

**Invitation for Comment on the EPA Science Advisory Board Short List Candidates  
for the Report on the Environment - 2007 Review Panel**

**July 31, 2006**

The EPA Science Advisory Board (SAB) Staff Office announced in a *Federal Register* Notice (Volume 71, Number 101, Pages 30138 – 30139) that it was forming a panel to conduct a peer review of EPA's Draft Technical Document for the Report on the Environment 2007. To form the panel, the SAB Staff Office sought public nominations of engineers, ecologists, public health and biomedical scientists, and chemical and physical scientists with expertise in: designing, implementing, and applying indicator information and data at regional and national scales to evaluate the condition of air, water, and land environments, human health, and ecological condition. Background information on the project and details on the nomination process appeared in the cited notice. The notice is available on the SAB Website at <http://www.epa.gov/sab/>.

Based on qualifications, interest, and availability of the nominees, the SAB Staff Office identified a "Short List" of nominees. Brief biographical sketches of candidates on the "Short List" are listed below for comment. We welcome information, analysis or documentation for the Staff Office to consider in evaluating the "Short List" candidates.

The SAB Staff Office Director, in consultation with SAB leadership, as appropriate, makes the final decision about who will serve on the panel in the "Panel Selection" phase of this process. In that phase, the SAB Staff Office completes its review of information regarding conflict of interest, possible appearance of impartiality, and appropriate balance and breadth of expertise needed to address the charge. The SAB Staff Office reviews all information provided by candidates, along with any information that the public may provide in response to the posting of information about the prospective panel on the SAB Web site during the "Short List" phase, and information gathered by SAB Staff independently on the background of each candidate.

Please provide any comments you may have with respect to the "Short List" candidates, no later than August 21, 2006. Please make your comments to the attention of Dr. Thomas Armitage, Designated Federal Officer. Emailing comments ([armitage.thomas@epa.gov](mailto:armitage.thomas@epa.gov)) is the preferred mode of receipt.

## Candidates for the Report on the Environment 2007 Review Panel

George Alexeeff

California Environmental Protection Agency

Dr. George Alexeeff is currently Deputy Director for Scientific Affairs, Office of Environmental Health Hazard Assessment, CAL/EPA. From 1990 – 1998 he served as Chief, Air Toxicology and Epidemiology Section, California Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (CAL/EPA). From 1988- 1990 he served as Chief of the Air Toxics Unit, California Department of Health Services (CDHS). From 1989 – 1990 Dr. Alexeeff was Acting Chief, Hazard Evaluation Section, CDHS. He was staff Toxicologist at CDHS from 1986-1988. He was a toxicologist at the California Public Health Foundation from 1985 – 1986, and he was a toxicologist in combustion toxicology, Research and Development at Weyerhaeuser Company from 1983-1985. Dr. Alexeeff received a Ph.D. in Pharmacology and Toxicology from the University of California at Davis in 1982, and a B.A. in Chemistry from Swarthmore College in 1976. He has been certified as a Diplomat of the American Board of Toxicology, Inc., (DABT) since 1986. In his current position Dr. Alexeeff is responsible for supervising activities in the following areas: identification of carcinogens and reproductive toxins in the environment; review of epidemiological and toxicological data to identify hazards and derive risk-based assessments; development of guidelines to identify chemicals hazardous to the public and compounds to which infants and children may have increased susceptibility; recommending ambient air quality standards for California; identifying toxic air contaminants; characterizing air toxics hot spots; developing public health goals for contaminants in water; preparing Proposition 65 evaluations for carcinogens and developmental/reproductive toxins; issuing sport fish consumption advisories to the public; conducting epidemiological studies or investigations, developing indicators of environmental quality; pesticide poisoning illness surveillance, training health personnel on pesticide poisoning recognition; reviewing hazardous waste site risk assessments; and conducting multi-media risk assessments. Dr. Alexeeff has coauthored numerous health evaluations based on epidemiological and toxicological data. He has reviewed over 140 documents evaluating human epidemiological or animal toxicological evidence for the Office of Environmental Health Hazard Assessment or other agencies such as U.S. EPA. Dr. Alexeeff's professional activities and have included: President, Genetic and Environmental Toxicology Association of Northern California, 1995; Society of Toxicology member since 1981; Charter member and coorganizer of the Northern California, Chapter of the Society of Toxicology; Charter member of the Pacific Northwest Chapter of the Society of Toxicology; Consultant to California Office of Environmental Health Hazard Assessment (OEHHA) and CDHS for the Research Scientist and Staff toxicologist classifications; member of the Toxicology Council for National Foundation for Applied Combustion, member of American Society for Testing and Materials' Task Groups; Member of International Standards Organization's, Task Group on combustion toxicology; Member of the American Chemical Society Chemical Health and Safety subsection.

## Henry Anderson

### Wisconsin Division of Public Health

Dr. Henry Anderson holds positions as the state environmental and occupational disease epidemiologist in the Wisconsin Department of Health and Social Services, chief medical officer in the Wisconsin Division of Public Health, and adjunct professor at the University of Wisconsin-Madison, Department of Population Health, and the University of Wisconsin Institute for Environmental Studies, Center for Human Studies. His expertise includes public health; preventive, environmental, and occupational medicine; respiratory diseases; epidemiology; human health risk assessment; and risk communication. Dr. Anderson received his M.D. degree in 1972 from the University of Wisconsin-Madison. He was certified in 1977 by the American Board of Preventive Medicine with a sub-specialty in occupational and environmental medicine and in 1983 became a fellow of the American College of Epidemiology. Active research interests include: environmental health indicators and disease surveillance, childhood asthma, lead poisoning, reproductive and endocrine health hazards of sport fish consumption, arsenic in drinking water, chemical and nuclear terrorism, occupational and environmental respiratory disease, occupational fatalities, and occupational injuries to youth. Dr. Anderson currently serves on the U.S. EPA Children's Health Protection Advisory Committee, is the Chair of the Board of Scientific Counselors for the National Institute of Occupational Safety and Health and is serving on the National Academy of Sciences Toxicity Testing for Assessment of Environmental Agents. He was a founding member of the Agency for Toxic Substances and Disease Registry Board of Scientific Counselors (1988-1992). He served on National Academy of Sciences/Institute of Medicine committees that developed the reports Injury in America and Nursing, Health & Environment. He served on the Presidential Advisory Board on Radiation Worker Compensation, the Hanford Human Health Effects Subcommittee, and the Rocky Flats Advisory Committee for the Beryllium Program, the Centers for Disease Control and Prevention (CDC) and the National Center for Environmental Health, Director's Advisory Committee. He is a fellow of the Collegium Ramazzini and the American Association for the Advancement of Science. He is associate editor of the American Journal of Industrial Medicine and serves on the editorial board of Cancer Prevention International.

## Joseph Arvai

### Michigan State University

Dr. Joseph Arvai is an assistant professor of judgment and decision making within the Environmental Science and Policy Program and the Department of Community, Agriculture, Recreation, and Resource Studies (CARRS) at Michigan State University. He is also Director of the Skunkworks Lab, a research unit concentrating on environmental issues with a focus on policy and decision making under conditions of risk and uncertainty. Dr. Arvai received a B.Sc. in Biology (1994), an M.Sc. in Marine Ecology/Oceanography (1997), and a Ph.D. in Decision Science (2001) from the University of British Columbia (Vancouver, B.C., Canada). Dr. Arvai is also an adjunct professor in the Institute for Resources, Environment, and Sustainability at the University of British Columbia and one of the principal investigators at Decision Research based in Eugene, OR. Dr. Arvai's research focuses on problems related to environmental decision making, mainly in the context of designing and testing decision-aiding approaches for risk and resource management, as well as choice and preference behavior. Dr. Arvai has an extensive background in marine biology and ecology. He has conducted research on the ecological effects of various contaminants (e.g., metals, organics) in coastal estuaries. He has also worked on experiments, conducted in cooperation with the Canadian Space Agency and National Aeronautics and Space Administration (NASA), to determine the drivers for vertical migration in shallow-system copepods. Dr. Arvai also has experience in psychology and economics; to this end, much of Dr. Arvai's current is in decision sciences and is applied mainly to the broader context of natural resource management. This research involved studies of choice and preference behavior, along with tests of prescriptive, structured decision making approaches for making multiattribute, values-based choices and for fostering more thoughtful tradeoffs in resource management. Publications stemming from his research appear in journals such as Environmental Science & Technology, Risk Analysis, the Journal of Forestry, Ecological Economics, and Climatic Change. Dr. Arvai was previously on the faculty of the School of Natural Resources at the Ohio State University where he conducted research focusing on developing improved decision making approaches for risk problems involving intertemporal tradeoffs (i.e., management effort expended now in return for potential benefits later). He moved to Michigan State to take part in the development of a new program in environmental science and policy. Dr. Arvai is a member of the Society for Risk Analysis, Society for Judgment and Decision Making, and Sigma Xi. Recent sources of research funding include the National Science Foundation and the National Aeronautics and Space Administration.

## Edwin Bisinger

### Akzo Nobel Inc.

Dr. Edwin Bisinger is currently the manager of regulatory toxicology for Akzo Nobel Inc. and was formerly employed by the U.S. Environmental Protection Agency as an environmental scientist. He holds the Ph.D. degree in public health toxicology from the University of Illinois - Medical Center campus. His dissertation project was titled, Prediction of human percutaneous absorption of chemical substances from laboratory animal data. He is a Diplomate of the American Board of Toxicology. Dr. Bisinger has over 25 years of experience in TSCA, FIFRA, FDA and industrial toxicology.

## **Mark Borchardt**

### **Marshfield Clinic Research Foundation**

Dr. Mark A. Borchardt is a Research Scientist at the Marshfield Clinic Research Foundation in Marshfield, Wisconsin, where he is Director of the Public Health Microbiology Laboratory. He obtained his B.S. degree from the University of Wisconsin – Madison, and Ph.D. from the University of Vermont. He spent two years as a post-doctoral fellow at the Stroud Water Research Center of the Philadelphia Academy of Natural Sciences. Dr. Borchardt's background is in the ecology and evolution of aquatic microorganisms, a valuable perspective for pursuing his current research interest in drinking water microbiology. His recent publications focus on pathogen detection methods, molecular epidemiology, and infectious diarrhea in children as related to rural drinking water and sanitation, antibiotic usage and bacterial resistance, and human gastrointestinal viruses in groundwater. The projects have been highly interdisciplinary and depend on a novel blend of collaborators in civil and environmental engineering, clinical medicine, hydrogeology, epidemiology, microbiology, and public health practitioners. The Wisconsin Department of Natural Resources, American Water Works Association Research Foundation, U.S. Environmental Protection Agency, National Science Foundation, National Institute of Occupational Safety and Health, and the Centers for Disease Control and Prevention have funded Dr. Borchardt's studies. He is the principal investigator of the EPA-funded Wisconsin Water And Health Trial for Enteric Risks, an ongoing study addressing the association between viruses in the groundwater sources of municipal drinking water and acute illnesses in children. Dr. Borchardt is currently a member of the Editorial Board of Clinical Medicine and Research, the Science and Technical Work Group of Groundwater Advisory Committee for the Wisconsin Department of Natural Resources, and the Building and Planning Committee for the U.S. Department of Agriculture – Agricultural Research Service.

## Timothy Buckley

### The Ohio State University

Dr. Timothy J. Buckley recently joined the faculty as an associate professor at the Ohio State University School of Public Health (OSU-SPH) after nine years at the Johns Hopkins Bloomberg School of Public Health. At OSU-SPH he has taken on leadership responsibility as Division Chair in the Environmental Health Sciences program. His ten years of academic research experience is complemented by five prior years as a government research scientist with the U.S. EPA's National Exposure Research Lab. Dr. Buckley received his Ph.D. in Environmental Science from Rutgers University and a Masters of Health Science in Industrial Hygiene from the Johns Hopkins Bloomberg School of Public Health. Throughout his research career he has focused on methods, measurements, and models for assessing human exposure to contaminants in the community and work environments as a basis for assessing the public health threat and developing strategies for prevention. Dr. Buckley has been responsible for the concept, design, implementation, and management of several major studies involving human exposure to PAHs, metals, VOCs, pesticides, and PCBs through multiple environmental media. These large-scale projects complement laboratory-based studies where controlled exposures are used to more fully investigate relationships between exposure, body burden, and effects. Dr. Buckley's current research includes community-based exposure assessment, the role of exposure to indoor air pollution and allergens in asthma among inner-city children, exposure and effects from mobile source related air pollution, methods for measuring bioaerosols, improving methods to assess dermal exposure, and the development and evaluation of exposure biomarkers. He has published nearly fifty peer-reviewed research articles on these and other topics. While with the U.S. EPA, Dr. Buckley received awards for his role and efforts in the National Human Exposure Assessment Survey (NHEXAS) and the Lower Rio Grande Environmental Exposure Study. His published research was recognized in 1996 with a U.S. EPA Scientific and Technology Achievement Award and again in 1999 by the Walter G. Berl Award given the Johns Hopkins Applied Physics Laboratory. Dr. Buckley is a certified industrial hygienist and has been elected to leadership positions among his professional associations including chair of the American Industrial Hygiene Association's Biological Monitoring Committee and Academic Counselor of the International Society of Exposure Analysis.

## **Dennis Burton**

### **University of Maryland at College Park**

Dr. Dennis Burton joined the faculty of the University of Maryland at College Park's College of Agriculture and Natural Resources in 1991 where he has served until the present as a Senior Research Scientist. Dr. Burton received a B.S. in Applied Science from Virginia Commonwealth University in 1965 and a Ph.D. in Zoology from Virginia Tech in 1970. He completed a 1-year post-doc under Dr. John Cairns, Jr. in 1971. He was an Assistant/Associate Curator in the Division of Limnology and Ecology at the Academy of Natural Sciences of Philadelphia from 1971 to 1980 and Director of the Benedict Estuarine Research Laboratory, 1972-1973. Dr. Burton was a Senior Professional Staff/Principal Professional Staff member at The Johns Hopkins University Applied Physics Laboratory from 1980 to 1991 and Supervisor of the Aquatic Ecology Laboratory from 1980-1991. His research interest includes the fate and effects of contaminants in the aquatic environment, ecotoxicology, water quality, and ecological risk assessment. Dr. Burton has served on a number of advisory committees and review panels such as EPA's Environmental Biology Review Panel; Department of Energy's (DOE) Long-Range Basic Research Planning Committee for Environmental Restoration; National Institute of Environmental Health Sciences' (NIEHS's) National Toxicology Program Peer Review Panel; National Institutes of Health's (NIH's) Small Business Innovation Research Peer Review Panel; and others. He is author of over 130 technical publications, including three books, on a variety of environmental topics. Dr. Burton currently has research funding from a number of sponsors including the U.S. Army, Dominion Cove Point LNG, LP; Mirant Mid-Atlantic LLC; and Cell Preservation Services, Inc.

## **Aaron Cohen**

### **Health Effects Institute**

Dr. Aaron J. Cohen is a Principal Scientist at the Health Effects Institute in Boston Massachusetts, an independent research organization providing science on the health effects of air pollution. He received an A.S. in respiratory therapy and a B.S. in Health Sciences from Northeastern University, an MPH in epidemiology and biostatistics from the Boston University School of Public Health, and a D.Sc. in epidemiology from the Boston University School of Public Health. Dr. Cohen has held the following positions: Principal Scientist, Health Effects Institute, Boston, MA (2000 – present); Visiting Scientist, Harvard Initiative for Global Health, Boston, MA (2005 – present); World Health Organization Temporary Advisor, World Health Organization Center for Environment and Health, Bonn, Germany (2005 – present); Senior Scientist, Health Effects Institute, Boston, MA (1996 – 2000); Adjunct Assistant Professor, Division of Environmental Health, Boston University School of Public Health (1994 – Present); Consulting Epidemiologist, John Snow International Center for Environmental Health Studies, Boston, MA (1992 – 1997); Staff Scientist, Health Effects Institute, Boston, MA (1990 – 1996), Consulting Epidemiologist, Epidemiology Resources, Inc., Chestnut Hill, MA (1989 – 1994); Staff Epidemiologist, Epidemiology Resources, Inc., Chestnut Hill, MA (1987 – 1989), Teaching Assistant, Boston University School of Public Health (1986 – 1987); Research Associate, Parental Epidemiology, Department of Newborn Medicine, Brigham and Women's Hospital, Boston, MA (1985 – 1987); Research Assistant, Harvard School of Public Health, Boston, MA (1984 – 1986). Dr. Cohen was a respiratory therapist at: Tufts New England medical Center,

Boston, MA, (1971 – 1973); Boston City Hospital, Boston, MA, (1973 – 1977); Neonatal Blood Gas Laboratory, Boston Hospital for Women, Boston, MA (1977 – 1981). Dr. Cohen served as: Visiting Academic, St. George's Hospital Medical School, University of London, London, UK (2006); Consulting Editor – Respiratory Care Journal (1980 – 1983); Associate Editor – Journal of Exposure Analysis and Environmental Epidemiology (1999 – 2003). In addition, Dr Cohen has served on the editorial boards of the following journals: Respiratory Care Journal (1983 – 1985); Inhalation Toxicology (2000 – 2001); Epidemiology (2001 – 2005). Dr. Cohen has been a reviewer for the following journals: American Journal of Public Health, American Journal of Epidemiology, Environmental Health Perspectives, Epidemiology, and the International Journal of Epidemiology. Dr. Cohen has published numerous journal articles, reports, and book chapters.

## Rodney DeHan

### Florida Geological Survey

Dr. Rodney DeHan joined the Florida Geological Survey in 1997 where he is currently a Senior Research Scientist. His current research projects are focused on the role of ground water as a component of watersheds with special interest in the characterization and dynamics of interaction between ground and surface water in the coastal environment. Dr. DeHan initiated his undergraduate and professional education in the United Kingdom which culminated in earning the degree, Doctor of Veterinary Medicine from the University of Edinburgh, Scotland. His graduate work continued in the United States where he earned the degrees, Master of Science in Microbiology/Virology from the University of Kansas, and a Ph.D. in Biological Sciences from Florida State University. He continued his association with the University as a member of the research faculty of the Department of Biological Sciences until 1980. He is currently an adjunct professor in the Department of Geology of the Florida State University. Dr. DeHan joined the Florida Department of Environmental Protection in 1974 and worked in the Treatment Process Technology and Biology Sections. He established the Florida Ground Water Program in 1979 and helped guide its development into a leader in ground water protection in the country. Dr. DeHan Chaired the Ground Water Work Group of the National Water Quality Monitoring Council and has served on several U.S. EPA and U.S. geological Survey (USGS) panels including those related to the development of the Wellhead Protection Program, National Ground Water Strategy, Pesticides in Ground Water Strategy, Contingency Planning for Public Water Supplies and the joint EPA-USGS Workgroup on Hydrogeologic Mapping Needs for Ground Water Protection and Management. He has also served on the Advisory Council on National Water Quality Assessment, the Federal Interagency Steering Committee and the Executive Committee of the National Water Quality Monitoring Council where he co-chaired the Ground Water Focus Group.

## Syed Hasan

### University of Missouri

Dr. Syed Hasan is a professor of geology, Director of the Center for Applied Environmental Research, and Chairman of the Department of Geosciences at the University of Missouri-Kansas City. He received his Ph.D. from Purdue University in 1978, M.S. in Applied Geology from Roorkee University in 1963, and B.S. with Geology (Honors) from Patna University in 1960. His doctoral studies focused on development of an expert system for environmental decision-making, a work that has found many applications. His teaching and research interests are in waste management, pollution abatement, and environmental health. He teaches courses in waste management and environmental policy. He designed a new program, Graduate Certificate in Waste Management that has been offered since January 2003. Dr. Hasan is a licensed and registered geologist in the State of Missouri and a member of several national and international professional societies. His research efforts have been supported by grants from National Science Foundation (NSF), U.S. EPA, and state and local agencies; he has served as the Technical Advisor for the Big River Mine Tailings Superfund Project in southeast Missouri (April 1998-March 2000). Dr. Hasan has served on the Board of Directors of LeadBusters, Inc. (re-named Health Homes, Inc.), a non-profit organization dedicated to combating lead poisoning in children, and as a member of the Public Oversight Board of the Lake City Army Ammunition Plant, Independence, Missouri. Lately, he has been studying the relationship between geologic factors and human health and is a founding member of the International Association of Medical Geology and is serving as the chairman of its Education Committee. He has convened specialty symposia on medical geology at meetings of the Geological Society of America and has lectured on this emerging specialty in Egypt (2006), India (2005) and at universities in the U.S. He has published his research findings in national and international journals and has authored an award-winning college textbook titled *Geology and Hazardous Waste Management* (Prentice Hall, 1996) for which the Association of Environmental and Engineering Geologists presented him its Claire P. Holdredge Award (1998). Dr. Hasan was recipient of the Educator's Environmental Excellence Award (2000) from U.S. EPA, Region VII for his dedication to environmental education. In 2005 he was honored by Purdue University as the Outstanding alumnus of its Department of Earth & Atmospheric Sciences. Dr. Hasan is a member of the Board of Advisors, Arab Healthy Water Association (UNESCO, Egypt), and is a Fellow of the Geological Society of America where he also serves on the Management Board of its Engineering Geology Division and as a member of the Joint Technical Program Committee for the 2006 Annual Meeting, Philadelphia, PA. He is currently serving as the Editor for the "Engineering Geology, Environmental Geology, and Mineral Economics" theme of the UNESCO's landmark publication, *Encyclopedia of Life Support Systems*. Dr. Hasan is listed in *Men and Women of Science*, *Who's Who in Science and Engineering* and other national and international bibliographies. His recent sources of research funding include the U.S. EPA.

## Charles Hawkins

### Utah State University

Dr. Charles Hawkins is Professor of Aquatic Ecology in the Department of Watershed Sciences and Director of the Western Center for Monitoring and Assessment of Freshwater Ecosystems at Utah State University. Dr. Hawkins received a Ph.D. in Entomology from Oregon State University (1982), an M.S. in Aquatic Biology from California State University, Sacramento (1975), and a B.A. in Biology from California State University, Sacramento (1973). Dr. Hawkins has been on the faculty of Utah State University since 1983. He teaches courses in general ecology, stream ecology, water quality, and professionalism in the life sciences. His research focuses on the ecology and management of freshwater ecosystems with special emphasis on sampling designs and statistical methods applicable to ecological research, biological monitoring, and conservation; predictive modeling of community composition; use of aquatic biota to assess and monitor ecological integrity; cumulative effects of watershed alteration on the physical, chemical, and biotic condition of aquatic and riparian ecosystems; and the biology and ecology of freshwater invertebrates, amphibians, and fishes. Over the last 10 years, Dr. Hawkins has worked extensively with state and federal agencies to develop and evaluate scientifically defensible biological indicators and criteria for freshwater ecosystems. His research has been supported by grants from the National Science Foundation, U.S. EPA, and the U.S. Forest Service. He has served on the editorial board of the Journal of the North American Benthological Society and served a 4-year term as Vice-Chair and Chair of the Aquatic Ecology section of the Ecological Society of America. He served two terms (2001-2005) on the Ecological Processes and Effects Committee of the EPA's Science Advisory Board and serves on the Community Condition Indicators Committee for the H. John Heinz III Center for Science, Economics and the Environment.

## Joseph Helble

### Dartmouth College

Dr. Joseph J. Helble is Professor and Dean of the Thayer School of Engineering at Dartmouth College. Prior to joining Dartmouth as Dean in 2005, he served as a faculty member and Chair of the Department of Chemical Engineering at the University of Connecticut (UConn), and was also a member of the UConn Environmental Engineering faculty. He is a 1982 summa cum laude B.S. graduate of Lehigh University in chemical engineering, and a 1987 chemical engineering Ph.D. graduate of the Massachusetts Institute of Technology. His research is primarily in the area of air pollution, with specific activities and interests in combustion-derived particulate matter formation and control, mercury, trace metal and air toxics air pollutants, air quality modeling, ambient particulate matter structure, carbon dioxide capture, and particle coalescence. He also initiated a program to produce biodiesel fuel from waste vegetable oil on the UConn campus. Dr. Helble is the author of 100 publications, primarily in the air pollution field, and is a member of the editorial board of the journals Fuel Processing Technology and Environmental Engineering Science. From 2004-2005, Dr. Helble was the holder of the Revelle Fellowship in Global Stewardship from the American Association for the Advancement of Science (AAAS). As the Revelle Fellow, he spent a year working on environmental and technology policy issues in the office of U.S. Senator J. Lieberman. Prior to joining the UConn faculty in 1995, Dr. Helble spent 8 years at Physical Sciences Inc., a small business specializing in environmental and energy technology research and development. He also spent a fellowship period at U.S. EPA headquarters in Washington D.C as a science and policy fellow of the American Association for the Advancement of Science (AAAS), and received the Barnard Award from AAAS for his work on dioxin as an EPA Fellow in 1993. Dr. Helble is active in the American Association of Aerosol Science, the American Chemical Society, where he is currently Program Chair of the Fuel Chemistry Division for the 2007 national ACS meetings, the American Society for Engineering Education (ASEE), and the science policy fellowship program of AAAS. He has served on EPA Science Advisory Board panels on air toxics and the first draft report on the environment, and on numerous NSF advisory and review panels in environmental engineering and in combustion. He recently served on the NSF Committee of Visitors (COV) reviewing the combustion program within the NSF Engineering Directorate. Dr. Helble is an elected member of the Connecticut Academy of Science and Engineering. His current research is supported by the Department of Energy, National Aeronautics and Space Administration (NASA), and a U.S. EPA STAR graduate fellowship granted to one of his students.

## David Hoel

### Medical University of South Carolina

Dr. David G. Hoel is Distinguished University Professor of Biometry and Epidemiology in the College of Medicine at the Medical University of South Carolina in Charleston and Clinical Professor of Radiology at the University of South Carolina (USC) Medical School in Columbia. He received an A.B. in mathematics and statistics from University of California at Berkeley in 1961, a Ph.D. in mathematical statistics from University of North Carolina in Chapel Hill in 1966 and was a post-doctoral fellow in preventive medicine at Stanford University. Prior to joining the Medical University of South Carolina Dr. Hoel was Division Director for Risk Assessment at the National Institute of Environmental Health Sciences (NIEHS) in N.C. Dr. Hoel is a Fellow of the American Association for the Advancement of Science (AAAS), a member of the Institute of Medicine of the NAS and a National Associate of the National Academies. His awards include the Spiegleman Gold Medal in Public Health and the Ramazzini Award in Environmental and Occupational Health. He has served on numerous governmental committees including the Environmental Health Committee (EHC) and Radiation Advisory Committee (RAC) of EPA's Science Advisory Board. Dr. Hoel's research has focused on risk assessment methods with particular interest in low-dose radiation exposures and cancer. This work has included stays in Hiroshima as a Director at Radiation Effects Research Foundation (RERF) and currently is a RERF Scientific Counselor.

## Philip Hopke

### Clarkson University

Dr. Philip K. Hopke is the Bayard D. Clarkson distinguished professor at Clarkson University and the director of the Center for Air Resources Engineering and Science. Professor Hopke is the immediate past president of the American Association for Aerosol Research and was a member of the National Research Council's congressionally mandated Committee on Research Priorities for Airborne Particulate Matter and the Committee on Air Quality Management in the United States. He is a member of the National Research Council's U.S. Committee on Energy Futures and Air Pollution in Urban China and the United States. Professor Hopke received his B.S. in Chemistry from Trinity College (Hartford) and his M.A. and Ph.D. degrees in chemistry from Princeton University. After a post-doctoral appointment at M.I.T., he spent four years as an assistant professor at the State University College at Fredonia, NY. Dr. Hopke then joined the University of Illinois at Urbana-Champaign and subsequently came to Clarkson in 1989 as the Robert A. Plane Professor with a principal appointment in the Department of Chemistry. He has served as dean of the Graduate School, chair of the Department of Chemistry, and head of the Division of Chemical and Physical Sciences before he moved his principal appointment to the Department of Chemical Engineering in 2000.

## Allan Legge

### Biosphere Solutions

Dr. Allan Legge is currently President of Biosphere Solutions, an environmental consulting firm located in Calgary, Alberta, Canada. Prior to forming Biosphere Solutions in 1993, he was a Senior Research Scientist at the Kananaskis Center for Environmental Research at the University of Calgary from 1972 to 1990, and a Senior Research Officer in the Environmental Research and Engineering Department, Alberta Research Council from 1990 to 1993. Dr. Legge holds a B.A. in Biology and Dramatic Arts which was received from Whitman College, Walla Walla, Washington in 1965, and a Ph.D. in Plant Genetics/Ecology from Oregon State University in Corvallis, Oregon in 1971. His areas of specialization are environmental toxicology/atmospheric chemistry, and he focuses on the evaluation and assessment of the effects of the air pollutants SO<sub>2</sub>, O<sub>3</sub>, H<sub>2</sub>S, NO<sub>x</sub>, HF, PM and saline aerosols on forests and agricultural ecosystems. Dr. Legge has been a member of the EPA Science Advisory Board since 1985 and has served on the following: (1) Forest Effects Review Panel (Co-Chair), 1985; (2) Scientific and Technological Achievement Awards Subcommittee (STAA), intermittently from 1986 to 2002; and (3) Clean Air Scientific Advisory Committee (CASAC) as a consultant since 1994 on Review Panels dealing with Nitrogen Oxides, Ozone and Related Photochemical Oxidants, and Particulate Matter. He served as a member of the U.S. National Research Council Committee to Assess the North American Research Strategy on Tropospheric Ozone (NARSTO) from 1997 to 2000. Dr. Legge is an active member of the Air and Waste Management Association (AWMA), the Alberta Society for Professional Biologists, and the International Air Pollution Workshop. He was elected as a Fellow of the American Association for the Advancement of Science (AAAS) in 1992, and a Fellow of the AWMA in 2002. Dr. Legge's primary sources of recent grant and/or contract support have been from resource extraction industries (oil and gas; cement) in Canada, Alberta Environment (provincial government), non-governmental organizations and legal firms.

## Igor Linkov

### Cambridge Environmental, Inc.

Dr. Igor Linkov is a Senior Scientist with Cambridge Environmental Inc. in Cambridge, MA, and 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, Arthur D. Little, Inc. and Menzie-Cura and Associates, Inc., where he conducted ecological and human health risk assessments for Superfund sites. Dr. Linkov has a B.S. and M.Sc. 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 and Toxicology and Risk Assessment at Harvard University. Dr. Linkov has managed ecological risk assessments and contributed to human health risk assessment at several Superfund sites. He has developed models and software to support risk assessment for contaminated sites, including Superfund sites, and his recently completed modeling efforts include the FISHRAND model for PCB bioaccumulation in fish, used by the EPA for Hudson River Superfund site risk assessment. Dr. Linkov currently supports development of the Army Risk Assessment Modeling System (ARAMS) and also develops the risk-trace model for spatially explicit ecological risk assessment for the American Chemistry Council (ACC). One of the focuses of his current research is integrating risk assessment and multi-criteria decision analysis tools in managing contaminated sites. He is currently developing the Questions and Decision (QnD) model for environmental management at contaminated and disturbed sites for the U.S. Army Corps of Engineers. He has published widely on environmental policy, environmental modeling, and risk analysis, including five books and over 70 peer-reviewed papers and book chapters. Dr. Linkov has directed and chaired six international conferences on risk assessment and modeling and participated in organizing many others. Dr. Linkov serves as a Scientific Advisor to the Toxic Use Reduction Institute. Dr. Linkov is President for the Society for Risk Analysis (SRA) - New England. He also is the Past Chair of the SRA Ecological Risk Assessment Specialty Group and participates in several SRA and Society of Environmental Toxicology and Chemistry (SETAC) Committees. Dr. Linkov has served on many review and advisory panels for U.S. and international agencies, including risk assessment reviews for Superfund sites. Over the last two years, Dr. Linkov's research has been supported by the U.S. Army, Army Corps of Engineers, U.S. EPA, Department of Transportation (DOT), Department of Energy (DOE), National Oceanic and Atmospheric Administration (NOAA), North Atlantic Treaty Organization, U.S. Chamber of Commerce, American Chemistry Council, Dow Chemical, Chevron, and various private clients.

## Steven Macdonald

### Washington State Department of Health

Dr. Steven C. Macdonald is Epidemiologist in the Non-Infectious Conditions Epidemiology section at the Washington State Department of Health Office of Epidemiology. Dr. Macdonald received a B.A. in biology from the University of Massachusetts (1977), and an MPH (1981), and Ph.D. (1994) in epidemiology from the University of Washington School of Public Health and Community Medicine. He was awarded fellowships in Health Services Research, and Environmental Pathology & Toxicology. He has previously worked for the University of Washington (UW) School of Public Health as a health policy analyst, and the UW School of Medicine as a research scientist in preventive medicine. In 1995-97, he was assigned to the Surveillance Branch at the Centers for Disease Control (CDC) National Center for Environmental Health in Atlanta. He currently holds an appointment as Clinical Associate Professor at the UW Department of Epidemiology, and has taught courses in public health practice, and public health surveillance. Dr Macdonald served on the Executive Committee of the Council of State & Territorial Epidemiologists (CSTE), co-chaired the Intergovernmental CDC-CSTE Data Release Guidelines Workgroup, and currently chairs the CSTE Surveillance Coordination Group. He is a former chair of the Injury Control & Emergency Health Services section of American Public Health Association, and former member of the board of directors for the American Trauma Society.

## Maria Morandi

### University of Texas - Houston Health Science Center

Dr. Maria Morandi is an assistant professor of Environmental Sciences and Occupational Health at the School of Public Health of the University of Texas at Houston. She holds a BS degree in Chemistry from the City College of New York (1978), and MS (1981) and Ph.D. (1985) degrees in Environmental Sciences from the Norton Nelson Institute of Environmental Medicine of New York University. Dr. Morandi is also certified in Industrial Hygiene (CIH) by the American Board of Industrial Hygiene. Dr. Morandi's areas of expertise include assessment of indoor, outdoor and personal air concentrations of airborne contaminants in community and occupational environments, development of methods for personal exposure monitoring of gas and particle-phase airborne chemicals, evaluation of the effects from exposure to airborne particles and ozone on human and murine alveolar macrophages, cardiovascular effects from exposure to urban particulate matter and manufactured nanoparticles in sensitive individuals, and effects from exposure to airborne particles, ozone, and air toxics in children with asthma. She has also performed statistical modeling of PM source contributions. Dr. Morandi served as a member of the Integrated Human Exposure Assessment Committee of the EPA Science Advisory Board from 1992 and 1998, and 2003 to the present time. She was as member of the Research Strategies Advisory Committee between 1998 and 2003, and served in the Clean Air Scientific Advisory Committee (CASAC) CASAC Review Panel for the ozone AQDR. Dr. Morandi has also served as member or chair of several EPA program review panels, the Agency for Toxic Substances Board of Scientific Counselors, the National Institute of Occupational Health Study Section, and the Chemical Exposures Working Group for the National Children Study (NCS). Currently, she is a member of the Board of Scientific Counselors (BOSC) of the National Toxicology Program (NIEHS). Dr. Morandi's sources of recent grant and/or other contract support funding include: (1) U.S. Environmental Protection Agency (several contracts on the use of passive dosimeters for monitoring indoor, outdoor and personal air concentrations of air toxics; a STAR grant on the effect of PM on murine and human alveolar macrophages; and an evaluation of the impact of attached garages on indoor and personal air concentrations of VOCs); (2) National Institute of Environmental Health Sciences (NIEHS) on the impact of exposure of CAPs on lung surfactant using a murine neonate model; (3) the Mickey Leland National Urban Air Toxics Research Center (impact of exposure to airborne carbonyls, PM and ozone on children with asthma and the Houston Exposure to Air Toxics Study); (4) The Health Effects Institute (HEI) (a population-based exposure study, and effects from exposure to PM on endothelial dysfunction); and (5) National Institute for Occupational Safety and Health (NIOSH) (for training Industrial Hygienists).

## Deborah Neher

### University of Vermont

Dr. Deborah A. Neher is a soil ecologist and agroecologist. She currently holds the rank of chairperson and associate professor in the Department of Plant and Soil Science at University of Vermont. Dr. Neher received a B.S. in Environmental Science from McPherson College (1984), an M.S. in Plant Ecology from the University of Illinois (1986), and a Ph.D. in Plant Pathology from the University of California at Davis (1990). Neher has primary research interests in development of invertebrate bioindicators for environmental monitoring of terrestrial soils. Her approach is quantitative and ecosystem in perspective, linking communities with ecosystem functions of decomposition and nutrient cycling. Her focus is on soil nematodes, collembolans and mites for implementation on regional and national scales. Dr. Neher served as a member of the Agricultural Lands component of EMAP from 1990-1996. She has held positions of Associate Editor (1999-2000) and Editor of Ecology (2002-2004) for the Journal of Nematology, and member of the Ecology committee for the Society of Nematologists. Previously, she served as an associate editor for Plant Disease (1994-1996). For the American Phytopathological Society, she served as a member (1994-1997) and chair (1995-1996) of the Epidemiology committee and as a member of the Nematology committee (1997-2000). She has been active in the Soil Ecology Society since 1993, serving as society Secretary from 1996-1997. She has been instrumental in increasing the visibility of both soils and agriculture in the Ecological Society of America by initiating the Soil Ecology and Agroecology sections in the Ecological Society of America and serving as the first section chair of Soil Ecology in 1993-1995. Furthermore, she served on the Advisory Board for the Ecosystem Services Community Project, sponsored jointly by the Ecological Society of America and Union of Concerned Scientists from 2000-2001, and on the Board of Directors for the H. A. Wallace Institute for Alternative Agriculture from 1997-1999. In 2000-2002, she served on the Farmlands work group for the 2002 State of The Nation's Ecosystems: Measuring the Lands, Waters, and Living Resources of the United States. Dr. Neher's recent sources of research funding include the National Science Foundation, Department of Energy, and U.S. Department of Agriculture.

## Duncan Patten

### Montana State University

Dr. Duncan Patten is Research Professor with the Department of Land Resources at Montana State University, and Professor Emeritus of Plant Biology and past Director of the Center for Environmental Studies at Arizona State University. Dr. Patten earned an A.B. in Biology and Chemistry from Amherst College, an M.S. degree in Botany from the University of Massachusetts, and a Ph.D. in Botany and Ecology from Duke University. He is a research ecologist specializing in arid and mountain ecosystems, most recently emphasizing the understanding of ecological processes of western riparian and wetland ecosystems including isolated spring wetlands. Dr. Patten was Senior Scientist for the Bureau of Reclamation's Glen Canyon Environmental Studies (1989-1996) and Plant Process Coordinator of the IBP Desert Biome program. His recent research has focused on the development of ecological indicators for watershed analysis, effects of mountain development on riverine processes, and biocomplexity of human/natural processes on the Northern Range of Yellowstone National Park. His research has been supported by National Science Foundation (NSF), U.S. EPA, National Park Service (NPS), U.S. Fish and Wildlife Service (USFS) and other federal and state agencies. Dr. Patten chaired the Grass/Shrubland workgroup and serves on the Design Committee of the Heinz Center's State of the Nation's Ecosystems project. He participated on the US Forest Service Sustainable Rangeland Round Table addressing indicators of rangeland integrity, and has worked with the National Park Networks, especially the Yellowstone Network, assessing ecological health of the parks. He serves on the Independent Science Board of the California Bay Delta Authority (CALFED) that advises on river restoration, water quality and quantity, and levee safety in the Bay-Delta region. Dr. Patten chaired the Technical Advisory Committee for the Governor's Upper Yellowstone River Cumulative Effects Task Force (1999-2004). He has served on a number of committees of the National Research Council/ National Academy of Sciences, chairing several. He was a member of the NRC/NAS Board on Environmental Science and Toxicology and Commission on Geoscience, Environment and Resources. He also served three years on a National Science Foundation ecology review panel. He was founding president of the Arizona Riparian Council, president of the Society of Wetland Scientists, and Business Manager of the Ecological Society of America. He is an American Association for the Advancement of Science (AAAS) Fellow.

## Russell Persyn

### South Dakota State University

Dr. Russell A. Persyn is an Assistant Professor in the Agricultural and Biosystems Engineering Department at South Dakota State University and serves as the Environmental Quality Engineer for the South Dakota Cooperative Extension Service. Dr. Persyn received his Ph.D. from Iowa State University in agricultural engineering and civil engineering (separate majors) and received his M.S. and B.S. from Texas A&M University in agricultural engineering. He is also a Registered Professional Engineer in the State of Texas. Professionally, Dr. Persyn is an active member of the American Society of Agricultural and Biological Engineers serving and organizing technical meetings, symposiums, continuing professional development sessions, and promoting engineering licensure. Dr. Persyn has worked on water quality issues and evaluation of best management practices and waste treatment technologies and has received funding from the Texas Water Resources Institute, Texas State Soil and Water Conservation Board, Environmental Protection Agency, United States Geological Survey, and United States Department of Agriculture. He has led and collaborated on projects involving nutrient enrichment issues and worked with scientists, engineers, and stakeholders to assist in meeting surface water quality standards. Specifically, Dr. Persyn has worked on evaluating composted organics from various sources for use in erosion control on construction projects, focusing on movement of sediment, nutrient and heavy metal transport, and development of model parameters. Dr. Persyn also has considerable experience in the design and evaluation of treatment technologies such as constructed wetlands, sand filters, trickling filters, and aerobic treatment units and land application technologies including, spray distribution, drip distribution, and subsurface treatment.

## Gary Pierzynski

### Kansas State University

Dr. Gary Pierzynski is an environmental chemist specializing in trace metals in the environment and nutrient cycling in agricultural and other soil systems. He is currently Professor and Interim Head, Department of Agronomy, at Kansas State University with an appointment of 70% research and 30% teaching. He holds a Ph.D. in soil chemistry from the Ohio State University, and an M.S. in environmental chemistry and B.S. in Crop and Soil Science from the Michigan State University. He is senior author on a widely used textbook, *Soils and Environmental Quality* (third edition). His research program has three main thrusts: 1) Trace element chemistry and contamination in soils. He has researched revegetation strategies for contaminated sites, including the use of soil amendments to reduce phytotoxicity and innovative approaches to establish vegetation such as deep-planted poplar trees or mycorrhizae inoculation. He has assessed novel approaches for estimating trace element bioavailability using physiologically based extraction tests simulating the human digestive process, animal feeding, and diffusive gradients in thin films. He has contributed some of the original research on in situ remediation of lead contaminated soils, resulting in a patent. 2) Impacts of agriculture on water quality. He has quantified the changes in total and soluble phosphorus losses in runoff that can be realized by changes in tillage and phosphorus fertilizer management and has provided guidance on critical soil phosphorus levels in relation to water quality, including providing advice to state and federal agencies on legislation and the development of the phosphorus site index for Kansas. Current work emphasizes the combined effect of best management practices on multiple water contaminants and the use of animal manures as nutrient sources. Additional research has investigated techniques for estimating phosphorus bioavailability in soil and water including development of a procedure using iron-oxide as a phosphorus adsorbent. 3) Nutrient cycling in concentrated animal feeding operations. Dr. Pierzynski and co-workers have characterized the extent of soil contamination beneath lagoons and conducted basic ternary cation exchange work on lagoon liner materials with a focus on the development of soil chemical criteria for lagoon liner construction that will minimize losses to the environment. Dr. Pierzynski's record of achievement has earned him many positions of leadership including: Editor of the *Journal of Environmental Quality*, soil and environmental quality division chair for the Soil Science Society of America, USDA-NRI panel manager for the Soils and Soil Biology Program; vice-chairperson for the Soil Remediation Subcommittee of the International Union of Soil Science, co-chair of the USDA Chemistry and Bioavailability of Waste Constituents in Soils regional research committee, technical advisor (EPA funded) for the Jasper County Superfund Site Citizens Coalition, the St. Francis County Superfund Site Coalition, and for the Bartlesville OK Coalition; peer-reviewer for EPA risk assessment efforts; member and chair of the technical and organizing committees for the International Conference on the Biogeochemistry of Trace Elements Series; and Vice President of the International Society for Trace Element Biogeochemistry. He has more than 50 refereed journal publications, more than 200 abstracts and presentations, one patent, more than 40 invited presentations, and has received more than 3 million dollars in extramural funding. Dr. Pierzynski teaches courses on environmental quality, plant nutrient sources, soil and environmental chemistry, and advanced soil chemistry. His awards and professional recognition include: Fellow of the American Society of Agronomy and the Soil Science Society of America, the Soil Science Education Award from the Soil Science Society of America, the Outstanding

Teaching and Outstanding Research Awards from Gamma Sigma Delta, Faculty Scholar by Phi Kappa Phi, twice named Faculty of the Semester and the Outstanding Academic Advisor Award from the College of Agriculture at Kansas State University.

## Ramesh Reddy

### University of Florida

Dr. Ramesh Reddy is Graduate Research Professor and Chair, Soil and water Science Department, University of Florida. Dr. Reddy received a B.S. in agriculture (1965) and an M.S. in agronomy and soil science (1967) from A.P. Agricultural University, and a Ph.D. in agronomy and soil science from Louisiana State University (1976). Dr. Reddy's areas of expertise and research include: biogeochemistry, wetlands and aquatic systems, soil and water quality, and ecosystem restoration. Dr. Reddy's recent research has included contributions in the following areas: 1) Determination of the importance of biogeochemical processes on water quality in wetlands and aquatic systems. 2) Using historical dating techniques and spatial nutrient storage in soils to investigate phosphorus enrichment in the Everglades. 3) Investigating the role of biotic and abiotic uptake of phosphorus by calcareous periphyton mats in the water column and its regulation in maintaining low phosphorus concentration in the water column of the Everglades. 4) Conducting work to estimate the long-term phosphorus assimilation capacity of wetlands and streams. 5) Research on shallow lakes to investigate internal phosphorus flux from bottom sediments. 6) Evaluating nutrient/contaminant impacts in wetlands and aquatic systems. 7) Developing the linkage between microbial diversity and activities in wetlands, and identifying molecular level biogeochemical indicators for evaluating wetland ecosystem recovery. 8) Identifying biogeochemical indicators to evaluate pollutant impacts in wetlands and aquatic systems. 9) Developing tools to extrapolate process-level information for use in restoration and management of wetlands and aquatic systems. Dr. Reddy's research is funded by several agencies including: U.S.EPA, NSF, USDA-NRI, USGS, DOI, several Florida state agencies. Dr. Reddy published 300+ refereed journal articles and book chapters, and edited 5 books. Highly Cited Researcher - <http://www.isihighlycited.com/>. Ecology and Environment category (one of the top 200 worldwide). Dr. Reddy has served on numerous advisory committees. He is a member of the U.S. National Committee on Soil Science of the National Academy of Sciences. He is member of U.S. EPA committee on developing nutrient criteria for wetlands. He has served on the following editorial advisory boards: Associate Editor and member of the Editorial Board, Journal of Environmental Quality (1985 – 1990, 1994 – 1996); Associate editor, Wetlands Ecology and Management (1988 – 2000); Editorial Board, Critical Reviews in Environmental Science and Technology (1992 – present), Editorial Board, Nutrient cycling in Agroecosystems (1999 – present). Dr. Reddy's select awards and honors include: University of Florida Doctoral Dissertation Advisory /Mentoring Award (2005); Fellow, World Innovation Foundation (2004); Member, U.S. National Committee, National Academy of Sciences (2003 – 2007); Environmental Quality Research Award, American Society of Agronomy (2002); Sigma Xi Senior Faculty Research Award (2002); Soil Science Applied Research Award, Soil Science Society of America (2001); Fellow, American Association for the Advancement of Science (2001); Florida Research Foundation Professor (1999-2002); Appointed Graduate Research Professor -1993-to date; Fellow - Soil Science Society of America (1988); Fellow - American Society of Agronomy (1988).

## Gary Saylor

### University of Tennessee

Dr. Gary S. Saylor is Beaman, Distinguished Professor of Microbiology, and Ecology and Evolutionary Biology at the University of Tennessee. He is director of the University of Tennessee – Oak Ridge National Laboratory (UT-ORNL) Joint Institute for Biological Sciences at Oak Ridge National Laboratory. He received his Ph.D. (1974) in Bacteriology and Biochemistry from the University of Idaho where he conducted research on heterotrophic utilization of organic carbon in freshwater environments. This was followed by postdoctoral training in Marine Microbiology and Biodegradation at the University of Maryland after which he joined the faculty of the University of Tennessee in 1975. He is the Founding Director (1986) of the Center for Environmental Biotechnology, a Research Center-of-Excellence, and is current Director of the State Center-of-Excellence, the Waste Management Research and Education Institute, and Interim director of the Institute for a Secure and Stable Environment. Over his career he has directed over \$30,000,000 in environmental, biodegradation, and molecular ecological research for numerous federal, state, and industrial sponsors. He has directed the graduate programs of approximately 45 Ph.D. and 15 Master's students in Microbiology, Ecology, and Evolutionary Biology and engineering. He has edited five books and contributed 281 publications in broad areas of molecular biology, environmental microbiology, biodegradation, and biotechnology, and holds ten patents on environmental gene probing, genetic engineering for bioremediation, bioelectronic sensor technology, and environmental gene expression. His work has included molecular and environmental aspects of PCB, PAH, BTEX and TCE metabolism. He has given invited presentations at over 300 national and international meetings in the broad area of biotechnology and the environment. He has served on and/or chaired numerous panels and advisory review committees of Oak Ridge National Laboratory (ORNL), Lawrence Berkeley National laboratory (LBNL), (Argonne National Laboratory (ANL), Brookhaven National Laboratory (BNL), National Science Foundation (NSF), National Institutes of Health (NIH), Department of Energy (DOE), U.S. EPA, and four different National Academy of Sciences/National Research Council (NAS/NRC) subcommittees. During his career, he has been awarded a National Institute of Environmental Health Sciences (NIEHS) Research Career Development Award (1980-1985); was named by Science Digest Top 100 Innovators in Science in 1985, he received the American Society for Microbiology, Procter and Gamble Award for Environmental Microbiology (1994), the Distinguished Alumni Award of the University of Idaho (1995) and the DOW Chemical Foundation SPHERE Award (1998-2000). He was elected to the American Academy of Microbiology in 1991 and is a lifetime member. He has served in an editorial capacity for six journals and is currently an associate editor for Environmental Science and Technology. Professional memberships include American Association for the Advancement of Science (AAAS), American Society for Microbiology (ASM), American chemical Society (ACS), Society for Industrial Microbiology (SIM), Society of Environmental Toxicology and Chemistry (SETAC) and SPIEE. Dr. Saylor served as a member of the Water Environment Research Foundation, Research Council from 1999 to 2001. Recent research support is from NIH, (National Aeronautics and Space Administration (NASA), Defense Advanced Research Projects Agency (DARPA), NSF, U.S. Department of Agriculture (USDA), U.S. Army, ONR and DOE in areas integrating Bioluminescent Bioreporter Integrated Circuit technology, nucleic acid environmental diagnostics and biosensing gene expression, and

monitoring in complex system analysis. Areas of research expertise include microbiology, genetic engineering, molecular biology in biodegradation and bioremediation; PAH, PCB soils, sediments, and water; molecular ecology in biological waste treatment, PCR-gene probes, biosensors for bioavailable pollutants including endocrine disruptors, nanotechnology, and carbon nanofibers in microbial biofilms. He has recently served (2003-2004) on a NAS/NRC review subcommittee on standoff explosives detection and was a member of a DOE Committee of Visitors (2004) examining Office of Biological and Environmental Research (OBER's) grant solicitation and review process. He is currently a member of EPA's Science Advisory Board Drinking Water Committee and is an executive committee member of the Board of Scientific Counselors for EPA's Office of Research and Development.

## Mark Schwartz

### University of California, Davis

Dr. Mark Schwartz is a Professor in the Department of Environmental Science and Policy, College of Agriculture, University of California at Davis (UC Davis). He holds a B.A. Biology and Chemistry from College of St. Thomas (St. Paul, MN); Master of Science in Ecology from the University of Minnesota; Ph.D. in Biology from Florida State University. His current research is focused on five areas: (1) the potential impact of global warming on the distribution of trees in the eastern U.S.; (2) Taxonomic and geographic patterns in the distribution of rare plants and how this affects conservation strategies; (3) economic models of mutualism; (4) the interactions among fire, native herbivores and cattle on Miombo vegetation at the landscape scale; and (5) planning and implementing effective floodplain restoration in the Cosumnes River ecosystem. He spent the 2001-2002 academic year as a program manager at the National Science Foundation (Ecosystems program and Biocomplexity in the Environment). He serves on the editorial boards of Ecology Letters and Biological Conservation. He serves on the Board of Governors for the Society of Conservation Biology and is chair of the Graduate Group in Ecology at UC Davis. Recent grant support comes from CalFed and from the National Science Foundation.

## Alan Steinman

### Annis Water Resources Institute, Grand Valley State University

Dr. Alan Steinman is currently Director of the Annis Water Resources Institute at Grand Valley State University. He oversees research, educational activities, and outreach at the Institute, and maintains an active research program dealing with impacts of nonpoint source pollution, ecosystem restoration of the Great Lakes, and valuation of ecosystem services in west Michigan. Prior to joining AWRI, Steinman was the Director of the Okeechobee Restoration Program at the South Florida Water Management District. Dr. Steinman received his Ph.D. in Botany and Aquatic Ecology at Oregon State University and did his postdoctoral research at Oak Ridge National Laboratory in nutrient cycling and disturbance ecology. Steinman's expertise includes restoration ecology, nutrient cycling, periphyton ecology, and aquatic metabolism. He is currently the associate editor of two scientific journals, and serves on the federal Sustainable Water Resources Roundtable. Recent federal service includes NSF's Ecosystems Panel, the Science Advisory Boards for U.S. Geological Survey's (USGS) contaminants program, MN Sea Grant, and U.S. EPA's draft report on the Environment—2003, and a member of EPA's nutrient criteria for streams and rivers. At the state level, he serves on the Phosphorus Management Policy Advisory Committee and the State's Groundwater Conservation Advisory Council, where he chairs the sustainability subcommittee. Regionally, he serves on the Green Infrastructure Leadership Council for the West Michigan Strategic Alliance and the Board of Directors of the Land Conservancy of west Michigan. A partial listing of his current grant sources include: 1) Enhancing the Muskegon River Initiative: fish recruitment at the interface of the Great Lakes and their watersheds. Co-PI. 2004-2007. Funded by Great Lake Fishery Trust. 2) Nonpoint source impacts in the lower Muskegon River watershed. PI. 2005-2007. Funded by U.S. Department of Education. 3) Economic valuation of ecosystem services in west Michigan. PI. 2006-2008. Funded by People and Land, Kellogg Foundation.

## John Suen

### California State University, Fresno

Dr. John Suen is the Chief of Hydrogeology Studies at the California Water Institute and a Professor of Geology at California State University (CSU), Fresno. He has served as Chair of the Department of Earth and Environmental Sciences, and founding Program Coordinator of the University of California at Riverside - CSU Fresno Joint B.S. Degree Program in Environmental Sciences. He received a Bachelor of Science degree with Honors from McGill University in Canada, a Doctor of Science degree from the Massachusetts Institute of Technology, and was a postdoctoral fellow at the University of California, San Diego. Prior to joining the faculty of CSU Fresno, he has also served as adjunct faculty at the State University of New York at Stony Brook, and California State University, Hayward. Dr. Suen was Scientist at Brookhaven National Laboratory on Long Island, New York, where he worked as a technical consultant for the U.S. Nuclear Regulatory Commission's Low-Level Waste Source Term Project, developing hydrogeologic models for calculation of radioisotope transport in the subsurface. He has published extensively in this field. He was also on the research staff of Gulf Oil Canada and Sohio Petroleum Company (now BP America) working on heavy/enhanced oil recovery. Dr. Suen's current research projects include the study of contaminant hydrology in the Central Valley of California, and hydrology of fractured rocks. Currently, his research interest focuses on the application of isotopic data in hydrology, such as studying nitrate contamination in groundwater using nitrogen and oxygen isotopes as a source indicator in agricultural environments. In past years, Dr. Suen has served on a number of advisory capacities, including expert ground water panel for the cities of San Francisco and Daly City, the board of directors for the Bay Institute of San Francisco – a 501(c)3 environmental organization, the Commission on the Urban Agenda of the National Association of State Universities and Land-Grant Colleges (NASULGC), the Kings River Groundwater Basin Committee of the State Regional Water Quality Control Board, and the Curriculum Advisory Panel of Madera College Center, College of Sequoia.

## **Deborah Swackhamer**

### **University of Minnesota**

Dr. Deborah Swackhamer is Professor of Environmental Chemistry in the Division of Environmental and Occupational Health, School of Public Health, and also Co-Director of the Water Resources Center, at the University of Minnesota, Minneapolis. Dr. Swackhamer holds an M.S. in Water Chemistry (1982), University of Wisconsin, Madison, Wisconsin, and a Ph.D. in Oceanography and Limnology (1985), University of Wisconsin, Madison, Wisconsin. She joined the faculty of the University of Minnesota in 1987 following postdoctoral experience at Indiana University, Bloomington. Dr. Swackhamer has studied the processes affecting the behavior and fate of persistent organic compounds including PCBs, dioxins, and pesticides in the Great Lakes for the past 20 years, including sediment accumulation, source determinations, water column processes, and food web bioaccumulation. She continues to study the process of bioaccumulation in lower trophic levels, and is the Principal Investigator for the Great Lakes Fish Monitoring Program of the U.S. EPA Great Lakes National Program Office. Currently, her research has expanded to include exposures and impacts of endocrine disruptors in aquatic systems. She also is developing and validating chemical indicators of ecological condition for coastal zones of the Great Lakes. Dr. Swackhamer has been active in numerous professional societies, including the Environmental Division of the American Chemical Society, the Society of Environmental Toxicology and Chemistry, and the International Association of Great Lakes Research. She served as Chair of the Committee on Drinking Water Contaminants for the Water Science and Technology Board, National Research Council, National Academy of Sciences from 1998-2002; Co-Chair, Gordon Research Conference, Environmental Sciences: Water, June 23-28, 2002, New Hampton, NH.; and is currently a Member of the Science Advisory Board of the International Joint Commission of the U.S. and Canada and Chair of the Emerging Issues Work Group. She also is a member and Chair of the Great Lakes Environmental and Molecular Sciences Center Technical Advisory Board, Western Michigan University, Kalamazoo, MI and a member of the Science Advisory Board of the National Undersea Research Program for the North Atlantic and Great Lakes, NOAA.

## **Stephen Trombulak**

### **Middlebury College**

Dr. Stephen Trombulak is currently the Albert D. Mead Professor of Biology and Environmental Studies at Middlebury College in Vermont. His B.A. is in Biology (1977, University of California at Los Angeles) and his Ph.D. is in Zoology/Ecology (1983, University of Washington). His area of expertise and research activities include the study of how conservation lands can be integrated into the larger matrix of lands associated with natural resource harvesting and management. He is involved with the Society for Conservation Biology (Board of Governors, North American Section Board of Governors, and President of the North American Section) and several regional advisory groups, including the Northern Forest Lands Council and the (Vermont) Governor's Forest Resources Advisory Committee. All of his recent contract support has been through The Nature Conservancy, the Vermont Natural Resources Council, and the Nantucket Conservation Foundation.

## **Sverre Vedal**

### **University of Washington**

Dr. Sverre Vedal is currently Professor in the Department of Environmental and Occupational Health Sciences, Division of Occupational and Environmental Medicine, at the University of Washington School of Public Health and Community Medicine. Dr. Vedal is a pulmonary physician and an epidemiologist. He received his Doctor of Medicine degree from the University of Colorado and his Master of Science (M.Sc.) degree in epidemiology from the Harvard University School of Public Health. He worked for 18 years as an academic pulmonologist at the University of British Columbia in Vancouver, and then 3 years at the National Jewish Medical and Research Center in Denver, Colorado before joining the faculty at the University of Washington in 2004. Dr. Vedal was a member of the EPA Science Advisory Board's Clean Air Scientific Advisory Committee (CASAC) until 2003 and then served on the CASAC Particulate Matter Review Panel until 2006. He now serves on the CASAC Ozone Review Panel. Dr. Vedal serves as a standing member of the Review Committee of the Health Effects Institute (HEI) and chaired the review committee for the HEI-funded National Morbidity, Mortality, and Air Pollution Study (NMMAPS) and the HEI committee that reviewed the revised time series analyses of EPA selected studies. He served as a member of the Air Quality Management in the U.S. Committee of the National Research Council and now serves on the Institute of Medicine Committee on Evaluation of the Veterans Administration's Presumptive Disability Decision-Making Process. Dr. Vedal's research interests are in the health effects of air pollution and in occupational lung disease. He is currently working on incorporating source-oriented approaches to specifying exposure to ambient air pollution in epidemiological studies, and on identifying effects of long-term exposure to components and sources of particulate matter on cardiovascular disease.

## **Duc Vugia**

### **California Department of Health Services**

Dr. Duc J. Vugia is Chief of the Infectious Diseases Branch and the Assistant State Epidemiologist for Infectious Diseases at the California Department of Health Services. He received his M.D. from the University of California (UC) San Francisco and was further trained in Internal Medicine and in Infectious Diseases at UC Irvine Medical Center and in epidemiology at UC Berkeley. He received an MPH from UC Berkeley and a B.A in Chemistry from the University of Southern California. He was a medical epidemiologist at the Centers for Disease Control and Prevention (CDC) where he investigated foodborne and waterborne bacterial and parasitic infections. In California, Dr. Vugia manages statewide programs to monitor, investigate, prevent, and control general communicable diseases including foodborne, waterborne, vectorborne and zoonotic diseases. Dr. Vugia has also been serving as co-director of the California Emerging Infections Program, a cooperative project involving the UC Berkeley School of Public Health, CDC, and selected California counties to address emerging infectious diseases. He has been an author or coauthor of more than 100 peer-reviewed scientific publications, including several on foodborne and waterborne diseases.

## Judith S. Weis

### Rutgers University

Dr. Judith Weis is a Professor, Department of Biological Sciences, Rutgers University, Newark NJ. She previously served as Associate Dean for Academic Affairs at the University. She also has served as American Association for the Advancement of Science (AAAS) Congressional Science Fellow with the Senate Environment and Public Works Committee, and Program Director at the National Science Foundation. She has been a visiting scientist at EPA, both at the research lab at Gulf Breeze FL and in the Office of Water (Ocean and Coastal Protection Division). She received her bachelor's degree from Cornell University, and M.S. and Ph.D. from New York University. Dr. Weis' research has focused on estuarine ecology and ecotoxicology. She has published over 150 refereed papers, focusing mainly on stresses in the estuarine environment, and their effects on organisms, populations and communities. Particular areas of focus have been effects of metal contaminants on growth, development, and behavior; development of tolerance to contaminants in populations living in contaminated areas; effects of invasive marsh plant species on estuarine ecology and on fate of metal contaminants. Much of her research has been focused on estuaries in the New York/New Jersey Harbor area. Dr. Weis has served on numerous advisory committees and has held leadership positions: Boards of Directors of the Society of Environmental Toxicology and Chemistry (SETAC) and the American Institute of Biological Sciences (AIBS); Chair of the Biology Section of American Association for the Advancement of Science (AAAS) in 2000; and President of AIBS in 2001. She is currently Board member of the Association for Women in Science (AWIS). She is a fellow of the American Association for the Advancement of Science (AAAS). She has served on advisory committees for the U.S. EPA Scientific and Technical Achievement Awards (STAA) for the U.S. EPA Science Advisory Board, and the Endocrine Disruptors Screening and Testing Advisory Committee – EDSTAC) and for the National Oceanic and Atmospheric Administration (NOAA). She has been a member of the Marine Board of the National Research Council, and currently serves on the National Sea Grant Review Panel of NOAA. Dr. Weis has previously on the Editorial Boards of Transactions of the American Fisheries Society and Bulletin of Environmental Contamination and Toxicology. She is Currently Associate Editor of Bulletin of Environmental Contamination and Toxicology and on the Editorial Board of BioScience. Dr. Weis' sources of recent grant support include: U.S. Geological Survey - Water Resources research program; National Science Foundation - Division of Environmental Biology; NOAA, and Meadowlands Environmental Research Institute.

**Barry Wilson****University of California, Davis**

Dr. Barry Wilson is a professor in the College of Agriculture at the University of California Davis (UCD). Dr. Wilson received his B.A. degree at the University of Chicago, a B.S. and M.S. in Biology at the Illinois Institute of Technology, and a Ph.D. in Zoology from University of California at Los Angeles in 1962. He has been a member of the College of Agriculture at UCD since then. His areas of expertise include neurotoxicology and ecotoxicology. Current research focuses on organophosphate induced neuropathis including Gulf War syndrome, standardization of clinical cholinesterase testing, impact of pesticides on the environment, impact of pesticides on development of cells, birds, fish and mammals. Dr. Wilson serves on several California EPA pesticide advisory committees, has just finished a term on the UCD Graduate Council. He is an active member of the Society of Toxicology (SOT) and the Society for Environmental Toxicology and Chemistry (SETAC), both locally and nationally. He is a member of the National Institute for Environmental Health Sciences (NIEHS) supported UCD Center for Environmental Health Sciences and the National Institute for Occupational Safety and Health (NIOSH) UCD Center for Agricultural Health and Safety. Additional grant support is from Department of Defense (DOD) and several California commodity groups.

**Terry F. Young****Environmental Defense**

Dr. Terry Young is an independent consultant, and has managed projects for Environmental Defense for more than twenty years. Dr. Young received her bachelor's degree in chemistry at Yale University and her Ph.D. in Agricultural and Environmental Chemistry from the University of California at Berkeley. Her recent work includes the design of a system that uses economic incentives, including input pricing and tradable discharge permits, to control farm pollution in California's San Joaquin Valley. Additional work includes the development of ecological indicators to track management and restoration of ecological systems such as the San Francisco estuary. She has published on topics of economic incentives for environmental protection, indicators of ecological integrity, and market solutions for water pollution

**Chen Zhu**

**Indiana University**

Dr. Chen Zhu is an Associate Professor of Geological Sciences at Indiana University – Bloomington. He received a Ph.D. degree from Johns Hopkins University, and a postdoctoral fellowship from Woods Hole Oceanographic Institution. Dr. Zhu's primary research interest is environmental geochemistry and hydrogeology, providing a scientific basis for addressing society's pressing environmental concerns and problems. Dr. Zhu has worked on a wide spectrum of environmental problems, including Naturally Occurring Radioactive Materials (NORM), uranium and radionuclides contamination in groundwater and soils, and geochemistry and hydrology related to the Yucca Mountain Project and the Nevada Test Site. Dr. Zhu is the author or co-author of over seventy publications and the first author of the popular book entitled "Environmental Applications of Geochemical Modeling," published by Cambridge University Press in 2002. He is a recipient of the H.V. Ellsworth Prize in Mineralogy from the University of Toronto, a Senior Associateship Award from the National Research Council, National Academy of Sciences, and a Guest Professorship from the Swiss Federal Institute of Technology (ETH). He was elected a Fellow of the Geological Society of America in 2005. Dr. Zhu has served on proposal review panels for the U. S. Environmental Protection Agency and the Department of Energy. He is currently an Associate Editor for *Geochimica et Cosmochimica Acta* and *Journal of Contaminant Hydrology*, and was on the editorial board for *Ground Water*.