UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C. 20460

OFFICE OF THE ADMINISTRATOR
SCIENCE ADVISORY BOARD

June 1, 2005

MEMORANDUM

SUBJECT: Formation of SAB *ad hoc* Homeland Security Advisory Committee

FROM: Heidi L. Bethel, Ph.D. */Signed/*
Designated Federal Officer, Homeland Security Advisory Committee
EPA Science Advisory Board Staff Office (1400F)

THRU: Daniel Fort */Signed/*
Ethics and FACA Policy Officer
EPA Science Advisory Board (SAB) Staff Office (1400F)

TO: Vanessa T. Vu, Ph.D.
Director
EPA Science Advisory Board Staff Office (1400F)

This memo summarizes steps taken in regard to the request from the U.S. Environmental Protection Agency for a Homeland Security Advisory Committee to provide independent scientific and technical advice to the Administrator and other EPA officials on matters pertaining to EPA's mission in protecting against the environmental and health consequences of terrorism. As the Committee provides advice on specific topics brought to their attention by the Agency, the Designated Federal Officer administering the Committee will initiate a review to identify any conflict of interest and appearance of a lack of impartiality related to specific advisory topics and will document the results in subsequent memoranda as appropriate.

A. Background

The EPA Science Advisory Board (SAB) Staff Office has taken steps to form this new SAB Committee in order for the SAB to provide the Agency advice on issues of homeland security. Because of the cross-disciplinary nature of these issues, multiple EPA offices are anticipated to be involved which are coordinated through the Administrator's Office of Homeland Security. Additionally, EPA works with other federal government agencies, state and tribal governments and other partners to coordinate these issues. Accordingly, the SAB Staff Office published a *Federal Register Notice* on July 30, 2003 (see Attachment A) which solicited nominations for a multi-disciplinary Committee with broad expertise to provide advice on the homeland security activities of the Agency.

B. Determinations:

The overall charge to the Committee:

This *Ad Hoc* Committee is being formed to advise EPA on general issues of homeland security as they arise. Possible activities that this Committee may provide advice on include, but are not limited to: (a) detection and characterization of contaminants in buildings and public venues, response and mitigation, and prevention and protection; (b) improvements to rapid risk assessment for terrorist agents such as development of information systems and tools, risk estimates and risk communication methodologies (c) verification of the performance technologies that can be used to monitor and ensure the quality of our nation's drinking water supplies, and technologies for use in monitoring indoor environments. As specific activities arise for this Committee's consideration, detailed information about these activities will be published in future Federal Register Notices and posted at the Science Advisory Board's web site.

Type of Committee and expertise needed:

The FEDERAL REGISTER notice cited above identified the types of expertise needed to provide broad scientific advice on EPA's involvement in homeland security and includes expertise in the following areas: (a) atmospheric sciences and air modeling; (b) engineering expertise for the design and operation of building systems for air treatment and handling; (c) engineering expertise for the design and operation of water treatment and dispersal systems; (d) analytical chemistry for chemical detection methodologies; (e) microbiology related to detection techniques for microbial pathogens; (f) expertise in inactivation and disposal techniques for bulk amounts of materials containing chemical, radiological, and biological agents; (g) radiation health; (h) toxicology; (i) clinical toxicology; (j) microbial pathology; (k) epidemiology; and (l) risk assessment.

How individuals were selected for the "Short List" posted on the SAB website as candidates for the committee.

In response to the *Federal Register Notice* published on July 30, 2003 the SAB Staff Office received nominations of many experts and identified a "Short List" of 65 candidates (see Attachment B) for the Homeland Security Advisory Committee. Subsequently, the "Short list" was posted on the SAB web site for public comment. Comments were received from 15 members of the public. See Attachment C for the list of public commenters.

Identification of parties who are potentially interested in or may be affected by the activities of the SAB Homeland Security Advisory Committee:

Parties interested in the activities of the SAB Homeland Security Advisory Committee include all Americans as they may all be potentially affected by acts of terrorism. Specific groups with an interest in the activities of the Homeland Security Advisory Committee may include, but are not limited to: other Federal government agencies, state and local governments, tribal governments, drinking water and wastewater utilities and the food, transportation, building and energy industries.

Whether the overall charge involves a Particular Matter and how conflict of interest regulations apply to members of the committee:

It is likely that the work of this SAB Advisory Committee will either not qualify as a particular matter or will be a particular matter of general applicability since the committee's work will probably not involve specific parties.

18 U.S.C. 208 provision states that:

> "An employee is prohibited from participating ***personally and substantially*** in an official capacity in any ***particular matter*** in which he, to his knowledge, or any person whose interests are imputed to him under this statue has a financial interest, if the particular matter will have a ***direct and predictable effect*** on that interest [emphasis added]."

For a conflict of interest to be present, all elements in the above provision must be present. If an element is missing, the issue does not involve a formal conflict of interest. However, the general provisions in the "appearance of a lack of impartiality guidelines" may still apply and need to be considered.

Personal and Substantial Participation:

Participating personally means participating directly. Participating substantially refers to involvement that is of significance to the matter. [5C.F.R. 2640.103(a)(2)]. Committee members will be participating personally in matters presented to them through attendance at meetings, teleconferences and other means.

Particular Matter:

A "particular matter" refers to matters that "...will involve deliberation, decision, or action that is focused upon the interests of specific people, or a discrete and identifiable class of people." It does not refer to "...consideration or adoption of broad policy options directed to the interests of a large and diverse group of people." [5 C.F.R. 2640.103 (a)(1)]. A particular matter of general applicability means a particular matter that is focused on the interests of a discrete and identifiable class of persons, but does not involve specific parties [5 C.F.R. 2640.102(m)].

Direct and Predictable Effect:

A direct effect on a participant's financial interest exists if. "... a close causal link exists between any decision or action to be taken in the matter and any expected effect of the matter on the financial interest...A particular matter does not have a direct effect...if the chain of causation is attenuated or is contingent upon the occurrence of events that are speculative or that are independent of, and unrelated to, the matter. A particular matter that has an effect on a financial interest only as a consequence of its effects on the general economy is not considered to have a direct effect." [5 C.F.R. 2640.103(a)(i)]. A predictable effect exists if, "...there is an actual, as opposed to a speculative, possibility that the matter will affect the financial interest." [5 C.F.R. 2640.103(a) (ii)].

Appearance of a Lack of Impartiality Considerations:

The Code of Federal Regulations [5 C.F.R. 2635.502(a)] states that:

> "Where an employee knows that a ***particular matter*** involving specific parties is likely to have a ***direct and predictable effect*** on the financial interest of a member of his household, or knows

that a person with whom he has a covered relationship is or represents a party to such matter, and where the person determines that the circumstances would cause a ***reasonable person*** with knowledge of the relevant facts to question his impartiality in the matter, the employee should not participate in the matter unless he has informed the agency designee of the appearance problem and received authorization from the agency designee."

Further, 5 C.F.R. 2635.502(a)(2) states that:

"An employee who is concerned that circumstances other than those specifically described in this section would raise a question regarding his impartiality should use the process described in this section to determine whether he should or should not participate in a particular matter."

Each potential committee member was evaluated against the 5 C.F.R. 2635(a)(2) general requirements for considering an appearance of a lack of impartiality. Information used in this evaluation has come from information provided by potential committee members (including, but not limited to, EPA 3110-48 confidential financial disclosure forms) and public comment.

To further evaluate any potential appearance of a lack of impartiality, the following three (3) questions were posed to all prospective committee members:

- Please identify previous advisory service in the last two years on issues of Homeland Security to the U.S. EPA or other organizations.

- Have you made any public statements (written or oral) on issues regarding Homeland Security? If so, please identify those statements.

- Do you know of any reason that you might be unable to provide impartial advice to EPA on issues of Homeland Security or any reason that your impartiality might be questioned?

These or similar questions will also be asked of all Homeland Security Advisory Committee members before any advisory activity and the responses evaluated again for any issues concerning an appearance of a lack of impartiality.

<u>Conflict of Interest and Appearance of a Lack of Impartiality Determination for Committee Members</u>

Prospective committee members were required to submit a confidential financial disclosure form (EPA Form 3110-48, "Confidential Financial Disclosure Form for Special Government Employees Serving on Federal Advisory Committees at the U.S. Environmental Protection Agency"). As a result of a review of these forms, the responses to the three questions above, public comments, and information gathered by SAB staff, the Deputy Ethics Official of the Science Advisory Board, in consultation with the SAB Ethics and FACA Policy Officer, has determined that there are no conflict of interest or appearance of a lack of impartiality issues for the members of this committee.

<u>How individuals were selected for the final committee.</u>

The SAB Staff Office Director, in consultation with SAB leadership, makes the final decision about who serves on the HSAC Committee. For the EPA SAB Staff Office, a balanced committee is characterized by inclusion of candidates who possess the necessary domains of knowledge, the relevant

scientific perspectives (which among other factors, can be influenced by work history and affiliation), and the collective breadth of experience to adequately address the charge. Specific criteria to be used in evaluating an individual committee member include: (a) scientific and/or technical expertise, knowledge, and experience (primary factors); (b) availability and willingness to serve; (c) absence of financial conflicts of interest; (d) absence of an appearance of a lack of impartiality; (e) skills working in committees, subcommittees and advisory panels; and, for the committee as a whole, (f) diversity of, and balance among, scientific expertise, viewpoints, etc.

A list of the Committee membership and their affiliation can be found in Attachment D. As advisory activities arise for this Committee's consideration, remaining members of the "short-list" may be invited by the SAB Staff Office to participate in specific activities in order augment the current expertise of the Committee members.

Concurred,

/Signed/ Dated: June 1, 2005

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Vanessa T. Vu, Ph.D.
Director
EPA Science Advisory Board Staff Office

Attachment A

Science Advisory Board Staff Office; Request for Nominations for a U.S. Environmental Protection Agency Science Advisory Board Ad Hoc Committee To Be Known as the Homeland Security Advisory Committee (HSAC)

[Federal Register: July 30, 2003 (Volume 68, Number 146)]
[Notices]
[Page 44761-44762]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr30jy03-50]

ENVIRONMENTAL PROTECTION AGENCY
[FRL-7537-6]

Science Advisory Board Staff Office; Request for Nominations for a U.S. Environmental Protection Agency Science Advisory Board Ad Hoc Committee To Be Known as the Homeland Security Advisory Committee (HSAC)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The EPA Science Advisory Board (SAB) Staff Office announces the formation of a new SAB ad hoc Committee on Homeland Security known as the Homeland Security Advisory Committee (HSAC), and is soliciting nominations for members of the Committee.

DATES: Nominations should be submitted in time to arrive by August 20, 2003.

ADDRESSES: Nominations should be submitted in electronic format through the Form for Nominating Individuals to Panels of the EPA Science Advisory Board provided on the SAB Web site. The form can be accessed through a link on the blue navigational bar on the SAB Web site, www.epa.gov/sab. To be considered, all nominations should include the information requested on that form. Anyone who is unable to access nominations on the SAB Web site can obtain a paper copy of the form by contacting Dr. Philip Sayre, Designated Federal Officer (DFO), as indicated below.

FOR FURTHER INFORMATION CONTACT: Any member of the public wishing further information regarding this Request for Nomination may contact Dr. Philip Sayre, by telephone/voice mail at (202) 564-7673, or via e-mail at sayre.phil@epa.gov. Those unable to access the nomination forms through the above Web site can contact Dr. Sayre at the following address: Philip Sayre, Ph.D., Science Advisory Board Staff Office, U.S. Environmental Protection Agency (Mail Code 1400A), Suite 6450-R, 1200 Pennsylvania Avenue, NW., Washington, DC 20460-0001. General information about the SAB can be found in the SAB Web site at http://www.epa.gov/sab.

SUPPLEMENTARY INFORMATION: Summary: The EPA SAB Staff Office is announcing the formation of a new ad hoc Committee to help provide advice through the SAB to the Administrator, and other officials in the U.S. Environmental Protection Agency on matters pertaining to EPA's mission in protecting against the environmental and health consequences of terrorism. The SAB Staff Office is soliciting nominations for members of the new Committee.

This Committee is being formed to help provide advice to the Agency, as part of the SAB's mission, established by 42 U.S.C. 4365, to provide independent scientific and technical advice, consultation, and recommendations to the EPA Administrator on the technical bases for EPA regulations.

The work of this Committee is expected to continue for approximately two to three years; the background for the effort is described below. Committee members will help provide advice to the Agency through the SAB. The EPA Administrator may determine that a particular HSAC meeting be partially or fully closed when matters under discussion are covered by one of the Government in the Sunshine Act (5 U.S.C. 552b) open meeting exceptions. The SAB is a chartered Federal Advisory Committee that reports directly to the Administrator.

The HSAC will comply with the openness provisions of the Federal Advisory Committee Act (FACA) and all appropriate SAB procedural policies, including the SAB process for panel formation described in the EPA Science Advisory Board (SAB) Panel Formation Process: Immediate Steps To Improve Policies and Procedures--An SAB Commentary (EPA-SAB-EC-COM-002-003), http://www.epa.gov/sab/pdf/ecm02003.pdf.

Background: EPA is supporting the President's National Strategy for Homeland Security and the new Department of Homeland Security in specific areas. In keeping with EPA's traditional mission of protecting human health and the environment, the Agency's mission includes protection of the country against the environmental and health consequences of acts of terrorism. EPA is responsible for assisting public and private utilities in securing the nation's drinking and wastewater infrastructure, for assisting those responsible for indoor air, for working with the Department of Homeland Security to support the enhancement of security for our chemical industry and hazardous materials sector, and for responding to and recovering from acts of biological, chemical, certain radiological, and other terrorist attacks. For example, recently EPA has monitored environmental conditions to help protect workers in and around the World Trade Center, and developed and implemented a plan for decontaminating the Hart Senate Office Building. For more information on the EPA Homeland Security Strategic Plan, please see http://www.epa.gov/epahome/headline_100202.htm.

The EPA organizations involved in implementation of Homeland Security include the following: The Office of Research and Development (ORD); the Office of Water (OW); the Office of Solid Waste and Emergency Response (OSWER); the Office of Air and Radiation (OAR); the Office of Pesticides, Prevention, and Toxic Substances (OPPTS); the Office of Environmental Information (OEI); and the Office of Enforcement and Compliance Assurance (OECA). Further, two new organizations within EPA have been formed to address homeland security matters: the Office of Homeland Security (OHS) which coordinates activities across the Agency, and the Office of Research and Development's (ORD's) National Homeland Security Research Center (NHSRC). The NHSRC has a 3-year mission to provide appropriate, effective and rapid risk assessment guidelines and technologies to help decision-

makers prepare for, detect, contain, and decontaminate chemical and biological attacks directed against buildings and water treatment systems.

The Agency has asked the EPA Science Advisory Board to form an expert group to advise senior managers on matters related to homeland security. Examples of consultations for the Committee could include the following: (1) Detection and characterization of contaminants in water and air, response and mitigation, and prevention and protection; (2) improvements to rapid risk assessment for terrorist agents such as development of information systems and tools, risk estimates and risk communication methodologies; and (3) verification of the performance of technologies that can be used to monitor and ensure the quality of the nation's drinking water supplies, and technologies for use in monitoring indoor environments.

Charge to the Panel: When specific issues are identified for SAB advice, a charge to the Panel and the initiation of SAB HSAC activities will be announced on the SAB Web site at http://www.epa.gov/sab/panels/paneltopics.html.

Request for Nominations: The EPA SAB Staff Office requests nominations of individuals who are regarded as national and international level experts in homeland security to serve as Committee members. Areas of expertise sought include at least the following: (a) Atmospheric sciences and air modeling; (b) engineering expertise for the design and operation of building systems for air treatment and handling; (c) engineering expertise for the design and operation of water treatment and dispersal systems; (d) analytical chemistry for chemical detection methodologies; (e) microbiology related to detection techniques for microbial pathogens; (f) expertise in inactivation and disposal techniques for bulk amounts of materials containing chemical, radiological, and biological agents; (g) radiation health; (h) toxicology; (i) clinical toxicology; (j) microbial pathology; (k) epidemiology; and (l) risk assessment.

Process and Deadline for Submitting Nominations: Any interested person or organization may nominate qualified individuals to serve as committee members in the areas described above. The nominating form requests contact information about the person making the nomination; contact information about the nominee; the disciplinary and specific areas of expertise of the nominee; the nominee's resume; and a general biosketch of the nominee indicating education, expertise, past research, recent service on other advisory committees or with professional associations, and recent grant and/or contract support.

Anyone who is unable to submit nominations through the SAB Web site, or has questions concerning any aspect of the nomination process, may contact Dr. Philip Sayre as indicated above in this FR notice. Nominations should be submitted in time to arrive no later than August 20, 2003.

The EPA Science Advisory Board Staff Office will acknowledge receipt of the nominations. From the nominees identified by respondents to this Federal Register notice and through other sources (termed the ``Widecast''), SAB Staff Office will develop a smaller subset (known as the ``Short List'') for more detailed consideration. Criteria used by the SAB Staff Office in developing this Short List are given at the end of the following paragraph. The SAB Staff Office will contact individuals who are considered for inclusion in the Short List to determine whether they are willing to serve on the Committee. The Short List will be posted on the SAB Web site at: http://www.epa.gov/sab, and will include, for each candidate, the nominee's name and their biosketch. The Short List also will be available from Dr. Sayre at the address listed above. Public comments will be accepted for 21 calendar

days on the Short List. During this comment period, the public will be requested to provide information, analysis or other documentation on nominees that the SAB Staff Office should consider in evaluating candidates for the Committee.

For the EPA SAB, a balanced Committee is characterized by inclusion of candidates who possess the necessary domains of knowledge, the relevant scientific perspectives (which, among other factors, can be influenced by work history and affiliation), and the collective breadth of experience to adequately address the charge. Public responses to the Short List candidates will be considered in the selection of the Committee members, along with information provided by candidates and information gathered by EPA SAB Staff Office independently on the background of each candidate (e.g., financial disclosure information and computer searches to evaluate a nominee's prior involvement with the topic under review). Specific criteria to be used in evaluating individual nominees include: (a) Scientific and/or technical expertise, knowledge, and experience (primary factors); (b) absence of financial conflicts of interest; (c) scientific credibility and impartiality; (d) availability and willingness to serve; and (e) ability to work constructively and effectively in committees.

Those Short List candidates ultimately chosen to serve on the Committee will be appointed as Special Government Employees. Therefore, all Short List candidates will be required to fill out the ``Confidential Financial Disclosure Form for Special Government Employees Serving on Federal Advisory Committees at the U.S. Environmental Protection Agency" (EPA Form 3110-48). This confidential form allows Government officials to determine whether there is a statutory conflict between that person's public responsibilities as a Special Government Employee and private interests and activities, or the appearance of a lack of impartiality, as defined by Federal regulation. The form may be viewed and downloaded from the following URL address: http://www.epa.gov/sab/pdf/epaform3110-48.pdf. Finally, some members may need to complete national security clearance forms to obtain access to sensitive or classified homeland security information. Committee members will likely be asked to attend one to two meetings and public conferences per year over the anticipated course of the advisory activity.

Dated: July 24, 2003.
Vanessa T. Vu,
Director, EPA Science Advisory Board Staff Office.
[FR Doc. 03-19352 Filed 7-29-03; 8:45 am]
BILLING CODE 6560-50-P

Attachment B

Invitation for Comment on the EPA Science Advisory Board – Short List Candidates for the Homeland Security Advisory Committee

The EPA Science Advisory Board (SAB) Staff Office is forming the SAB Homeland Security Advisory Committee (HSAC). Nominations for technical experts to serve on the HSAC were requested in a July 30, 2003 Federal Register Notice (Volume 68, Number 146, pages 44761-44762, available on the Internet at http://www.epa.gov/fedreg/EPA-SAB/2003/July/Day-30/sab19352.htm). The notice provided background information, the process for submitting nominations, and expertise needed for consideration as a candidate for the HSAC. Pursuant to the Federal Register notice, any interested person or organization may nominate qualified individuals for membership to the HSAC, and individuals should have expertise in one or more of the following areas related to homeland security and emergency/disaster response:

- air modeling
- analytical chemistry
- atmospheric sciences
- chemical detection methodologies
- clinical toxicology
- containment of radioactive waste
- detection of microbial pathogens
- environmental engineering
- epidemiology
- HVAC engineering
- inactivation of chemicals
- inactivation of microorganisms
- microbiology
- radiation health
- risk assessment
- toxicology
- water treatment plant engineering

The SAB Staff Office received from the public 85 nominations of experts to serve on the HSAC. The SAB Staff Office reviewed each interested nominee's qualifications and developed a "Short List" of 65 nominees whom are qualified and willing to serve on the HSAC. Brief biographical sketches ("biosketches") of the "Short List" candidates are provided below. The SAB Staff Office invites the public to provide information or analyses pertinent to these candidates' service on the HSAC or as experts to supplement the HSAC, as appropriate. Any information furnished by the public in response to this web site posting will be combined with information already provided by the nominees and other information gathered independently by the SAB Staff Office. Prior to final HSAC selection, the combined information will be reviewed and evaluated for any possible conflict of interest or a possible appearance of a lack of impartiality. Please e-mail your comments to Angela Nugent (nugent.angela@epa.gov) no later than February 4, 2005.

Attachment B

SAB Homeland Security Advisory Committee
Short List Candidates' Biographical Sketches

Akay,Adnan

Carnegie Mellon University

Dr. Adnan Akay holds the Lord Chair in Engineering and is the head of the Mechanical Engineering Department at Carnegie Mellon University. Previously, he was on the faculty at Wayne State University where he held the DeVlieg Chair in Engineering and a visiting staff fellow at the National Institute of Environmental Health. He has held visiting appointments at MIT and the University of Rome "La Sapienza." Dr. Akay received his B.S., M.M.E., and Ph.D. in Mechanical Engineering from North Carolina State University. Akay's research lies in applied mechanics with emphasis on vibrations and acoustics. Much of his research focuses on friction-induced sounds, addressing aircraft and automotive brake noise, and on contact damping aimed at reducing jet engine blade vibrations. A current collaborative research project with the University of Rome applies the concept of thermalization of vibrations, inspired by the dynamics of atoms in a solid, to reduce vibrations in complex structures. Adnan Akay's current focus is to promote a "renaissance" in engineering education, one that emphasizes knowledge creation and recognizes the individual student and prepares students for the post 9/11 world. Adnan Akay is an active member of the engineering professional community, and has been recognized for his contributions to research, education and professional service. He is a fellow of the American Society of Mechanical Engineers and the Acoustical Society of America, and a member of several honor societies. Most of his activities are coordinated through ASME, for which until recently he served as a vice president of Environment and Transportation Group and as a team leader in the Critical Asset Protection Initiative. He co-founded, and has held numerous positions in, the ASME Noise Control and Acoustics Division. He also participated in the Engineering Foundation and has served as Council chair. Dr. Akay regularly consults with international industries as a technical advisor and serves on advisory boards of several universities. He serves on the Technical Advisory Committee of Pratt & Whitney. Recent research funding is from AFOSR, NSF, Unilever, Inc. and Robert Bosch GmbH.

Anastas,George

Environmental Evaluation Group

Mr. George Anastas is currently employed as a consultant to the Office of the General Counsel of the New Mexico Environment Department specializing in nuclear facility emergency response planning and the effects of chemical releases on critical segments of the population. He also serves as a consultant to the New Mexico Office of Emergency Management in radiation safety and emergency response training of first responders. He serves on a U.S. Department of Homeland Security, Office for Domestic Preparedness, Committee on the Homeland Defense Equipment Reuse (HDER) Program. He received a Bachelor of Science degree in physics from the State University of New York at Albany and a Master of Public Health degree, specializing in environmental/radiological health, from the University of Minnesota. He has also taken graduate courses in nuclear and environmental engineering at Rensselaer Polytechnic Institute in Troy, New York. He is a Certified Health Physicist, a Professional Nuclear Engineer and a Diplomat of the American Academy of Environmental Engineers with a specialty in radiation protection. His current research interests include: chemical and radiation risk estimation for critical segments of the population, risk communication, and emergency response planning for radiological incidents. He is a member of the American Academy of Environmental Engineers (AAEE), the American Academy of Health Physics, the American Nuclear Society (ANS), the American Society of Safety Engineers (ASSE), the American Conference of Governmental Industrial Hygienists (ACGIH), the Health Physics Society (HPS) and the Australasian Radiation Protection Society (ARPS). He is a former President of the Health Physics Society (2001-2002). As President of the HPS he initiated the formation of the Health Physics Society Homeland Defense Committee and arranged for a Mid Year Topical Symposium on the subject of Homeland Security. In 2002, he was elected a Fellow of the Health Physics Society. He presently serves on the Executive Committee for the Third Annual Homeland Security Conference which will include the First Annual Southwest Regional Native American Homeland Security Conference. Over his 25 year career, he has worked for state governments, academia and industry in a variety of radiological heath and safety positions. He has published and presented over 100 topics to industry, scientific, government, elected officials and academic groups on radiation safety, risk amelioration, and industrial and occupational safety. Funding for his research was included in budget authorizations from the California State University, Sacramento, where he served as Director of Environmental Health and Safety and Radiation Safety Officer. He has served on, and held responsible positions with, advisory committees and professional organizations including: the Gas Research Institute, the Edison Electric Institute, the California State University, the Electric Power Research Institute and the Health Physics Society.

Andersen,Gary

Lawrence Berkeley National Laboratory

Dr. Gary Andersen is a microbial ecologist and Group Leader in Molecular Microbial Ecology at Lawrence Berkeley National Laboratory. He received his Ph.D. from the University of California at Berkeley in plant pathology in 1993. His expertise is in microbial ecology with an emphasis on the natural distribution of pathogens in the environment, pathogen genetics, and biotechnology. He has worked on developing high-density microarray systems for the detection and characterization of human pathogens and has numerous publications on pathogen diagnostics. Current research projects include the characterization of background organisms from pathogen surveillance systems as well as DNA sequencing and comparative genomics of the plague pathogen, Yersinia pestis. He also developed the VNTR system for strain typing in Bacillus anthracis. He has served on committees for the National Institute of Health and currently serves as a member of the National Institute of Allergy and Infectious Diseases review panel for SBIR in Biodefense. He is also a member of the advisory board for the Sloan Foundation. His current research is supported by the Department of Homeland Security, NIAID, and the Department of Energy.

Anderson,Henry

Wisconsin Division of Public Health

Dr. Henry Anderson received his MD in 1972 from the University of Wisconsin Medical School, Madison, WI. He completed a medical internship and a Preventive Medicine Residency. He is certified by the American Board of Preventive Medicine with a sub-specialty in occupational and environmental medicine and is a fellow of the American College of Epidemiology. Since 1980 he has been employed by the Wisconsin Department of Health and Social Services as a Chief Medical Officer and State Environmental and Occupational Disease Epidemiologist. He holds adjunct Professorships at the University of Wisconsin - Madison, Department of Population Health, and the UW Institute for Environmental Studies, Center for Human Studies. He has authored over 175 publications on a broad spectrum of environmental, occupational and public health topics. His current State responsibilities include planning for and response to chemical and radiation components of terrorism. He is responsible for Wisconsin's public health response to natural and manmade disasters such as flooding, tornadoes, and chemical accidents. He co-chaired a committee of The Council of State and Territorial Epidemiologists that prepared the report "National Assessment of the Status of Planning for Public Health Preparedness for Chemical and Radiological Contaminating Terrorism." State and federal agencies such as CDC, EPA and HUD fund his research. Current research includes: environmental health indicators and disease surveillance, childhood asthma, lead poisoning, endocrine disruption and sport fish consumption, arsenic in drinking water, bioterrorism (focusing on chemical and radiation), natural disasters, asbestos disease, occupational fatalities and occupational injuries to youth. He is a former member of the Armed Forces Epidemiology Board and the current chair of the NIOSH Science Advisory Board. He is a fellow of the Collegium Ramazzini and the American Association for the Advancement of Science. He is a member and past president of the Council of State and Territorial Epidemiologists (CSTE), and a member of the Association of State and Territorial Health Officials (ASTHO) Environmental Health Policy Committee. He was a member of the EPASAB and chaired the Environmental Health Committee and the Integrated Human Exposures Committee. He is associate editor of the American Journal of Industrial Medicine and serves on the editorial board of Cancer Prevention International.

Bellamy,William

CH2M Hill

Dr. William Bellamy is Fellow and Vice President of Water Technologies for CH2MHILL, one of the nation's largest environmental consulting firms. He received his BS in Electrical Engineering (Biomedical Option) and MS in Civil (Environmental) Engineering from the University of Wyoming; and his PhD in Civil (Environmental) Engineering from Colorado State University. His thirty years of experience include research, study, design, construction, and operation of potable water, wastewater, water resource, hazardous waste, and solid waste projects in Asia, Europe, Middle East, and North America. Research experience totals over $15 million with an emphasis on transitioning science into application. Currently, Dr Bellamy is managing an American Water Works Association Research Foundation (AWWARF) research project on algal toxins and a study of UV disinfection under adverse conditions. Additional examples of over 50 AWWARF, American Water Works Association (AWWA), EPA and utility funded research includes: Surrogate Indicators of Treatment Plant Evaluations, Integrated Disinfection Design Framework, Capital Planning Manual, and Giardia Treatment Efficiency of Slow Sand Filtration. His research has contributed to water treatment innovations such as arsenic treatment with micro-filtration, large-scale UV disinfection systems, integrated disinfection design framework, ozone treatment innovations, and dual membrane purification. These efforts have lead to over 100 publications and presentations as well as over 150 specific project reports. Recently, he has assisted in security assessments, designs, and systems for major water treatment and distribution systems in the US and Iraq as well as providing guidance for the development of CH2MHILL's Security Task Force. Security applications experience consists of detection, monitoring, passive, and active response, and facility security measures. Specific assignments included base security officer and emergency response engineer for environmental incidences. Dr. Bellamy's affiliations include adjunct professor at Colorado State University; National Advisory Committee, University of Wyoming; Sydney Water Corporation International Experts Committee (standing); project manager for AWWARF research projects; peer review JAWWA; past affiliations include the National Drinking Water Advisory Council, Commissioned Officer in the Environmental Hygiene Agency; Director IOA, Co-chair AWWARF and EPA's Experts Work Group on Microbial and Disinfection, as well as numerous committees and working groups for EPA, AWWA, AWWARF, and state regulatory agencies.

Bier,Vicki

University of Wisconsin-Madison

Dr. Vicki Bier holds a joint appointment as Professor in the departments of Industrial Engineering and Engineering Physics at the University of Wisconsin-Madison, where she has directed the Center for Human Performance and Risk Analysis (formerly the Center for Human Performance in Complex Systems) since 1995. She received a Ph.D. in Operations Research from the Massachusetts Institute of Technology in 1983, and a B.S. in Mathematical Sciences from Stanford University in 1976. Dr. Bier's current research interests focus on the application of decision analysis, risk analysis, game theory, and related methods to problems of security and critical infrastructure protection. Dr. Bier received the Women's Achievement Award from the American Nuclear Society in 1993, and was elected a Fellow of the Society for Risk Analysis in 1996. She served as the engineering editor for Risk Analysis from 1997 through 2001, and has been a councilor of both the Society for Risk Analysis and the Decision Analysis Society. Dr. Bier has served as a member of the Radiation Advisory Committee of the U.S. Environmental Protection Agency's Science Advisory Board, and as a member of the Advisory Committee of the Harvard Center for Risk Analysis. Her research is currently funded by the Army Research Office, the National Science Foundation, the Midwest Regional University Transportation Center, and the Department of Homeland Security.

Bindal,Hari

US Coast Guard

Mr. Hari Bindal is an Environmental Engineer with the U.S. Coast Guard Engineering Logistics Center (ELC), Department of Homeland Security, in Baltimore Maryland. Mr. Bindal manages Vessel Environmental Compliance Program at the ELC (1995-current) and had managed the Hazardous Waste program at the U.S. Coast Guard Headquarters (1991-95) in Washington DC. He also serves as member, appointed by the Governor, on the "State of Maryland Controlled Hazardous Substance Advisory Council," a Six- year (1999-2005) term position. Mr. Bindal received a Bachelor's degree in Civil Engineering (1966), a Masters in Public Health Engineering (1972), and another Masters in Environmental Engineering (1978). He is registered professional engineer (PE), (State of WV, 1978). Mr. Bindal is managing an alternative fuel (Biodiesel) for applicability for the Coast Guard vessels.

Blake,Diane

Tulane University Health Science Center

Dr. Diane A. Blake is a Professor of Biochemistry at Tulane University Health Sciences Center. She received her Ph.D. in 1977 (Biochemistry) from the University of Illinois (Urbana-Champaign) and joined Tulane in 1993 after serving for 10 years as a faculty member at Meharry Medical College in Nashville, TN. She is an expert on the development of antibodies to specific environmental contaminants and toxins (most notably, heavy metals and radionuclides) and the incorporation of these antibodies into field-portable, autonomous, or submersible sensors that can rapidly and reliably detect chemical and biological threats in surface and groundwater. She has also developed rapid antibody-based tests to assess the levels of metals/radionuclides in clinical samples. In addition to work her work on sensors, she has been very active in the study of antibody architecture and function, in the development of recombinant antibody formats, and in the mechanisms that inhibit cell proliferation. These research efforts have resulted in over 60 papers and book chapters to date. Dr. Blake's research program has received continuous peer-reviewed grant support for more than 20 years from a combination of the following U.S. federal agencies: NSF, EPA, NIH, DOE, CDC, USGS, and DoD. She has served on several Research Review Panels for U.S. Environmental Protection Agency, including those for Environmental Biology and Chemistry. She has been active on advisory panels of the National Science Foundation as well, serving on their Special Emphasis Panels, their first Biocomplexity Panel and for 5 years on their Cell Biology Panel. She was a member of the site visit team assembled to review the Environmental Sensors program of the Tennessee Valley Authority and has provided ad hoc reviews to the NIH, the Wellcome Trust (UK) and Engineering and Biotechnology peer-review programs of Kentucky and North Carolina. Dr. Blake's most recent research activities include the development and characterization of antibodies to uranium and plutonium for incorporation into handheld and autonomous sensor devices. This research is funded by the DOE. She also receives funding from the USGS for the development of a sensor that can rapidly detect coliform contamination in surface waters.

Boynton,Garry

New York Department of Environmental Conservation

Mr. Garry Boynton is currently employed by the Dept. of Environmental Conservation as an Environmental Chemist III. He has a Bachelor of Science degree in Chemistry (1973) for the Worcester Polytechnic Institute of Worcester Massachusetts. Mr. Boynton's career has been focused on air monitoring for the last 22 years. His early analytical training, with the NYS Dept. of Agriculture and Markets, was in pesticide residue analysis of food and environmental samples. His first environmental work was with the Love Canal air monitoring project. He has been a lead in the design and implementation of 3 major air studies around the Fresh Kills landfill on Staten Island and the lead in designing and implementing the New York State VOC monitoring Network. He is now the air monitoring laboratory manager with responsibilities for the repair and maintenance of the "Criteria" pollutant network, sampling and analysis of canister samples for the Air Toxics monitoring program, the Photochemical Assessment Monitoring (PAMS) program in NYC including the carbonyls sampling and analysis for both the PAMS and National Air Toxics Trends (NATTS) programs. He has been the Air Monitoring Emergency Response Coordinator since the task was created in 2003. This task has been advisory within the NYSDEC response capabilities and entails the coordination of staff and support with the Scientific Advisory Group that is activated during specific environmental emergency responses. The majority of the funding is from the 105 grant and state funding. The EPA NATTS grant for two stations supports a small portion of the statewide VOC laboratory analysis.

Briese,Garry L.

International Association of Fire Chiefs

Garry L. Briese has been the Executive Director of the International Association of Fire Chiefs since 1985. The IAFC is the professional association for senior fire and emergency service leaders, with a membership over 12,000, from more than 25 nations. Mr. Briese received his B.A. in International Relations from the University of South Florida in 1971 and his Masters Degree in Public Administration from the Nova Southeastern University in 1983. He became a Certified Association Executive from the American Society of Association Executives in 1981. Mr. Briese is an adjunct associate professor at both the University of Maryland and George Washington University. He spent the previous 15 years working as the executive director of the Florida College of Emergency Physicians. He has over 30 years experience in the fire service, both as a volunteer and as a paid fire fighter. Prior to the consolidation of sixteen fire districts into the Orange County Fire & Rescue Department, he served as the chairman of the Board of Fire Commissioners for the Killarney Fire District in Orange County, Florida. He developed the Fire Service Leadership Partnership Program, a nationally recognized labor management relations program for the fire service. Since 1978, he has been the earliest national advocate for terrorism preparedness for the fire and emergency services and has done extensive research and lecturing in those areas. He developed a concept and was instrumental in the implementation of multiple major national and international terrorism conferences such as: the First World Conference on Fire and Emergency Services Response to Terrorism in 1993 and the Conference on Strengthening the Public Safety Response to Terrorism. He is a well-known author and lecturer on leadership issues and future issues in the fire and emergency services discipline and has co-authored two emergency medical textbooks for first responders, in addition to speaking at numerous national and international conferences, such as the 2002 International Conference on Aviation Security and Confronting International Terrorism. Internationally, he has addressed terrorism conferences in Japan, Israel, Germany, Belgium, and the United Kingdom. Mr. Briese was awarded the James O. Page EMS Achievement Award in 2004, which award is presented annually to an individual who has played a key role in creating and/or promoting non-clinical innovation and achievements in Fire Service EMS. He received the U.S. Coast Guard Meritorious Public Services Award in 2001 for "Notable services that have greatly contributed to the advancement of the missions and goals of the Coast Guard". He was appointed by the Secretary of Energy as a Commissioner on the DOE Independent Commission on Fire Safety and Preparedness (2001-2003). He is a member of the Board of Directors of the Emergency Medicine Learning and Resource Center of the Florida Emergency Medicine Foundation.

Camper,Anne K.

Montana State University

Dr. Anne Camper is Professor of Civil Engineering, Adjunct Professor of Microbiology and Associate Dean for Research and Graduate Studies, College of Engineering at Montana State University. She has also been involved with the Center for Biofilm Engineering at MSU since its inception. Her B.S. and M.S. degrees are in environmental microbiology, and her Ph.D. is in civil/environmental engineering. Research interests are in biofilm growth and control in drinking and industrial water systems; the fate, transport and survival of pathogens in biofilm systems; and the physiology of biofilm bacteria. She has been the principal investigator or co-principal investigator on 36 grants related to drinking water treatment or distribution. Relevant national professional service includes 1) editorial boards of Microbial Ecology and Biofilms, 2) participant in two American Academy for Microbiology Colloquia "Global Issues in Microbiological Water Quality for the Next Century", 1995 and "Re-evaluation of Microbial Water Quality:

Powerful New Tools for Detection and Risk Assessment", 2000; 3) participant and organizing committee of AAM "Microbial Communities: Advantages of Multicellular Cooperation" colloquium; 4) Reviewer of the National Research Council Report "A Review of the EPA Water Security Research and Technical Support Action Plan: Project Evaluation (2003); 5) US EPA technical expert workshop, Exposure Assessment of Pathogens and Toxic Chemicals in Drinking Water Distribution Systems, 2004; 6) Peer review panel, National Risk Management Research Laboratory, Water Supply and Water Resources Division, US EPA, 2004; 7) National Research Council, Water Science and Technology Board Committee on Public Water Supply Distribution Systems: Assessing and Reducing Risks, 2004 - 2005. She is a member of the American Water Works Association, serving on several national committees, the International Society of Microbial Ecology, the American Society for Microbiology, and the American Society for Engineering Educators. Authorship includes 41 peer-reviewed publications, 7 book chapters, 10 peer reviewed reports, and 46 conference proceedings. Research funding has been from industry, the US EPA, Army Research Office, National Science Foundation, National Institutes of Health, the American Water Works Association Research Foundation, the US Bureau of Reclamation, and the US Department of Agriculture.

Cheng,Meng-Dawn

Oak Ridge National Laboratory

Dr. Meng-Dawn Cheng is a senior scientist in the Environmental Sciences Division at the Department of Energy's Oak Ridge National Laboratory. He received his Ph.D. in Civil and Environmental Engineering from University of Illinois at Urbana-Champaign in 1986, and had 3-year's postdoctoral training at the University of Medicine and Dentistry of New Jersey on human exposure analysis and measurement. Dr. Cheng's research program has been in aerosol modeling, particle measurement, and atmospheric dispersion priori to his employment at the Oak Ridge National Laboratory in 1993. His research direction has then been widened to include instrumentation, detection strategy, source identification, consequence analysis, modeling of release of toxic and warfare agents to the air, and surface decontamination. Dr. Cheng has 157 publications and technical reports, 1 awarded patent, 4 intellectual property disclosures to Department of Energy, and 1 Cooperative Research and Development Agreement with chemical industry. He currently leads a multi-million dollar research program at ORNL on technology development of aerosol and bioaerosol agent detection, measurement strategy, and biological responses. His research at ORNL related to homeland security has been funded under programs directed by the Department of Energy Nuclear Nonproliferation Security Administration, Y12 National Security Complex, and the Munition Directorate at the Eglin Air Force Base of the Department of Defense.

Cornwell,David

Environmental Engineering & Technology Inc.

Dr. David Cornwell is currently President of EE&T, Inc., a consulting engineering firm dedicated to working with utilities on drinking water issues. After receiving his Ph.D. from the University of Florida, he was an Assistant and later Associate Professor at Michigan State University before starting EE&T. Dr. Cornwell's expertise is in the treatment of drinking water and he has been called in to help utilities throughout the country. He has over 50 publications in the drinking water treatment field, including co-author of the widely used textbook, "Introduction to Environmental Engineering" (McGraw-Hill), and has been Principal Investigator on over 30 externally funded research projects, particularly from the American Water Works Association (AWWA). Many of the techniques he developed for treatability assessments are now widely used by the industry. He has twice won the JAWWA best paper award, chaired the AWWA Technical and Education Council (TEC), served on their executive committee, and has chaired several AWWA Divisions and committees. He has most recently helped utilities with security issues including everything from hardware assessment/design (fencing, lighting, key control) to treatment and emergency response preparedness. As chair of TEC he has overseen AWWA's security training efforts and serves as an advisory committee member for the EPA funded manual on "AWWA Physical Security Guidance Documents." His particular Homeland Security expertise would be in assisting utilities prepare for or respond to emergency treatment issues.

Crump-Wiesner,Hans J.

Office of Emergency and Remedial Response

Mr. Hans J. Crump-Wiesner has served in various governmental positions for 38 years with chief responsibilities for response to terrorism incidents and hazardous material releases into the environment, including chemical, biological and nuclear contaminants. In this capacity, he managed a national emergency response program for the U.S. Environmental Protection Agency (EPA) under the Clean Water Act and under the Comprehensive Environmental Response, Compensation and Liability Act (Superfund). As Deputy Director of the Emergency Response Division in the Office of Emergency and Remedial Response, he was responsible for developing national program guidance and procedures for responding to environmental releases, including spill response and prevention, technical assistance, health and safety, and emergency response training. He was a member of the National Response Team for coordinating responses to major and catastrophic environmental or terrorism incidents and the EPA National Incident Coordination Team. For six years, Mr. Crump-Wiesner served as Director of the Analytical Operations Center for Superfund. He managed a national program for the analysis of hazardous waste samples for Superfund, including analytical methods development, QA/QC guidance, laboratory performance evaluation, data integrity, and ADP systems for analytical data management. For four years, Mr. Crump-Wiesner was EPA's Liaison to the Federal Bureau of Investigation (FBI) and the U.S. Coast Guard for developing interagency plans for responding to incidents of domestic terrorism. In the FBI Counter Terrorism Section, he coordinated and provided technical assistance in actual or suspected terrorist incidents, participated in special counter-terrorism events, such as top-secret exercises, national conventions, and sports events. Mr Crump-Wiesner represented EPA on the Concept of Operations Plan workgroup for six major agencies and departments. The workgroup published the first Concept of Operations Plan for responding to domestic terrorism incidents which is currently in effect. He was a member of the FEMA workgroup for developing plans for responding to domestic terrorism incidents and special events. He was designated as an EPA representative on the FBI Domestic Emergency Support Team for providing rapid surveillance and monitoring technical support and advice on behalf of EPA to Federal, State and local governments. He prepared internal EPA procedures for counter- terrorism response activation, personnel requirements, and equipment specifications for EPA's participation in the FBI Domestic Emergency Support Team. He developed guidance on equipment specifications for EPA Regional Response Teams. He was a member of the Interagency FBI/DOD Standards and Equipment workgroup for developing standards for personal protection, surveillance and monitoring devices for chemical, biological and nuclear agents, and communications equipment. Mr. Crump-Wiesner is currently retired from Federal Service. He is working as a German and English language instructor at the Berlitz Language School in Washington, DC. He holds a B.A. degree from the University of Pennsylvania and an M.S. degree in Analytical Chemistry from the University of Maryland.

Curtis,Joseph

Strategic Concepts

Dr. Joseph Curtis is the Chief Systems Engineer for chemical biological systems at Strategic Concepts, LLC. From 1997 to 2004, he consulted with technology development teams supporting US and Canadian defense departments developing medical countermeasures for chemical biological medical systems. Experience includes developing regulatory and risk management strategies to support technology acquisition for consequence management organizations responding to chemical, biological, radiological and nuclear incidents including the Chemical Biological Incident Response Force (CBIRF), and the United Nations Monitoring Verification Inspection Commission (UNMOVIC). Accomplishments include consulting to the FDA microbiological devices panel for biodetection technology, systems integration for the Joint Biological Agent Identification System (JBAIDS), recommending pharmacokinetic studies for oxime-based decontamination systems, applying modeling and simulation tools to evaluate resuscitative medical systems, and decontamination systems on fixed sites. Systems acquisition experience includes requirements development, systems integration, and testing and evaluation of prototype systems. As a member of the Joint Family of Decontamination Systems (JFSDS) integrated product team shared in the Packard Award for innovation in defense acquisition. Dr Curtis is a participant on the ANSI Homeland Security Standards Panel and is involved in a infrastructure security program for the chemical pipeline industry. Dr. Curtis received his Ph.D. from the University of California, Davis, in Cell and Developmental Biology, with an emphasis in biophysical modeling and neurotoxicology. He also holds a MS in Biomedicine and a BS in Biology from, Chicago State University. Dr. Curtis also received training in environmental management, risk communication, risk assessment, and environmental remediation from UC Berkeley, and microscopic analytical methods from McCrone Research Institute. Toxicology research includes investigating TCE mechanisms of toxicology at the Wright Patterson AFB.

Denig-Chakroff,David

Madison Water Utility

Mr. David Denig-Chakroff is General Manager of Madison Water Utility. He received a BA degree in geology from Hanover College and a MS degree in Natural Resources Management from The Ohio State University, specializing in hydrogeology and water policy. He is active in the American Water Works Association, where he has served on the Wisconsin section research committee and is currently chair of the legislative and regulatory affairs committee. Mr. Denig-Chakroff is on the Board of Directors of the Association of Metropolitan Water Agencies, where he was instrumental in the formation of the Water Information Sharing and Analysis Center (WaterISAC). Under his direction, Madison Water Utility became a charter member of the WaterISAC. Under his leadership, the utility has also conducted plans and emergency procedures in preparation for Y2K, completed a vulnerability assessment of its system, and completed a comprehensive emergency response plan. Mr. Denig-Chakroff has served on numerous federal councils and work groups, including the National Water Quality Monitoring Council, the EPA Data Reliability Work Group, the Index of Watershed Indicators Drinking Water Advisory Group, and the Advisory Committee on Water Information. On the latter advisory committee, he provides expertise on drinking water utilities and homeland security issues as they apply to the water industry. Locally, Mr. Denig-Chakroff has served on the Dane County Y2K Preparedness Team, the Dane County Power Supply Emergency Management Team, the City of Madison Domestic Preparedness and Emergency Planning teams and, following the events of 9/11/01, has served on the City's Emergency Safety and Security Team.

Durfee,Mary

Michigan Technological University

Dr. Mary Durfee is an Associate Professor in the Social Sciences Department and the Special Assistant to the Provost at Michigan Technological University. She took her Ph.D. in government at Cornell University; her dissertation was on surprise attack. She served as a consultant to the EPA's SAB subcommittee on the social diffusion of environmental technology and has been a reviewer of NSF Integrative Graduate Education and Research Traineeship programs and a co-PI in Michigan Tech's IGERT in Sustainability. Her publications and research interests have been on management and cooperation in the Great Lakes of North America. More recently, she has joined forces with faculty in Civil and Environmental Engineering on the use of Agent-based modeling, including work on how local communities might respond to the disruption of civil infrastructure due to extreme events. Current funding is from NSF. Pending projects at NSF are Globalization, Engineering, and Public International Law (as PI); Broken Link (senior researcher). She and her colleagues in engineering also have a white paper under consideration by the Department of Defense on ways to conceptualize legitimacy through agent-based modeling.

Ehleringer,James

University of Utah

Dr. James Ehleringer is a Distinguished Professor of Biology at the University of Utah, where he heads the Stable Isotope Ratio Facility for Environmental Research (SIRFER). His background is in ecology, stable isotope chemistry, and environmental science. He received his B.S. and Ms. degrees from San Diego State University and his Ph.D. from Stanford University. Over the past three decades, he has been applying the use of stable isotopes at natural abundance levels to understand fundamental processes in biological, ecological and environmental sciences. This work has included both forensics and homeland security, where he has been involved in sourcing the geographical origins of counterfeit currencies, illicit drugs, explosives, human movements, and microbes. A common theme of his research program is to develop technologies to complement other traditional approaches for sourcing and identifying region-of-origin for biological and non-biological materials. Dr. Ehleringer has authored over 325 scientific publications during his career. He serves on the boards of nearly a dozen scientific journals and international scientific committees. His research program is broadly supported by both non-governmental and Federal sources, including the FBI, CIA, DOE, NSF, NASA, and TSWG.

Ensor,David S.

RTI International

Dr. David S. Ensor is the Director for the Center of Aerosol Technology and Senior Fellow at the Research Triangle Institute. While at RTI, Dr. Ensor has managed and conducted aerosol research in homeland security and environmental protection. Dr. Ensor has managed programs in aerosol research, filtration, air pollution control technology, particle sampling and characterization, indoor air quality, pollution prevention, exposure research, surface cleaning, testing of military and first responder protective garments for chemical and biological agents, microcontamination control, instrumentation development, and test methods development. Current clients include U.S. EPA, DARPA, U.S. Army and the CDC. Representative projects include Government Team Immune Buildings for DARPA, Government Team Spectral Sensing Biological Aerosols for DARPA, Development of a Nanofiber Air Filter for DARPA and Homeland Security Technology Verification for U.S.EPA. Dr. Ensor was Chair of the

International Organization of Standards (ISO) technical committee (TC) 209 working group (WG 7) (1995-2004), which developed standard, ISO 14644 Cleanrooms and associate controlled environments, Part 7: Separative devices (clean air hoods, gloveboxes, isolators, and mini-environments), published in October 2004. He was President of the American Association for Aerosol Research (1988-1990) and is a Founding Editor of Aerosol Science and Technology. Dr. Ensor is a Fellow of the Institute of Environmental Sciences and Technology and served as its Technical Vice President (1991-1993). He is Fellow and member of the College of Fellows of the American Society for Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and chaired the Technical Committee for Particles/Particle Removal Systems (1994-1997), which is responsible for a new air cleaner test method. Dr. Ensor is an Adjunct Professor of Environmental Engineering at the University of North Carolina at Chapel Hill. He has a Ph.D. in engineering and an M. S. in chemical engineering from the University of Washington and B.S. in chemical engineering from Washington State University. Before coming to RTI, Dr. Ensor managed industrial research and development of aerosol and gas instrumentation for Meteorology Research, Inc. Dr. Ensor has over 80 peer reviewed publications and over 200 presentations.

Faison,Brendlyn

Hampton University

Dr. Brendlyn D. Faison is an applied microbiologist who specializes in the environmental sciences. Her interest centers on waste management, environmental protection, site remediation, waste recycling, and waste recovery. Her technical experience includes 1) design and testing of novel ingredients for consumer products, 2) development of new processes for conversion of fossil fuel wastes to useful commodity chemicals, 3) pre-treatment of process wastes to be discharged to the environment, and 4) cleanup of areas already contaminated with radioactive materials. She is familiar with hazardous and radioactive waste forms generated by household, industrial, and government activities. Her technical background encompasses pollution prevention, pollution control, and environmental cleanup. This work is coupled with her prior experience in the management of biohazardous wastes and her recent efforts toward development of biosafety training materials. Dr. Faison earned her doctorate in bacteriology from the University of Wisconsin-Madison in 1985, having received earlier degrees from Wellesley College and the Massachusetts Institute of Technology. She is a faculty member at Hampton University in Virginia. She has hands-on experience with viruses, bacteria, and fungi: the three microbial types currently associated with bioterrorism. She has consulted with Environmental Protection Agency committees involved in environmental protection, as well as a Department of Energy (DOE) facility-security group. She is a longtime member of the American Society for Microbiology, the Society for Industrial Microbiology, the American Chemical Society, and the American Biological Safety Association. Her environmental management research activities have been supported by the DOE and the National Aeronautics and Space Administration.

Fan-Cheuk,Anna

California Environmental Protection Agency

Dr. Anna M. Fan, Ph.D., DABT, is Chief of Pesticide and Environmental Toxicology Section, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (OEHHA-Cal/EPA), California. The Section includes scientific and risk assessment programs in these areas: drinking water chemicals evaluation (develop Public Health Goals, PHGs) to support regulatory standards development (Maximum Contaminant Levels, MCLs), chemicals in fish evaluation and health advisories development, pesticide toxicology evaluation, agricultural worker health and safety, community health investigation, medical supervision program and physician guidelines and training on pesticide poisoning and treatment for physicians and other health professionals. Dr. Fan received her B.S. degree in Biological Sciences from College of Holy Names, Oakland, CA; M.A. in Biology at University of San Francisco; and Ph.D. in Toxicology from Utah State University. She was in environmental consulting before serving in the California Department of Health Services and has since been with OEHHA-Cal/EPA for more than twenty years after creation of the new Cal/EPA. Her research work included carcinogenicity of metals and immunotoxicity of pesticides. She has coordinated risk assessments and recommendations for emergency response in the case of toxic chemical spill, along with coordination with the State Office of Emergency Services and on-site personnel. She provides special reviews for chemicals and warfare agents. Her current areas of expertise and interest include human and environmental health risk assessment and toxicology, science policy and regulatory decision-making, and biological warfare in the history of China. Dr. Fan has served on the US. EPA Science Advisory Board, Drinking Water Committee; the U.S. EPA Endocrine Disruptors Screening and Testing Advisory Committee; and National Research Council, Committee on Groundwater Recharge. She recently serves on the ILSI Expert Panel on Screening Assays for Chemical Toxicity. She is a member of California's Pesticide Registration and Evaluation Committee. She has served as President of the American Chinese Toxicology Society and is currently on an international Advisory Committee for Environmental Health and Occupational Medicine. She has organized national (American Chemical Society, American College of Toxicology) and international symposia, and is the author of numerous publications on risk assessment and environmental health and toxicology. She is Editor-in-Chief of a book, Toxicology and Risk Assessment. Principles and Methods and Considerations in Practical Applications. She is editor of Journal of Environmental Science and Health. Part C. Environmental Carcinogenesis and Ecotoxicology Reviews.

Fischhoff,Baruch

Carnegie Mellon University

Dr. Baruch Fischhoff is Howard Heinz University Professor, in the Department of Social and Decision Sciences and Department of Engineering and Public Policy at Carnegie Mellon University. He holds a B.S. in mathematics and psychology from Wayne State University and a MA and Ph.D. in psychology from the Hebrew University of Jerusalem. He is a member of the Institute of Medicine of the National Academy of Sciences, and has served on some two dozen NAS/NRC/IOM committees. He is a Fellow of the American Psychological Association and recipient of its Early Career Awards for Distinguished Scientific Contribution to Psychology and for Contributions to Psychology in the Public Interest. He is a Fellow of the Society for Risk Analysis and recipient of its Distinguished Achievement Award. Dr. Fischhoff's research includes risk perception and communication, risk management, adolescent decision making, medical informed consent, and environmental protection. He has co-authored or edited four books, Acceptable Risk (1981), A Two-State Solution in the Middle East: Prospects and Possibilities (1993), Preference Elicitation (1999), and Risk Communication: The Mental Models Approach (2001). He was appointed as a member of the U.S. Department of Homeland Security's Homeland Security Science and Technology Advisory Committee (HSSTAC) in February 2004.

Gabry,Jon

Tetra Tech FW, Inc

Dr. Jon C. Gabry currently serves as the Chemistry/Physical Sciences Discipline Lead at Tetra Tech FW, Inc. (formerly Foster Wheeler Environmental), a full-service environmental consulting, engineering, remediation, and construction firm. He holds a Ph.D. in Ecology and MS in Biology from Rutgers University, and BS in Biology with a concentration in Marine Science and BS in Pre-medicine from the Pennsylvania State University. Dr. Gabry has more than 23 years experience in environmental/analytical chemistry and has extensive experience in analytical method

development and validation. He is currently serving as a task manager for the EPA Region 2 Rapid Risk Project - Homeland Security Work Assignment whose focus is performing research activities to support EPA's Office of Research and Design (ORD) and the National Homeland Security Research Center (NHSRC) evaluation of various national security threat scenarios. He has developed in concert with Dugway Proving Ground a new, rapid capillary electrophoresis analytical method capable of analyzing VX, GB (Sarin) and HD (Mustard) chemical warfare agents (CWA) Schedule 2 compounds breakdown products (irrespective of agent hydrolysate) for real-time supercritical wet oxidation (SCWO) unit effluent process monitoring. In addition, he has developed five analytical methods for various organic compounds within CWA hydrolysates and total organic carbon method modifications to remove analytical interferences in SCWO process effluent. He also developed and validated a rapid soil extraction/cleanup procedure for analyzing PCBs, which has been incorporated in a compendium of USEPA-approved analytical methods (USEPA/540/2-88/005) and has performed USATHAMA pre-certifications and certification analyses. He has performed GC (FID, HECD, ECD, PID, NPD), GC/MS, HPLC, and UV analysis on a variety of sample matrices. He also has evaluated bioaccumulation factors (BCFs) of chemical warfare agent degradation products, pesticides and metals for the U.S. Army to develop probable stochastic ranges of BCFs in various fish species for incorporation into an exposure pathway model. Dr. Gabry has worked on over 32 Superfund sites, three of which involved mixed waste (radiological/inorganic contaminants), and over 100 sites for USACE, DoD, State agencies, or private clients. His current focus involves environmental chemical mobility and fate evaluations, quality assurance/quality control programs, development of field sampling programs, and supervision of field/mobile laboratories and laboratory treatability studies. Dr. Gabry has served as a member of the USEPA Data Usability Work Group, which developed national guidance for usability and data validation of both CLP (Contract Laboratory Program) and non-CLP Superfund data (USEPA/540/1-98/001). He is a USEPA Region 2 Certified Data Validator (Organic/Inorganic) and has provided expert testimony on analytical chemistry methodologies and data validation for the U.S. Department of Justice.

Guidotti,Tee

George Washington University

Dr. Tee L. Guidotti is a physician who is board certified in internal medicine, pulmonary medicine and occupational medicine. Dr Guidotti has published approximately 180 original research papers, review, case studies, and book chapters and has authored or edited five books. He is currently Professor of Occupational and Environmental Medicine at the George Washington University Medical Center, where he is chair of the Department of Environmental and Occupational Health of the School of Pubic Health and Health Services. Prior to joining GW, he held a similar position at the University of Alberta in Canada. He received his medical and public health training at Johns Hopkins after attending medical school at the University of California at San Diego. Dr Guidotti first became active in issues related to environmental security in the late 1980's and has been most active in the general areas of bioterrorism education, public health policy, workforce and health protection for first responders. The academic department that he heads has had a thematic emphasis in homeland security since 1999. He has been personally active in teaching, training, consulting, advising in homeland defense since 1998, and designed training for almost 1000 employees of the District of Columbia Department of Health. He is currently a member of several working groups and task forces addressing issues of homeland defense and has worked closely with Dycor USA, a private firm. He is currently working with several task forces on homeland security, particularly the Occupational Health Coordinating Group (an ISAC associated with the Department of Health and Human Services) and the Infrastructure Advisory Team of the Department of Homeland Security.

Hazen,Terry

Lawrence Berkeley National Laboratory

Dr. Terry Hazen received his B. S. and M. S. degrees in Interdepartmental Biology from Michigan State University. His Ph.D. is from Wake Forest University in Microbial Ecology. His dissertation research was done at the DOE Savannah River Site on the effects of nuclear reactor cooling waters on bacteria, alligators, and fish. Dr. Hazen was Professor, Chairman of Biology, and Director of Graduate Studies at the University of Puerto Rico for 8 years. He was Fellow Scientist at the Savannah River Site for 11 years and manager of the Biotechnology Group. He took his present position as Head of the Ecology Department at LBNL in February 1998. He took over as head of the Center for Environmental Biotechnology at LBNL in 1999. He has obtained competitive research funding and major institutional grants from DOE, NIH, NSF, NOAA, WRRI, DOD. He was president of the Puerto Rico Society of Microbiology and received the First Prize for Science Writing with his students in 1986 from the Ateneo de Puerto Rico. He received the R&D 100 award in 1995 and 1996; numerous other awards, and has been a fellow in the American Academy of Microbiology since 1991. He has authored more than 170 scientific publications, not including more than 442 abstracts and chapters in several books. He has also given more than 735 scientific presentations, 75% of them invited. He has patents on five bioremediation processes that are being used in 25 states and several countries in Europe and Asia. Prof. Hazen has supervised the graduate theses of 23 students and 13 postdoctoral fellows. He worked on the ecology of pathogens and indicators for more than 25 years. He was also appointed to the United Nations Global Water Quality Task Force in 1997, one of only two US scientists. This past spring he was part of an EPA expert panel tasked with writing a white paper on pathogen and indicator ecology in warm waters.

Heitkamp,Michael

Westinghouse Savannah River Company

Dr. Michael Heitkamp has over 27 years of experience in environmental microbiology and biotechnology. He is currently the Research Manager for Environmental Biotechnology at the Savannah River National Laboratory (SRNL) at the DOE's Savannah River Site near Aiken, SC. He came to SRNL from Monsanto Life Sciences Company where he worked in Corporate R&D as a Science Fellow in environmental microbiology. Prior to joining Monsanto, he was a Research Microbiologist at both the National Center for Toxicological Research, U.S. FDA, in Jefferson, AR and the Columbia National Contaminant Research Laboratory, U.S. Dept. of Interior, in Columbia, MO. Dr. Heitkamp completed his B.S. and a M.S. in Veterinary Microbiology at the University of Missouri, Columbia, MO and a Ph.D. in Interdisciplinary Toxicology at the University of Arkansas Medical School, Little Rock, AR. Dr. Heitkamp's training and experience span microbial ecology, microbial physiology, microbial tracking and the laboratory, pilot-scale and field testing of novel microbial technologies for biotreatment of water, air and soils. He also developed new molecular biology technologies to investigate survival, movement and genetic exchange of recombinant microorganisms in different ecosystems. His recent focus, relative to Homeland Security, has been the development and deployment of novel biodetection technologies and conducting preparedness training for biological and chemical weapons of mass destruction (WMDs). He currently manages a biotechnology R&D program with activities in biosecurity, biosensors, environmental genomics, and proteomics. Dr. Heitkamp is also a staff instructor at the Federal Law Enforcement Training Center (FLETC), Brunswick, GA, where he teaches classes in Biological and Chemical WMD recognition and preparedness. Dr. Heitkamp has also served as the primary DOE instructor for biological and chemical WMD preparedness and emergency response classes taught for the last two years to U.S. Customs field inspectors and agents in Washington, DC and at numerous airports and seaports across North America. He also recently worked with NOAA to organize a multi-agency workshop titled "Coastal Bioterrorism: Developing Capacities for Protecting Ports and Communities" held in Charleston, SC. Dr. Heitkamp has also served on the Environmental Committee of the Public and Scientific Affairs Board of the American Society for

Microbiology (three consecutive terms), Steering Committee on U.S. EPA's Remediation Technology Development Forum (RTDF) and as an expert panelist on a variety of scientific workshops and symposia sponsored by U.S. DOE, NSF, Water Environment Research Federation, U.S. Corps of Engineers, American Chemical Society and several additional professional societies and other federal agencies.

Hoel,David

Medical University of South Carolina

Dr. David G. Hoel is Distinguished University Professor in the Department of Biostatistics, Bioinformatics and Epidemiology at The Medical University of South Carolina, Charleston, South Carolina. He has a B.A. in Mathematics from The University of California (Berkeley), a Ph.D. in Mathematical Statistics from the University of North Carolina (Chapel Hill) and post-doctoral training in Preventive Medicine from Stanford University. Dr. Hoel was at the NIEHS of NIH for over 20 years as Director of the Division of Environmental Risk Assessment that was responsible for developing methods for quantitatively estimating health risks from low-dose chemical exposures. He has particular interests in estimating the health effects of radiation exposures and has spent a total of 3 years working at the RERF in Hiroshima as one of the program directors. His current research is focused on low-dose adverse health effects of gamma, neutron and alpha radiation, as well as plutonium in particular and is funded by DOE and by NASA. He also receives funding from DOE for the medical evaluation of former DOE workers and DOD for prostate cancer research. Dr. Hoel has served on numerous government and National Academy committees including the SAB of EPA, FDA's TSE (mad-cow disease) advisory committee, the Institute of Medicine's, of which he is a member, committee on The Health Effects of Mustard Gas and Lewisite. He also chaired the National Research Council's committee to Study the Mortality of Military Personnel Present at Atmospheric Tests of Nuclear Weapons and the Medical Follow-up Agency's committee on the Patterns of Illness and Care before Deployment to the Persian Gulf War. He was a member of the NRC's BEIR V (Biological Effects of Ionizing Radiation) and two Agent Orange committees. Currently he is a member of an advisory group to the DOD on exposure effects of the use of depleted uranium in combat.

Hope,Bruce

Oregon Department of Environmental Quality (DEQ)

Dr. Bruce Hope has been with the Oregon Department of Environmental Quality (DEQ) since 1995, where he currently serves as a senior environmental toxicologist for the Air Quality Division. He is presently responsible for establishing the Air Toxics Science Advisory Committee (ATSAC), researching, reviewing and recommending air toxics benchmarks to the ATSAC for approval, and proposing recommended benchmarks for adoption as administrative rules. In 2000-01, he was on leave from DEQ as an American Association for the Advancement of Science (AAAS) risk policy fellow at the U.S. Department of Agriculture in Washington DC, where he worked on food safety, microbial risk, and bioterrorism issues. Work on this latter issue lead two papers on evaluation of terrorist threats, particularly to agriculture, with established risk assessment methodologies. Prior to joining DEQ, he was a consultant in the private sector managing human health and ecological risk assessments for commercial and government clients. He has served on a number of U.S. Environmental Protection Agency national advisory and review panels addressing cumulative risks, wildlife risk assessment, and probabilistic risk methodologies. He holds M.S. and Ph.D. degrees in biology (aquatic toxicology) from the University of Southern California and a B.A. degree from the University of California. He is not currently a recipient of any research funding from any source.

Ibrahim,Shawki

Colorado State University

Dr. Shawki Ibrahim is presently a professor in the Department of Environmental and Radiological Health Sciences at Colorado State University (CSU). He received a doctorate degree in Environmental and Radiological Health Sciences from New York University (NYU) and was an Assistant Research Scientist at NYU's Institute of Environmental Medicine for 5 years, prior to joining CSU in 1980. He has more than 28 years of experience in the areas of radiological measurements, radioanalytical chemistry, nuclear waste management, and the environmental distribution and behavior of radioactivity. In particular, he developed several radiochemical procedures for the determination of natural and man-made radionulcides in a variety of sample media. Over the years, he has accumulated significant research experience in assessing the distribution and behavior of radioactive contaminant around DOE nuclear weapon facilities and uranium mining and milling operations. Recently, he received the DOE Radiochemistry Education Award to train a new generation of radiochemists to meet the national need for such personnel. In addition to his research and teaching responsibilities at CSU, he has served on the National Academy of Sciences Committee to evaluate EPA guidelines for exposure to naturally-occurring radioactive materials (NORM), as consultant to the Science Advisory Board's Radiation Advisory Committee of EPA on the Multi-Agency Radiological Laboratory Analytical Protocols (MARLAP), as a member of the Rocky Flats Environmental Restoration Committee, and assisted in the development of radiological monitoring capabilities at the nuclear test site in the Marshall Islands. He is presently developing a training program in radiation detection and public safety for first responders in homeland security. He has written over 70 open literature publications in refereed journals and technical series and many other technical reports on the measurements, distribution, and behavior of radioactivity in man and the environment.

Inyang,Hilary

University of North Carolina at Charlotte

Dr. Hilary I. Inyang is the Duke Energy Distinguished Professor of Environmental Engineering and Science, Professor of Earth Science and Director of the Global Institute for Energy and Environmental Systems at the University of North Carolina-Charlotte. Prior to his current position, he was University (titled) Professor, Dupont Young Professor and Director of the Center for Environmental Engineering, Science and Technology (CEEST) at the University of Massachusetts, Lowell. Previously he taught at George Washington University, Washington, DC; Purdue University, West Lafayette, Indiana; and University of Wisconsin, Platteville. Professor Inyang also served at the U.S. Environmental Protection Agency (1991-1993) as a Senior Geoenvironmental Engineer and subsequently as the President of Geoenvironmental Design and Research (GDR) Inc., a small research firm that he founded in 1993. From 1997 to 2001, he was the Chair of the Environmental Engineering Committee of the USEPA Science Advisory Board, and also served on the Effluent Guidelines Committee of the National Council for Environmental Policy and Technology, both of which dealt with key issues that presently fall within the scope of environmental security. He has authored/co-authored more than 160 articles, book chapters, federal design manuals, and the textbook, Geoenvironmental Engineering: principles and applications, published by Marcel Dekker (ISBN: 0-8247-0045-7). He is an associate editor/editorial board member of eight refereed international journals and contributing editor of three books, including the United Nations Encyclopedia of Life Support Systems (Environmental Monitoring Section). He has been selected as the Co-chair and keynote speaker of the Technical Committee of the 2003 First International Conference on City and Industrial Security to be held in Nanjing, China (Oct. 29-31). He has served on more than 60 international, national, and state science/engineering panels and committees and has, since 1995, co-chaired several

international conferences in seven countries. Professor Inyang has given more than 62 invited speeches and presentations on a variety of technical and policy issues at many institutions and agencies in several countries. His expertise includes environmental security issues such as radiation control engineering, monitoring, and containment technologies for released contaminants and inhibition of dusts that may spread contaminants and pathogens through the air. His research has been recently sponsored by NOAA, USDOE, USDOD, USNRC, DuPont Corporation, Sandia National Laboratory, Duke Energy Corporation and the National Science Foundation. Professor Inyang holds a Ph.D. (1989) with a double major in Geotechnical Engineering and Materials and a minor in Mineral Resources from Iowa State University, Ames, Iowa; an M.S. (1986) and B.S. (1985) in Civil Engineering from North Dakota State University, Fargo, North Dakota; and a B.Sc. (Honors, 1981) in Geology from the University of Calabar, Nigeria. He has received several professional honors, including selection as a Fellow of the Geological Society of London, the 1999 Chancellor's Medal for Distinguished Public Service of the University of Massachusetts, Lowell; 2001 Swiss Forum Fellow selection by the American Association for the Advancement of Science (AAAS); the 1996 National Research Council Young Investigator Selection; 1992 Eisenhower-Jennings Randolph Award of the International Public Works Federation/World Affairs Institute tat was instituted to honor the international achievements of former U.S. President Dwight D. Eisenhower; and the 1991 American Association for the Advancement of Science/USEPA Environmental Science and Engineering Fellowship.

Kahn,Bernd

Georgia Institute of Technology

Dr. Bernd Kahn is director, Environmental Resources Center (ERC), and professor emeritus, Nuclear and Radiological Engineering and Health Physics Program, at the Georgia Institute of Technology. He received a B.S. in chemical engineering from the New Jersey Institute of Technology, an M.S. in physics from Vanderbilt University, and a Ph.D. in chemistry from M.I.T. He has been engaged as a radiochemist in measuring radionuclides and performing research concerning their movement in the environment since 1951. In this field, he worked successively for the Oak Ridge National Laboratory, the U.S. Public Health Service, and the U.S. Environmental Protection Agency, and then taught at Georgia Tech. He has written more than 160 research publications. He is an honorary member of NCRP, fellow of the Health Physics Society, and a member of APS and ACS. He has served on NAS and NCRP scientific committees to address radioactivity in the environment and on the EPA-SAB Radiation Advisory Committee. He currently directs the Environmental Radiation Laboratory of the ERC in monitoring radioactivity for the Georgia Dept. of Natural Resources and is preparing a textbook laboratory manual on Radioanalytical Chemistry under the sponsorship of NNSA-DOE. Concerning homeland security, (1) one of the purposes of the textbook is developing radiochemists for responding to radiological terrorist activity, (2) Dr. Kahn has just organized a workshop sponsored by NNSA for developing radiochemists to work at DOE laboratories, and (3) Dr. Kahn currently participates in an NNSA-sponsored group for attribution of radiological terrorist activity.

Knobeloch,Lynda

Wisconsin Dept of Health and Family Services

Dr. Lynda Knobeloch is a research scientist manager in the Wisconsin Department of Health and Family Services' Bureau of Environmental and Occupational Health and an adjunct Associate Professor of Molecular and Environmental Toxicology at the University of Wisconsin-Madison. Her research interests are in the fields of human exposure assessment, regulatory toxicology, and public health surveillance. She earned a bachelor of science degree in Medical Technology and doctorate in Environmental Toxicology from the University of Wisconsin-Madison. Dr. Knobeloch was a member of the NRC Committee on the Toxicological Effects of Methylmercury. She was an external reviewer of the Institute of Medicine's Immunization Safety Review and the US EPA's Mercury Report to Congress. She receives funding under the US CDC Hazardous Substances Emergency Event Surveillance and Environmental Public Health Tracking grant programs. She has also been awarded funding by the Wisconsin Department of Administration to conduct a population-based assessment of mercury exposure. Dr. Knobeloch is a current member of US EPA National Pollution Prevention and Toxics Advisory Committee.

Koutrakis,Petros

Harvard University

Dr. Petros Koutrakis is Professor of Environmental Sciences and director of the Environmental Chemistry Laboratory at Harvard University. He received his Ph.D. in environmental chemistry from the University of Paris. His research interests include human exposure assessment, ambient and indoor air pollution, environmental analytical chemistry, and environmental management. He is a former Technical Editor-In-Chief of the Journal of the Air and Waste Management Association. Currently, Dr. Koutrakis is a consultant to the EPA Science Advisory Board and an advisor to the International Monitoring of Protected Visual Environments (IMPROVE), the Pan American Health Organization (PAHO), the World Health Organization (WHO), and the United Nations Environment Program (UNEP). He has served on several EPA review panels and chaired the EPA Review Panel for Research Proposals on Ambient Particle Modeling. He is the PI of the EPA/Harvard Center on particle health effects; Co-PI on two NIEHS Program projects (Cardiac effects of air pollution). In addition, he is the PI of exposure assessment and air quality studies funded by EPA, HEI, EPRI, API, and DOE. Dr. Koutrakis has extensive experience in measuring ambient air particles and holds several patents on devices that are used for producing exposures to concentrated ambient particles and for collection of high volume samples for toxicological and chemical characterization of ambient particles. The combination of these technologies and Dr. Koutrakis' expertise in ambient air particle exposure assessment provide a unique resource that is useful to assess the dangers of and help protect the public from airborne toxic particles.

Lee,Richard

RJ Lee Group, Inc

Dr. Richard J. Lee is the President and founder of RJ Lee Group, Inc. Building on twenty-five plus years of experience in environmental and materials characterization, Dr. Lee's strategic initiative continues to address preventative measures, emergency responsiveness and failure analysis of both man-made and natural catastrophic events. He has lead RJ Lee Group in teaming with organizations within the Department of Homeland Security. Those projects range from material analysis of space shuttle debris to environmental analysis related to Desert Storm to forensic analysis on the USS Iowa explosion to concrete infrastructure analysis. Currently, Dr. Lee is working on analysis of contaminants resulting from the World Trade Center disaster. As a pioneer and leading authority in the field of Computer Controlled Scanning Electron Microscopy (CCSEM), Dr. Lee conceived and developed CCSEM techniques and applied the techniques for characterization, identification and quantification of a wide variety of materials from the metal, mining and environmental science industries. He has also founded two other high technology startups that manufacture electron microscopes and laboratory information systems. Dr. Lee has been named 2004 Master Entrepreneur for Western Pennsylvania, 1991 Entrepreneur of the Year for the Mid-Atlantic States. In addition, he has received an honorary doctorate of science from his alma mater, the University of North Dakota, for his achievements in science and business. Dr. Lee has testified as an expert witness in Federal and State courts, and

has directed major research programs covering a wide variety of technical disciplines. He is a member of the Microscopy Society of America and the American Physical Society. He has served as an advisor to the Environmental Protection Agency, American Iron Ore Association, American Mining Congress and National Stone, Sand & Gravel Association (NSSGA). Dr. Lee also participated as an expert in environmental analysis on a panel for Environmental Litigation and Insurance Disputes Post 9/11 at The Homeland Security Executive Symposium in 2003. Prior to joining RJ Lee Group, Inc. in 1985, Dr. Lee was an associate professor at Purdue University and later held the position of Head of the Physics Section at the U.S. Steel Technical Center. His Ph.D. is in Theoretical Solid State Physics from Colorado State University (1970) and his B.S. is in Physics from the University of North Dakota (1966).

Linkov,Igor

Cambridge Environmental, Inc.

Dr. Igor Linkov is a Senior Scientist with Cambridge Environmental Inc. in Cambridge, MA and an Adjunct Professor of Engineering and Public Policy at Carnegie Mellon University in Pittsburgh, PA. Prior to joining Cambridge Environmental, Dr. Linkov was a Senior Risk Assessor and Team Leader at ICF Consulting and Arthur D. Little, Inc., where he conducted environmental risk assessments in support of government and commercial clients. Dr. Linkov has a BS and MSc in Physics and Mathematics (Polytechnic Institute, Russia) and a Ph.D. in Environmental, Occupational and Radiation Health (University of Pittsburgh). He completed his postdoctoral training in Biostatistics, Toxicology and Risk Assessment at Harvard University. He has performed state-of-the-art risk assessments and environmental threat investigations both in the United States and abroad. Dr. Linkov's skills include environmental security, risk assessment for emerging threats, multiple criteria decision analysis, toxicology, radiation health and safety, guidance development, risk communication, policy analysis, and biostatistics. Dr. Linkov's research in the area of emergency response and homeland security has been supported by the North Atlantic Treaty Organization and the US Department of Defense. He managed the radiation safety program for the US Army Soldiers' Systems Command and helped in developing the Army Risk Assessment Modeling System (ARAMS). For NATO, he organized an international workshop on the Role of Risk Assessment in Addressing Environmental Security Needs. He is currently organizing a workshop on Integrating Human Effectiveness and Risk Characterization of Non-Lethal Weapons into Antiterrorism Civil Science Programs, jointly supported by NATO and the US Air Force, as well as a workshop on Environmental Security in Harbors and Coastal Areas, supported by NATO and by the US Army Corps of Engineers. As a Member of the Organizing Committee for the 2003 and 2004 annual meetings of the Society for Risk Analysis (SRA), Dr. Linkov was responsible for the terrorism-related track, and he organized two symposia on emergency response. He has also organized SRA continuous education workshops on Risk Communication: Application and Case Studies in Military and Emergency Settings. He has published widely on environmental policy, environmental modeling, and risk analysis, including six books and over 70 peer-reviewed papers and book chapters. Dr. Linkov serves as a Scientific Advisor to the Toxic Use Reduction Institute, a position that requires nomination by the Governor of Massachusetts. Dr. Linkov is President for the Society for Risk Analysis-New England. He is also Past Chair of the SRA Ecological Risk Assessment Specialty Group and participates in several SRA and SETAC Committees. Dr. Linkov has served on many review and advisory panels for the US and international agencies. Over the last two years, Dr. Linkov's research has been supported by the US Army, the Army Corps of Engineers, EPA, DOT, DOE, NOAA, NATO, US Chamber of Commerce, American Chemistry Council, Dow Chemical, Chevron, and various private clients.

Links,Jonathan

John Hopkins University

Dr. Jonathan M. Links, Ph.D. is Professor of Environmental Health Sciences in the Johns Hopkins Bloomberg School of Public Health, with a joint appointment in Radiology in the School of Medicine. He received a B.A. in Medical Physics from the University of California, Berkeley (1977), and a Ph.D. in Environmental Health Sciences (with a concentration in Radiation Health Sciences) from Johns Hopkins School of Public Health (1983). His expertise is in radiation physics and dosimetry, medical imaging instrumentation, radiation-based biomarkers, and terror preparedness and response. With respect to emergency response and homeland security, Dr. Links is the Director of the Johns Hopkins Center for Public Health Preparedness (funded by the CDC); Baltimore City's radiation terror expert, working with the Health, Fire, and Police Departments; and a member of the federal DHS Infrastructure Advisory Team (coordinated through Oak Ridge Associated Universities). He is a past president of the Society of Nuclear Medicine, a 13,000 member professional medical society that deals with the use of radioactivity and radiation in medicine. He is a member of the Delta Omega National Public Health Honor Society. His activities are funded by grants from the CDC and NIH.

Lioy,Paul J.

UMDNJ - Robert Wood Johnson Medical School

Dr. Paul J. Lioy is a Professor of Environmental and Occupational Medicine at Robert Wood Johnson Medical School-UMDNJ, Deputy Director for Governmental Affairs and Director of the Exposure Measurement and Assessment Division at the Environmental and Occupational Health Sciences Institute (EOHSI) of NJ. He has a Ph.D. in Environmental Science from Rutgers University, NJ. Dr. Lioy has been conducting research on Environmental Health Issues for the past 30 years, focusing primarily on how individuals and populations come into contact with environmental agents within acute and long-term exposure events for single and multiple exposure routes. Before 9-11-01, his work in emergency response had been derived from experiences in dealing with acute exposure issues in urban and rural populations around the world, e.g., Peru mercury spill. Since 9-11, however, his Division has directed many of its skills in exposure measurement and modeling to homeland security issues. The emphasis has been on developing approaches for safe response, interdiction, and situation assessment post event, and development of training scenarios; ascribing realistic exposures based upon activity pattern of victims and emergency responders. His Division has also dealt with the aftermath of the attack on the WTC and provided lessons learned from the event. Since 2001, Dr. Lioy has been PI or Co-PI (with Panos Georgopoulos and Clifford Weisel) on HLS research supported by the EPA, NIEHS, VA, and ONR (through a subcontract to a Delaware Company called QLI). He is currently working with the NJ Department of Health to develop new Homeland Security approaches, and will be participating in the next DHS and BNL Dispersion study in NYC. He has given plenary lectures and addresses on HLS issues to a variety of audiences, and written manuscripts and editorials on the topic over the past 3 years. He is currently on University Committees related to HLS issues, and Vice Chair of the EPA Expert Technical Panel charged with implementing a program to resolve issues related to potential continued contamination indoors, and assess continuing health issues. Dr. Lioy has been a member of the Science Advisory Board of the EPA, and served as a chair or member of numerous National Research Council Committees.

McGrady,Edsel

CNA Corp.

Dr. Edsel D. McGrady is currently the Director of Gaming and Gaming Research at ThoughtLink Inc. In his current position, he is responsible for a wide range of training and gaming research work related to Homeland Security and personal team building. Prior to his coming to ThoughtLink Inc., he lead a research team at the CNA Corporation devoted to chemical and biological warfare, homeland defense, force protection, and gaming. Dr. McGrady has designed and led games and exercises on a wide range of Homeland Security related topics. His clients include the White House, Department of Agriculture, Department of Health and Human Services, United States Central Command, the Department of the Navy, academic institutions, and foreign governments. In addition to conducting technical analysis of chemical and biological defense tactics and system, Dr. McGrady's team at the CNA Corporation was involved in reconstruction and analysis of real world response operations. These include the 2001 anthrax attacks, chemical and biological defense operations during Operation Iraqi Freedom, the recent SARS outbreak, Exotic Newcastle Disease in the American Southwest, and the recent Ricin events on Capitol Hill. Dr. McGrady has a Ph.D. in Chemical Engineering from the University of Michigan, and has attended Senior Executives in National and International Security course at Harvard University.

McMullen,Lee D.

Des Moines Water Works

Dr. Lee D. McMullen is the Chief Executive Officer and General Manger of Des Moines Water Works, Des Moines, Iowa. He holds a B.S. in Civil Engineering, with his M.S. and Ph.D. in Environmental Engineering, all from the University of Iowa. Prior to joining Des Moines Water Works, he taught undergraduate and graduate engineering students in water chemistry, hydraulics, and computers at the University of Iowa. Throughout his career, Dr. McMullen has been active in numerous professional organizations, including serving two terms as Chairperson of the EPA's National Drinking Water Advisory Council and a member on the Drinking Water Committee of the Agency's Science Advisory Board. Currently he serves on the Water Utility Council of the American Water Works Association and the Board of Directors of the Association of Metropolitan Water Agencies. Dr. McMullen is a past Board member of the American Water Works Association's Research Foundation, participated in numerous projects funded by the Foundation, and has been a peer reviewer of numerous articles written for AWWA's Journal. Through a multi-year project commencing in 1999 supported by the US/Ukraine Partnership, Dr. McMullen, as Water Quality Team Leader, works with the Cherkasy, Ukraine Water Department in jointly researching and developing solutions to water quality problems for the 320,000 residents of this city located on the Dnipro River, in southeastern Europe. Recent research efforts at Des Moines Water Works are focused in the areas of physical, chemical, and biological treatment of water for drinking water purposes. Ongoing biological research initiated in 2004 includes testing biological removal of nitrate from shallow ground water and river water using plankton in lieu of chemical nitrate removal. This biological nitrate removal methodology, when fully implemented, is anticipated to provide savings to the utility of approximately $200,000. Physical and chemical water treatment research, specifically low pH lime softening, was initiated in 2003 and completed in 2004. The findings there from were implemented in 2004 with an anticipated savings to the utility of $160,000 and with no detrimental effect on finished water. All funding for these research activities being conducted is derived from water rate revenue at Des Moines Water Works. No funding for this research has been received from any outside sources.

Michaels,Robert A.

RAM TRAC Corporation

As president of RAM TRAC Corporation, Dr. Robert A. Michaels consults in toxicology and health risk assessment to public interest, corporate, and government clients. He has been an invited speaker on bioterrorism, and television panelist on terrorism. A recent recipient of the Kramer Medal for excellence in his field, Dr. Michaels has published extensively on airborne hazards, health risks, risk management, and policy. He served as consultant to the Congressional Office of Technology Assessment, Chairperson of the State of Maine Scientific Advisory Panel, and toxicologist of the Natural Resources Defense Council. He is an elected Life Member of the New York Academy of Sciences, Chairperson of the Certification Review Board of the Academy of Board Certified Environmental Professionals, Secretary of the NFPA Technical Committee on Classification and Properties of Hazardous Chemicals, Board Member of the National Association of Environmental Professionals, and Member of professional societies such as the Society for Risk Analysis and Society of Toxicology. Dr. Michaels earned his doctorate at the State University of New York at Stony Brook in 1979, in Environmental Toxicology. He has hands-on experience in a research laboratory at the Mount Sinai Medical Center experimenting on potentially lethal viruses, including culturing them and infecting animals and human cells. He also has addressed chemical risks, such as catastrophic industrial releases of ammonia and chlorine gases, and supported the U. S. National Advisory Committee on Acute Exposure Guideline Levels to implement Federal emergency planning laws.

Nadeau,Royal

The Eco-Strategies Group

Dr. Royal J. Nadeau is President of The Eco-Strategies Group and Regional Manager of Ecological Services for the Northeast Office of TetraTech, EMI. Dr. Nadeau founded The Eco-Strategies Group and joined TetraTech after more than thirty years with the U.S. Environmental Protection Agency serving for the last fifteen years as the Deputy Director of the Environmental Response Team (ERT). The Environmental Response Team is comprised of technical professionals who provide the EPA Regional and Headquarters offices, U.S. Coast Guard, Federal, State, local Agencies and foreign governments, experienced technical and logistical assistance in responding to environmental emergencies such as oil and hazardous materials spills. Dr. Nadeau was instrumental in advancing the technology for monitoring the use of dispersants and other chemicals on oil spills as well as methodologies for measuring particulates and other products of combustion from burning oil. He was considered to the be the agency's expert in the field of chemical counter-measures for oil spills. Dr. Nadeau served as course director and instructor for a number of the courses presented in the training program of the ERT. These courses are designed for federal, state and local On-Scene Coordinators in the areas of health and safety, various technical operations associated with removal and remediation of hazardous materials. More recently, the program has specific courses to help first responders to deal with anthrax, biohazards and air monitoring for weapons of mass destruction. Dr. Nadeau presently serves on his local Homeland Security Committee in the Town of Allamuchy, New Jersey. This committee focuses on the security issues of the town but coordinates with county and state emergency and public safety officials in the course of carrying out its mandate. The committee recently completed a study of the security of the local water supply and presented its findings and recommendations to the Mayor and Council as to what measures were practical, economical and achievable to better secure the water supply from possible terrorist activities. Dr. Nadeau was awarded a Gold Medal as a Distinquished Career Award for a career of distinquished scientific accomplishments and improvements towards making EPA a better place to work and improving the environment.

North,D. Warner

NorthWorks Inc

Dr. D. Warner North is president and principal scientist of NorthWorks, Inc., a consulting firm in Belmont, California, and consulting professor in the Department of Management Science and Engineering at Stanford University. Dr. North has participated in a number of recent government-sponsored meetings on Homeland Security. His paper "A Discussion of Findings and Their Possible Implications from a Workshop on Bioterrorism Threat Assessment and Risk Management" (coauthored by Raymond Zilinskas and Bruce Hope) is in press for Risk Analysis, 2004. Over the past thirty years, Dr. North has carried out applications of decision analysis, risk analysis, and cost-benefit analysis for electric utilities in the US and Mexico, for the petroleum and chemical industries, and for US government agencies with responsibility for energy and environmental protection. He has served as a member and consultant to the Science Advisory Board of the US Environmental Protection Agency since 1978, and as a Presidentially appointed member of the US Nuclear Waste Technical Review Board (1989-1994). Dr. North is a co-author of many reports dealing with environmental risk for the National Research Council of the National Academy of Sciences, including "Risk Assessment in the Federal Government: Managing the Process" (1983), "Improving Risk Communication" (1989), "Science and Judgment in Risk Assessment" (1994), and "Understanding Risk: Informing Decisions in a Democratic Society" (1996). He is currently a member of the National Research Council Panel on Public Participation in Environmental Assessment and Decision Making. Dr. North was a member of the Board on Radioactive Waste Management of the National Research Council from 1995 until 1999. He was the chair for the steering and advisory committees for the International Workshop on the Disposition of High-Level Radioactive Waste, held November 4-5, 1999, and leading to the National Research Council report, "Disposition of High-Level Waste and Spent Nuclear Fuel: The Continuing Societal and Technical Challenges," published in June 2001. Dr. North was named a National Associate of the National Research Council in 2003. He recently served as the report review coordinator for the bioterrorism-related National Research Council Report, "Review of Testing and Evaluation Methodology for Biological Point Detectors." Dr. North is a past president (1991-92) of the international Society for Risk Analysis, a recipient of the Frank P. Ramsey Medal from the Decision Analysis Society in 1997 for lifetime contributions to the field of decision analysis, and the 1999 recipient of the Outstanding Risk Practitioner Award from the Society for Risk Analysis. Dr. North received his Ph.D. in operations research from Stanford University and his B.S. in physics from Yale University.

Patel,Kumer

Pranalytica, Inc

Dr. Kumer Patel is Professor of Physics and Astronomy and Chemistry and Electrical Engineering at University of California. He is the founder and CEO and Chairman of the Board of Pranalytica, a company based in Santa Monica, CA and specializing in developing technologies for very low-level detection of toxic gases of importance in environmental, industrial and homeland security and defense related applications. Pranalytica is currently a supplies instrumentation for sub-ppb detection of many gases including ammonia, 1,3-dimethyl formamide, benzene, toluene, and xylenes to environmental and semiconductor industry customers. Dr. Patel obtained a Ph.D. in Electrical Engineering for Stanford University in 1961. Dr. Patel is the inventor of the high power carbon dioxide laser that has become the workhorse in many activities including industrial processing, surgery, and scientific applications including pollution detection. He is also the inventor of a number of other high power molecular gas lasers and the tunable spin flip Raman laser. He started and developed the field of tunable laser lased photoacoustic spectroscopy for sub-ppb detection of trace gases. He carried out the first measurements nitric oxide in the stratosphere that proved the potential role of nitric oxide in stratospheric ozone. He is an expert in the area of very low level detection of trace gases using photoacoustic spectroscopy and he has shown that this technology is capable of providing instrumentation for very sensitive and highly reliable detection of many chemical warfare gases including nerve gases, e.g., Sarin that was used by the Aum Shinrikyo cult in the Tokyo subway terrorist attack. This expertise is directly applicable to the needs of emergency response and homeland security for guarding the population from chemical weapon terrorism. Dr. Patel's team at Pranalytica has provided the first analysis of correctly predicting the performance of chemical and biological weapon sensors that need to operate in realistic environments that are contaminated with a multitude of relatively harmless gases. This first analytic framework for estimates the performance of such sensors in terms of available sensitivity as a function of the sensor's false positive indications. Dr. Patel is a member of the National Academy of Sciences and the National Academy of Engineering and has served on many its committees. He is currently a member of the Committee on International Security and Arms Control, a standing committee of the National Academy of Sciences dealing with the issues of nuclear, chemical, and biological weapons. He is serving on a National Academies study committee "Advances in Technology and the Prevention of their Application to Next Generation Biowarfare Threats." He is the past President of the American Physical Society in 1995 and of the Sigma Xi, the Scientific Research Society in 1994-1996. Dr. Patel is a recipient of the National Medal of Science by the President of the United States of America in 1996. Pranalytica currently is a recipient of a DARPA contract for developing the next generation of chemical weapon sensors and a USDA grant for developing a rugged and reliable ammonia sensor for agricultural applications.

Pellizzari,Edo D.

Research Triangle Institute

Dr. Edo P. Pellizzari is a Senior Fellow in Analytical and Environmental Health Sciences and Director of Proteomics at Research Triangle Institute (RTI). He was formerly RTI's Vice-President for Analytical and Chemical Sciences. Dr Pellizzari has 33 years of experience at RTI in technical leadership on over 100 contracts, grants and cooperative agreements with NIH, EPA, state, and industrial clients. He is nationally and internationally recognized for his technical contributions to environmental health sciences, and in particular on human exposure to toxic substances. Dr. Pellizzari received the Wesolowski Award from the International Society for Exposure Analysis, was a US P.H.S. Fellow at the Texas Research Institute of Mental Science, Houston, Texas, and a Fulbright-Hayes Fellow at the Faculty of Chemistry, Department of Biochemistry, Republic Montevideo, Montevideo, Uruguay. He has developed and applied analytical methods for the determination of toxic substances in air, drinking water, food, and biological media. He has served on National Academy of Sciences committees, on EPA's Science Advisory Board, Committee on Drinking Water, and has participated in dozens of workshops and panels for major Government agencies (e.g., EPA, NIEHS, HHS, NSF, and DOE) in the areas of air and water pollution, and characterization of toxic substances in environmental and biological media. Dr. Pellizzari has over 200 publications and 250 presentations on the analysis of toxic/hazardous substances in the environment. Dr Pellizzari has a Ph.D. in analytical biochemistry from Purdue University and an A.B. in biology and organic chemistry from California State University, Chico. He currently receives funding under a NIEHS contract for the re-analysis of LC-MS data for protein identification.

Pitt,Robert E.

University of Alabama

Robert Pitt is the Cudworth Professor of Urban Water Systems in the Department of Civil and Environmental Engineering at the University of Alabama. He is also Director of the UA interdisciplinary Environmental Institute. He received a B.S. in Engineering Science from Humboldt State University, an M.S. in Civil Engineering from San Jose State University, and was awarded a Ph.D. in Civil and Environmental Engineering by the University of Wisconsin – Madison. From 1971 to 1979 he was a Senior Engineer with URS Research Co. and with Woodward Clyde Consultants; from 1979 to 1987 he was a private consultant and also an Environmental Engineer with the Wisconsin Department of Natural Resources. From 1987 to 2001, he was a Professor and founding Director of the Environmental Health Engineering program at the University of Alabama in Birmingham and had joint appointments with the Schools of Engineering and Public Health. He has been at the Tuscaloosa campus of the University of Alabama since 2001. His teaching and research interests include the fates and effects of hazardous materials lost during transportation accidents and associated contingency planning, analytical methods to detect sources of contaminants in urban drainage systems, development of new analytical methods for the rapid and sensitive detection of toxicants, sources of pathogens in urban areas, modeling of urban infrastructure systems, development of stormwater control technologies, modifications of soil structure due to urbanization, and the integration of hydrology and water quality objectives in drainage design. His research has been funded by many state and local agencies, along with the U.S. Environmental Protection Agency, the National Science Foundation, Environment Canada, and various industries. He has published more than 100 publications, including journal articles, research reports, and several books. He received a Distinguished Service Citation from the University of Wisconsin, was a member of the project team that received a first place national award for a combined sewer project from the Water Environment Federation, and has received several outstanding teacher and volunteer service awards. He is a registered Engineer and a Diplomate of the American Academy of Environmental Engineers. He has also served on numerous professional committees in the U.S. and abroad.

Poland,Gregory

Mayo Clinic

Dr. Gregory Poland is the Mary Lowell Leary Professor in Medicine, which represents the highest academic distinction for faculty of Mayo Clinic. Presently, Doctor Poland is the Director of the Mayo Clinic's Vaccine Research Group, a group which he founded over 15 years ago and which uses state-of-the-art research technology to investigate issues surrounding vaccine response and novel vaccines important to public health. Importantly, these include the most recent concerns and studies regarding bioterrorism, national defense, and public health. In addition, his other roles and responsibilities include Professor of Medicine of Infectious Diseases and Molecular Pharmacology and Experimental Therapeutics, the Associate Chair for Research for the Department of Medicine, the Director of the Immunization Clinic and the Program in Translational Immunovirology and Biodefense at the Mayo Clinic and further include roles in nationally recognized committees such as The Advisory Committee on Immunization Practices, the National Foundation for Infectious Diseases, and The Great Lakes Regional Center for Excellence in Biodefense and Emerging Infectious Diseases. In May 2003, he was awarded the distinguished Secretary of Defense Medal for Outstanding Public Service for his service on the Armed Forces Epidemiological Board, of which he is still a serving board member. Dr. Poland sits on a number of high-profile national committees, organizations, and workgroups and is asked to advise government and military officials on issues of vaccine, vaccination policies, and infectious disease prevention on a regular basis. He is the President of the International Society for Vaccines and in 2000; he was unanimously selected as the American Editor for the Journal "Vaccine." In 1998, he received a joint award from the Centers for Disease Control and Prevention and the Health Care Financing Administration for his contribution to increasing adult immunization rates in the US, which was awarded by Dr. Satcher, Surgeon General of the United States. Also of major significance, in 1997, he was honored as the "Outstanding Clinical Investigator of the Year" by the Mayo Clinic. Dr Poland received his medical degree from the Southern Illinois University School of Medicine in Springfield, Illinois, and completed his residency and advanced post-graduate work at the University of Minnesota, Abbott-Northwestern Hospital, Minneapolis, MN.

Rhode,Steven

Massachusetts Water Resources Authority

Mr. Steve Rhode is currently a Laboratory Section Manager at the Massachusetts Water Resources Authority (MWRA). He has held this position for over ten years. His expertise is in analytical chemistry, specifically the analysis of environmental samples by gas chromatography (GC) and gas chromatography/mass spectrometry (GC/MS). However his duties as the primary technical contact for the MWRA's Department of Laboratory Services require a strong technical understanding of all aspects of environmental testing, microbiology related to detection techniques for microbial pathogens and the design and operation of water and wastewater treatment and dispersal systems. Mr. Rhode holds a M.S. in Chemistry from the University of New Hampshire. His thesis research explored several routes leading to the formation of tetramethyl lead in the environment. As a graduate student, he wrote the first drafts of several sections of the 1984 fundamental Chemometrics review for the journal Analytical Chemistry. Since September 2001, Mr. Rhode has served on MWRA's internal security task force. His duties include advising senior management on laboratory capabilities, monitoring instrumentation, and the behavior of potential water contaminants. He reviewed the available literature and developed a series of contaminant information sheets covering more than 30 possible biological and chemical agents for use in the MWRA emergency operations center. He implemented a standard testing regime for laboratory response to potential contamination events. Mr. Rhode has been an invited speaker on contaminant behavior and laboratory preparedness at training seminars and desktop drills. Mr. Rhode authored a proposal to evaluate a novel combination of online chemical and biological sensors in a water system, which has been selected for award by USEPA New England Region. He has also been working with the EPA New England Region Laboratory, Massachusetts DEP and Massachusetts DPH to develop a model interagency laboratory response plan for water contamination incidents. He served as a peer reviewer for the laboratory protocol of EPA's Contamination Response Toolbox. Mr. Rhode is a member of the laboratory workgroup to the Massachusetts Department of Public Health State Bioterrorism Advisory Committee and has supported EPA's efforts to develop a CBR methods database (NEMI-CBR core group) and a water contaminant detection working group.

Royse,Christopher

Science Applications International Corporation

Mr. Christopher Royse currently works for the Science Applications International Corporation's Threat Reduction Support Center as the Deputy Task Leader of the Biological Weapons Proliferation Prevention Support Team. Specifically, he provides science, engineering, and technical assistance to the Defense Threat Reduction Agency, Cooperative Threat Reduction Program which assists countries of the Former Soviet Union with establishing safeguards, both technical and operational, which are designed to prevent proliferation, theft, and containment breaches involving biological

pathogens. Mr. Royse serves on the faculty as an Adjunct Professor at the George Washington University where he teaches a graduate course on protecting the workplace against Weapons of Mass Destruction and is the Chairman of the Northern Virginia Technology Council's BioMedTech Committee. His expertise includes past work in operational, technical and administrative positions that focused on physical and operational security, laboratory procedures and management, and assisting in the development of science and technology policy for organizations to include US Army Special Operations Command, the Federal Bureau of Investigation, and US clinical/medical laboratories. Mr. Royse is currently a member of George Mason University's first COHORT of graduate students enrolled in the M.S. of Bioscience Management, graduation May 2005, has earned a Master of Humanities and a Bachelors of Arts degree in Political Science from the Wright State University in Dayton, OH and is an active member in ASIS International.

Sadowsky,Michael

University of Minnesota

Dr. Michael Sadowsky is the Distinguished McKnight University Professor, Department of Soil, Water and Climate; BioTechnology Institute; and Department of Microbiology, University of Minnesota, St. Paul, MN. Dr. Sadowsky studied at the Department of Bacteriology at the University of Wisconsin-Madison, and received his Ph.D. in Microbiology from the University of Hawaii in 1983. Between 1983 and 1985, Dr. Sadowsky did postdoctoral research at the McGill University in the plant-microbe interactions group of the Plant Molecular Biology laboratory. He worked shortly for Allied Corporation as a Molecular Biologist and then worked for the USDA in Beltsville Maryland for several years in the Nitrogen Fixation and Soybean Genetics Laboratory. He joined the faculty at the University of Minnesota in 1989, where he is currently a Professor in three departments and a member of 5 graduate faculties. In addition to his teaching and research efforts, Dr. Sadowsky is Director of Graduate Studies for the Microbial Engineering Program, a unique M.S. level program offering course work and research experience in the Departments of Chemical Engineering, Microbiology, and Biotechnology. He recently was an editor of the journal Applied and Environmental Microbiology (where he has served on the editorial board for 17 years) and is also an editorial board member of the journals Symbiosis and Microbe and Environments, and served as an associate editor for Molecular-Plant Microbe Interactions. Dr. Sadowsky has authored or coauthored more than 96 articles in scientific journals and books and was elected fellow of the American Academy of Microbiology in 1999. Dr. Sadowsky's research efforts are directed towards the identification and characterization of bacterial genes and metabolic pathways involved in the biodegradation of chlorinated herbicides such as atrazine using recombinant DNA methodologies. He has cloned all the genes involved in the atrazine biodegradation pathway and have sequenced the whole catabolic plasmid that they reside on. PCR, microarrays, combinatorial DNA methodologies, genomics and other recombinant DNA techniques are used to investigate atrazine-degrading microorganisms in soil, the regulation of gene expression, the evolution of the atrazine chlorohydrolase gene, and the role that plasmid gene transfer and catabolic transposons play in the dissemination of atrazine degradation genes in soil microbial communities. The use of purified enzymes, as well as transgenic bacteria and plants, to bioremediate atrazine-contaminated soils and water is also being explored. In addition, his research efforts are directed toward the identification and examination of bacterial genes involved in the early periods of legume-microbe symbioses. He is specifically interested in studying Rhizobium and Bradyrhizobium genes that play a prominent role in host/microbe recognition and in the establishment of symbiotic, nitrogen-fixing nodules. He is also actively involved in developing molecular tools to determine sources of bacteria in the environment and is studying how environmental factors affect gene transfer among bacteria in the environment.

Sandquist,Gary

U.S. Military Academy

Dr. Gary Sandquist is currently a visiting professor in Physics and Civil and Mechanical Engineering Departments at the US Military Academy at West Point. He supports and trains Army personnel in Functional Area 52 activities (Nuclear operations and research and DOE Standard "Radiation Protection"). He is also a Professor and former Director of the Graduate Nuclear Engineering Program in Mechanical Engineering at the University of Utah. He is a Registered Professional Engineer in Utah and New York (Mechanical) and California (Nuclear), a Board Certified Health Physicist, a Diplomat in Environmental Engineering, a Certified Quality Auditor, and a retired US Naval Reserve Commander-Intelligence Designator. The Reactor Supervisor and NRC Licensed Senior Reactor Operator for a TRIGA research reactor, he served as a short mission expert in nuclear science and safeguards for the IAEA and as Technical Training Director for the joint DOE, EPA, and DRI Community Radiation Monitoring Program at the Nevada Test Site. His principal scientific interests include risk assessment; radiation transport, analytical detection, and measurement; assessment and decontamination of chemical and radioactive hazards; design and execution of characterization and final status surveys using MARSSIM; and design and operation of HVAC systems. His scientific and technical societies include American Health Physics Society and American Society of Engineering Education. He is a Fellow of the American Nuclear Society and the American Society of Mechanical Engineering. He has authored or co-authored 500 publications including 5 books and book chapters, 175 refereed papers, 320 technical reports, developed 17 major technical computer codes and participated in 192 technical meetings, conferences, workshops and government hearings. He holds a BS in Mechanical Engineering, MS in Engineering Science, Ph.D. in Mechanical and Nuclear Engineering, MBA, was a Post Doctoral Fellow at MIT, and served a Sabbatical at Ben Gurion University in Beer Sheva, Israel.

Shatkin,Jo Anne

Cadmus Group, Inc.

Dr. Jo Anne Shatkin, Ph.D., is a Principal at The Cadmus Group, Inc., a firm that provides environmental and energy consulting services primarily to government clients, and a Research Assistant Professor in the Interdisciplinary and Global Studies Division at Worcester Polytechnic Institute. Dr. Shatkin has 18 years of experience in quantitative human health risk assessment, qualitative risk-based prioritization approaches, environmental chemistry, assessing chemical bioavailability, population risk assessment, multimedia and cumulative risk assessments for exposure to complex mixtures, and models for characterizing and reducing uncertainty in exposure assessment. Her expertise includes technical analyses to compare and prioritize environmental issues, exposure assessment, dermal exposure evaluations and modeling, and chemical speciation. She received her Ph.D. in Environmental Science and Policy in 1994 and her MA in Risk Management and Technology Assessment, both from Clark University, and possesses a Bachelor of Science degree from Worcester Polytechnic University in Biology and Biotechnology. Prior to joining the Cadmus Group in 2002, she led and conducted numerous risk assessments on brownfields, petroleum and coal tar contaminated sites, evaluated risks associated with contaminant mixtures, bioavailability of soil contaminants, and derived health based standards for reuse of contaminated sites. At present, she manages an effort for the U.S. EPA's Office of Ground Water and Drinking Water for a novel approach to identify priorities for the "Contaminant Candidate List"; that includes strategies for identifying the universe of potential drinking water contaminants; conducting analyses to identify priority contaminants from among the universe of chemical and microbial contaminants; developing and testing statistical approaches, including a prototype algorithm (e.g., an artificial neural network), developing contaminant data and approaches for use in the algorithm, and providing technical support to EPA and a National Drinking Water Advisory Council Workgroup on the Contaminant Candidate List process. She recently conducted a microbial risk assessment of the infectious risk of solid waste leachate in a community setting. Dr. Shatkin has served as Chapter and Section Committee

Chair for the Society for Risk Analysis; President of the New England Chapter of the Society for Risk Analysis; Board Member and President of the Regional Environmental Council, and committee member of the Massachusetts Department of Environmental Protection Science Advisory Panel. Her recent work has been funded under contracts from the U.S. EPA, local municipalities, and private organizations in the solid waste hauling and real estate sectors.

Shuchman,Robert

Altarum Institute

Dr. Robert Shuchman is a Senior Vice President at the Altarum Institute (formerly the Environmental Research Institute of Michigan (ERIM)) as well as Technical Director of the Environmental Group within the Environmental and Emerging Technologies Division. He is also an Adjunct Professor in the College of Engineering at the University of Michigan. Dr. Shuchman received his BS in Geological Oceanography and a BSE in Environmental Science Engineering at the University of Michigan (1974). In 1976, he obtained a MS in Remote Sensing at the University of Michigan. His Ph.D. (1982) is in Natural Resources and Oceanic Science from the University of Michigan. Dr. Shuchman has spent the last thirty years utilizing remote sensing data to address a variety of earth applications including: oceanography; polar ice cap and glacier mapping; disaster assessments, remediation, and mitigation; and ecological risk assessment. His current research activities utilize dynamic geospatial based decision support systems to address human health consequences due to anthropogenic pollution. Dr. Shuchman has served on numerous advisory panels for NASA, NOAA, University of Michigan, University of Bergen (Norway), National Academy of Science (Naval Studies Board, Committee for Earth Science), and the U.S. intelligence community. He was a member of the Environmental Task Force (ETF) and MEDEA, which was charged by Vice President Gore in 1992 to examine the utility of using classified data and systems to address environmental and climate change issues facing the United States. He has a patent pending, is the co-author of three books, and has in excess of 100 publications in refereed journals and other scientific contributions.

Smith,Douglas G.

ENSR International, Inc.

Dr. Douglas G. Smith, Sc.D., currently serves as Principal Environmental Health Scientist in the Risk Assessment Dept. of ENSR International, an environmental consulting company with 70 worldwide offices. Dr. Smith's academic background includes a BA in Physics from Franklin and Marshall College and an MS and Sc.D. in Environmental Health Sciences from Harvard University School of Public Health. His specialties in environmental health sciences include air pollution transport and risk analysis, radiological health, as well as chemical process safety and related emergency preparedness assessment and planning. Dr. Smith has more than 29 years experience as an environmental risk assessment and risk management consultant. He has authored more than 45 publications and technical presentations on hazardous air pollutant modeling issues, accidental release assessment, and risk communication. Dr Smith's consulting has included applied R&D projects for state and federal agencies, but has primarily been devoted to providing clients in chemical, pharmaceutical, paper, food, and energy production industries with practical technical advice on the functional, regulatory, and training requirements for their risk management programs. This has included overall program design, consequence assessment and preparedness planning, as well as training and auditing services to assure compliance with OSHA's Process Safety Management (PSM) rule, and U.S. EPA's Risk Management Planning (RMP) rule. In 2003, his long interest in atmospheric dispersion model development and validation, and associated exposure and risk modeling, led to his nomination and appointment to the SAB panel reviewing the 3MRA Modeling System. This system contains a set of models and statistical tools designed to help EPA assess on a national basis the benefits from alternative risk management practices for classification, storage, and disposal of RCRA-regulated materials. His work on that SAB panel has now essentially concluded, as the final report is proceeding through the SAB and EPA administrative review process. His current activities on emergency planning and preparedness have included presentations over the last three years in national technical meetings and last fall to the Environmental Business Council of New England. His latest publication is a short paper in New England Environment on site vulnerability assessment; and he chaired the technical session on this topic at this year's EnviroExpo symposium in Boston.

Snyder,Robert

Rutgers University

Dr. Robert Snyder is currently the Associate Dean for research at the Ernest Mario School of Pharmacy of Rutgers, the State University of New Jersey. He is also Professor of Pharmacology and Toxicology. His former administrative positions include Chairman, Department of Pharmacology and Toxicology, Director, Graduate Program in Toxicology, and Director of the Environmental and Occupational Health Science Institute (EOHSI). While he was Director, EOHSI developed the first Homeland Security Symposium at the University and has now established a Homeland Security Research Institute. Dr. Snyder sits on the board of the institute. His current activities include the AEGL Committee directed by the USEPA, the Non-Stock Pile Committee of the NAS/NRC which is concerned with some aspects of the cleanup of sites were chemical warfare agents were manufactured, a review of worker health and industrial hygiene practices at the Hanford laboratory in Richland, WA, and he is a member of a committee at the International Life Sciences Institute studying the role of Mode of Action in Risk Assessment. Dr. Snyder formerly chaired the NAS/NRC Committee on Reference Doses for Chemical Warfare Agents and has served on the Committee on Toxicology and many of its subcommittees for many years. He was active in devising an emergency response mechanism to be activated in the event of an accidental or terroristic release of chemicals. His research area is the toxicology and carcinogenesis of benzene and related areas of hemato-toxicology and solvent toxicology. Dr. Snyder is currently the President of the American College of Toxicology, a member of the General Assembly of the International Union of Toxicology and the past president of the Academy of Toxicological Sciences. He is a long-term member of the Society of Toxicology. He is the founder of the International Symposium on Biological Reactive Intermediates, which meets every five years and has now met and published the results of 6 such symposia. He has interests in the area of molecular epidemiology and has participated in several symposia on the subject.

Sorensen,John H.

Oak Ridge National Laboratory

Dr. John H. Sorensen is currently a Distinguished Research and Development Staff at the Oak Ridge National Laboratory. In 1973, he received a BA in Geography and Economics from Clark University; in 1974, a MA in Geography from University of Colorado (Thesis title: "Nuclear Energy in Light of Resource Management Experience"); and in 1977, a Ph.D. in Geography from University of Colorado (Dissertation title: "Interaction of Adjustments to Natural Hazard"). Dr. Sorensen's research has focused on emergency planning and the impacts of hazard and risk on human systems. He is lead author of The Impacts of Hazardous Technology: The Psycho-Social Effects of Restarting TMI-1, published by the State University of New York Press. In addition, he has written extensively on public response to emergency warnings, protective action planning, and individual and organizational behavior in disasters. Dr. Sorensen has recently conducted work on the Chemical Stockpile Emergency Preparedness

Program, FEMA's Family and Community Preparedness Program, and DOE's Chemical and Biological National Security Program. He has led projects related to emergency and crisis management for DOD, FEMA, EPA, NRC, and DOE. From 1995 to 1997, he served as the team leader for Prediction, Forecast, and Warning subgroup of the Second Assessment of Research on Natural Hazards, a project supported by the National Science Foundation. He has participated in post disaster studies for the National Academy of Sciences and the National Weather Service. Dr. Sorensen has served on numerous committees and advisory boards concerning disaster management including the National Research Council's Subcommittee on Earthquake Research, the National Research Council's Committee on Disaster Research in the Social Sciences, the National Institute for Chemical Studies (NICS), the advisory committee for the Natural Hazard Research and Applications Center at the Institute of Behavioral Sciences, University of Colorado, and FEMA's Emergency Management Technology Steering Group. Recently he severed as a consultant to OSTP on the development of a Critical Infrastructure Protection Research Plan. Recent research projects include: "Chemical Stockpile Emergency Preparedness Program (CSEPP) Technical Training," FEMA, 2004; "Risk Communication and Emergency Warning," FEMA, 2003; "Intelligent Consequence Management," ORNL Laboratory Directors Research Development Fund, 2003; "Chemical Stockpile Emergency Preparedness Program (CSEPP) Technical Training," FEMA, 2003; "Risk Communication and Emergency Warning," FEMA, 2002; "Technical Support for Chemical and Related Technological Hazard Management," FEMA, 2002; " How Clean is Safe: Decontamination for Chem/Bio Incidents, DOE, 2001; "Technical Support for Chemical and Related Technological Hazard Management," FEMA, 2001; " How Clean is Safe: Decontamination for Chem/Bio Incidents, DOE, 2000; "Technical Support for Chemical and Related Technological Hazard Management," FEMA, 2000; "Accident Investigation Support," Chemical Safety and Hazard Investigation Board, 1999.

Stetzenbach,Linda

University of Nevada, Las Vegas

Dr. Stetzenbach is the Director of the Microbiology Division of the Harry Reid Center for Environmental Studies at the University of Nevada, Las Vegas. She received her Ph.D. from the University of Arizona (Microbiology, 1986) where she also completed a post doctoral fellowship in 1987 (Veterinary Science). Between her B.S. (Microbiology, University of Arizona, 1970) and her graduate studies, she was a clinical microbiologist identifying pathogenic bacteria, fungi, mycobacteria, and viruses, and determining antibiotic susceptibility of clinical isolates. Since 1987, she has conducted research in environmental microbiology at the University of Nevada, Las Vegas with a focus on bioaerosols and measurement methods for environmental microorganisms that can impact the environment and human health. Research under her direction has involved the development of enhanced methods for the detection, identification, and enumeration of airborne and surface-associated microorganisms. She has received funding for research from several groups within the US Department of Defense (DOD) and has published two peer-reviewed papers based on that research, with a third paper in press. Additional studies for DOD were conducted under classified status. Funding for her research has also been awarded from Lawrence Livermore National Laboratory, the National Aeronautics and Space Administration (NASA), the National Institute of Occupational Safety and Health (NIOSH), the U.S. Department of Energy, and the U.S. Environmental Protection Agency. She is a member of the American Society for Microbiology where she serves on the Environmental Microbiology Committee of the Public and Scientific Advisory Board, the Mycological Society of America, the American Conference of Governmental Industrial Hygienists (ACGIH) where she serves on the Bioaerosols Committee, the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) where she served on the Environmental Health Committee, and the International Society for Indoor Air Quality (ISIAQ). She has published several peer-reviewed journal articles focused on microbial contaminants in indoor environments and has served as an editor for Applied and Environmental Microbiology since 2000. She has been an author and an editor for the two published editions and the upcoming 3rd edition of the Manual of Environmental Microbiology. She has also been a member of the editorial board for the Encyclopedia of Environmental Microbiology, Microbial Ecology, the Journal of Industrial Microbiology and Biotechnology, and Aerobiologia. She co-authored a book on quality assurance for life science researchers and the Dictionary of Environmental Microbiology. She has served on the advisory board of the Defense Threat Reduction Agency and on numerous peer-review panels for the National Institutes of Health, and as a review panelist for the National Institutes of Allergy and Infectious Diseases/National Institutes of Health Planning Grants for Regional Centers of Excellence for Bioterrorism and Emerging Infectious Diseases. She is also serving on the Board of Directors of the National Center for Energy Management and Building technologies and as an external advisory board member of the Cincinnati Childhood Allergy and Air Pollution Study.

Sudakin,Daniel

Oregon State University

Dr. Daniel L. Sudakin, M.D., M.P.H., is an Assistant Professor in the Department of Environmental and Molecular Toxicology at Oregon State University. He is board certified in Medical Toxicology and Preventive Medicine by the American Board of Preventive Medicine. He is a certified instructor and provider in Advanced Hazmat Life Support. He is Principal Investigator of the National Pesticide Medical Monitoring Program, a cooperative agreement with U.S. EPA, which provides informational assistance in the investigation of human exposure to pesticides. He is a member of the American College of Medical Toxicology, Weapons of Mass Destruction Antidotes Subcommittee. He is also a member of the American College of Medical Toxicology, Occupational and Clinical Toxicology Committee. Dr. Sudakin has conducted investigations on the epidemiology of symptomatic pesticide exposures utilizing poison control center data. He has also published articles on the epidemiology and acute toxicology of human exposure to pesticides and other agricultural chemicals. During the period from 2000-2004, Dr. Sudakin's primary source of research funding has come from the U.S. EPA for activities including the National Pesticide Medical Monitoring Program and the National Pesticide Information Center.

Trehy,Michael

Solutia, Inc.

Dr. Michael Trehy is an analytical chemist at Solutia Inc. (formerly the chemical business units of Monsanto Company). He has been actively involved in environmental issues related to waste water treatment, chlorination by-products in drinking water, methods development for analyzing for trace components in the environment and the fate of surfactants such as linear alkylbenzene sulfonate in the environment. He is a member of Environmental Protection Agency's Science Advisory Board subcommittee for the selection of Scientific and Technological Achievement Awards and has published articles in the ACS journals Analytical Chemistry and in Environmental Science & Technology. His research with Ted Bieber at Florida Atlantic University led to an understanding that dichloroacetonitriles were being formed in many water supplies and these reaction pathways could be modeled by the reaction of chlorine with amino acids. Work at the University of Florida with Rick Yost and at Solutia Inc. has emphasized GC/MS methods for trace analysis of compounds in the environment. Dr. Trehy obtained his B.S. in chemistry from Eckerd College, his M.S. in chemistry from Florida Atlantic University and his Ph.D. in chemistry at the University of Florida. He was the chief chemist for the West Palm Beach Water Department in Florida for 9 years and superintendent of water and wastewater treatment plants for one year prior to returning to school to obtain his Ph.D. His responsibilities at Solutia Inc. have included developing methods and providing analytical support for environmental testing needs. More recently, these responsibilities have also included environmental risk assessment for new and existing products for Solutia.

Viscusi,W. Kip

Harvard Law School

Dr. W. Kip Viscusi is the John F. Cogan, Jr. Professor of Law and Economics and Director of the Program on Empirical Legal Studies at Harvard Law School. Professor Viscusi received his A.B. degree in economics summa cum laude from Harvard, where he also received his A.M. in economics, M.P.P. in public policy, and Ph.D. in economics. He received awards for best undergraduate thesis and best doctoral dissertation in economics at Harvard. Professor Viscusi's research focuses primarily on risk analysis for environmental risks and responses by individuals and society to risk and uncertainty. He has published over 20 books and 240 articles, most of which deal with different aspects of health and safety risks. Two of his recent articles focus on perception of the risks of terrorism and societal responses to homeland security risks. Professor Viscusi's estimates of the value of risks to life and health are currently used to value benefits of regulation throughout the Federal government. He has consulted to the U.S. Office of Management and Budget, the Environmental Protection Agency, the Occupational Safety and Health Administration, the Federal Aviation Administration, and the U.S. Department of Justice on issues pertaining to the valuation of life and health. Professor Viscusi also served on the Science Advisory Board of the U.S. Environmental Protection Agency for seven years. He is the Founding Editor of the Journal of Risk and Uncertainty and has served on the editorial boards of eleven other journals, including the American Economic Review and the Review of Economics and Statistics. He currently has an EPA grant through August 2005 to assess the benefits of water quality improvements and is completing work on a USDA food safety grant through the Harvard School of Public Health, which ends in September 2004.

Voeller,John

Black & Veatch

In 2004, Mr. John Voeller is working as an ASME Fellow assigned to the Office of Science and Technology Policy in the Executive Office of the President. In this position, he is working with the Department of Homeland Security to build a critical infrastructure protection research and development plan across all agencies of government. It is the first such integrated R&D plan for the nation that crosses all agencies. The plan will set the direction for all homeland security R&D related to all types of infrastructure for the next decade. His current corporate position is Senior Vice President. Chief Knowledge Officer and Chief Technology Officer for Black & Veatch, an engineering firm of roughly 7000 people headquartered in Kansas City, Mo. He graduated from Georgia Institute of Technology with a BME in 1971. Hi is a member of the corporate management team and has responsibility for visioning strategic technology directions. He is currently focused on creation of a completely new knowledge management approach that is termed decision-centric, which is designed to enable the fifth generation of engineering and construction advancement for the firm. Has been responsible for the creation of five and ten year automation strategies. He is the principal architect of POWRTRAK; the automated engineering system of Black & Veatch that was used to build over 500 power facilities around the world and was performed advanced data-centric automation over a decade before firms like Intergraph and Catia announced any similar capability. This unique system has been reviewed in articles in ENR, Forbes ASAP, and CIO.

Walsh,Daniel C.

Columbia University Institute for Social and Economic Research and Policy and New York State Department of Environmental Conservation, New York City Region

Dr. Daniel Walsh is the Chief of the New York City Superfund and Brownfield Program for the New York State Department of Environmental Conservation (NYSDEC). He oversees a staff of over 20 scientists and engineers that actively manage over 1000 sites throughout New York City. He is New York City's coordinator for New York State's Brownfield Cleanup Program which couples remediation and new development by providing substantial development-based tax incentives for remedial projects at brownfield sites. Dr. Walsh formerly served as the Acting Chief of the New York City Solid Waste and RCRA Division for NYSDEC and oversaw programs for solid waste collection, transfer and disposal, solid waste recycling, composting and beneficial reuse, medical waste and RCRA transfer, storage and disposal. Following the September 11, 2001 attack on the World Trade Center, Dr. Walsh served as the Chief of Operations for New York State DEC's Civilian Response and oversaw a staff of over 50 people involved in management of spill and hazardous waste response, and oversight of debris handling and transport systems and natural resource systems. He served full time on that project for its 11-month duration. During the latter stages of the program he was responsible for the regulation of the debris handling and final disposal operations at the Fresh Kills Landfill. Dr. Walsh is an Adjunct Professor and Senior Research Scientist at Columbia University's Institute for Economic and Social Research and Policy. He teaches courses in environmental remediation and waste management at Columbia University and Barnard College. He earned his doctorate at Rensselaer Polytechnic Institute and is a geochemist and geophysicist with extensive experience in hydrogeology and contaminant transport and management. His recent work achievements include management of the environmental remediation and closure of the 3000-acre Fresh Kills Landfill, the world's largest landfill with an operating history spanning more than 50 years and 150 million metric tons of waste. Among the systems developed at the site during his management include the world's largest systems for landfill gas recovery and treatment system, landfill leachate containment, recovery and treatment, and landfill capping, His research interests involve the geochemistry and geomicrobiology of large urban terrestrial pollution enclaves and the forensic reconstruction of historical pollution patterns in heavily urbanized areas. His recent publications have reconstructed the history of solid waste incineration and landfill in New York City since 1800.

Watson,James E.

University of North Carolina

Dr. James E. Watson, Jr. is a Professor Emeritus of the University of North Carolina. He received his undergraduate education in Nuclear Engineering and an M.S. degree in Physics from North Carolina State University. He holds a Ph.D. in Environmental Sciences and Engineering from the University of North Carolina (UNC), where his studies focused on Health Physics. As a UNC faculty member for 27 years, he received the Underwood and McGavran Awards for excellence in teaching and the Greenberg Alumni Endowment Award for excellence in teaching, research, and service. He has taught graduate courses in radiation health, has experience in radiological emergency planning and disposal of radiological materials, and has conducted research related to environmental radioactivity and radiation measurements. He is a past president of the Health Physics Society, the national radiation safety society, and a past chairman of the Radiological Health Section of the American Public Health Association. He was selected as a National Lecturer for Sigma Xi, and he has served on National Academy of Sciences committees studying radioactive waste management, on the Centers for Disease Control and Prevention's Advisory Committee for Energy-Related Epidemiologic Research, as chairman of the Environmental Protection Agency's Radiation Advisory Committee, and as chairman of the North Carolina Radiation Protection Commission. Prior to joining the UNC faculty, he was Chief of the Tennessee Valley Authority's Radiological Hygiene Branch where his responsibilities included radiological emergency planning for TVA's nuclear power plants. During his UNC tenure he served on the North Carolina

Radiation Protection Commission from 1978 to 2002, and this service included responsibilities related to radiological emergency planning and radiological waste disposal. Also, service on Pennsylvania Power and Light Company's Environmental Advisory Committee from 1988 to 1996 involved participation in radiological emergency planning and reviewing radioactive waste disposal issues. A number of other service activities related to radioactive waste disposal including service on State (North Carolina) advisory committees, as an alternate member of the Southeast LLRW Compact Commission, and as a member of National Academy of Sciences Committees. He has not had any recent grant or contract support.

Weiss,Bernard

University of Rochester Medical Center

Dr. Bernard Weiss is currently Professor of Environmental Medicine at the University of Rochester School of Medicine and Dentistry, where he has been a member of the faculty since 1965. He received the BA degree from New York University and the PhD from the University of Rochester. Before joining the faculty at Rochester, he served on the faculty of the Johns Hopkins School of Medicine, and, earlier, held an appointment at the U.S. Air Force School of Aviation Medicine. He has served as a member of many committees and panels devoted to toxicology and environmental health, including those organized by the U.S. Environmental Protection Agency's Science Advisory Board (such as the Dioxin Reassessment Review Panel, the Human Health Research Strategy Panel, and the Subcommittee on Human Testing of Pesticides), and the National Academy of Sciences (for example, the recent Committee on Air Quality in Passenger Aircraft, and, currently, the Space Exposure Guidelines Committee). He is especially concerned with risk assessment issues arising from the effects of environmental chemicals on the brain, behavior, and performance. In 1986, he was named Scientist of the Year by the Learning Disabilities Association of America, and, in 1990, was awarded the Stokinger Prize by the American Conference of Governmental Industrial Hygienists (ACGIH). In 2003, he received a Distinguished Investigator Award from the Neurotoxicology Specialty Section of the Society of Toxicology. He has served as president of several organizations in the area of neurotoxicology. Dr. Weiss is the editor or co-editor of seven books and monographs and author or co-author of over 200 articles. His special interests and publications lie primarily in areas that involve chemical influences on behavior; these include the neurobehavioral toxicology of metals such as lead, mercury and manganese; endocrine disruptors such as dioxin; solvents such as toluene and methanol; drugs such as cocaine; and air pollutants such as ozone. He has written extensively on the question of delayed toxic effects, an issue with many implications for chemical terrorism that has largely been overlooked up to now. His current research anticipates funding from NIH (NIEHS) for a project to investigate the joint toxicity of mercury vapor and methylmercury.

White,David C.

University of Tennessee

Dr. David C. White is a University of Tennessee/Oak Ridge National Laboratory Distinguished Scientist and Professor of Microbiology working as a microbial ecologist and founder/director of the Center for Biomarker Analysis at the University of Tennessee, Knoxville. He has a BA from Dartmouth College (Magna Cum Laude), MD from Tufts University and Ph.D. in biochemistry from Rockefeller University. He has served on the faculty of University of Kentucky Medical Center in biochemistry and developed the clinical experiences for medical students at the Florida State University. He was awarded the Procter and Gamble Award in Applied and Environmental Microbiology sponsored by the American Society for Microbiology for 1993; Frank N. Nelson distinguished Lecturer in Molecular Biology, Biotechnology, and Medicine, Montana State University, 1994; and the 1994 Per Brink Lecture in Ecology, University of Lund, Sweden. He was also a Fellow American Association for Advancement Science 1994-present, and awarded the 1995 Athalie Richardson Irvine Clarke Prize for Outstanding Achievement in Water Science and Technology by the National Water Research Foundation. He was appointed to the Naval Research Advisory Committee, 1995-1997, Bunker Memorial Lecture International Congress of Marine Biofouling & Corrosion, Plymouth, UK, 1995; Naval Research Advisory Board 1995-1997, Director, Microbial Task Force, National Water Research Institute 1996-present, Science Team Leader for Assessment and Community Dynamics, Natural and Accelerated Bioremediation Research Program, Office of Health and Environmental Research, DOE, 1996-1999. His research, reported in over 525 peer-reviewed papers, has focused on assessment of lipid and DNA biomarkers to quantitatively define composition, ecology and interactions of complex intact microbial communities in a wide variety of environments for remediation potential and effectiveness, defensible end-points, toxicological assessments, potential for infectivity and as the base of the food chain. Research has recently been broadened to include detecting presymptomatic response patterns of regulatory lipids (eicosanoids and phosphatidylcholine lipids) to stress, toxins, allergens, and infections in breath condensate as harbingers of impending pulmonary pathobiology and in rapid comprehensive detection of potential microbial pathogens in drinking water distribution systems. He served as a Visiting Distinguished Scientist, The Jet Propulsion Laboratory, Pasadena, CA 1998-2000 in planetary protection. He has held adjunct professorships Professor of Community Medicine and Family Medicine, University of Florida Medical Center, 1975-1984; Professor of Biological Sciences 1972-1986, Professor of Oceanography, Professor of Chemistry, FSU, 1981-1986; Professor Institute of Food and Agricultural Sciences, University of Florida, 1981-1986; Professor Interdepartmental Toxicology Program, University of Arkansas Medical Center, and the National Center for Toxicological Research, 1981-1988. Founder and Co-director Center for Biomedical and Toxicological Research, Florida State University, 1982-1985. He was founding Editor-in-chief, Journal of Microbiological Methods, Elsevier Biomedical Press, Amsterdam, 1982-1998; Receiving Editor Journal Microbiological Methods, 1998-2001; Emeritus Editor, 2002-present, Editor, Applied and Environmental Microbiology, American Society for Microbiology, 1980-1986; Associate Editor, Journal of Contaminant Hydrology, 1985-1992; Editorial Board, Annual Review of Microbiology, 1989-1992; Advisory Board, Series in Ecological and Applied Microbiology, John Wiley & Sons, NY, 1992-present; and on the Editorial Board, Environmental Microbiology, 1998-present. He has served National Research Council, National Academy of Science: Member, Space Science Board, Committee on Planetary Biology and Chemical Evolution, 1982-1984, 1985-86, 1991-1995; Task Group of Major Directions for Space Science: 1995-2015, Life Sciences Committee 1984-1985; Planetary Protection Committee, 1991-1995; Member, Marine Board, Panel on Fates and Effects of Drilling Muds and Cuttings in the Marine Environment, 1982-1983; Review Board for Research on Organotin antifouling coatings, U.S. Navy, 1985-1986; Science Advisory Committee, Robert S. Kerr Environmental Research Laboratory, U.S. Environmental Protection Agency, 1983, 1985; National Science Foundation, Biological Oceanography Panel 1980-1983; American Institute of Biological Science, NASA Panel for program on Global Habitability, 1983-1985; American Water Works Association Research Foundation Project Advisory Committee, 1990-1992; US EPA Bioremediation Risk Assessment Panel, 1993-1995; Advisory Board, Annual Review of Microbiology, 1988-1992; Scientific Advisory Panel, NSF Center for Microbial Ecology, Michigan State University, 1989-1995; NSF Center for Biofilm Engineering, Montana State University, 1987-1996; National Water Research Institute Advisory Board, 1993-present; Project Advisory Committee, American Water Works Association Research foundation, 1992-1996; Technical Advisory Committee, Strategic Environmental Research and Development Program (SERDP), 1996-2000; Natural Attenuation Program (SERDP) 1996-1999; and Member, Basic Energy Research Advisory Subcommittee (BERAC), Department of Energy, Office of Science, Office of Biology and Environmental Research, Natural and Accelerated Bioremediation Research Program (NABIR), 2000-2002. His research is currently funded by DOE, DARPA, and NSF.

Zimmerman,Rae

New York University

Dr. Rae Zimmerman (B.A. in Chemistry, University of California-Berkeley; Master of Urban Planning, University of Pennsylvania; and Ph.D. in Urban Planning, Columbia University) is Professor of Planning and Public Administration at New York University's Wagner Graduate School of Public Service. She has been principal investigator (PI) or co-PI for research grants at NYU in the areas of environment, infrastructure and security, including hazardous wastes, extreme events, and risk perception, funded by NSF, EPA, and state and local governments. She directs the Institute for Civil Infrastructure Systems (ICIS), a multi-university NSF-funded center for collaborative, interdisciplinary infrastructure research, education, and outreach located at NYU. Her recent focus has been engaging researcher and emergency manager collaborations in the context of the WTC attacks, leading the NSF-funded workshop that culminated in Beyond September 11th (Boulder, CO, University of Colorado, 2003) co-produced by ICIS and others. In homeland security research, under USC leadership, she heads NYU's partnership in the U.S. DHS first homeland security center of excellence based at USC where her focus is critical infrastructure, directs research linking public services and emergency services through NYU's Catastrophe Center for Preparedness and Response, is part of Dartmouth's cyber security consortium and the Columbia University WTC evacuation study, and has had risk assessment responsibilities for the NYC OMB, the U.S. GAO, the Water Environment Federation and others in various areas of application including water resources. She also co-leads the EPA-funded research on air and traffic related impacts of waste transfer in the South Bronx, NY. She has authored numerous papers on the role of transportation, water, and environmental protection infrastructure for the security, health, and environmental quality of communities served by those services, and in 2003-2004 published about a dozen chapters in these areas. She authored Governmental Management of Chemical Risk (Lewis/CRC) and co-edited Digital Infrastructures (Routledge, 2004) and Sustaining Urban Networks (Routledge, 2004). She is a Fellow and Past-President of the Society for Risk Analysis (SRA), co-chairing SRA's First World Congress on Risk in 2003 and is a Fellow of the American Association for the Advancement of Science and Elected Member of the AAAS Electorate Nominating Committee (Societal Impacts of Science and Engineering section). Recent prior committee appointments relevant to security include the National Academy of Sciences (NAS) Review and Evaluation of the Army Chemical Stockpile Disposal Program Committee, the NAS Board on Infrastructure and the Constructed Environment, and the U.S. EPA, ORD Board of Scientific Counselors. Prior to NYU, she was with U.S. EPA Region II.

Attachment C

Public Commenters
for Homeland Security Advisory Committee

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Dr. A. Nelson Avery, MD, The University of Texas Medical Branch

Dr. James K. Channel, Environmental Evaluation Group

Mr. Mike Cooper, Vishay Siliconix

Mr. John J. Fittipaldi, Army Environmental Policy Institute

Ms. Beverly O. Hall, North Carolina Radiation Protection Section

Dr. Janet Johnson, MFG, Inc.

Mr. James F. Manwaring, Awwa Research Foundation

Mr. Robert H. Neill, Environmental Evaluation Group

Dr. John C. Nemeth, Oak Ridge Associate Universities

Mr. Harvey Patashnick, Rupprecht & Patashnick Co., Inc.

Mr. Dennis R. Poulsen, California Steel Industries, Inc.

Mr. Matthew Silva, Environmental Evaluation Group

Dr. Philip C. Singer, University of North Carolina

Dr. Rhodes Trussell, Trussell Technologies, Inc.

Attachment D

U.S. Environmental Protection Agency
Science Advisory Board
Homeland Security Advisory Committee

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