MIT. Overall, the stability of the board is reflected in Dr. Bromberg's participation since the inception of the Center in 1985 and Dr. Kadlubar's membership since 1990. Many of the members of the board are or have been Directors of NIEHS Centers (Drs. Liebler, Gallo and Cory-Sleeta) and therefore, are quite familiar with the role of these Centers in research support.

The *External Advisory Board* meets in conjunction with the training grant workshop and meets to review topics presented by the Director that have arisen out of internal advisory board discussions. The topics include individual core research review and/or approaches to delivery of services through the Core Facilities. Individual Center members are also invited to make scientific presentations. In 2003, this Center hosted the annual NIEHS Center Director's meeting and we used this as a forum for our external advisory group. During this grant renewal period, the most difficult task facing the Center related to the major budgetary re-allocations mandated by the financial constraints of the NIEHS. Therefore, the external advisors were often contacted individually by telephone and e-mail, in lieu of formal meetings, to seek their advice on the necessary restructuring of the Center. We feel that this was a highly successful process that has made our recent formal meetings more focused on the science rather than on the process of running the Center. At the advisory meetings, the Deputy Director also updates the External Advisory Board on the status of the Pilot Project Program. In fact, it was this board that stressed the importance of having non-Center investigators as members of the Pilot Project Review Committee. Following their visit, board members prepare a letter to the Director in which they summarize their views on the topics reviewed at the meeting. The Director then shares this letter with the *Internal Advisory Board* and Core Facility Directors. If Center members had made presentations at the meeting, any feedback is shared with them. Recommendations from this Board about the importance of institutional commitment to the Center have also been shared with the Dean of the School.

At the advisory meetings, the Deputy Director also updates the *External Advisory Board* on the status of the Pilot Project Program. In fact, it was this board that stressed the importance of having non-Center investigators as members of the Pilot Project Review Committee. Following their visit, board members prepare

a letter to the Director in which they summarize their views on the topics reviewed at the meeting. The Director then shares this letter with the *Internal Advisory Board* and Core Facility Directors. If Center members had made presentations at the meeting, any feedback is shared with them. Recommendations from this Board about the importance of institutional commitment to the Center have also been shared with the Dean of the School.

Role of the NIEHS Center in Faculty Recruitment to Environmental Health

The NIEHS Center has played a major role in the recruitment of new faculty to environmental health at Johns Hopkins. Over the past five years this has resulted in eight assistant professors and one associate professor whose research programs are focused in the environmental health sciences. The specific contributions of the Center to these recruitments has included; travel support for the bringing in of faculty candidates, salary support for the new faculty, support for technicians and postdoctoral fellows in their laboratories, and specialized equipment purchases necessary for these investigators to begin their research careers. In addition, all of these faculty have been encouraged, and many have successfully obtained, pilot project funds from our Center program. The following describes with a brief synopsis these outstanding young investigators (more detailed descriptions of their research is found in the *Career Development for Environmental Health Investigators* section of the grant) who have or are now receiving partial startup support from the Center.

- **Water Research**

Historically, Johns Hopkins had a major program in water research. Indeed one of the past Chair's of the Department of Environmental Health Sciences, Dr. Abel Wolman, had been responsible for building the Baltimore water system. Given the critical role that water purity and contamination plays in urban environmental health; it was an important strategic decision to re-develop this program. The NIEHS Center has played a major role in these recruitments. One of the recent achievements of this new program was its contributions to the Hurricane Katrina relief program in Fall, 2005 in partnership with the American Red Cross. A description of these efforts is found at http://www.jhsph.edu/katrina/katrina_health.html.

Dr. Kellogg Schwab

Dr. Schwab was recruited to Johns Hopkins as an Assistant Professor following an extensive national search. The goal of the search was to identify an outstanding young investigator to be the first building block to re-establish a program in water research at the Bloomberg School of Public Health. In the past, the water program, that was led by the late Dr. Kruse, was internationally known for its academic and research activities and unfortunately during the 1980's and 90's, the program languished and all but disappeared from the School. As part of our strategic planning, we felt that the reconstitution of this area was critically important to our research and training mission. Thus, we conducted a joint search with the Department of Environmental Health Sciences and the Department of Geography and Environmental Engineering at the School of Engineering to identify faculty who could undertake this rebuilding effort. We were also facilitated by the strong commitment money and space renovations by the School to this effort. Dr. Schwab has admirably filled this difficult role and he has developed a robust research and academic program focused on the fate and transport of microorganisms in the environment with a strong emphasis on water and human health. Recently, Dr. Schwab was promoted to Associate Professor.

The role that the NIEHS Center has played in the career development of Dr. Schwab has been many fold. For two years, his salary was supported at 25% effort by the Center. When Dr. Schwab arrived at Johns Hopkins, there were no faculty members or research laboratories in the Department of Environmental Health Sciences conducting water-related environmental research. Within a year, Dr. Schwab had organized and equipped two fully functional laboratories. One laboratory was designed as a self-contained field sample processing facility for the independent analysis of environmental samples collected during field studies. The NIEHS Center provided the resources for the purchase of the preparative centrifuges and PCR machines needed for these facilities. The need for this specialized field laboratory stems from the requirement to have samples processed in an area isolated from potential cross-contamination from microorganisms, plasmids or PCR amplicons generated from within the research building. This strict level of containment significantly

enhances confidence in data interpretation. As a point of fact, numerous environmental researchers from other institutions have requested Dr. Schwab's advice during design of similar environmental field laboratories following a presentation Dr Schwab gave on the development of this laboratory at an Environmental Protection Agency (EPA) sponsored meeting entitled "Workshop to Develop a Protocol for Reliable Genetic Methods for the Detection of Viruses, for use in EPA's Water Programs" held in January 2003 at the EPA's Office of Water Research in Cincinnati, OH.

To develop Dr. Schwab's research program, he has made extensive use of *Facility Core A: Environmental Exposure and Health Assessment*, *Facility Core C: Microarray and Molecular Biology* and *Facility Core D: Bioinformatics/Biostatistics*. Dr. Schwab also received a pilot project grant titled, Development of a Quantitative PCR Method to Measure *Aspergillus fumigatus* in Indoor Air of Urban Buildings, that was instrumental in establishing the quantitative PCR methods for the measurement of microorganisms in a variety of media. Dr Schwab's laboratory has extended this strategy for norovirus, a leading cause of viral gastroenteritis world-wide, detection using reverse transcription (RT)-PCR incorporating multiple primers and probes and utilizing an internal standard for RT-PCR control.

Dr. Rolf Halden

As part of our strategic planning in water research, we recognized that there was a need to identify a candidate with chemical expertise to complement the biological studies of Dr. Schwab. Dr. Rolf Halden was identified from a national search and at that time, he had been a project engineer for four years in the Environmental Restoration Division at the Lawrence Livermore National Laboratory, University of California. Dr. Halden's research in water contamination was at superfund sites and in the San Francisco Bay and his work on priority pollutants greatly expanded our expertise in the Center. The specific contributions of the NIEHS Center to Dr. Halden includes 25% salary support for two years and the purchase of a number of specialized instruments for chemical and protein analysis. The Center purchased a liquid chromatography mass spectrometer (for Shimadzo Instruments, this is a mass spectrometer that is not capable of MS/MS analysis and is not part of the Center's facility core). In addition to the equipment and instrumentation in Dr. Halden's laboratory that was purchased using Center funds, he makes extensive use of *Facility Core A: Environmental Exposure and Health Assessment*, *Facility Core C: Microarray and Molecular Biology* and *Facility Core D: Bioinformatics/Biostatistics*. One example of his studies is the investigation of the wide-spread contamination of water in the US by Triclocarban, N-(4-chlorophenyl)-N'-(3,4-dichlorophenyl)urea, a polychlorinated phenyl urea pesticide, marketed under the trademark TCC and used primarily as an antibacterial additive in personal care products. Dr. Halden has received a pilot project grant titled, Development of an Exposure assessment Tool for the Biocide, Tricolosin.

Dr. Thaddeus K. Graczyk

The last of the recruitments for the water research program was completed last year and starting in July, 2005, Dr. Thaddeus K. Graczyk began receiving support from the Center. Dr. Graczyk research focuses predominantly on the important problem of transmission cycles of anthrozoonotic parasites in the environment such as *Cryptosporidium*, *Giardia*, and human infectious microsporidia (*i.e.*, *Encephalitozoon intestinalis*, *E. cuniculi*, *E. hellem*, and *Enterocytozoon bieneusi*), particularly in surface waters used for recreation and for drinking purposes. His research program on *Cryptosporidium* addresses the epidemiological implications of environmental contamination with this pathogen from point and non-point sources, and modes of parasite transmission by waters, food and mechanical vectors. For these studies, he has assembled and led a multidisciplinary research team consisting of scientists from the USDA, CDC, and NOAA to study the susceptibility of the Chesapeake Bay to environmental contamination with *C. parvum*, and also to assess the risk of waterborne cryptosporidiosis due to flooding in the US, perhaps as a consequence of the climate change within North America. The specific contributions of the NIEHS Center to Dr. Graczyk include 25% salary support for two years. Dr. Graczyk has received two pilot project grants and they are: 1) Testing a Simple Prevention Procedure Against Exposure to Pathogens via Contact with Surface Waters in Urban Environments of Metropolitan Baltimore and 2) Spatial and Temporal Distribution of Host-Sources of Human Enteric Parasites in Surface Waters of the Baltimore Metropolitan Area. Prior investment by the NIEHS in the preparative laboratories and PCR instruments have facilitated his research and he also makes use of the

facility cores, particularly the spatial statistical analysis component of *Facility Core D: Bioinformatics/Biostatistics*.

- ***Molecular Sciences In Environmental Health***

The basic molecular sciences provide the foundation for the future of environmental health investigations and these results are also a first step in the translational paradigm. As part of our ongoing efforts to recruit young scientists who can help us maintain a vibrant research program, we have ongoing searches for basic scientists who are interested in focusing on problems related to environmental health. Towards this objective we have recruited three assistant professors over the past three years.

Dr. Walter Watson

Dr. Walter Watson was recruited as an assistant professor in September, 2003. He received his Ph.D. from the University of Kentucky in 1999 and was a NIH Postdoctoral Fellow under Dr. Dean P. Jones at Emory University School of Medicine. Dr. Watson's research is focused on redox regulation of gene expression and it is well known that oxidative stress is a component of many human diseases and contributes to the toxicity of a number of environmental and therapeutic agents. Furthermore, the generation of small amounts of pro-oxidants appears to be an essential part of several signal transduction pathways. Although all macromolecules can be targets of oxidative damage, the oxidation of specific cysteine thiols in some proteins (such as transcription factors) can have dramatic functional consequences. Thioredoxin is a redox-active protein that is ideally suited for the reduction of oxidized cysteine residues in proteins, providing a means by which oxidative signals can be reversed. The major goal of his research is to define the roles of thioredoxin in oxidative signaling in the cytoplasm and as a regulator of gene expression in the nucleus. Prior to his arrival at Johns Hopkins, Dr. Watson had been awarded a K22 Transition in Position career development award by the NIEHS that supported the start-up for the experimental research in his laboratory. Dr. Watson received 25% salary support for two year from the NIEHS Center. He has also made extensive use of *Facility Core B: In Vitro and In Vivo Imaging and Analysis*, *Facility Core C: Microarray and Molecular Biology* and *Facility Core D: Bioinformatics/Biostatistics*.

Dr. DeLisa Fairweather

Dr. DeLisa Fairweather started her position as assistant professor in July, 2005, and at that time she began receiving support from the Center. Dr. Fairweather received her Ph.D. from the University of Western Australia in 1998. For a five year period Dr. Fairweather was a Postdoctoral Fellow and then a research associate under the mentorship of Dr. Noel Rose at the Johns Hopkins School of Medicine. Dr. Fairweather's research is in the area of autoimmunity and the role that environmental toxicants, such as mercury, play in the development of autoimmune disease. She is also studying the role of innate immunity in regulating development of inflammatory heart disease, the role of sex hormones in inflammatory heart disease and in collaboration with Dr. Biswal (*Facility Core C: Microarray and Molecular Biology*) with the underlying contributions of the Nrf2 pathway and oxidative stress in heart disease. Dr. Fairweather has also received start-up salary support (25% effort) from the NIEHS Center and support for 50% of a post-doctoral fellow. She has made extensive use of *Facility Core B: In Vitro and In Vivo Imaging and Analysis*, *Facility Core C: Microarray and Molecular Biology* and *Facility Core D: Bioinformatics/Biostatistics*. Her laboratory is exploring the role of innate immunity in cardiovascular disease and the link between infections, toll-like receptor signaling and increased heart disease. She was recently awarded an R01 grant (1R01HL087033-01) titled Regulating Heart Disease: The Adjuvant Effect of Viral Infection.

Dr. Steven An

The most recent appointment as assistant professor was Dr. Steven An who started in January, 2006. Dr. An received his Ph.D. from Brown University in 2000 and from 2000-2003, he was a post-doctoral fellow under the mentorship of Dr. Jeffrey J. Fredberg at the Harvard School of Public Health. Dr. An fulfills our desire to recruit a faculty member with a focus in the biophysical arena. Dr. An's research interests are focused on the airway smooth muscle (ASM) cell and its role in excessive airway narrowing in asthma. His laboratory utilizes a suite of novel nano-technologies, in combination with multiple chemical and genetic manipulations, to quantify the extent to which airway hyperresponsiveness (AHR) in asthma is attributable to the ability of the ASM cell to stiffen, to generate contractile force, and to remodel its cytoskeleton, with an emphasis on the molecular

mechanisms that regulate these processes. Thus, his current research employs a number of novel biophysical methodologies to investigate mechanical properties of the cell and, in particular, underlying structures and signals that regulate these responses. His work is the best possible example of advances that can be derived from bridging of the physical sciences and the life sciences and, importantly, has potential applications in the area of lung biology with direct impact on respiratory diseases and public health outcomes. The NIEHS Center is currently supporting 25% of his salary and the start-up funds for the purchase of the specialized equipment he uses for the measurement of cell motility.

- ***Biostatistics/Bioinformatics***

The NIEHS Center has always supported interactions with biostatistics, and more recently in the development of the field of bioinformatics. All investigators in the Center recognize the emergence of these technologies as being central to modern environmental health research. Further with the acquisition of a new training grant from NIEHS in environmental biostatistics (T32 ES012871, Dr. Thomas Louis PI), there was a clear need to recruit new faculty in this area. These recruitments were done with a joint search committee between the Department of Biostatistics and the Department of Environmental Health Sciences. Dr. Scott Zeger, Chair of the Department of Biostatistics and Director of *Facility Core D: Bioinformatics/Biostatistics*, has facilitated these recruitments by assuring joint appointments for all recruited faculty in his department. To date, two faculty have been recruited using this process.

Dr. Sining Chen

Starting in August, 2005, Dr. Sining Chen began receiving support from the NIEHS Center (25% effort for two years) as a new assistant professor. Dr. Chen received her Ph.D. from Duke University in 2002 in their Institute of Statistics and Decision Sciences. Dr. Chen's undergraduate degree in applied mathematics is from Tsinghua University in Beijing, which is the leading scientific undergraduate university in the country. From 2003 to 2005, Dr. Chen was a Postdoctoral Fellow under the mentorship of Dr. Giovanni Parmigiani at the Johns Hopkins School of Medicine in the Department of Oncology. During this post-doctoral experience, Dr. Chen developed statistical models that have been applied to genetic changes that underlie risk for breast cancer. These models have direct applicability to current issues in gene-environment interactions that underpin risk from many environmental exposures. Dr. Chen was awarded a pilot project grant titled, *Studying Associations in Neuroimages: An Empirical Bayes Approach*. In this work she is collaborating with the findings from the Baltimore Memory Study directed by Dr. Brian Schwartz.

Dr. Frank Curriero

Dr. Frank Curriero was recruited as an assistant professor and began receiving support (25% effort for two years) from the Center in July, 2005. Dr. Curriero brings skills in spatial statistics and geographic information systems (GIS) and this was an area identified by Center members as a major need. Dr. Curriero received his M.A and Ph.D. in Statistics from Kansas State University and joined the Department of Biostatistics at Johns Hopkins following a two-year post-doctoral experience with Dr. Lele at Johns Hopkins. Dr. Curriero's collaborations across the school have been extensive and include publications with Drs. Samet and Zeger on morbidity and mortality from particulate matter exposure (1, 2), survival following Alzheimer's Disease diagnosis (3), surveillance data on prostate cancer in Maryland (4) and GIS studies of global climate change (5). Dr. Curriero has been actively involved in the application of GIS technologies to hazardous waste exposures and has collaborated extensively with Center members on this issue (6, 7). Dr. Curriero's research on the application of kriging to environmental measurements was supported by the pilot projects program with the grant, *Spatial Regression Methodology for data Located at Different Levels of Geographic Precision: application to Environmental Exposure Assessment*. Dr. Curriero is also a member of *Facility Core D: Bioinformatics/Biostatistics* to provide support for the spatial statistical efforts of Center members.

- ***Environmental Epidemiology***

Working in collaboration with the Department of Epidemiology and the Department of Environmental Health Sciences we sought to recruit new faculty in the area of environmental epidemiology. We were particularly interested in the recruitment of physician scientists, who could help provide clinical expertise to environmental

epidemiology investigations. This national search has resulted in the recruitment of the following faculty member.

Dr. Ana Navas-Acien

Dr. Ana Navas-Acien began as an assistant professor in October, 2005 and is receiving support from the NIEHS Center (two years of salary support 10% effort due to her ongoing grant support). Dr. Navas-Acien is a physician-epidemiologist with a specialty in Preventive Medicine and Public Health and with a long-term interest in the health consequences of widespread environmental exposures. Dr. Navas-Acien received her MD degree in 1996 from the University of Granada School of Medicine in Spain and then followed with an MPH degree from the National School of Health in Madrid in 1998. During this time, Dr. Navas-Acien participated in several studies in Latin America. This experience encouraged her to apply to this School for the PhD program in the Department of Epidemiology at Johns Hopkins. Dr. Navas-Acien received her PhD in 2005 under the mentorship of Dr. Eliseo Guallar. Dr. Navas-Acien's thesis research examined the role that low level arsenic exposure plays in the development of diabetes and cardiovascular disease (8-10). This work builds upon her previous work in the metals toxicity field and this is a mainstream interest among many faculty in the department. During Dr. Navas-Acien's tenure as a graduate student, she also participated in a number of teaching venues including work with Dr. Samet on environmental tobacco smoke exposure (11). This was done as part of a course held in Brazil and Dr. Navas-Acien's language skills will also help in our recruitment and retention of students and fellows from Latin America. Based on an epidemiologic approach, her research investigates the cardiovascular effects of arsenic, selenium, lead, cadmium and other trace metals. Given the paucity of epidemiologic data at low/moderate levels, the possible biological basis, and the controversy for current environmental standards, this challenging area of research is potentially relevant for public health. For exposures with large epidemiologic evidence of the adverse health effects, such as secondhand smoke, her interest is to conduct relevant research in support of progressive policies to reduce involuntary exposure to environmental toxins.

As a physician scientist, we have also endeavored to assure that Dr. Navas-Acien has a clinical mentoring structure to help facilitate her career development. To meet this goal Dr. Navas-Acien is becoming a member of the Welsh Center for Clinical Epidemiology at Johns Hopkins. The Welsh Center is a joint effort between the School of Medicine and the School of Public Health, and integrates members of the Department of Medicine and the Department of Epidemiology to further efforts in the arena of clinical epidemiology. Dr. Neil Powe, Director of the Welsh center has assigned Dr. Eliseo Guillar as Dr. Navas-Acien's mentor. Dr. Guillar is a collaborator on the pilot project grant awarded to Dr. Navas-Acien, Lead Dose and Markers of Cardiovascular Function in Korean Lead Workers.

- ***Epigenetics Faculty into the Center***

Dr. Stephen Baylin

Dr. Baylin's research has contributed heavily to the concept that epigenetically mediated loss of gene function is a major player in the progression of human cancer. This process, for which aberrant gene promoter hypermethylation is a signature and a component of aberrant loss of transcription for involved genes, is now known to be an alternative to coding region mutations for loss of function of more than half the classic tumor suppressor genes and for a growing list of candidate tumor suppressor genes in virtually every type of human cancer. This laboratory is attempting to understand the abnormalities of chromatin and methylation assembly that may account for the appearance of these epigenetic abnormalities during tumor development and how they mediate the transcriptional repression. They are learning, in this regard, that an interaction between the DNA methylation, histone de-acetylase (HDAC) and histone methylating enzymes mediates the transcriptional silencing. The Baylin laboratory has also discovered that the enzymes that catalyze DNA methylation, the DNA methyltransferases (DNMTs), are more complex than previously thought and can both inhibit transcription and interact with HDACs, independent of mediating the methylation. In collaboration with the Vogelstein-Kinzler lab, they have identified that an interaction between DNMTs is required in colon cancer cells to maintain the abnormal promoter methylation and silencing of important tumor suppressor genes. All of these studies are giving us a much more complete picture of the machinery that mediates aberrant promoter methylation in cancer. They also are contributing to the translational goal of targeting reversal of abnormal gene silencing as

a cancer prevention and/or therapy strategy. The research also illustrates the temporal changes in gene expression and recent studies have shown that many environmental agents can trigger these responses, this has been recently reviewed (12).

Dr. James Herman

The Herman lab's work explores the importance and clinical utility of epigenetic changes in cancer. In earlier work, they developed a simple and sensitive method, methylation-specific PCR, for the detection of methylation changes. It is the most widely used method for the study of methylation changes in cancer. This approach, and others developed in the lab, is now used to identify new genes that are silenced in cancer. The Herman lab also continues to examine methylation events in pre-invasive lesions associated with solid tumors to understand tumor development and progression and to develop these findings into early detection markers. The Herman lab also has explored the use of gene methylation as predictive and prognostic markers in cancer. Both in the lab and in a phase 1 trial, Herman has studied approaches to reverse gene silencing in patients with cancer (13).

Research Retreats and Program Enrichment by the Center

Initial Center Retreat, June 23, 2003

The current five-year funding for this Center began on April 1, 2003, and we scheduled a major Center member retreat at the Belmont Conference Center, Linthicum MD for June 23, 2003. The major agenda items at that this retreat were: 1) a detailed discussion of the review critique from the site visit, 2) a discussion of the budget reductions, 3) a discussion of the merger of two of our facility cores (Facility Core B and D) into one new core, *The In Vitro and In Vivo Imaging and Analysis Facility Core*, and 4) a discussion on the need to enhance our bioinformatics capacity in the Center. We also had an extensive discussion on the need to expand our mass spectrometry capabilities in the NIEHS Center. This led to the commitment to increase our capacity in metals analysis through the purchase of the ICP/MS and the expansion of our small molecule analysis with the procurement of a new triple-quadrupole mass spectrometer. Finally, we had an extensive discussion about the nature of our community outreach program and how this will integrate into the future translational research activities of our Center.

Hosting NIEHS Center Directors Meeting in October 19-21, 2003

From October 19-21, 2003, we hosted the NIEHS Center Directors meeting. The theme of the meeting was urban environmental health and the program involved both plenary talks and panel discussions. This meeting was the first to integrate the community outreach and education directors into the annual Center Director's meeting. The keynote speaker for this conference was the Lieutenant Governor of the State of Maryland, Mr. Michael Steele, who spoke on Urban Health as a Priority for the State of Maryland. We also utilized this meeting as the forum for our *External Advisory Board* meeting.

The first session of the meeting focused on air pollutants as an urban environmental health priority and was chaired by Dr. Timothy Buckley (JHU). There were three talks. The first was by Dr. Jonathan Samet (JHU) who described the *National Morbidity and Mortality Air Pollution Study (NMMAPS)*, the next talk was by Dr. Francesca Dominici (JHU) who framed, *Integrating Models for Health and Exposure Air Pollution Data* and the last talk in the session was by Dr. John Peters the NIEHS Center Director at USC; titled, *The Search for Chronic Health Effects of Urban Air Pollution*. This scientific session was then followed by a panel discussion titled, *Translating Air Pollution Data to the Community* and the participants were Andrea Hricko (USC), Marti Lindsay (UA), George Thurston (NYU), and Michael Trush (JHU), Chair, all leaders of the COEP programs.

The second session focused on host, genetic and environmental susceptibility and was led by Dr. Valeria Culotta (JHU). There were also three talks and they started with Dr. Leona Sampson (MIT), who spoke on *Complex Biological Responses to DNA Damaging Agents*. The next talk was Dr. Brian Schwartz (JHU) who described the research surrounding *Gene-Environment Interactions in Neurological Disease Following Lead Exposure* and the last seminar was by Dr. Martyn Smith (UC-Berkeley) titled *Gene-Environment Interactions in Leukemia and Lymphoma*. This session was also followed by a panel discussion which described Interfacing

Gene-Environment Data with Community. The panelists were COEP Directors, Frances Lynn (UNC), Robin Fuchs-Young (UT-MDACC), and Michael Trush (JHU), Chair.

The last session was titled, *From Bench to Community: Translating Environmental Health Research* and Dr. Thomas Kensler was the session Chair. The two talks were *Hepatic Energy Homeostasis and Obesity-Related Liver Disease in Mice and Men* by Dr. Anna Mae Diehl (JHU) and *Translating Molecular Research to Chemoprevention of High Risk Populations* discussed by Dr. Thomas Kensler (JHU). The final panel discussion addressed Involvement of COEP in Translational Research and the panelists were Larry Johnson (TAMU), Sharon Petronella (UTMB), and Michael Trush (JHU), Chair.

Over 125 people attended this meeting and this forum provided our Center with a major boost for the start of the grant renewal.

Annual Environmental Health Sciences Research Retreats

The environmental health sciences research retreats are sponsored in part by the NIEHS Center in an effort to bring faculty, students and fellows together to discuss science/research, identify research areas of common interest across disciplines for future multi-disciplinary research grants to NIH and other funding agencies and to identify emerging areas of research in environmental health and emerging novel technologies for application to environmental health research. An organizing committee made up of Center members, chaired by Dr. Chandrasegaren, draws up the agenda which is then reviewed by Dr. Groopman. These agendas are designed to be very broad based and inclusive of both young and senior investigators. We also invite students who have posters from national meeting presentations to present them for informal discussions. All of these retreats are held on two days at the Mt. Washington Conference Center in Northwest Baltimore. This facility is serviced by the Johns Hopkins University shuttle system which facilitates student attendance. Finally, these research retreats have been used as an opportunity to invite potential members of the Center to present their science.

November 14 and 21, 2003

Our first session of the November 14th Retreat was devoted to *Toxicologic and Epidemiologic Approaches to Understanding the Causes of Central Nervous System Disease*, which was chaired by Dr. Brian Schwartz. The panel discussion group consisted of Drs. Joseph Bressler and Tomas Guilarte. The second session focused on *Molecular Imaging*, chaired by Dr. Tomas Guilarte. The panel discussion group consisted of Jonathan Links (Instrumentation), Kwamena Baidoo (Radiochemistry), and Martin Pomper (Director of the NCI Imaging Center at Hopkins). The third session was devoted to *Environmental Lung Disease*, chaired by Dr. Sekhar Reddy (Toxins-induced Signaling in the Lung). The panel discussion group consisted of Wayne Mitzner (Aging and Lung Structure-Function), Clarke Tankersley (Air Pollution and Cardiopulmonary Effects) and Shyam Biswal (Oxidants Stress and Airway Inflammation). The final session was dedicated to *Reducing Uncertainty in Exposure and Risk Assessment*, chaired by Dr. Rolf Halden. The panel discussion group consisted of Drs. Tim Buckley, Paul Strickland and Kellogg Schwab. The Overview was delivered by Dr. John Groopman discussing the Emerging Areas of Research. A poster session was held with faculty, students and post-doctoral fellows displaying their recent research.

Our second session in this series on November 21st was devoted to *Genetic Models (K/O)*, chaired by Dr. Clarke Tankersley. The panel discussion group consisted of Thomas Kensler and James Yager. The second session focused on *Emerging Technologies*, chaired by Dr. Shyam Biswal. The panel discussion group consisted of Drs. John Groopman and Clarke Tankersley. The third session was devoted to *The Significance of Reactive Oxygen Species to Human Diseases Elicited by Environmental Agents*, chaired by Dr. Michael Trush. The panel discussion group consisted of Dr. Valeria Culotta (Use of Yeast Models for Studying ROS Homeostasis and Toxicity), Terence Risby (Measurement of Oxidative Stress in Humans) and Thomas Kensler (Is Chemoprevention Applicable to ROS-Mediated Diseases? The final session was dedicated to *Susceptible Populations/Models*, chaired by Dr. Lynn Goldman. The panel discussion group consisted of Virginia Weaver (Identifying susceptible populations in occupational epidemiology studies), Tom Guilarte (Early life exposures vis a vis chronic impacts in adults; new models of animal research) and Shyam Biswal (Applications of

toxicogenomics technologies for early life stages (e.g., fetal cells in umbilical cord). A poster session was held with faculty, students and post-doctoral fellows displaying their recent research.

April 23, 2004

The first session was devoted to *OXYGEN*, chaired by Dr. Robert Fitzgerald. The session speakers were Drs. Robert Fitzgerald, Michael Trush, Naresh Punjabi and Machiko Shirahata. These talks ranged from the formation and molecular consequences of oxygen mediated damage to the clinical effects of reactive oxygen species. The second session focused on *New Research Directions*, chaired by Dr. John Groopman. This session was designed to give two new faculty, Dr. Walter Watson and Dr. B. Rey DeCastro an opportunity to present their research interest and strategies. The last session of the day was devoted to the *Role of the Immune System in Environmental Diseases*, chaired by Dr. Ellen Silbergeld. The session speakers were Drs. Ellen Silbergeld, Michael Trush, Joseph Bressler and Jennifer Nyland. A poster session was held with faculty, students and post-doctoral fellows displaying their recent research. The last session also stimulated the discussion on the need for faculty recruitment in the area of environmental immunology and this led to the national search that resulted in the hiring of Dr. DeLisa Fairweather as an assistant professor.

January 13-14, 2005

Dr. Groopman gave the overview on January 13th discussing the *Role of EHS: Past and Future Perspectives*. This talk was designed to provide a perspective on the challenges for the field to respond to the NIH roadmap initiatives. The first scientific session was devoted to *Lung Related Research*, chaired by Dr. Robert Frank. The session speakers were Drs. Bill Spannhake (Lung Related Overview), Clarke Tankersley (Particulate Exposure Adversely Lowers Cardiac Output in Senescent Mice), Robert Brown (Non-invasive Imaging of Human Airway). The second session focused on *Cancer Research*, chaired by Dr. Michael Trush. The session speakers were John Groopman (Cancer Research Overview), Paul Strickland (Biomarkers of Exposure to PAHs), James Yager (Estrogen Catechol Metabolites and Breast Cancer), and S. Chandrasegaran (Gene Targeting using Zinc Finger Nucleases).

During the second day on January 14th the morning session was focused on *Metals*, chaired by Dr. Alan Goldberg. The session speakers were Tomas Guilarte (Overview), Brian Schwartz (Dose Lead Shrink the Brain? New Evidence from Neuroimaging Studies), Drs. Silbergeld, Bressler, Culotta and Goldman. The final session was dedicated to *New Initiatives*, chaired by Dr. John Groopman. The session speakers were Patrick Breyse (SUPERFUND), Brian Schwartz (Built Environment – “The Built Environment: I Can’t Define It but I Know It When I See it”), Jacqueline Agnew (ERC/NIOSH) and John Groopman (NIH Road Map). A poster session was held with faculty, students and post-doctoral fellows displaying their recent research.

January 12-13, 2006

The focus of the first session on this retreat was on *Environmental Health Disaster Preparedness*. Dr. Alan Goldberg gave the Introduction to Public Health After Disasters followed by Dr. Jonathan Links discussing an Introduction to the role of Environmental Health In Disaster Preparedness and Response: Research, Education and Practice. Dr. Alison Geyh then reviewed the Post 9/11 Research And Response: The Immediate Effort And Long Term Objectives For Understanding The Impact Of The Attacks On The World Trade Center. Dr. Kellogg Schwab gave his first-hand experiences on the Post Katrina response and research: Limitations in real-time response and an approach for follow-up studies. This morning session was wrapped up by Drs. Links, Geyh and Schwab discussing the issues related to immediate and longer term research in preparedness. Following the panel discussion, Dr. Lynn Goldman described the New National Center for the Study of High Consequence Events Preparation and Response at Johns Hopkins funded by the Department of Homeland Security. Finally, the day ended with a group discussion on the mechanisms to coordinate and foster an EHS preparedness program to enhance research, practice and education.

The next day had a series of talks from the new faculty chaired by Dr. Machiko Shirahata. The presenters and the titles of their talks were: Dr. DeLisa Fairweather, Understanding Heart Disease; Dr. Frank Curriero, Location, A Source of Variation Worth Considering; Dr. Sining Chen, Advancing statistics in Environmental Health Sciences; Dr. Ana Navas-Acien, Environmental cardiovascular epidemiology and a little bit of secondhand smoke; Dr. Steven An, Cytoskeletal stiffness, contraction, and remodeling at the nano-scale: what

do these teach us about airway hyperresponsiveness in asthma?; and Dr. Thaddeus Graczyk, Waterborne Parasites At A Glance.

The morning session ended with a talk by Dr. James Yager: Programs for National Academy of Science "Discussion of NAS/NRC Report I on Toxicity Testing and Assessment of Environmental Agents – Opportunities for EHS?"

The final session in the retreat was on *Children's Health Issues and Developmental Neurotoxicity*, chaired by Dr. Joseph Bressler. The talks were by Dr. Joseph Bressler, "Neurodevelopment and Neurodevelopmental Disorders", Dr. Lynn Goldman, "Protecting babies? What is stain repellent and flame retardants doing in umbilical cord blood?", Dr. Tomas Guilarte, "Neurogenesis in developmental lead neurotoxicity" and Dr. Alan Goldberg: "Developmental Neurotoxicity (DNT) - The TestSmart Program".

Our next scheduled Research Retreat will be on March 15-16, 2007. Last year an anonymous departmental survey was done using the Survey Monkey on-line system and these research retreats were cited as the most important mechanism for communication and stimulation of research collaborations done at our institution.

Global Environmental Health Initiative with MIT Center

Starting in August 2004 at an international symposium held in Bangkok Thailand, leadership from the MIT environmental health sciences Center and the Center started to discuss collaborative interactions in global environmental health. These discussions were followed up in December 2005 at an Asian public health leaders meeting on air pollution and health that was also held in Bangkok Thailand. In July 2006 we traveled to Bangkok Thailand and Singapore to establish air toxics driven global environmental health initiative. Working with our colleagues over the past year, we outlined a concept for creating an international, interdisciplinary, multi-institutional network to be nucleated by MIT and Johns Hopkins with strategic partners in Asia. During this current period of unprecedented growth in Asia as a result of globalization, this Institute will promote education, basic research and translational research as applied to important regional human health problems. Through the partnering of the Chulabhorn Research Institute (CRI) in Bangkok, Thailand, National University of Singapore, MIT and JHU, there is a major opportunity to leverage towards a Global Health and Exposure Biology Institute. The vision statement for this initiative concept lays out a virtual infrastructure, grounded by our existing NIEHS Centers, that houses a team of scientists and engineers who do research in the emerging area of exposure biology framed on emerging global health issues. The Institute will conduct and facilitate research in three cutting edge areas. (1) The development of biomarker technology that accurately predicts human biological response to exposure induced by external agents. Biomarker technology is destined to become the cornerstone of modern molecular epidemiology, by which inter-individual responses to toxins and drugs will be evaluated. Better biomarkers will eventually translate to more accurate, faster and cheaper clinical trials. This virtual institute will have the opportunity to become the thought leaders in clinical trial design through their expertise in molecular biomarkers of disease; (2) The Institute will also provide a foundation for a human disease interventions. Investigators in this initiative will mount a broad, informatics based program aimed at identification of chemical agents that result in reduction in disease burden. Agents that induce pathways that protect against cardiovascular disease and cancer will be identified using a novel paradigm recently developed at MIT and Johns Hopkins University. A parallel, closely interacting, sub-program will use detailed knowledge of disease specific biochemical networks to design agents that simultaneously attack multiple nodes in the biochemical networks of diseased cells. Clinical development of agents arising from the chemo-intervention and chemo-therapy programs will be an ultimate goal of these efforts. (3) Population analysis of the people of Singapore and Thailand will be accomplished in a new initiative entitled the Asia Phenome Project. Investigators on this effort will build upon an existing, modest scope epidemiological study by adding to it a host of modern measurement tools that, in aggregate, will provide the most detailed phenotypic definition of a population in any epidemiologic study done to date. This state of the art technology will provide unprecedented detail in describing the phenotype of urban Asians. This detail will allow better prediction of disease risk and, along with other programs within the Institute, will provide better access to customized medical care. It is noteworthy that the three thrust areas of this Institute are linked by a strong reliance on modern technology.

The Johns Hopkins Cigarette Restitution Fund (CRF) supported by the State of Maryland

The State of Maryland participated in the National Tobacco Settlement and following the enactment of a law in Maryland for the use of these funds called the Cigarette Restitution Fund, Dr. Groopman was appointed to co-direct the implementation of the program at Johns Hopkins with Dr. Martin Abeloff, Director of the Cancer Center. One of the specific mandates in the law governing the cigarette restitution fund is to investigate underlying environmental risk factors that contribute to the cancer burden in the state of Maryland. Thus, from the inception of this program this Center has played a central role in supporting a series of research grants funded by this program. The NIEHS Center has provided critical facility core infrastructure for the following research projects that were supported with grants of \$150,000 from CRF.

Dr. Rolf U. Halden's project was *Human Fetal Exposure to Drinking Water Carcinogens in Maryland*. Drinking water is an important pathway for exposures to potential environmental hazards. A water samples repository is maintained by this project. This study examines trihalomethanes, pesticides, inorganic contaminants, metals and radionuclides in umbilical cord blood. With in-kind support of the CDC, analysis of these compounds in infants emphasizes environmental contributions from wastewater and waste-water treatment, run off, chemical applications to land (pesticides), and other aspects of environmental health. Geographic correlations between pathway and exposure are observed here and reported to local health officials. This project has made use of *Facility Core A: Environmental Exposure and Health Assessment, and Facility Core D: Bioinformatics/Biostatistics*.

Dr. Bruce Trock studied the *Impact of Environmental Cadmium Exposure on Prostate Cancer Risk in the Baltimore Metropolitan Area*. Cadmium is suspected to play an etiologic role in prostate cancer. A biracial, urban population is being studied to assess this relationship in a geographic area having perhaps higher environmental, non-smoking-related cadmium exposures. This project has made use of *Facility Core A: Environmental Exposure and Health Assessment*.

Drs. Timothy J. Buckley and Thomas A. Burke have studied *Cancer Prevention in Maryland through Risk Characterization*. Ecologic distribution of risk and exposure for cancer differs across Maryland. This project seeks to profile local area environmental risk, exposure and health. This information was used to communicate with local health officials and to describe various policy options. This project has made use of *Facility Core A: Environmental Exposure and Health Assessment, and Facility Core D: Bioinformatics/Biostatistics*.

Dr. Alison S. Geyh, *Ambient Air Elemental and Metal-Containing Particulate Matter and Risk for Lung Cancer Death*. Recent findings implicate ambient particulates in air with risk of disease. The actual distribution of metal-related particulates by type, composition, and source is not well articulated and will be the focus of this grant. This first project will make use of Inductively Coupled Plasma Mass Spectroscopy (ICP-MS), a core resource for investigators in the Johns Hopkins Institutions. This project has made use of *Facility Core A: Environmental Exposure and Health Assessment, Facility Core B: In Vitro and In Vivo Imaging and Analysis, Facility Core C: Microarray and Molecular Biology and Facility Core D: Bioinformatics/Biostatistics*

Dr. Ellen K. Silbergeld, *Environmental Arsenic Exposure and Cancer Risk in Maryland's Eastern and Western Shore Counties*. Maryland's rural areas are dependent on wells as the source for their drinking water. Arsenic has been observed in USGS samples of MD ground water. This project explores potential non-aquifer related environmental factors that influence perhaps non-random arsenic occurrence. Biomarkers of exposures are also investigated. This project has made use of *Facility Core A: Environmental Exposure and Health Assessment, Facility Core B: In Vitro and In Vivo Imaging and Analysis, Facility Core C: Microarray and Molecular Biology and Facility Core D: Bioinformatics/Biostatistics*

Communications

The center has developed a newsletter in collaboration with the communications director for the Department of Environmental Health Sciences, Mr. Brian Fitzek. This newsletter is formatted as a PDF file and is posted on the Center website and widely distributed. This newsletter was started at the end of 2003. In years 2004, 2005 and 2006, we had 6,942 separate downloads of these newsletter PDFs from our web-site. In

addition, from 2003-2006, we have had 11,771 separate investigations of the NIEHS Center's web-page. These newsletters are included in the appendix of this section.

Data Sharing Plan

Consistent with NIH policies, the investigators in this center grant are committed to share research data on completed NIH-funded research projects. The sharing of final research data facilitates the discovery process and is, therefore, of great scientific and public benefit. Specific approaches to comply with the NIH Policy on Sharing of Research Data are outlined in the following.

The primary means through which program members share final research data is the publication of their findings in peer-reviewed scientific journals. The center grant has facilitated significant contributions to the peer-reviewed cancer research literature, with over 550 research articles published during the most recent renewal period. Our investigators conform to the standards established by peer-reviewed journals to be in compliance with the NIH Policy on Sharing of Research Data. Finally, program members continually develop new collaborations and partnerships, and are open to requests for data or collaboration from other scientists, within the limits established by HIPAA, and for unpublished proprietary data.

Response to the Critique of the Previous Site-visit Report for the Administrative Core

The priority score at the 2002 site-visit was 149 and no significant deficiencies were cited in the report.

Cited publications:

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Survey Results for Center Member Use of Facility Cores

	YES	NO	LONGER TERM
FACILITY CORE A: EXPOSURE AND EFFECT ASSESSMENT			
Animal inhalation	2	8	2
Human exposure chamber	1	9	0
Ambient exposure assessment	5	7	3
FACILITY CORE B: CELL AND TISSUE ANALYSIS			
Light microscopy	7	6	1
Cell and tissue imaging	5	6	1
FACILITY CORE C: DNA MICROARRAY AND MOLECULAR BIOLOGY			
DNA microarray (Affymatrix)	12	3	3
DNA microarray (custom nylon/glass arrays)	13	3	2
Gel electrophoresis of proteins	6	6	1
Gel electrophoresis of nucleic acids	6	6	1
Mass spectroscopy for peptide sequencing	8	4	2
Luminometer for reporting genes	5	6	1
Phosphoimager	10	6	2
Oligonucleotide synthesis	11	5	0
FACILITY CORE D: IN VIVO IMAGING			
PET/SPEC Camera in vivo imaging	3	6	1
FACILITY CORE E: ENVIRONMENTAL BIOSTATISTICS			
Bioinformatics	8	4	4
Biostatistics training and consultation	10	3	3
SCHOOL OF MEDICINE CORE FACILITIES			
Confocal microscopy	10	3	1
Electron microscopy	2	5	2
Transgenics	5	5	3
GENERAL INSTRUMENTATION AND SERVICES			
PCR machine	7	6	2
Ultracentrifugation	6	6	2
UV-Spectroscopy	7	6	1
NMR Spectroscopy	2	7	2
Spectrofluorimeter	6	6	1
Autoclave	8	6	2
Scintillation counter	7	6	1
X-Ray developer	9	6	0
LC/Mass Spectroscopy	6	6	3
GC/Mass Spectroscopy	1	7	1
Metal Analysis (atomic absorption)	4	6	0
HPLC	4	7	1

SUGGESTED COMMON EQUIPMENT TO BE PURCHASED, SUPPORTED OR REPLACED

- A. Array reader
- B. Array software - bioinformation analysis

- C. Plate reader luminometer
- D. Table top ultra
- E. Real time PCR
- F. Accelerated solvent extraction unit: Dionex (~\$60K)
- G. Kinetic Phosphorescence Analyzer (KPA) for U and lanthanide: Chemcheck (~\$35K)
- H. LC/MS/MS or LC/MS^n (ion trap): Finnigan (~\$250K)
- I. Atomic absorption spectrophotometer (graphite furnace)
- J. UV/VIS spectrometer

FACILITY CORE D: IN VIVO IMAGING

PET/SPEC Camera <i>in vivo</i> imaging	3	6	1
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FACILITY CORE E: ENVIRONMENTAL BIOSTATISTICS

Bioinformatics	8	4	4
Biostatistics training and consultation	10	3	3

SCHOOL OF MEDICINE CORE FACILITIES

Confocal microscopy	10	3	1
Electron microscopy	2	5	2
Transgenics	5	5	3

GENERAL INSTRUMENTATION AND SERVICES

PCR machine	7	6	2
Ultracentrifugation	6	6	2
UV-Spectroscopy	7	6	1
NMR Spectroscopy	2	7	2
Spectrofluorimeter	6	6	1
Autoclave	8	6	2
Scintillation counter	7	6	1
X-Ray developer	9	6	0
LC/Mass Spectroscopy	6	6	3
GC/Mass Spectroscopy	1	7	1
Metal Analysis (atomic absorption)	4	6	0
HPLC	4	7	1

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- J. UV/VIS spectrometer

NIEHS Center Sponsored Seminars: February 1, 2002 (date of last renewal submission) to Present:

Date	Speaker	Title
02/06/02	Dr. Alvaro Puga, Professor, Center for Environmental Genetics, Department of Environmental Health, University of Cincinnati College of Medicine	"Cross-Talk Between AH Receptor and Signal Transduction Pathways"
02/07/02	Dr. Alison Geyh	"Something's in the Air: Assessing Exposure to Airborne Contaminants and What We May Never Know"
2/12/02	Matthew Hora, Director, Health and Food Systems Department, Capital Area Food Bank	"From Farm to Table: A Look at Regional Food Systems:
02/13/02	Dr. Kellogg Schwab Assistant Professor, Engineering	"Microbiological Assessment of the Baltimore Metropolitan Water Shed"
02/15/02	Professor Romain Pauwels, University Hospital, Dept of Respiratory Diseases, Ghent, Belgium	"The Role of the Dendritic Cell in Airway Disease"
02/18/02	LTC James Madsen, MD, Deputy Director, National Capital Consortium Residency in Occupational and Environmental Medicine, Uniformed Services, University of the Health Sciences	"Chemical Terrorism"
02/19/02	Dr. Theo Colburn, Director Wildlife and Contaminants Project, Senior Program Scientist, World Wildlife Fund, Washington, DC	"From Patient to Population: Thinking Big"
02/21/02	Dr. Harold Groeben, Visiting Assistant Professor	"The Effect of Local Anesthetics on Bronchial Hyperactivity In Vivo"
03/04/02	Dr. Jocelyn Apollon, President of Apollon and Associates, Inc.	"Media Skills 101: Developing the Message"
03/07/02	Ann Brockhaus, RN, MPH, Consultant, Organizational Resources, Counselors, Inc.	"OSHA: New Programs and Priorities"
03/11/02	Dr. Jackie Agnew, Professor and ERC Director	"Models of Occupational Stress"
03/12/02	Dr. Jay Goodman, Professor and Interim Chairperson, Department of Pharmacology and Toxicology, Michigan State University	"Altered DNA Methylation: A Secondary Mechanism Involved in Carcinogenesis"
03/13/02	Dr. Jo Rae Wright, Duke University Medical Center, Department of Cell Biology	"Immunomodulatory Functions of Pulmonary Surfactant"
03/14/02	Anne Morrison, Occupational Health Nursing Supervisor and Consultant, Fort Meade, MD	"Occupational Health Nursing in the Military"

Date	Speaker	Title
03/14/02	Dr. William Eaton	PROSTATE CANCER DEMONSTRATION PROGRAM SEMINAR "Eastern Catchment Area (ECA): Lessons Learned"
03/14/02	Dr. Michael P. Kladden, Assistant Professor, Dept of Biochemistry and Biophysics, Texas A&M University	"Investigating Chromatin Remodeling in Living Cells With Chimeric DNA Methyltransferases"
03/21/02	Dr. Bruce R. Pitt, Professor and Chairman, Department of Environmental and Occupational Health, University of Pittsburgh Graduate School of Public Health	The Eleventh Harold and Marilyn Menkes Memorial Lecture "Nitric Oxide and Zinc Homeostasis in Pulmonary Endothelial Cells"
03/21/02	NATIONAL LIVE SATELLITE BROADCAST	"Children's Environmental Health Information Resources" presented by the Partners in Information Access for Public Health Professionals. Cosponsored by the Center for a Livable Future and the Johns Hopkins NIEHS Center in Urban Environmental Health
03/25/02	Dr. Clifford Mitchell	"Return to Work After Injury" Rehabilitation at In-Plant Clinics at Ford Motor Company
03/26/02	Dr. Brooke T. Massman, Department of Pathology, University of Vermont, College of Medicine	"Cell Signaling by Asbestos in Pulmonary Fibrosis and Mesothelioma"
3/27/02	Dr. Rolf Halden, Assistant Professor, Environmental Engineering	"Pharmaceuticals in U.S. Streams: A Public Health Concern"
04/01/02	Junius McElvene-Jones, Day, Reavis & Pogue, John Kemp-Chairman of the Board, AAPD, Bob Herman-Paralyzed Veterans Administration, Jennifer Sheehy-Presidential Task Force on Employment of Adults with Disabilities.	"Panel Discussion On Employment of People with Disabilities: Legal, Political and Employer Perspectives in the New ADA Era".
04/1/02	Dr. Roger McIntosh	"Occupational Health Aspects of Chemical Weapons Exposure"
04/4/02	Diane Zerbe, MHS, Research Associate, Scientific Program Coordinator, Johns Hopkins School of Public Health	"Program Description: Public Health Scientists Working to Address Terrorism"
04/05/02	Barbara Davis, V.M.D., Ph.D., Chief, Laboratory of Women's Health and Female Reproductive Pathology Group, NIEHS	"An Approach to Study Environmentally Mediated Diseases in Women"
04/08/02	Robert Finkelstein	"Railroad Safety and Worker Injury Prevention"
04/08/02	Dr. Virginia Weaver, Assistant Professor, Occupational Health	Clinical Case Series
04/09/02	Dr. Laurie Zoloth, Professor, Social Ethics, Chair, Jewish Studies Program, College of Humanities, San Francisco State University	"Children's Health Care: Social Justice, Social Responsibilities, And Public Policies"

Date	Speaker	Title
04/10/02	<p>REVEREND JIM LEWIS and other members of the Delmarva Poultry justice Alliance will discuss the occupational health and social impacts of current methods of production</p> <p>MICHAEL SHUMAN, Senior Partner, Community Ventures LLP, will discuss his monograph</p>	<p>"Chicken Production And The Health Of Workers, Farmers, The Environment And Our Communities"</p> <p>"Bay Friendly Chicken: Reinventing the Delmarva Poultry Industry"</p>
04/11/02	Mary Doyle, MPH, COHN-S Contractor	"Occupational Hearing Conservation"
04/11/02	Sampson B. Sarpong, M.D., Assistant Professor of Pediatrics and Microbiology, Human Genome Center, Howard University	"An approach to study urban asthma in mouse models"
04/11/02	Richard Joseph Jackson, MD, Director, National Center for Environmental Health, Centers for Disease Control and Prevention	"Urban Approach to Study Urban Asthma in Mouse Models"
4/16/02	Kellogg J. Schwab, Ph.D., Assistant Professor, Division of Environmental Health Engineering	"The Quest to Provide Clean Drinking Water: Alternative Filtration Processes"
04/20/02	Sekhar Reddy, Assistant Professor, Environmental Health Sciences, Division of Physiology	"New Insights Into the Toxicant-Induced Respiratory Pathogenesis: Players and Pathways"
04/22/02	CELEBRATE EARTH DAY WITH THE CENTER FOR A LIVABLE FUTURE	The Center for a Livable Future will be showing the videos "Keeping the Earth" by the Union of Concerned Scientists, "Sustainable Lives, Attainable Dreams" by the National Wildlife Federation, and a powerful 6-minute visual on world population growth since the beginning of time by Zero Population Growth.
04/23/02	David G. Longfellow, Ph.D., Chief, Chemical and Physical Carcinogenesis Branch, Division of Cancer Biology, National Cancer Institute	"Etiology: From N.I.H. to Carcinogenesis"
04/25/02	Dr. Sekhar Reddy, Assistant Professor, Division of Physiology.	INFORMAL SCIENTIFIC GATHERING "Molecular Responses of the Lung: Role of AP-1, an environmental biosensor".
04/25/02	Nancy S. Pugh, BS, MAS, COHN-S, President, Pugh and Associates, LLC	"The Role of the Occupational Health Nurse Consultant."

Date	Speaker	Title
04/25/02	Dimitrios Georgakopoulos, Ph.D., Research Fellow Department of Medicine, Div. of Cardiology, Johns Hopkins University School of Medicine	"Is phospholamban the cure for heart failure: Insights from the phospholamban knockout mouse and in-vivo viral mediated gene transfer."
04/30/02	Sekhar Reddy, Ph.D., Assistant Professor, Division of Physiology	"New insights into the toxicant-induced respiratory pathogenesis: players and pathways"
05/02/02	Dr. Bill Spannhake, Professor and Associate Chair, Division of Physiology.	INFORMAL SCIENTIFIC GATHERING "The use of microarray data in studying the bronchial epithelium: A case study"
05/02/02	Shawn Soutiere, Ph.D. Candidate, Division of Physiology	"Structural Basis for Lung Pressure-Volume Curve Differences in Mouse Strains."
05/03/02	Anne Marie Bagley, RN, SPA, COHN-S, Nurse Manager, Associate Health Services, Marriott Corporation, Bethesda, Maryland.	"Occupational Health at Marriott Headquarters: Health Promotion and Disease Prevention"
05/06/02	Kurt Albertine, Ph.D., University of Utah	"Vitamin A treatment promotes alveolar formation in chronic lung disease of prematurity"
05/07/02	Lyngiene H. Calizo, Postdoctoral Fellow Candidate, Institute of Neurological Sciences, University of Pennsylvania	"Estrogen regulation of spines on the dendritic arbor ventromedial hypothalamic neurons and female reproductive behavior"
05/09/02	Sorachai Srisuma, M.D., Ph.D. Candidate, Division of Physiology	"Genomic Profiles of Angiogenesis in Ischemic Lung, O ₂ -rich Environment by High Throughput Oligonucleotide Microarray Study."
05/14/02	Jeffrey A. Johnson, Assistant Professor, School of Pharmacy, University of Wisconsin	"Activation of Antioxidant Response Element (ARE)-Driven Gene Expression of Neurons and Glia" How Important is Nrf2?"
06/05/02	Michael Aschner, Ph.D., Professor, Department of Physiology and Pharmacology, Wake Forest University, School of Medicine	"Manganese transport and mechanisms of neurotoxicity"
06/24/02	Jackob Moskovitz, D.Sc., M.Sc., B.A. Staff Fellow, NIH, Faculty Candidate Seminar	"Methionine sulfoxide reductase: A ubiquitous gene with multiple roles in survival and antioxidant defense"
09/05/02	Brendan Canning, Ph.D., Assistant Professor, Johns Hopkins Asthma and Allergy Center, Clinical Immunology	"Mechanisms of airway-defensive reflexes"
09/05/02	Yibin Wang, Ph.D., University of Maryland School of Medicine, Faculty Candidate Seminar	"Distinct roles of MAP kinases in heart failure"
09/12/02	Richard J. Traystman, Ph.D., Distinguished University Professor, Anesthesiology/Critical Care Medicine, Johns Hopkins Medical Institutions	"Autonomic dysfunction in diabetes: Role of neuronal M2 muscarinic receptors and insulin"

Date	Speaker	Title
09/17/02	Isaac N. Pessah, Ph.D., M.S., Professor, Department of Molecular Biosciences, School of Veterinary Medicine, UC/Davis	"Cellular neurotoxicity of polychlorinated biphenyls: interplay of environmental and genetic mechanisms"
09/18/02	Patrick N. Breyse, Ph.D., Professor, Division of Environmental Health Engineering, Department of Environmental Health Sciences	Asbestos Exposures during the World Trade Center Clean-up
09/25/02	Timothy Buckley, Ph.D., Assistant Professor, Division of Environmental Health Engineering, Department of Environmental Health Sciences	Communicating Exposure and Risk Results in a Community-based Study: Challenges and Lessons Learned
09/27/02	John D. Groopman, Ph.D., Professor and Chair, Department of Environmental Health Sciences, Director, NIEHS Center	"Molecular epidemiology of aflatoxins: Implications for public health"
10/09/02	Kellogg Schwab, Ph.D., Assistant Professor, Communicating Exposure and Risk Results in a Community-based Study: Challenges and Lessons Learned	Mandatory Laboratory Safety and The Chemical Database
10/10/02	Jimo Borjinigin, Ph.D., Department of Embryology, Carnegie Institution of Washington, Faculty Candidate Seminar	"Molecular mechanism of circadian melatonin production"
10/15/02	Allison Fryer, Ph.D., Professor, Division of Physiology, Department of Environmental Health Sciences	"Dysfunction of neuronal M2 muscarinic receptors and their contribution to asthma"
10/22/02	David Jacobson-Kram, Ph.D., DABT, VP, Toxicology and Laboratory Animal Diagnostics Division, Bio Reliance, Rockville, MD	"Use of transgenic mice in carcinogenicity testing"
10/24/02	Dr. Margo Schwab, Assistant Public Health Professor, Department of Epidemiology	Air Pollution Exposure and Respiratory Health Risks in Central City Baltimore: Approaches and Challenges
11/04/02	Michael S. Davidson, CHP, CHMM, CET, Director of Radiological Protection Duretak, Inc.	"Radiological Terrorism: Potential sources, biological effects, and occupational health impact"
11/05/02	Peter G. Shields, M.D., Professor of Medicine and Oncology, Director, Cancer Genetics and Epidemiology, Lombardi Cancer Center, Georgetown University Medical Center	"Molecular epidemiology of breast and lung cancer"
11/07/02	Karen Huss, MSN, DNSc, FAAN, Associate Professor, Johns Hopkins School of Nursing	"New insights"

Date	Speaker	Title
11/07/02	Albena Dinova-Kostova, Ph.D., Research Associate, Department of Pharmacology and Molecular Sciences, Johns Hopkins School of Medicine, Faculty Candidate Seminar	"How do electrophiles and sulfhydryl groups protect against cancer?"
11/12/02	Dr. Kenneth S. Ramos, Reed Professor and Director, Center for Environmental and Rural Health, Texas A&M University	"Molecular insights into redox regulation of transcription"
11/14/02	Shigeki Yamaguchi, M.D., Ph.D., Assistant Professor, Department of Anesthesiology, Dokkyo University School of Medicine	"Structural and functional differences in glomus cells between DBA/A/Jstrains"
02/03/03	Bruce Jones, MD, MPH Injury Prevention Program Manager, Directorate of Epidemiology and Disease Surveillance, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen, Maryland	"An Overview of Injuries in the Military: Surveillance, Research and Prevention."
02/27/03	Elise Handleman, BS, MEd., COHN-S., Director, Office of Occupational Health Nursing, DOL-OSHA, Washington, D.C.	"The Young Worker Initiative at OSHA."
03/03/03	Walter H. Watson, Ph.D. Emory University School of Medicine Department of Biochemistry	"Thioredoxin: An Enzymatic Complement to Glutathione"
03/03/03	Sharada Weir, Ph.D. Assistant Scientist Johns Hopkins Center for Injury Research and Policy	"The Economic Cost of Workplace Fatal Injury for Women in Traditionally Male Industries"
03/06/03	Diane Zerbe, MHS, Research Associate, Scientific Program Coordinator, Johns Hopkins School of Public Health	"The Public Health Response to Terrorism"
03/10/03	Robyn Robbins, B.S. C.I.H. Assistant Director, Occupational Safety and Health Office United Food and Commercial Workers International Union	"Collaborating with Unions to Conduct Research: Recommended Approaches and Successful Examples".
03/13/03	Ann Brockhaus, RN, MPH, Consultant, Organization Resources Counselors, Inc., Washington, DC	"Current Trend in the Organization of Health and Safety Programs."
03/20/03	Nathan Dodder, Ph.D., Post- Doctoral Candidate, Ronald Hites' Laboratory, Chemistry Department and School of Public and Environmental Affairs, Indiana University	"Polybrominated Diphenyl Ethers in Air, Fish and Human Maternal and Umbilical Cord Blood Samples"

Date	Speaker	Title
03/24/03	Stephen W. Clark USEPA, Office of Ground Water and Drinking Water	"Homeland Security And Public Health"
03/25/03	Peter G. Shields, M.D. Professor of Medicine and Oncology, Associate Director for Cancer Control and Population Sciences, Director, Cancer genetics and Epidemiology, Georgetown University Medical Center	"Molecular Epidemiology of Breast and Lung Cancer"
04/10/03	Taik-Koo Yun, M.D. Korea Institute of Cancer Chemoprevention Seoul, Korea	"Experimental and Epidemiological Evidence on Non-Organ Specific Cancer Preventive Effect of Korean Ginseng and Identification of Active Compounds"
04/10/03	Betty H. Addison, MS., Director of Career Services and Disability Support, Johns Hopkins University	"An Overview of the Americans with Disabilities Act and the University and School Responsibilities and Services."
04/14/03	Nanjoo Suh, Ph.D. Department of Pharmacology Dartmouth Medical School Faculty Candidate	"Development of New Chemopreventive Agents: Chemoprevention Based on Mechanism"
04/15/03	David M. Panchision, Ph.D. Laboratory of Molecular Biology/NINDS/NIH, Bethesda	"Stem Switching Mechanisms: Implications for Development, Regeneration and Cancer."
04/17/03	Robin Newhouse, PhD, RN, Nurse Researcher, Kathy Thompson, RN, The Johns Hopkins Hospital	"Smoking Cessation".
04/24/03	Elaine Papp, RN, COHN-S, George Mason University, Program Analyst, Office of Evaluation and Analysis, DOL-OSHA, Washington, DC	"OSHA—A New Focus and Direction"
05/02/03	Daniel Savage II, Ph.D., Department of Neurosciences University of New Mexico School of Medicine	"Synaptic plasticity and learning deficits in prenatal ethanol-exposed offspring"
05/02/03	Christina Borgeest Graduate Student University of Maryland at Baltimore	"The effects of methoxychlor and kepone on the ovary"
05/05/03	Jonathan Sheng, PhD Post-Doctoral Research Fellow College of Pharmacy University of Iowa Faculty Candidate	"Molecular Basis of Sulfotransferase Mediated Toxicity"

Date	Speaker	Title
05/06/03	Steven R. Myers, PhD Associate Professor Department of Pharmacology and Toxicology University of Louisville School of Medicine	"Assessing Environmental Exposures to Polycyclic Aromatic Hydrocarbons: Relationship Between Personal Exposure to Polycyclic Aromatic Hydrocarbons and Biomarkers of Internal Dose"
05/08/03	Pauline Karikari-Martin, RN,MPH,MSN,PAHM, Clinical Program Manager-Disease Management (Asthma) and Preventive Health Services CareFirst Blue Cross Blue Shield, Baltimore, MD	"Public Health Opportunities at a Managed Care Organization (MCO): Asthma Disease Management".
05/14/03	Scott Jenkins, Ph.D. Postdoctoral Fellow Neurotoxicology Division EPA, Faculty Candidate	"Proposed Role for Toxicant Exposure in Tauopathy Pathogenesis"
05/16/03	B. Rey de Castro, Sc.D. Harvard School of Public Health Postdoctoral Fellow	A Pilot Project Using Microarrays to Monitor Gene Expression by Outdoor PM2.5"
05/19/03	Dr. Paul Keim, The Cowden Endowed Chair in Microbiology, Northern Arizona University	"Tracking Biothreat Pathogens: Genomics, Epidemiology and Evolution of Plague and Anthrax."
05/29/03	Deanna D. Wormley, Department Of Pharmacology, Meharry Medical College.	"Consequences Of Prenatal Exposures To Tcdd And B(A)P On Synaptic Plasticity Mechanisms"
06/02/03	Paul Turner, Ph.D. Senior Research Fellow University of Leeds, UK	"Aflatoxin Exposure in West African Children: Approaches to Develop Interventions"
06/16/03	Banu Ormeci, Assistant Research Professor, Department of Civil and Environmental Engineering, Duke University	"Inactivation and Detection of Particle-Associated Microorganisms"
06/26/03	Yeomin Yoon, Ph.D. Faculty Research Associate Department of Civil and Environmental Engineering Arizona State University	"Removal Mechanisms of Inorganic/Organic Endocrine Disrupting Compounds and Pharmaceuticals in Drinking Water Treatment"
07/16/03	Susan M. Fischer, Ph.D. University of Texas M.D. Anderson Cancer Center Science Park-Research Division	"COX-2 As a Target for Skin Cancer prevention"
09/23/03	Walter H. Watson, Ph.D. Assistant Professor Toxicological Sciences, EHS, Bloomberg School of Public Health	"Thioredoxin and Thiol Redox Regulation"
09/25/03	Michael Heitt, PsyD., Clinical Psychologist, Assistant Director, FASAP and Student Assistance Program, Johns Hopkins University.	"The Risk Assessment Team and Workplace Violence."

Date	Speaker	Title
09/30/03	Debasish Sinha, Ph.D. Assistant Professor Department of Ophthalmology School of Medicine and Department of Environmental Health Sciences	"Lens as a Model to Study Cellular Differentiation and Apoptosis"
10/02/03	Arnold "Butch" deCastro, MSN, MPH, Ph.D., Senior Occupational Health and Safety Specialist, American Nurses Association, Nurse Advocacy Programs, Washington D.C.	"Advocating for the Health & Safety of Nurses: A Core Issue for the American Nurses Association."
10/09/03	Robyn Robbins, BA, CIH, Assistant Director, Occupational Safety and Health Office, United Food and Commercial Workers International Union, Washington, D.C	"Collaborating with Unions to Conduct Research: Recommended Approaches and Successful Examples"
10/16/03	Robert Nester, PhD, RN, Health Scientist, Occupational Health and Safety Administration, Department of Labor, Washington, DC.	"The OSHA Youth Initiative."
10/29/03	Jan Powell, Ph.D., MPH Assistant Professor Department of Epidemiology and Preventive Medicine University of Maryland School of Medicine, Baltimore	"Environment-Gene-Host Interactions in the Ecology and Pathogenesis of <i>Vibrio vulnificus</i> "
11/03/03	Laura Welch, MD, MPH Medical Director Center to Protect Workers' Rights Silver Spring, Maryland	"Work-Related Musculoskeletal Disorders in Construction."
11/03/03	Laura Welch, MD, MPH Medical Director Center to Protect Workers' Rights Silver Spring, Maryland	"Rehabilitation and Return-to-Work in the Construction Industry."
11/06/03	Kate McPhaul, RN, MPH, Doctoral Candidate, University of Maryland, School of Nursing, Baltimore, Maryland	"Violence in the Home Health Workplace: A Descriptive Study."
11/07/03	James S. Brown, Jr., Ph.D. Center for Environmental Medicine, Asthma, and Lung Biology, University of North Carolina at Chapel Hill	"Ultrafine particle deposition and clearance in the healthy and obstructed lung."
12/01/03	David N. Fisman, M.D., M.P.H. Assistant Professor, Department of Epidemiology and Biostatistics, Drexel University School of Public Health	"Needlestick Injuries to Health Care Workers"

Date	Speaker	Title
12/04/03	Frances Humphrey, BS, CRNP, CCM, COHN-S, Manager, Occupational Health Services, Johns Hopkins, Homewood Campus.	"Managing an Occupational Health Clinic in an Academic Setting."
12/08/03	Dr Judith McKenzie, Assistant Professor, Hospital of the University of Pennsylvania.	"Body Fluid Exposures in Correctional Health Care Workers".
12/11/03	Mary Pohanka, MSN/MPH. LTJG, US Navy	"Operation Iraqi Freedom on board the USNS Comfort"
01/15/04	Martin A. Philbert, Ph.D., Professor, Department of Environmental & Industrial Health, University of Michigan	"PEBBLEs - Nanoscale Optical Sensors for Real-Time Intracellular Measurements: From Inception to Application"
01/26/04	Joel C. Gaydos, MD, MPH Director, Public Health Practices, Department of Defense, Global Emerging Infectious Surveillance and Response System	"Emerging Infectious Diseases"
01/28/04	Josip Blonder, MD, Senior Research Scientist, Mass Spectrometry Center, SAIC - Frederick, Inc., National Cancer Institute at Frederick, Frederick, MD	"Targeted and Global Proteomic Analysis of Membrane Proteins Using Peptide LC-MS/MS"
01/29/04	John L. Beard, PhD, Professor of Nutrition, Graduate Program, Nutrition, The Pennsylvania State University	"Brain Iron Deficiency in Early Life: Does It Leave a Lasting Impression?"
02/02/04	Michael Hodgson, MD, MPH Director, Occupational Health Programs, Office of Public Health and Environmental Hazards, Veterans Health Administration	"Weapons of Mass Destruction and Health Care Facilities"
02/02/04	Captain Bruce Cohen, MD, MPH, Director of Accessions, Naval Medical Education and Training Command	"Safety and Health in the Maritime Industry"
02/05/04	Patricia K. Bertsche, MPH, RN, COHN-S, FAAOHN, Manager, Corporate Occupational Health Services, Abbott Laboratories, Abbott Park, IL	"The Role and Responsibilities as the Manager of Abbott Laboratories Global Occupational Health Services"
02/19/04	Patricia Robuck BSN, MPH, PhD, Director, Clinical Trials Program, Division of Digestive Diseases and Nutrition (NIDDK), Bethesda, MD	"The Clinical Trials Program at NIDDK"
02/20/04	Joel E. Baker, Professor Chesapeake Biological Laboratory, University of Maryland	"Bioavailability and metabolism of polybrominated diphenyl ether flame retardants in aquatic food webs: an emerging environmental issue"

Date	Speaker	Title
02/23/04	Gary S. Sorock, PhD, Associate Professor, Center for Injury Research and Policy, Bloomberg School of Public Health	"Epidemiology of Acute Hand Injuries at Work"
02/23/04	Vsevolod Y. Polotsky, MD, PhD, Instructor of Medicine, Johns Hopkins University, School of Medicine, Division of Pulmonary & Critical Care Medicine, Johns Hopkins Asthma & Allergy Center	"Sleep Disordered Breathing Alters Glucose and Lipid Regulation"
02/25/04	Edward J. Calabrese, PhD, Professor of Toxicology, Environmental Health Sciences, School of Public Health, University of Massachusetts	"Hormesis: From Marginalization To Mainstream"
02/26/04	Beth A. Resnick, MPH, Associate Director, Johns Hopkins Centers for Excellence in Environmental Public Health Tracking and Community Environmental Health Practice	"Environmental Health Practice and Links to Occupational Health."
03/08/04	Joel C. Gaydos, MD, MPH, Director, Public Health Practices, Department of Defense, Global Emerging Infectious Surveillance and Response System	"Emerging Infectious Diseases"
03/11/04	Ann Brockhaus, RN, MPH, Consultant, Organization Resources Counselors, Washington, DC	"Integrating Health Protection and Health Promotion-Trends in Large Companies."
03/11/04	K. Chul Kim, PhD, Professor of Pharmacy and Medicine, Department of Pharmaceutical Sciences, University of Maryland, Baltimore	"Role of MUC1 mucin in mucociliary clearance of P. aeruginosa"
03/25/04	Anne Fox, RN, BS, COHN-S, Administrative Supervisor for Health Services; Acting Medical Director, Department of Juvenile Services Baltimore, MD	Occupational Health at the Department of Juvenile Services
03/26/04	Justin Hanes, PhD, Assistant Professor of Chemical & Biomolecular Engineering, The Johns Hopkins University	"Polymer Systems for Drug and Gene Delivery in the Lungs."
03/29/04	Gina Orton, MD, Department of Justice	"Stress Claims and Proactive Approaches"
04/05/04	Bob Gayler, MD, Associate Professor, Johns Hopkins Medical Institutes	"Review of Radiographs from Los Alamos Research Project"
04/06/04	Nancy A. Stout EdD, Director, NIOSH Division of Safety Research	Injury Prevention Research Initiatives at NIOSH

Date	Speaker	Title
04/12/04	Dr Francesca Litow, MD, MPH, Naval Environmental Health Center	"Management of multinational situations in Occupational Safety and Health"
04/14/04	Masayuki Yamamoto, MD, PhD, University of Tsukuba, Tsukuba, Japan	"Nrf2-Keap1 System A New Stress Response Mechanism"
04/22/04	Anita L. Schill, PhD, MPH Senior Scientist, CDC/NIOSH, Washington, DC	"Steps to a Healthier US Workforce: A New NIOSH Initiative"
04/29/04	Karin Myerson, COHN-S, MS, Occupational Health Manager, Washington Hospital Center, Washington, DC	"Management of a Hospital Occupational Health Service"
05/28/04	Dr. Edathil Vijayan FNASc, Professor & Head, School of Life Sciences, Pondicherry University, India	"Peptide, Cytokine and Nitric Oxide Signals In The Hypthalamus And GnRH Release"
06/11/04	Dr. Thomas Hartung Professor, University of Konstanz, Germany and Head, European Center for the Validation of Alternative Methods (ECVAM), Ispra, Italy	Evidence Based Testing in Toxicology
09/08/04	Marc Ostermeier, PhD, Assistant Professor, Chemical & Biomolecular Engineering, Whiting School of Engineering, The Johns Hopkins University	Protein Switches: Molecular Tools for Diagnostics & Therapeutics
09/13/04	Robert Lavin, MD, Director, Pain Management Service, Baltimore VAMHCS	Pain Management
09/22/04	Elizabeth Wagner, PhD, Professor, Johns Hopkins Asthma and Allergy Center	Endothelial Cell Heterogeneity: The Systemic Circulation of the Lung
09/27/04	Susan P. Baker, MPH, Professor, Center for Injury Research and Policy	Aviation Injuries
10/04/04	Stephen A. Bokat, Senior Vice President & General Counsel, US Chamber of Commerce	Americans with Disabilities Act: Update on current cases
10/05/04	Robert J. Rubin, PhD, Professor Emeritus, Johns Hopkins Bloomberg School of Public Health	The 2004 Anna Baetjer Lecture Reflections on Toxicology on the 40th Anniversary of its Establishment by Anna Baetjer at the Johns Hopkins Bloomberg School of Public Health
10/06/04		The Pathogenesis of Tuberculosis: A Symposium In Honor of Arthur M. Dannenberg, Jr., MD, PhD, In Celebration of His 80th Birthday and 40th Year at The Johns Hopkins Bloomberg School of Public Health
10/06/04	Vladimir R. Muzykantov, MD, PhD, Institute for Environmental Medicine, University of Pennsylvania, School of Medicine	"Targeted delivery of therapeutic enzymes to endothelial cells."

Date	Speaker	Title
10/07/04	Nancy Cassell, BA, MEd, School to Career Coordinator, Dundalk High School, Baltimore County Public School	"The School-to-Work Program at Dundalk High School"
10/18/04	Margit Bleecker, MD, Center for Occupational and Environmental Neurology	EMG/NCS in Occupational Neurology
10/21/04	Michael T. Crow, PhD, Associate Professor of Medicine, Johns Hopkins University, Division of Pulmonary and Critical Care Medicine, Johns Hopkins Asthma and Allergy Center	"A novel master regulator of cell death in the heart"
10/21/04	Elaine Papp, RN, COHN-S, MSN, Program Analyst, Office of Program Review, DOL-OSHA, Washington, DC	"The Executive Leadership Program: Discussion of Activities at the World Health Organization and International Council of Nursing in Geneva, Switzerland."
10/25/04	William J. Ward, Jr., MHS, Associate Professor; Director, Health Finance & Management, Johns Hopkins Bloomberg School of Public Health	Hospital Finance 101
10/28/04	LT Tarah S. Somers RN, MSN/MPH, ATSDR, Liaison Office to EPA Headquarters, Washington, DC	"Opportunities for Nurses with Occupational and Environmental Backgrounds within the Federal Government."
11/78/04	Steven Shapiro, MD, Parker B. Francis Professor of Medicine, Harvard Medical School; Chief, Pulmonary and Critical Care Medicine, Brigham and Women's Hospital	The Thirteenth Harold and Marilyn Menkes Memorial Lecture Multidisciplinary Approach to COPD: Environment By Gene Interactions
11/18/04	Kristin Weinhauser, MSN, MPH, HIV/AIDS Technical Advisor, Catholic Relief Services Program Quality Support Department, Baltimore, MD	"International Work Environments – HIV/AIDS Policies and Programs"
11/22/04	Thaddeus K. Graczyk, MSc, PhD, Associate Professor, The W. Harry Feinstone Department of Molecular Microbiology and Immunology and the Department of Environmental Health Sciences, Bloomberg School of Public Health	"What We Know That We Don't Know About Waterborne Parasites"
12/01/04	Alexander Verin, PhD, Associate Professor, Department of Medicine, Pulmonary Division, Johns Hopkins School of Medicine	"Crosstalk between microtubules and microfilaments in the regulation of endothelial permeability"
12/06/04	Elisa Braver, PhD, Senior Epidemiologist, The Insurance Institute for Highway Safety	"Occupational Injuries in Motor Vehicle Crashes: What Do We Know and What Should We Do?"

Date	Speaker	Title
12/08/04	Philip Beachy, PhD, Professor, Department of Molecular Biology and Genetics, The Johns Hopkins University School of Medicine; Investigator, Howard Hughes Medical Institute	"Hedgehog Signaling in Development and Disease"
12/09/04	Butch de Castro, PhD, MSN/MPH, RN, Senior Staff Specialist, Center for Occupational Health, The American Nurses Association, Bethesda, MD	"The Asian Pacific Caucus"
01/10/05	Wendong Huang, Post Doc, Baylor University	"Regulation Of Chemical Stress Response And Liver Carcinogenesis By A New Cluster Of Nuclear Hormone Receptors"
01/24/05	Ritu Agarwal, Post- Doc, Johns Hopkins School of Medicine	"Mitotic Regulation And Checkpoints: Keeping The Genome In Shape"
01/31/05	DeLisa Fairweather, PhD, Research Associate, Pathology, Johns Hopkins University School of Medicine	"Susceptibility to heart disease: a role for mast cells in amplifying the effects of environmental toxins"
02/02/05	Dr. Jana Kesavan, Research Physicist, Edgewood Chemical Biological Center, US Army, Aberdeen Proving Ground	"Sampler Characterization Test Methodology at Edgewood Chemical Biological Center"
02/03/05	Patricia K. Bertsche, RN, MPH, COHN-S, FAAOHN, Manager, Abbott Laboratories, Global Occupational Health Services (GOHS)	"Report of trip to Muhimbili National Hospital, Dar es Salaam, Tanzania at the Review of their Infection Control Program."
02/07/05	Andrew Lincoln, ScD, MS, Health Research Scientist, War-Related Illness and Injury Study Center (WRIISC)	"The War-Related Illness and Injury Study Centers: A Resource for Deployment-Related Health Concerns"
02/07/05	Ed Bernacki, MD, MPH, Director, Health, Safety and Environment JHU and JHH	"Contributions an OEM physician can make through involvement in professional associations"
02/09/05	Roger A. Jenkins, PhD, Oak Ridge National Laboratory, Chemical Sciences Division	Human Exposure to Environmental Tobacco Smoke: Is What You See What You Get?
02/16/05	Dr. Brett Simon, Johns Hopkins School of Medicine	"Regional Lung Function In Acute Lung Injury"
02/17/05	Tula Fitzgerald, RN, COHN, Occupational Health Nurse for Peace Corps, Washington, DC	"Occupational Health at the Peace Corp Headquarters"
02/18/05	Xu Xu, PhD, Research and Teaching Specialist, UMDNJ, Environmental and Occupational Health Sciences Institute	"Utilization of Biomarkers and Pharmacokinetics in Exposure Assessment"
02/18/05	Carole Baldwin, Marine Biologist, Smithsonian National Museum of Natural History	One Fish, Two Fish, Crawfish, Bluefish: The Smithsonian Sustainable Seafood Project

Date	Speaker	Title
02/22/05	Hoa Nguyen, Department of Statistics, Carnegie-Mellon University	The Faulty False Discovery Rate: How Do Biased Nulls Affect Power and Control of the FDR?
02/25/05	Ginger L. Chew, ScD, Assistant Professor, Columbia University Mailman School of Public Health	"Challenging the Paradigm of Dust Mite Allergen and Mold Exposure: What the Inner-City Has Taught Us"
03/07/05	Bill Borwegen, MPH, Occupational Health and Safety Director, Service Employees International Union (SEIU)	"Worker Health and Safety Issues at SEIU"
03/09/05	Donald Coffey, MD, Professor, Oncology, The Johns Hopkins School of Medicine	"What we know and what we don't know about cancer"
03/10/05	Kate McPhaul, RN, MPH, PhD. Clinical Instructor and Coordinator Undergraduate Community Health, University of Maryland School of Nursing	"Workplace Violence in the Home Visiting Workplace: Development of Measures."
03/11/05	Christopher J. Paciorek, PhD, Department of Biostatistics, Harvard School of Public Health	"Gaussian Processes for Spatial Modeling in Environmental Health: Parameterizing for Flexibility vs. Computational Efficiency"
03/16/05	Steven S. An, PhD, Research Associate, Department of Environmental Health, Harvard School of Public Health	Do biophysical properties of the airway smooth muscle cell in culture predict airway hyperresponsiveness in vivo?
03/17/05	Barbara Sattler, PhD, RN, FAAN, Research Associate Professor, University of Maryland, School of Nursing	"Environmental Health Programs at the University of Maryland"
03/17/05	Daniel C. Liebler, Ph.D., Professor of Biochemistry and Pharmacology, Director, Proteomics Laboratory Mass Spectrometry Research Center, Vanderbilt University School of Medicine.	NIEHS Training Program and NIEHS Center: The 2005 Annual Scientific Workshop Title: "Toxicoproteomics: Protein Targets of Reactive Electrophiles"
03/23/05	Irena Petrache, PhD, Assistant Professor of Medicine, Pulmonary and Critical Care Medicine, Johns Hopkins University	"Apoptotic mechanisms of alveolar destruction in emphysema"
03/30/05	Gregory Diette, MD, Assistant Professor, Department of Epidemiology, Bloomberg School of Public Health	"The home environment of East Baltimore preschool children with and without asthma"
03/31/05	Carol Kawecki, MA, RN, BSN, Program Manager, The National Center for Healthy Housing	"The Home-Based Child Care Lead Safety Program in Syracuse and Rochester, N.Y."
04/07/05	Pat McLaine RN, MPH, Director of Program Management, National Center for Healthy Housing, Columbia, MD	"Overview of the National Center for Healthy Homes Project."

Date	Speaker	Title
04/11/05	Sining Chen, Research Fellow, Johns Hopkins University School of Medicine, Oncology Center	Design and Analysis of Studies of Cancer Risks from Major Genes
04/11/05	Lauren Black, MS, PhD, Postdoctoral Fellow, Boston University	"Multiscale Dynamic Mechanics: Airway Resistance in the Human Lung and Tissue Mechanics in Engineered Extracellular Matrix Sheets"
04/11/05	Terence Martin, PE, Retired Team Leader, Natural Resources Management Team, Office of Environmental Policy and Compliance, US Department of the Interior	"Drinking Water Regulation in the US"
04/12/05	Åsa Karlsson Wheelock, Post-doctoral Fellow, Kyoto University Bioinformatics Center, Institute for Chemical Research, Kyoto University	"A Proteomics Approach to Investigate the Synergistic Toxicity of Ozone and 1-nitronaphthalene in the Rat Respiratory System"
04/13/05	Bill Guggino, Professor of Physiology and Pediatrics, The Johns Hopkins University School of Medicine, Department of Physiology	The promise of gene therapy for CF – Where are we?
04/18/05	Judith McKenzie, MD, MPH, Assistant Professor, Director of Clinical Practice, Associate Residency Director, Division of Occupational Medicine, Department of Emergency Medicine, Hospital of the University of Pennsylvania	"Blood borne Pathogens"
04/21/05	Cynda Rushton, DNSc, RN, FAAN, Associate Professor, Johns Hopkins School of Nursing	"Ethical Issues in Occupational Health."
04/25/05	Alan T. Stone, Professor, Environmental and Aquatic Chemistry, Department of Geography and Environmental Engineering, Whiting School of Engineering, Johns Hopkins University	Reactions Between Transition Metal Ions and Ionizable Organic Compounds. Problems Arising from Mixtures?
04/25/05	Margit Bleecker, MD, PhD, COEN	"Neuropsychological Testing"
04/26/05	Katie Miller, ScM, ScD (pending), Harvard University	"DNA repair polymorphisms, Arsenic, and Non-melanoma skin cancer"
4/28/05	Amanda Slagle, RN, MSN/MPH Candidate, Johns Hopkins School of Nursing/Public Health	"What can Border Health Teach You?"
05/03/05	James O'Callaghan, PhD, Molecular Neurotoxicology Laboratory, CDC, NIOSH, Morgantown, West Virginia	Activation of Jak-Stat3 Pathway Precedes Reactive Gliosis In Multiple Models of Chemically-Induced Neurodegeneration

Date	Speaker	Title
05/09/05	Donald Versteeg, PhD, Principle Scientist, The Procter & Gamble Company	Environmental Risk Assessment of Pharmaceuticals and Personal Care Products
05/10/05	Timothy Dvonch, PhD, Assistant Research Scientist, Department of Environmental Health Sciences, University of Michigan School of Public Health	"Sources and Health Effects of Ambient Fine Particulate Matter in Detroit"
05/11/05	Matthew H. Porteus, MD, PhD, Assistant Professor, Pediatrics, Biochemistry, Southwestern Medical School, Graduate School of Biomedical Sciences	"Manipulating the Mammalian Genome with Zinc Finger Nucleases"
05/16/05	Leila Jackson, PhD, Division of Epidemiology, Statistics and Prevention Research, National Institute of Child Health and Human Development, National Institutes of Health, Rockville, MD	"Polychlorinated Biphenyl Exposure and Menstrual Cycle Characteristics"
05/16/05	Margit Bleecker, MD, PhD, Director, Center for Occupational and Environmental Neurology	"Neurotoxicology"
05/18/05	Sorachai Srisuma, MD, PhD, Pulmonary & Critical Care Medicine, Brigham & Women's Hospital, Harvard Medical School	"From Mouse Lung Development to Genetic Association in Chronic Obstructive Pulmonary Disease (COPD)"
06/01/05	P. Reddanna, PhD, School of Life Sciences, University of Hyderabad, India	"Anti-inflammatory and Anticancer effects of C-phycoerythrin, a protein from Spirulina (Cyanobacteria)"
06/15/05	Michael L. Shuler, PhD, Cornell University, Samuel B. Eckert Professor of Chemical Engineering	"Animals on a Chip: Applications to Toxicology"
08/08/05	Ira Coleman, ScD, MPH, St. Joseph Medical Center, Baltimore, MD	"Audiology & Issues Related to Workplace Noise"
08/29/05	Nancy Sahakian, Division of Respiratory Disease Studies, NIOSH, Center for Disease Control and Prevention	"Fellowship opportunities in the Epidemic Intelligence Service at NIOSH, National Center for Environmental Health, and/or infectious diseases at the CDC"
09/09/05	Michael F. Jacobson, Ph.D., Executive Director, Center for Science in the Public Interest	"Eating Green" for Health and the Environment: A look at the broad context of our eating patterns from their effects on human health and chronic disease to the environmental impact of the chemicals and energy used to produce our food."
09/14/05	Bill Bishai, MD, PhD, Professor of Medicine, Division of Infectious Diseases, Johns Hopkins School of Medicine; Co-Director, Johns Hopkins Center for Tuberculosis Research	"Genes for Mycobacterium tuberculosis survival: a TraSH collection"

Date	Speaker	Title
09/12/05	Captain Jay Montgomery MC, USN, Chief, Allergy & Immunology Service, NNMC	"Allergic Dermatitis & Patch Testing"
09/14/05	Philip J. Landrigan, MD, MSc, DIH, FAAP, Ethel H. Wise Professor and Chairman, Department of Community and Preventive Medicine, Professor of Pediatrics, Mount Sinai School of Medicine, NY	"Children's Health & Environment: The Problem and Solution"
09/19/05	Brian Schwartz, M.D., M.S., Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health, Johns Hopkins Univ.	"Does Environmental Exposure to Lead Cause Cognitive Dysfunction in the General Population? Update from the Baltimore Memory Study."
09/26/05	Jonathan Samet, M.D., Professor and Chair, Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins Univ.	"Radon in homes and risk of lung cancer: collaborative analysis of individual data from 13 European case-control studies"
110/03/05	James Madsen, M.D., M.P.H., Chemical Casualty Care Division, USAMRICD	"Chemical Casualty Response"
10/05/05	Delisa Fairweather, Ph.D., Assistant Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health, Johns Hopkins Univ.	"Is susceptibility to inflammation heart disease regulated during the innate immune response to viral infections?"
10/12/05	Wayne Mitzner, Ph.D., Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health, Johns Hopkins Univ.	"100 Years of Radiographic Imaging"
10/17/05	Daehee Kang, MD, PhD, Associate Professor, Department of Preventive Medicine, Seoul National University College of Medicine	"Urinary Biomarkers of PAH Exposure and Oxidative Stress in Environmental Health"
10/19/05	Walter Watson, Ph.D., Assistant Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health, Johns Hopkins Univ.	"Dynamic Regulation of the Thioredoxin System"
10/27/05	Ann Flagg, BA, Resource Developer, International Rescue Committee, Baltimore, MD	"Current Programs that Facilitate Employment Opportunities for New Refugees."
11/07/05	Clifford S. Mitchell, MD, MPH, Director, Occupational and Environmental Medicine Residency Program	"Surveillance Recommendations for Workers Responding Under the National Response Plan: Results of a Workshop"

Date	Speaker	Title
11/08/05	Dean P. Jones, PhD, Emory University, Department of Medicine; Director, Clinical Biomarkers Laboratory; Co-Director, Center for Clinical and Molecular Nutrition	"Redefining Oxidative Stress in Disease"
11/08/05	William Shaw, PhD, Researcher, Liberty Mutual Research Institute for Safety, Hopkinton, Massachusetts	Education and Research Center for Occupational Safety and Health <u>Seminar Series - Injury at Work: From Research to Prevention</u> "Integrating Clinical and Worksite Interventions For Work-Related Musculoskeletal Disorders"
11/10/05	Elizabeth Platz, PhD, Assistant Professor, Department of Epidemiology, JHSPH	"Diet, Physical Activity, and Cancer."
11/14/05	Dr. Craig Thorne, Medical Director, Employee Health & Safety, University of Maryland-Medical Center	"Control Technologies to Improve Healthcare Facility Infection Control: Applying Lessons from SARS"
11/15/05	David Berman, MD, PhD, Assistant Professor, Departments of Pathology & Urology and Sidney Kimmel Cancer Center, Johns Hopkins School of Medicine	"Modeling Carcinogenesis Through Prostate Development and Bladder Injury Repair"
11/17/05	Herman B.W.M. Koëter, PhD, Deputy Executive Director and Director of Science of the European Food Safety Authority (EFSA), Parma, Italy	"European Food Safety Assessment Approaches"
11/17/05	Jack A. Elias, MD, Waldemar Von Zedtwitz Professor of Medicine Chief, Pulmonary and Critical Care Medicine, Yale University School of Medicine	Harold and Marilyn Menkes Memorial Lecture "Mechanisms of Alveolar Destruction In COPD"
11/29/05	Keshia Pollack, PhD, MPH, The Robert Wood Johnson Foundation, Princeton, New Jersey	Graduate Seminar on Injury Research and Policy "Overweight and Obesity in Aluminum Smelter Employees: A Risk Factor for Non-Fatal Occupational Injuries"
11/30/05	Dr. Simeon Goldblum, University of Maryland, Department of Medicine	"Thrombospondin-1 Opens the Lung Microvascular Endothelial Paracellular Pathway through EGFR/ErbB2 Activation"
12/01/05	Randi Kopf, RN, MS, JD, Kopf HealthLaw, LLC, Rockville, MD	"Legal Aspects of Communication Technology in the Workplace"
12/05/05	Thomas G. Neltner, JD, CHMM, Director of Training and Education, The National Center for Healthy Housing	"Health, Homes and Workers"

Date	Speaker	Title
12/06/05	Jake Pauls, CPE, International Consultant in Building Use and Safety	"Office Worker Safety During Evacuations: Lessons Partially Learned, and To Be Learned, From 9/11"
12/07/05	Veena Kalra, MD FNAMS, FNASc, FIAP, Professor, Head, Department of Pediatrics, All India Institute of Medical Sciences (AIIMS), New Delhi	"Children's Health in India"
12/08/05	Catherine Quinn, RN, Health and Safety, Human Resources Division, Blue Cross/Blue Shield	"Occupational Health Nursing in the Corporate Setting"
12/15/05	Bernard Goldstein, MD, Dean, Graduate School of Public Health, University of Pittsburgh	"The Problems in Hazard Identification of Human Carcinogens: Formaldehyde and the Precautionary Principle"
01/11/06	David Schwartz, MD, Director, National Institute of Environmental Health Sciences and National Toxicology Program	"Environmental Genomics: A Key to Understanding Human Health"
01/18/06	Clarke Tankersley, PhD, Division of Physiology, Department of Environmental Health Sciences, Bloomberg School of Public Health	"Particle-induced Cardiac Effects — Why doubt it?"
01/20/06	Samuel J. Arbes, Jr., DDS, PhD, MPH, Staff Scientist and Epidemiologist, National Institute of Environmental Health Sciences (NIEHS) and National Institute of Health	"Oral Bacteria, Allergic Disease, and the Hygiene Hypothesis"
02/01/06	Machiko Shirahata, MD, DMSc, Professor, Department of Environmental Health Sciences	"When You Need Oxygen: A Story of the Carotid Body"
02/08/06	Jef Boeke, PhD, DSc, Professor, Department of Molecular Biology & Genetics, Department of Oncology, The Johns Hopkins University School of Medicine	"Recent adventures in yeast genomics"
02/08/06	Michael P. Holsapple, PhD, FATS, Executive Director, ILSI Health and Environmental Sciences Institute, Washington, DC	"Current Approaches to Assess Risk to the Developing Immune System"
02/15/06	Rita Schoeny, PhD, Senior Science Advisor, Office of Water, U.S. Environmental Protection Agency, Washington, DC	"Carcinogen Risk Assessment: Science and Policy at the EPA"
02/15/06	Dr. Masaru Ishii, Johns Hopkins Bayview-Otolaryngology	"Hyperpolarized Helium-3 MRI of Pulmonary Function"
03/01/06	Ben Caballero, MD, MPH, Johns Hopkins University	"The Nutrition Transition in China: Risk Factors for Obesity and Diabetes in Urban and Rural Populations"

Date	Speaker	Title
03/02/06	George P. Daston, PhD, The Proctor and Gamble Co., Cincinnati, OH	NIEHS Training Grant 14th Annual Scientific Workshop "Using Genomics to Evaluate the Response of the Developing Reproductive Systems to Estrogens"
03/06/06	Larry Elyea, Executive Program Director, Ergonomic Risk Reduction Process (ERRP), U.S. Postal Service and Richard Collins, Assistant to the National President, National Postal Mail Handlers Union (NPMHU)	"Changing the Culture of the United States Postal Service – An Ergonomics Success Story"
03/08/06	Chi Van Dang, MD, PhD, Professor of Medicine, Oncology, Pathology and Cell Biology, Johns Hopkins University School of Medicine	"Global Mapping of the MYC Target Gene Network and Tumorigenesis"
03/08/06	Rolf Halden, PhD, Assistant Professor, Department of Environmental Health Sciences	"Environmental Forensic Investigation of an Emerging Contaminant"
03/13/06	Paul Strickland, PhD, Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health	"Do Ingested Polycyclic Aromatic Hydrocarbons Cause Esophageal Cancer?"
03/15/06	James Higgins, PhD, Microbiologist, USDA, Environmental Microbial Safety Laboratory, Beltsville Agricultural Research Center, Beltsville, MD	"Molecular Ecology of Waterborne E. Coli"
03/17/06	Bruce P. Lanphear, MD, MPH, Sloan Professor of Children's Environmental Health, and Director Cincinnati Children's Environmental Health Center	"Trials and Tribulations of Protecting Children from Environmental Hazards"
04/03/06	Dr. Margit Bleecker, Center for Occupational and Environmental Neurology	"Selected Topic in Neurotoxicology"
04/04/06	Cory Brayton, DVM, Diplomate, ACLAM, ACVP, Director, Phenotyping Core, Associate Professor, Comparative Medicine, Johns Hopkins University, School of Medicine	"Impacts of nature and nurture on phenotyping for functional genomics initiatives"
04/04/06	Mike Dellarco, DrPH, US EPA National Center for Environmental Assessment	"Estimating risk through dermal exposure"
04/06/06	David Phillips, Professor of Environmental Carcinogenesis, Institute of Cancer Research, London	"DNA adducts as biomarkers of carcinogen exposure and cancer risk"

Date	Speaker	Title
04/10/06	Clifford P. Rice, Research Chemist, USDA-ARS, Environmental Management and Byproduct Utilization Laboratory, Beltsville, MD	"Challenges in the Environmental Analyses of Alkylphenol Ethoxylates"
04/10/06	Dr. Virginia Weaver, Associate Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health	"Revising the EPA's Air Quality Criteria Document for Lead: Turning Research Into Public Policy AKA The Good, the Bad, and the Ugly"
004/18/06	Rodney Levine, MD, PhD, Section Chief, Laboratory of Biochemistry, NHLBI, NIH	"Regulation of Protein Turnover by Oxidative Modification"
04/19/06	Dr. Kwang Chul Kim, Senior Scientist, Respiratory Immunology and Asthma Program, Lovelace Respiratory Research Institute, Albuquerque, New Mexico	"Anti-inflammatory role of MUC1 mucin during airway bacterial infection"
04/20/06	Steven N. Chillrud, PhD, Doherty Research Scientist, Lamont-Doherty Earth Observatory of Columbia University	"Sources, Transport And Fate Of Particle-Associated Contaminants In The Hudson Watershed: Extracting A Multi-Tracer, Basin Wide Perspective From The Sediment Record"
04/21/06	John Groopman, PhD, Anna M. Baetjer Professor and Chair, Department of Environmental Health Sciences	"Careers in Environmental Health Sciences"
04/21/06	Joshua M. Sharfstein, MD, Baltimore City Health Commissioner	Public Health Priorities in Baltimore in 2006
04/24/06	Byung-Kook Lee, MD DrMed.Sc MScOH (London), Director Institute of Industrial Medicine (Soonchunhyang University, Korea)	"Occupational Lead Exposure and Management"
04/25/06	Margie L. Clapper, PhD, Director of Population Science, Fox Chase Cancer Center, Philadelphia, PA	"CYP1B1: A Target for Early Chemopreventive Intervention in Tobacco Smoke-induced Lung Carcinogenesis"
04/25/06	Fred L. Kirschenmann, PhD, Distinguished Fellow, Aldo Leopold Center, Iowa State University, Professor of Religion and Philosophy, North Dakota Rancher	"The Farm-Food-Health Connection"
04/26/06	Jonathan Nuss, PhD, University of Texas, Medical Branch	"Ascertaining the Structural and Functional Consequences of Age-Associated Covalent Protein Modification."
04/26/06	Dr. Kathleen Barnes, Associate Professor, School of Medicine, Bayview Campus, Clinical Immunology	"Genetic epidemiology of complex lung diseases"

Date	Speaker	Title
04/27/06	David Holtgrave, PhD, Professor & Chair, Department of Health, Behavior and Society (JHSPH)	"An Ecologic Approach to Health and Behavior"
05/01/06	Illy Dominitz, MD , MPH, LCDR, MC, USNR, Chemical Biological Incident Response Force (CBIRF)	"First Responder Considerations to CBRNE Events: Hazard Mitigation and Decontamination"
05/05/06	Jackie Nowell, Director, Occupational Safety and Health, United Food and Commercial Workers Union	"Occupational Health Risks in the Poultry Industry"
05/10/06	John Groopman, PhD, Chair, Department of Environmental Health Sciences	"Hepatitis Viruses and Aflatoxin: A Conspiracy in Human Liver Cancer"
05/15/06	Craig Thorne, MD, MPH, FACP, FACOEM, Medical Director, Employee Health & Safety, University of Maryland Medical Center and Jill Rivers, Director, National Accounts, Kaiser Permanente	"Evidence-Based Approaches to Worksite Wellness and Employee Health Promotion and Disease Prevention"
05/17/06	Dr. Erika Matunis, Johns Hopkins School of Medicine	"Signals Regulating Stem Cell Self-Renewal"
09/13/06	Roger H. Reeves, Ph.D., Professor, Johns Hopkins School of Medicine	Debunking dogma in Downs Syndrome"
09/18/06	Brian Schwartz, M.D., Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health	"Global Environmental Change: What Can Clinicians and the Environmental Health Community Do About It Now?"
09/20/06	Joseph Bressler, Ph.D., Associate Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health	"Neural Differentiation of Embryonic Stem Cells: Effects of Drinking Water Contaminants"
09/20/06	Andy Feinberg, M.D., M.H.S., Professor, Johns Hopkins School of Medicine	"Epigenetics of Cancer Etiology"
09/25/06	Daniel Barnett, Ph.D., Instructor, Department of Environmental Health Sciences, Bloomberg School of Public Health	"Priority Setting for Pandemic Influenza: An Analysis of National Preparedness Plans"
09/26/06	Presented by Tomas Guilarte, PhD, Professor, JHSPH	"Chronic Manganese Exposure in Non-Human Primates and Risk of Neurological Disease"
09/27/06	Robert Fitzgerald, Ph.D., Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health	"Oxygen and the Organism: When Does O2 appear and How Does the Organism Detect It?"
10/04/06	Dr. Rubin Tudor, Professor of Pathology and Medicine, Division of Pulmonary and Critical Medicine, Johns Hopkins School of Medicine	"Cellular Stress Response in Cigarette Smoke Induced Lung Damage: Role of RTP801/mTOR Pathway."

Date	Speaker	Title
10/10/06	Cynthia Zahnow, Ph.D., Assistant Professor in Oncology, Kimmel Comprehensive Cancer Center	"Translational Regulation of C/EBP by Receptor Tyrosine Kinases: Implications for Mammary Development and Breast Cancer"
10/11/06	Curt I. Civin, M.D., Herman & Walter Samuelson Professor of Cancer Research, Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins School of Medicine	"Toward High Performance Hematopoietic Stem Cells"
10/18/06	Dr. Elena Naumova, Tufts University	"Sleep Apnea and Associated Risks"
10/19/06	Tarah Somers, RN, MSN/MPH, Lieutenant, US Public Health Service, ATSDR Liaison to EPA Headquarters, Agency for Toxic Substances and Disease Registry (ATSDR)	"Working towards 'Healthy Places': A nurse's experience at CDC/ATSDR"
10/30/06	Ladd Smith, President of the Research Institute for Fragrance Materials, Member, Center for Alternatives to Animal Testing	"Adverse Reaction: Short and Long Views"
11/01/06	Robert Brown, M.D., Professor, Anesthesiology, Johns Hopkins School of Medicine and Department of Environmental Health Sciences, Bloomberg School of Public Health	"Mechanisms of Reduced Airway Distension in Asthma"
11/02/06	CAAT 25 th Anniversary Symposium	"A Celebration of Progress in Humane Science"
11/07/06	Garth Powis, DPhil., Chairman, Department of Experimental Therapeutics; Director, Center for Targeted Therapy, UTMD, Anderson Cancer Center, Houston, TX	"Targeting Cancer Drugs Against Stress Signaling Targets"
11/09/06	Hugh Waters, Ph.D., M.S., Assistant Professor, Department of International Health, Bloomberg School of Public Health	"Measuring the Costs of Environmental Tobacco Smoke"
11/29/06	Dr. Chris Evans, Department of Pulmonary Medicine, MD Anderson Cancer Center, Institute of Biosciences and Technology	"Regulation and Function of Airway Mucus Secretion"
11/30/06	Teresa Moore, ME, CHES, Program Coordinator, MD Department of Health and Mental Hygiene, Maryland Nutrition, Physical Activity and Obesity Prevention Program	"Statewide Efforts on Obesity Prevention"
12/06/06	Center for a Livable Future – 10 th Anniversary Symposium	"Charting a Course to Sustainability Through Research, Education and Service"

Date	Speaker	Title
12/06/06	Martyn Thomas Smith, Ph.D., Professor of Toxicology, Division of Environmental Health Sciences, School of Public Health, University of California	"Molecular Epidemiology of Hematological Cancers in Adults and Children"
12/06/06	Dr. Hank Topper, Office of Pollution Prevention and Toxics, U.S. E.P.A.	"CARE: New EPA Community-Based Initiative Building Stronger Links to Public Health Community"
12/07/06	Sara Kanchuger, RN, MPH, Community Health Nurse Supervisor, Baltimore City Childhood Lead Poisoning Prevention Program	"Lead Poisoning in Baltimore City"
12/12/06	Sekhar P. Reddy, Ph.D., Associate Professor, Department of Environmental Health Sciences, Bloomberg School of Public Health	"Regulation and Functions of FRA-1 Protooncogene: An Emerging Target for Prevention of Tumor Progression"
12/14/06	Mary Armanios, M.D., Assistant Professor, Oncology, Johns Hopkins School of Medicine	"Consequences of Telomere Shortening in the Lung"