



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C. 20460

OFFICE OF THE ADMINISTRATOR
EPA SCIENCE ADVISORY BOARD

June 8, 2009

MEMORANDUM

SUBJECT: Formation of the Science Advisory Board (SAB) Risk and Technology Review Methods Panel

FROM: Sue Shallal, Ph.D.
Designated Federal Officer
Science Advisory Board Staff Office (1400F)

THRU: Anthony Maciorowski, Ph.D.
Deputy Director
Science Advisory Board Staff Office (1400F)

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

This memorandum documents the process and addresses the set of determinations that were used in forming the EPA Science Advisory Board (SAB) *Ad Hoc* Risk and Technology Review Methods Panel (RTR Methods Panel). This memorandum provides background information, and addresses the following determinations, specifically: the type of review body and the nature of the review; the type of expertise needed, financial conflict of interest considerations; appearance of a lack of impartiality considerations; and how individuals were selected for the Panel.

DETERMINATIONS:

1) Type Of Review Body And The Nature Of The Review

EPA's Office of Air Quality Planning and Standards (OAQPS) recently developed its draft Risk and Technology Review for Phase II Source Categories which evaluate the effects of industrial emissions of hazardous air pollutants (HAPs) on public health and the environment. The

proposed methodologies are demonstrated through the use of two case studies, 1) petroleum refineries and 2) Portland cement manufacturers.

The peer review will be conducted by a SAB *Ad Hoc* Review Panel and will provide the EPA Administrator with advice and recommendations. This Panel, known as the Risk and Technology Review Methods Panel (previously referred to as the RTR II Panel), will be composed of SAB members and invited outside experts.

2) Type of Expertise Needed to Address the Charge

A Federal Register notice was published on January 31, 2008 requesting nominations of individuals with the following expertise, expertise in one or more of the following areas, especially with respect to airborne (and possibly multi-pathway) fate-and-transport modeling of organic and inorganic chemicals; modeling of potential human exposures; modeling of human health risk; health effects of individual chemicals and mixtures of chemicals; risk assessment models and practices; uncertainty or sensitivity analyses; and risk communication theory and practice (see Attachment 1). On the basis of the candidates' credentials and willingness to serve on the panel, the SAB Staff Office identified twenty nine (29) nominees for the "short list" of candidates.

On June 6, 2008, the SAB Staff Office posted a notice on the SAB Web site inviting public comments on the prospective candidates being considered for the Panel (Attachment 2). In particular, the notice on the Web site stated that the Staff Office would welcome any information, analysis or documentation that the SAB Staff Office should consider in evaluating the candidates on the "Short List". The notice also asked that any advice, observations or comments which would be helpful in selecting the final candidates be provided to the SAB Staff Office no later than June 20, 2008. The SAB Staff Office received 1 set of submissions with comments on "short list" candidates for the RTR Methods Review Panel (Attachment 3).

3) Financial conflict of interest considerations, including identification of parties who are potentially interested in or may be affected by the topic to be reviewed.

i) Identification of parties who are potentially interested in or may be affected by the topic to be reviewed: The principal interested and affected parties for this review are: The group of people that are employed or have significant financial interests in facilities that are involved in petroleum refining activities or the manufacture of Portland cement (including, but not limited to, manufacture, use, treatment and disposal of materials associated with these activities). Other interested parties include EPA and other Federal government agencies; state and local governments; tribal governments; as well as, all U.S. residents, living in the vicinity of these refining and manufacturing entities, as they may potentially be exposed to contaminants released by these sources.

ii) Conflict of Interest Considerations: For financial Conflict of Interest (COI) issues, 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 statute 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.

(a) Does the overall charge of the SAB RTR Methods Review Panel involve a 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)]. Additionally, 5 CFR § 2637.102(a)(7) defines a particular matter involving specific parties to mean any judicial or other proceeding, application, request for ruling or other determination, contract, claim, controversy, investigation, charge, accusation, arrest or other particular matter involving a specific party or parties in which the United States is a party or has a direct and substantial interest.

A particular matter of general applicability means a particular matter that is focused on the interests of a discrete and identifiable group of people, but does not involve specific parties. [5C.F.R. § 2640.102(m)].

The work of this SAB Advisory Review Panel qualifies as a particular matter of general applicability because the resulting advice will be part of a deliberation, and under certain circumstances the advice could involve the interests of a discrete and identifiable class of people and does not involve specific parties. That group of people is the set of people that who are potentially interested in or may be affected by the topic to be reviewed, as identified above.

(b) Will there be personal and substantial participation on the part of Panel members? Participating personally means direct participation in this review. Participating substantially refers to involvement that is of significance to the matter under consideration. [5C.F.R. § 2640.103(a)(2)]. For this review, panel members will be participating personally in the matter through attendance at meetings, teleconferences and other means. SAB RTR Methods Review Panel members will provide advice that might influence the Agency’s Risk and Technology Review methodologies. Therefore, participation in this review will also be substantial.

(c) Will there be a direct and predictable effect on SAB RTR Methods Review Panel members’ financial interest? 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)]. SAB RTR Methods Review Panel members were asked to submit a Confidential Financial Disclosure for Special Government Employees, so that the SAB Staff Office could make this determination. The Staff Office has determined that there will be no direct and predictable effect on the financial interests of SAB RTR Methods Review Panel members.

3) 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.”

To evaluate any potentially appearance of a lack of impartiality, the following four (4) questions were posed to prospective advisory panel members:

- a) Do you know of any reason that you might be unable to provide impartial advice on the matter to come before the Panel or any reason that your impartiality in the matter might be questioned?
- b) Have you had any previous involvement with the issue(s) or document(s) under consideration, including authorship, collaboration with the authors, or previous peer review functions? If so, please identify those activities.
- c) Have you served on previous advisory panels or committees that have addressed the topic under consideration? If so, please identify those activities.
- d) Have you made any public statements that would indicate to an observer that you have taken a position on the issue under consideration? If so, please identify those statements.

As noted above, the subject of this SAB review can be considered a particular matter of general applicability. Each potential advisory panel member was evaluated against the 5 C.F.R. 2635.502(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 advisory panel members in the form of responses to the questions listed above, EPA 3110-48 confidential financial disclosure forms, as well as, information independently gathered by SAB and public comment. As a result of a review of this information, 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 conflicts of interest or appearance of a lack of impartiality for the members of this panel.

4) How individuals were selected for the final Panel.

The SAB Staff Office Director, taking all factors into account, makes the final decision about the membership of the Panel being formed. Specific criteria used in evaluating individual candidates include: (a) scientific and/or technical credentials and expertise, knowledge, and experience; (b) availability and willingness to serve; (c) absence of financial conflicts of interest; (d) absence of an appearance of lack of impartiality; and (e) skills working in committees, subcommittees and advisory panels; and for the Panel as a whole, (f) diversity of, and balance among, scientific expertise and viewpoints.

Based on the above specified criteria, the membership of the SAB *Ad Hoc* RTR Methods Review Panel includes the following experts:

1. Dr. Jana Milford, University of Colorado (CHAIR)
2. Dr. Allen Burton, University of Michigan
3. Dr. David Eastmond, University of California-Riverside
4. Dr. Thomas Gentile, New York State Department of Environmental Conservation
5. Dr. Gary Ginsberg, Connecticut Department of Public Health
6. Dr. Judith Graham, Consultant
7. Dr. Cynthia Harris, Florida A&M University
8. Dr. Thomas LaPoint, University of North Texas
9. Dr. Abby Li, Exponent Inc.
10. Dr. Randy Maddalena, Lawrence Berkley Laboratories
11. Dr. John O'Donoghue, University of Rochester
12. Dr. Loren Raun, Rice University
13. Dr. Mark Rood, University of Illinois
14. Dr. John Veranth, University of Utah
15. Dr. Chris Walcek, State University of New York

Concurred,

Date

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

ATTACHMENTS:

Attachment 1	Federal Register Notice- Request for nomination of experts
Attachment 2	Invitation for comments on the "Short List" candidates
Attachment 3	List of public commenters on the "Short List" candidates

ATTACHMENT 1

Science Advisory Board Staff Office; Request for Nominations for Science Advisory Board Panel on Risk and Technology Review Assessments for Phase II Source Categories

[Federal Register: January 31, 2008 (Volume 73, Number 21)]

[Notices]

[Page 5836-5838]

From the Federal Register Online via GPO Access [wais.access.gpo.gov]

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ENVIRONMENTAL PROTECTION AGENCY

[FRL-8523-3]

Science Advisory Board Staff Office; Request for Nominations for
Science Advisory Board Panel on Risk and Technology Review Assessments
for Phase II Source Categories

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The EPA Science Advisory Board (SAB) Staff Office is announcing the formation of an SAB Expert panel to review and provide advice about draft risk assessments that evaluate the effects of industrial emissions of hazardous air pollutants (HAPs) on public health and the environment in accordance with EPA's Risk and Technology Review (RTR) Assessment. The SAB Staff Office is soliciting public nominations of technical experts for this panel.

DATES: Nominations should be submitted by February 21, 2008 per the instructions below.

FOR FURTHER INFORMATION CONTACT: Members of the public who wish to obtain further information regarding the submission of nominations may contact Dr. Resha M. Putzrath, via telephone at: (202) 343-9978 or e-mail at: putzrath.resha@epa.gov. The SAB Mailing address is: U.S. EPA Science Advisory Board (1400F), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460. General information about the SAB as well as any updates concerning this request for nominations may be found on the SAB Web site at: <http://www.epa.gov/sab>.

Technical Contact: For questions and information concerning the Agency's draft technical documents and background information, contact Dr. Dave Guinnup, at: (919) 541-5368, or guinnup.dave@epa.gov.

SUPPLEMENTARY INFORMATION: Background: The SAB was established by 42 U.S.C. 4365 to provide independent scientific and technical advice to the Administrator on the technical basis for Agency positions and regulations. The SAB is a Federal Advisory Committee chartered under the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C., App. The SAB will comply with the provisions of FACA and all appropriate SAB Staff Office procedural policies.

Section 112(f)(2)(A) of the 1990 Clean Air Act Amendments (CAA) requires EPA to evaluate whether emission standards that were previously adopted under the technology-based, Maximum Achievable Control Technology (MACT) program provide an ample margin of safety to protect public health and prevent adverse environmental effects (taking into consideration costs, energy, safety, and other relevant factors). Within eight years of the promulgation of a MACT standard for the source category, EPA is mandated by the CAA to assess the risks to determine whether additional standards are needed.

EPA's Office of Air and Radiation has developed a Risk and Technology Review (RTR) Assessment Plan (referred to as RTR II) that has a streamlined approach. The SAB provided advice in a consultation on the RTR II in December 2006 [Consultation on EPA's Risk and Technology Review (RTR) Assessment Plan (EPA-SAB-07-009) available at: [http://yosemite.epa.gov/sab/sabproduct.nsf/33152C83D29530F08525730D006C3ABF/\\$File/sab-07-009.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/33152C83D29530F08525730D006C3ABF/$File/sab-07-009.pdf)]. The SAB identified some key scientific issues and provided recommendations for the Plan. The SAB Panel being formed will review EPA's draft risk assessments developed under the RTR II approach, as modified to reflect SAB recommendations. These draft risk assessments will evaluate the potential risks to human health and the environment that remain after sources come into compliance with MACT.

Request for Nominations: The SAB Staff Office is requesting nominations for nationally and internationally recognized, non-EPA scientists with expertise and experience related to: Airborne (and possibly multi-pathway) fate-and-transport modeling of organic and inorganic chemicals; modeling of potential human exposures; modeling of human health risk; health effects of individual chemicals and mixtures of chemicals; risk assessment models and practices; uncertainty or sensitivity analyses; and risk communication theory and practice. The Agency is particularly interested in nominees with in-depth knowledge and experience in evaluating effects, exposure, and risk of hazardous air pollutants.

Process and Deadline for Submitting Nominations: Any interested person or organization may nominate qualified individuals with expertise and experience described above for consideration of service on the SAB Panel on Risk and Technology Review Assessments for Phase II Source Categories. Nominations should be submitted in electronic format through the SAB Web site at the following URL: <http://yosemite.epa.gov/sab/sabproduct.nsf/Web/participatepanelformation?OpenDocument>. Please follow the instructions for submitting nominations carefully. To be considered, nominations should include all of the information required on the associated forms. Anyone unable to submit nominations using the electronic form or who has any questions concerning the nomination process may contact Dr. Resha M. Putzrath, as indicated above in this notice. Nominations should be submitted in time to arrive no later than February 21, 2008.

To be considered, all nominations should include: A current curriculum vitae (C.V.) which provides the nominee's background, qualifications, research expertise, and relevant publications for service on the Panel; and a brief biographical sketch (''biosketch''). The biosketch should be no longer than one page and should contain the following information for the nominee: (a) Current professional affiliations and positions held; (b) area(s) of expertise, and research activities and interests relevant to the Panel; (c) leadership positions in national associations or professional publications or other significant distinctions; (d) educational background, especially advanced degrees, including when and from which institutions these were granted; and (e)

service on other advisory committees or professional societies, especially those associated with issues under discussion in this review. Incomplete biosketches will not be considered. The EPA SAB Staff Office will acknowledge receipt of nominations.

The names and biosketches of qualified nominees identified by respondents to the Federal Register notice and additional experts identified by the SAB Staff will be posted on the SAB Web site accessible through a link for this panel at: <http://yosemite.epa.gov/sab/sabproduct.nsf/WebBOARD/CommitteesandMembership?OpenDocument>. Public comments on this ``Short List'' of candidates will be accepted for 21 calendar days. The public will be requested to provide relevant information or other documentation on nominees that the SAB Staff Office should consider in evaluating candidates.

For the EPA SAB Staff Office, a balanced subcommittee or review panel includes 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. To establish individual expert panels for the advisory activities described above, the SAB Staff Office will consider public comments on the ``Short List'' of candidates, information provided by the candidates themselves, and background information independently gathered by the SAB Staff Office. Specific criteria to be used for Panel membership 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; and (e) skills working in committees, subcommittees, and advisory panels; and (f) for the Panel as a whole, diversity of, and balance among, factors such as scientific expertise and viewpoints.

The SAB Staff Office's evaluation of an absence of financial conflicts of interest will include a review of 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 (which includes membership on an EPA Federal advisory committee) 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://yosemite.epa.gov/sab/sabproduct.nsf/WebSABSO/ethics?OpenDocument>.

The approved policy under which the EPA SAB Office selects subcommittees and review panels is described in the following document: Overview of the Panel Formation Process at the Environmental Protection Agency Science Advisory Board (EPA-SAB-EC-02-010), which is posted on the SAB Web site at:

<http://yosemite.epa.gov/sab/sabproduct.nsf/WebSABSO/OverviewPanelForm?OpenDocument>.

Dated: January 24, 2008.
Anthony F. Maciorowski,
Deputy Director, EPA Science Advisory Board Staff Office.
[FR Doc. E8-1772 Filed 1-30-08; 8:45 am]

ATTACHMENT 2

Invitation for Comment on the EPA Science Advisory Board Short List Candidates for the Risk and Technology Phase II Review Panel

June 6, 2008

The EPA Science Advisory Board (SAB) Staff Office announced in a *Federal Register* Notice published on January 31, 2008 (Volume 73, Number 21, Pages 5836-5838) that it was forming a panel to conduct a peer review of EPA's draft risk assessments that evaluate the effects of industrial emissions of hazardous air pollutants (HAPs) on public health and the environment. To form the panel, the SAB Staff Office sought public nominations of nationally recognized experts with expertise in one or more of the following areas, especially with respect to Airborne (and possibly multi-pathway) fate-and-transport modeling of organic and inorganic chemicals; modeling of potential exposure and risk; effects of individual chemicals and mixtures of chemicals; risk assessment models and practices; uncertainty or sensitivity analyses; and risk communication theory and practice.

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/fedrgstr/EPA-SAB/2008/January/Day-31/sab1772.htm>

Based on qualifications, interest and willingness to serve of the nominees, the SAB Staff Office has identified 29 candidates who have the relevant expertise for panel membership. Brief biographical sketches ("biosketches") on these expert candidates are provided below. We hereby invite comments from members of the public for relevant information, analysis or other documentation that the SAB Staff Office should consider in evaluating these candidates.

The SAB Staff Office Director makes the final decision about who serves on the review panel, based on all relevant information. This includes a review of the member's confidential financial disclosure form (EPA Form 3110-48) and an evaluation of a lack of impartiality. For the EPA SAB Staff Office, a balanced committee or panel 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 general charge. Specific criteria to be used in evaluating an individual Panel member include: (a) scientific and/or technical expertise, knowledge, and experience; (b) availability and willingness to serve; (c) absence of financial conflicts of interest; (d) absence of an appearance of a lack of impartiality; and (e) skills working in committees, subcommittees and advisory panels; and, for the Panel as a whole, (f) diversity of, and balance among, scientific expertise, viewpoints, etc.

Please provide any comments you may have with respect to the "Short List" candidates, no later than June 20, 2008. Please make your comments to the attention of Dr. Suhair Shallal, Designated Federal Officer. E-mailing comments to Dr. Shallal is the preferred mode of receipt (shallal.suhair@epa.gov).

Potential Candidates for the Panel on Risk and Technology Review Assessments for Phase II Source Categories

Allen, David T.

University of Texas, Austin, TX

Dr. Allen is the Gertz Professor of Chemical Engineering and the Director of the Center for Energy and Environmental Resources at the University of Texas at Austin. His research interests lie in environmental reaction engineering, particularly issues related to air quality and pollution prevention. He is the author of four books and over 125 papers in these areas. The quality of his research has been recognized by the National Science Foundation (through the Presidential Young Investigator Award), the AT&T Foundation (through an Industrial Ecology Fellowship) and the American Institute of Chemical Engineers (through the Cecil Award for contributions to environmental engineering). Dr. Allen was a lead investigator in one of the largest and most successful air quality studies ever undertaken: the Texas Air Quality Study. His current research is focused on using the results from that study to provide a sound scientific basis for air quality management in Texas. In addition, Dr. Allen is actively involved in developing Green Engineering educational materials for the chemical engineering curriculum. His most recent effort is a textbook on design of chemical processes and products, jointly developed with the U.S. EPA. Dr. Allen received his B.S. degree in Chemical Engineering, with distinction, from Cornell University in 1979. His M.S. and Ph.D. degrees in Chemical Engineering were awarded by the California Institute of Technology in 1981 and 1983. He has held visiting faculty appointments at the California Institute of Technology, the University of California, Santa Barbara, and the Department of Energy.

Andersen, Melvin

Chemical Industry Institute of Toxicology, Research Triangle Park, NC

Dr. Andersen is the Director, Division of Biomathematics and Physical Sciences, CIIT-Centers for Health Research, Research Triangle Park, NC. His responsibilities include imparting a systems biology emphasis to research on the health effects of environmental chemicals. Dr. Andersen was Professor of Environmental Health from 1999 to 2002. From 1994-1998, Dr. Andersen was Vice-President of the K.S. Crump Group of ICF Kaiser International Consulting. Between 1971 and 1994, he held positions in toxicology research and research management in the federal government (DoD and US EPA) and in private industry (Chemical Industry Institute of Toxicology). His career contributions are in developing biologically realistic models of the uptake, distribution, metabolism, and biological effects of drugs and toxic chemicals and applying these models in safety assessments and quantitative health risk assessments. He is recognized for contributions in developing short-courses and computer demonstrations in pharmacokinetics and pharmacodynamic modeling. Dr. Andersen is an author or co-author of 225 papers and 33 book chapters. He has received several awards for professional contributions. These awards include the Herbert Stokinger Award (American Conference of Industrial Hygienists, 1988), the George Scott Award (Toxicology Forum, 1993), the Kenneth Morgareidge Award (International Life Sciences Institute, 1989), and both the Frank R. Blood (1982) and Achievement Awards (1984) from the Society of Toxicology. Dr. Andersen is board certified in Industrial Hygiene and in Toxicology. His current research interests are developing mathematical descriptions of control of genetic circuitry in the developing and adult organism and the dose response and risk assessment implications of these control processes. In June 2002, Dr. Andersen was recognized as a 'highly cited' scientist by the Institute for Scientific Information.

Baier-Anderson, Caroline

Environmental Defense, Washington, DC

Dr. Baier-Anderson is a Health Scientist with Environmental Defense and an Assistant Professor in the Department of Epidemiology and Preventive Medicine at the University of Maryland, Baltimore where she teaches graduate courses in risk assessment. She earned a PhD in Toxicology in 1999 from the University of Maryland, Baltimore, after which she served as a technical advisor to communities living adjacent to hazardous waste sites through an EPA-funded community assistance program. Through this experience she developed a broad understanding of multi-stakeholder problem solving strategies for complex environmental problems. In addition to serving as an Assistant Professor at the University of Maryland, she has worked as an industry consultant, conducting risk assessments on chemicals found in drinking water. She has also served as a consultant to the State of Delaware on air toxics health risks. In her current position as Health Scientist for Environmental Defense, Dr. Baier-Anderson provides technical and scientific support on chemical regulatory policy, air toxics risk assessment, and environmental health and safety risks of nanomaterials. Previous experience on advisory panels include service on the Interstate Technology & Regulatory Council Perchlorate and Risk Assessment Resources teams, as an external peer reviewer for the EPA Office of Water, Contaminant Candidate List 3 (CCL3), and as an expert on the Toxicology Excellence for Risk Assessment (TERA) Peer Consultation on the Relationship between PAC Profile and Toxicity of Petroleum Substances. She is currently serving on the National Academy of Sciences committee on Contaminated Drinking Water at Camp Lejeune.

Burton, G. Allen

Wright State University, Dayton, OH

Dr. Burton is Professor of Environmental Sciences and Chair of the Department of Earth and Environmental Sciences at Wright State University. He holds a B.S. in biology and chemistry from Ouachita Baptist University, an M.S. in microbiology from Auburn University, and a Ph.D. in environmental science from the University of Texas at Dallas. His areas of expertise and research interests include: methods to identify significant effects and stressors in contaminated aquatic systems; ecosystem risk assessments evaluating multiple levels of biological organization; and integrating laboratory and in situ toxicity tests with habitat characterizations and physicochemical profiles to determine the role of chemical contaminants among multiple stressors. Dr. Burton was the Brage Golding Distinguished Professor of Research. He has served on numerous national and international scientific committees, review panels and editorial boards and will serve as President of the World Council of the Society of Environmental Toxicology and Chemistry.

Eastmond, David

University of California – Riverside, Riverside, CA

Dr. Eastmond is Professor and Program Chair of the Environmental Toxicology Graduate Program at the U. of California, Riverside. He did his undergraduate work at Brigham Young University and completed his Ph.D. in toxicology at U. California, Berkeley in 1987. The research in Dr. Eastmond's laboratory focuses on the mechanisms involved in the toxicity and carcinogenesis of environmental chemicals. One important goal of this research is to provide information allowing the potential adverse health effects associated with chemical exposure in human populations to be more accurately estimated. Investigations are performed using a variety of chemical, biochemical and molecular approaches with isolated enzyme, cell culture and animal model systems. He is currently President of the Environmental Mutagen Society; serves on the National Council on Radiation Protection and Measurements (April 2004 -present) Carcinogen Identification Committee member, Science Advisory Board, Office of Environmental Health and Hazard Assessment, State of California, January 1999- November 2003. Member, ILSI Risk Science Institute Steering Committee for Screening Tests for Toxic Chemicals, 2002-present. Invited participant to the ILSI/Health Canada peer consultation panel on "Genotoxicity for Categorisation of "Inherent Toxicity" to Humans under CEPA '99", 2002. Panel member, US Environmental Protection Agency's Expert Panel Peer Review of Benzene Risk Assessment Update, 1997. Consultant to the US Environmental Protection Agency on chemical and radiation-induced leukemogenesis in humans and rodents and the value of rodent models for assessing risks of lymphohematopoietic cancers, 1995-96. Information on grant/contract support to be appended.

Feldman, Howard

American Petroleum Institute, Washington, DC

Howard Feldman works on behalf of the American Petroleum Institute's (API) members, focusing on key regulatory and scientific issues, including the health, environment, and safety aspects of the oil and gas industry. At API, Howard Feldman oversees efforts addressing air, water, waste, health and safety issues. His primary areas of interest are air quality and atmospheric sciences, including emissions, pollutant modeling and data analysis. He has held positions of increasing responsibility at API. Previously he served as the Manager of Environmental Sciences, Research Program Coordinator for Air Quality, Senior Environmental Scientist and Environmental Scientist at API. Howard Feldman has served on many government and private sector advisory panels and participated in numerous policy and technical efforts, including: • Moderator, NUATRC workshop Air Toxics Research: Implications of Research on Policies to Protect Public Health June 12-13, 2007 • Member, Air Quality Working Group, The Heinz Center, the State of the Nation's Ecosystems: 2006-07. • Plenary address, EPA's Emissions Inventory Conference: 2006. • Planning Committee member and Moderator, Coordinating Research Council Air Toxics Workshops 2004 and 2006. • Member, December 2003 Peer Review of the CMAQ Model. • Co-chairman of the NARSTO Executive Steering Committee, which addresses the management of regional and urban air quality in North America. 2000-02. • External peer reviewer, EPA's Air Toxics Risk Assessment library, 2002-2005. Member, Steering Committee. Howard Feldman's received a Master of Science degree in June, 1981 from the HARVARD SCHOOL OF PUBLIC HEALTH, HARVARD UNIVERSITY majoring in both Environmental Health Management and Air Pollution Control. He completed his Bachelor of Science degree in May, 1979 at the COLLEGE OF AGRICULTURE AND LIFE SCIENCES, CORNELL UNIVERSITY; he majored in Atmospheric Science, with courses in environmental quality.

Fenske, Richard

University of Washington, Seattle, WA

Dr. Fenske is Professor of Environmental and Occupational Health Sciences at the University of Washington and director of the NIOSH-supported Pacific Northwest Agricultural Safety and Health Center since its establishment in 1996. He also serves as Deputy Director of the EPA/NIEHS-supported UW Center for Child Environmental Health Risks Research, and is a core faculty

member of the NIEHS-supported Center for Ecogenetics and Environmental Health. Dr. Fenske has developed an international reputation in occupational skin exposure and agricultural hygiene. He developed the video imaging technique for assessing exposure (VITAE system), a method that allows visualization and quantification of dermal exposure to hazardous chemicals. The VITAE system has been adopted by occupational health research laboratories in the United Kingdom, The Netherlands and Canada, as well as at the NIOSH-sponsored Great Plains Center for Agricultural Health, University of Iowa. He continues to maintain an active program of research and publication in this field. His work over the last several years has focused on children's exposure to pesticides in agricultural communities. Dr. Fenske serves on the National Advisory Panel of the National Cancer Institute's Agricultural Health Study, a prospective epidemiological study of pesticide applicators and their families that involves researchers from U.S. EPA and NIEHS. In 2002 Dr. Fenske was appointed to the National Academy of Sciences/Institute of Medicine Committee to Review the Health Effects in Vietnam Veterans of Exposure to Herbicides. He served as a member of the Agriculture Committee of the American Conference of Governmental Industrial Hygienists from 1993-2000. Dr. Fenske has provided testimony to the U.S. Senate Subcommittee on Toxic Substances, Environmental Oversight, Research and Development regarding children's exposure to pesticides. He was an invited speaker at the Surgeon General's Conference on Agricultural Safety and Health in 1991, and also served as an Outside Reviewer for the initial NIOSH sponsored Farm Family Health Hazard Surveillance proposals. He served on the NIOSH National Occupational Research Agenda (NORA) Allergic and Irritant Dermatitis team from 1997-2002. From 1984-1990 Dr. Fenske was Assistant Professor and then Associate Professor of Environmental Sciences at Rutgers University. Prior to this position, he received his doctoral degree and the Master of Public Health degree from UC Berkeley in Environmental Health Sciences. He earned a bachelor's degree in history from Stanford University.

Gentile, Thomas

New York State Department of Environmental Conservation, Albany, NY

Thomas Gentile, M.S. is a Research Scientist and serves as Chief of the Air Toxics Section in the Division of Air Resources with the New York State Department of Environmental Conservation (NYSDEC) in Albany, New York. Mr. Gentile received his Bachelor's degree in Biology at North Adams State College, followed by a Master's of Science in Public Health from the School of Public Health at the University of Massachusetts at Amherst. His public health concentration was Environmental Health. Mr. Gentile supervises the Air Toxics Section which was established to protect the public and the environment from the adverse effects of exposure to toxic air contaminants. The section is responsible for the risk assessment of air toxics in support of the air quality permitting program, as well as, other special studies involving the assessment of air toxics in communities across New York. He has worked on numerous air toxics issues at the State and Federal level. He was a member of the Clean Air Act Advisory Committee (CAAC) Workgroup working on the development of a National Integrated Urban Air Toxics Strategy for reducing air pollution, the Chemical Information Management Project with the Forum on State and Tribal Toxics Actions (FOSTTA), former chairman of the Northeast States for Coordinated Air Use Management (NESCAUM) Air Quality and Public Health Committee, served as a core workgroup reviewer on the USEPA Mercury Study Report to Congress, is a current member of the NYSDEC Mercury Task Force, and served as a consultant to the USEPA Science Advisory Board Executive Committee on risk assessment and air pollution issues. In 2003, Mr. Gentile was awarded the Alexander Rihm Jr. Outstanding Service Award by his peers for his work in the New York State Air Resources Program.

Gephart, Larry

EXXONMOBIL BIOMEDICAL SCIENCES INC, Annandale, NJ

Mr. Gephart received his Masters in Environmental and Industrial Health with a specialization in toxicology from the University of Michigan. He is a Diplomat of the American Board of Toxicology (DABT). Prior to joining ExxonMobil Biomedical Sciences, Inc. (EMBSI) in 1990, Mr. Gephart worked as a corporate toxicologist at the Eastman Kodak Company for ten years. At EMBSI, he is the manager of the Air Quality program, and administrator for the ExxonMobil Occupational Exposure Level Committee. Mr. Gephart also manages a group of toxicologists engaged in providing health, toxicity, and regulatory advice to the worldwide polyethylene, polypropylene, butyl, elastomers, and adhesives business groups. He is a former member of the EPA Federal Advisory Committee on Acute Exposure Guideline Levels, and former Chairperson for the American Industrial Hygiene Association Emergency Response Planning Guideline Committee. Recently completed projects relating to air issues include preparation of science comments on the NAAQS for PM, ozone, oxides of sulfur, and nitrogen oxides submitted to EPA by ExxonMobil and preparation of technical comments on the health aspects of reducing sulfur in bunker fuels provided to the International Maritime Organization. Mr. Gephart published a number of papers in peer reviewed toxicology journals, and wrote a chapter entitled "Air Pollution" in Health and Safety beyond the Workplace, John Wiley & Sons, eds.

Ginsberg, Gary

Connecticut Department of Public Health, Hartford, CT

Dr. Ginsberg is a toxicologist at the Connecticut Department of Public Health within the Division of Environmental and

Occupational Health Assessment. He has responsibility for human health risk assessments conducted in the state. Dr. Ginsberg serves as adjunct faculty at the Yale School of Medicine and is an Assistant Clinical Professor at the University of Connecticut, School of Medicine. He recently finished serving on the National Academy of Science Panel on Biomonitoring and he currently serves on the NAS Panel that is evaluating USEPA risk methods. He has been invited to testify at Congressional hearings on toxics issues on a number of occasions. He received a Ph.D. in toxicology from the University of Connecticut (Storrs) and was a post-doctoral fellow in carcinogenesis/mutagenesis at the Coriell Institute for Medical Research. Dr. Ginsberg's toxicology experience has involved a variety of settings: basic research, teaching, working within the pesticide and consulting industries, and now working in public health. He has published in the areas of toxicology, carcinogenesis, physiologically-based pharmacokinetic modeling, inter-individual variability and children's risk assessment. Dr. Ginsberg is also co-author of a book on toxics for the lay public, "What's Toxic, What's Not:" Berkley Books, December 2006.

Graham, Judith A.

Independent Consultant, Pittsboro, NC

Dr. Graham is an independent consultant on chemical health risk-related issues (12/07-present). She retired as the Managing Director (1/06-11/07) of the Long-Range Research Initiative (LRI) Team of the American Chemistry Council, where she also served as a Senior Scientist/Senior Director (12/00-12/05). She was responsible for the direction of the LRI, which sponsors an independent research program that advances the science of risk assessment for the health and ecological effects of chemicals to support decision-making by government, industry, and the public; coordinated with the International Council of Chemical Associations; and provided scientific consultation/representation inside and outside the American Chemistry Council. Prior to this, she retired from the U.S. Environmental Protection Agency's Office of Research and Development after 32 years of service. During that time, she served as an investigator, a Principal Investigator, Chief of the Branch that conducts animal inhalation toxicology research (7/80-7/85), Deputy Director of the Health Effects Research Laboratory (7/85-7/88), Associate Director of the Environmental Criteria and Assessment Office--Research Triangle Park (7/88-5/95), and Associate Director for Health of the National Exposure Research Laboratory (NERL)(5/95-11/00). She has a Ph.D. in physiology and pharmacology from Duke University (1979). She is a Fellow of the Academy of Toxicological Sciences and was elected President. She has been elected President of the International Society for Exposure Analysis (ISEA), President of the Inhalation Specialty Section of the Society of Toxicology (SOT), and President of the Risk Assessment Specialty Section of SOT. She is a member of the Board on Environmental Studies and Toxicology of the National Research Council, where she has served on several committees. She recently served on the Federal Advisory Committee for the National Child Study. Dr. Graham is an author of over 135 journal articles, book chapters, and conference proceedings (primarily on the health effects and health risks of air pollutants) and has made over 90 presentations (over 60 of which were invited) on these topics at national and international meetings. Dr. Graham has consulted extensively inside and outside EPA on the health effects or health risks of chemicals, especially air pollutants. Predominantly, this has involved advising EPA program offices that develop rules and regulations. She has been a senior consultant to the World Health Organization on their development of health-based Air Quality Guidelines for Europe that formed the scientific bases for regulatory activities by the European Commission and member countries. In addition, Dr. Graham has made extensive contributions to health risk assessments for EPA; for example, she was a co-author of 14 health chapters in Criteria Documents for Ozone, Sulfur Oxides, Particulate Matter, and Nitrogen Oxides. These Documents formed the scientific bases for the National Ambient Air Quality Standards. She also is expert in health risks of hazardous air pollutants, having published on some, contributed to WHO Air Quality Guidelines of some, and been very involved in ORD's management of the hazardous air pollutant research program. She was also a member of the EPA team that contributed to the hazardous air pollutant Title of the 1990 Clean Air Act Revisions. Dr. Graham has won numerous awards. Since 1990, they include: Office of Health and Environmental Assessment Peer Award for Managerial Excellence, 1991; ORD Unusually Outstanding Award in recognition of outstanding management and effective leadership within ORD, 1992; EPA Bronze Medals (for leadership on the ORD MMT Team, 1992; for evaluation of tropospheric ozone control, 1994; for contributions to the Fuels and Fuel Additives Health Effects Testing Rule, 1995; for the planning and completion of health research on MTBE, 1995; for outstanding support to EPA in reevaluating the health risks of gasoline containing MMT, 1996; and for outstanding and exceptional scientific contributions in completing the Air Quality Criteria Document for Ozone, 1997); the 1998 Career Achievement Award for outstanding achievement in inhalation toxicology from the Inhalation Specialty Section of SOT; the EPA Distinguished Career Award, 2001; and the Jerome J. Wesolowski award for outstanding contributions to human exposure assessment from the International Society of Exposure Analysis, 2005. In addition to her scientific activities, Dr. Graham has extensive managerial and executive experiences. For example, as Deputy Director of the Health Effects Research Laboratory, she shared with the Director the responsibility for a staff of about 300 and for funding acquisition, allocation, and administration of a budget of over \$40 million per year. As the Associate Director of NERL, she scientifically directed a program of about 180 people and \$35 million per year.

Harris, Cynthia

Florida A&M University, Tallahassee, FL

Dr. Harris attended the University of Kansas, where she received a B.A. (Honors' degree) in biology (1978) and a M.A. in genetics (1981). She received her Ph.D. in the biomedical sciences from Meharry Medical College in 1985, with concentration in the areas of nutritional biochemistry and toxicology. Dr. Harris was awarded a postdoctoral fellowship in the Interdisciplinary Programs in Health of the Harvard School of Public Health, where she conducted research regarding the effects of heavy metals on pulmonary function and environmental risk assessment. She is a Diplomate of the American Board of Toxicology (DABT). From 1990-1996, Dr. Harris served as a staff toxicologist and branch chief with the Agency for Toxic Substances and Disease Registry, a sister agency of the Centers for Disease Control and Prevention, in Atlanta, Georgia. Dr. Harris was the first African American branch chief of the Agency for Toxic Substances and Disease Registry. As branch chief of the Community Health Branch, she was responsible for the administration and management of staff who conducted environmental health assessments, at the request of individual citizens and community groups across the nation. In 1996, Dr. Harris accepted the position of Director of the Institute of Public Health at Florida A&M University. Since her tenure, she has been actively engaged in the general planning and development of the MPH program. The 1997 Florida State Legislature approved and appropriated funding to support the MPH program and the MPH program received full, maximum accreditation for its initial review (2000-2005). Dr. Harris has served on numerous committees and panels, which includes membership on the Board of Directors for the Florida Public Health Association, Chair of the Florida Public Health Partnership Council on Stroke, member of the Pregnancy Mortality Review Board, member of the Florida Sickle Cell Task Force, member of the American Public Health Association, member of the editorial board of the Harvard Journal of Public Health, reviewer for the Journal of Environmental Health, and board member for the Panhandle Chapter of the Florida March of Dimes. She has also provided a review for the Food and Nutrition Board of the National Academy of Sciences. She is a Full Member of the Society of Toxicology and was appointed by the Secretary of the U.S. Department of Health and Human Services to the Agency for Toxic Substances and Disease Registry Board of Scientific Counselors. In addition, she has served on numerous grant reviews for several federal agencies such as CDC, NIOSH, NIEHS and HRSA. She was also a panel member for the IOM Committee on the Gulf War and Health and was recently appointed by Congresswoman Donna Christensen to the Congressional Black Caucus Homeland Security Advisory Board. In December of 2004, Dr. Harris was appointed to the Council on Education for Public Health (CEPH) Board of Councilors for a three year term. CEPH is the national accrediting agency for all public health programs and schools of public health.

Huff, James

National Institute of Environmental Health Sciences, RTP, NC

Dr. Huff currently resides in the Office of the Director, NIEHS. His major research interests center on chemical carcinogenesis and their possible impact on environmental, occupational, and general public health. These activities include: conducting and evaluating long-term chemical carcinogenesis bioassays; exploring mechanisms of carcinogenic activity; identifying potential human carcinogens; conducting, evaluating, and refining in vitro and in vivo systems to improve cancer hazard predictions and risk assessments; pursuing environmental, occupational, and lifestyle causes of cancer; and examining issues and controversies in the quest to improved public health. He continues these activities by continuing to commit and dedicate his expertise, energy, and experience to reducing the cancer burden from chemicals and other environmental carcinogenic exposure circumstances. Dr. Huff is an elected member of the Collegium Ramazzini, an international community of 180 scholars in honor of Bernardino Ramazzini, to advance the study of occupational and environmental health issues around the world. Ramazzini Days are held annually in his birthplace Carpi, Italy. Dr. Huff has been an invited speaker, chairperson, or organizer at numerous national and international workshops, symposia, and conferences, and has authored or coauthored upwards of 300 scientific publications. In addition to these, and the nearly 350 corporate toxicology documents, IARC Monographs, and NTP Technical Reports, he initiated and was the lead editor on a book on hormonal carcinogenesis: Huff J, Boyd J, Barrett JC [Editors].

La Point, Thomas W.

University of North Texas, Denton, TX

Dr. La Point is a Senior Scientist in the Institute of Applied Sciences at the University of North Texas and a Professor in the Department of Biological Sciences. He received his Ph.D. from the Department of Biological Sciences at Idaho State University in Aquatic Biology. His primary research and teaching interests include contaminant effects on freshwater aquatic communities, specifically in how metals and organic contaminants affect benthic population dynamics and freshwater fisheries. He has published on ecosystem measures, contaminant bioaccumulation, and sub-lethal effects on aquatic populations. Dr. La Point has served on several USEPA Science Advisory panels concerned with pesticides and ecological risk and has worked as a consultant on Superfund issues at large sites. Dr. La Point also served on a National Academy of Science NRC Committee on Superfund Site Assessment and Remediation in the Coeur d'Alene River Basin. He is serving as Chair of a Water Environment Research Foundation subcommittee on whole-effluent testing as an indicator of aquatic health. He has served on several NSF, USEPA and USGS panels to review proposals submitted for funding. He is on the editorial board for Chemosphere and Environmental Toxicology and Pharmacology and has served as Editor of the Society of Environmental Toxicology and

Chemistry (SETAC) Special Publication Series. Dr. La Point's current research is funded by the USEPA, COE, and the City of Denton, TX.

Li, Abby

Exponent Incorporated, San Francisco, CA

Dr. Li is a Senior Managing Scientist in the Health Science Practice of Exponent Inc., a scientific consulting firm. Her areas of interest include adult and developmental neurotoxicology, and risk assessment. She is currently doing research evaluating the neurotoxic potential of solvents and pesticides. Previously to joining Exponent Inc., Dr. Li was Senior Science Fellow at Monsanto, providing expertise in toxicology/risk assessment to address regulatory science issues in different world areas. She led the neurotoxicology group at Monsanto's Environmental Health Laboratory for more than ten years where she conducted pharmacokinetic, toxicology and neurotoxicology studies for industrial chemicals, agricultural products, and pharmaceuticals. Dr. Li served on the U.S. expert teams to the Organization for Economic Cooperation and Development (OECD) for the development of international test guidelines for adult and developmental neurotoxicology, and as chair of neurotoxicology expert groups for industry trade organizations (i.e., the American Chemistry Council's long-range research program and American Industrial Health Council) addressing scientific/regulatory issues in neurotoxicology. Dr. Li was a full member of the EPA's Science Advisory Board's Environmental Health Committee for 6 years, and a member of several International Life Science Institute Committees on developmental neurotoxicology and toxicity testing of pesticides. She also served on the National Academy of Science's National Research Council Committee on Toxicity Testing and Assessment of Environmental Agents. She received her Ph.D. in pharmacology and physiology from the University of Chicago.

London, Stephanie

National Institute of Environmental Health Sciences, RTP, NC

Dr. London obtained her A.B.(1978), M.D.(1983), and Dr.P.H. (1989) in Epidemiology from Harvard University. She completed a residency in internal medicine at the Massachusetts General Hospital in 1986 and a residency in Occupational and Environmental Medicine at Harvard in 1989. She was an assistant professor at the University of Southern California School of Medicine from 1989 through 1995 where she was part of a small team of investigators who founded a landmark study of health effects of air pollution in school children known as the Children's Health Study. She came to the National Institute of Environmental Health Sciences in 1995 and received tenure in 2001. She is currently a senior investigator in the Epidemiology Branch with a joint appointment in the Laboratory of Respiratory Biology. Her work focuses on genetics and interactions between genetics, diet and environmental pollutants in relation to asthma and chronic obstructive pulmonary disease. Dr. London's research is supported in full by the Division of Intramural Research. She receives no external funding. Dr. London served as the federal chair of the Asthma Working Group of the National Children's Study. This committee drafted hypotheses for the study which were kept in the final study plans. She has also served on the International Program Committee of the American Thoracic Society and is active in various leadership committees of the Environmental and Occupational Health Assembly of the American Thoracic Society. She served as a Councilor of the International Society for Environmental Epidemiology and was on the organizing committee for the 2007 International Meeting to be held in Mexico City.

MacIntosh, David

Environmental Health & Engineering Inc., Newton, MA

Dr. MacIntosh, Sc.D. is a Senior Associate at Environmental Health & Engineering, Inc. (EH&E) in Newton, MA. Dr. MacIntosh's focus includes aggregate and cumulative exposure to chemical and biological pollutants in occupational and community settings. He possesses extensive experience in ascertaining the determinants of short-term, longitudinal, and chronic exposure to pollutants with direct application to remediation, risk assessment and epidemiology. He is also experienced in measurements and models of pollutants on indoor and ambient air quality with emphasis on pesticides, particulate matter, volatile organic compounds, and heavy metals. Dr. MacIntosh provides project management for environmental health and safety issues. He works on several projects sponsored by the U.S. Environmental Protection Agency, including the IAQ Practices in Schools, Large Building Survey Analysis, and Risks to Elderly from Indoor Air. Dr. MacIntosh collaborated on a multi-center investigation of children's exposure to non-persistent insecticides and a study of human immune system response to particulate matter of different origin. In 2002, MacIntosh was honored by the International Society for Exposure Analysis with the Joan M. Daisy Outstanding Young Scientist Award, which recognizes "outstanding contributions to the science of human exposure analysis by a young scientist." Prior to joining the EH&E, he earned tenure as an Associate Professor in the Department of Environmental Health Science at the University of Georgia, Athens, Georgia.

Maddalena, Randy

Lawrence Berkeley National Laboratory, Berkeley, CA

Dr. Maddalena is a Scientist in the Exposure and Risk Analysis Group within the Environmental Energy Technologies Division at

Lawrence Berkeley National Laboratory. He received his BS in Environmental Toxicology (1992) and his Ph.D. in Agricultural and Environmental Chemistry (1998) from the University of California, Davis. The primary focus of his research is development, evaluation and application of models that predict chemical fate in multiple environmental media (air, water, soil, vegetation, sediment) and chemical exposures through multiple pathways (drinking water, food, feed, indoor air) for both human and ecological receptors. He also develops tools and methods for performing probabilistic risk assessment and sensitivity analysis applied to complex regulatory models. His most recent work combines the use of models and experimental data to investigate how vegetation influences the environmental fate and transport of semivolatile organic pollutants and how the uptake of these pollutants into ecological or agricultural food chains might contribute to dietary exposures. Dr. Maddalena is a Co-chair of the Society of Environmental Toxicology and Chemistry (SETAC) Advisory Group on Fate and Exposure Modeling where he serves as an Editor of the Fate and Exposure Modeling column in the SETAC Globe. He is also a member of the International Society of Exposure Analysis and a member of the SAB's Integrated Human Exposure Committee.

McKone, Thomas E.

Lawrence Berkeley National Laboratory and University of California, Berkeley, CA

Thomas E. McKone is a Senior Staff Scientist and Deputy Department Head at the Lawrence Berkeley National Laboratory and an Adjunct Professor and researcher with the School of Public Health at the University of California, Berkeley. His research interests include the development, use, and evaluation of models and data for human-health and ecological risk assessments; chemical transport and transformation in the environment; and the health and environmental impacts of energy, industrial, and agricultural systems. In addition to his research and teaching activities with the University of California, Dr. McKone is active in other research, regulatory, and professional organizations. He has been a member of several National Academy of Sciences Committees and served six years on the EPA Science Advisory Board. He is past-president of the International Society of Exposure Analysis (ISEA) and has been on consultant committees for the Organization for Economic Cooperation and Development (OECD), the World Health Organization, the International Atomic Energy Agency, and the Food and Agriculture Organization. He is also currently a member of the International Life-Cycle Initiative Panel, a joint effort of the United Nations Environment Program (UNEP) and the Society for Environmental Toxicology and Chemistry (SETAC). The ISEA awarded him the 2003 Constance L. Mehlman Award for "contributions in exposure analysis research" that have provided "new approaches for the reduction or prevention of exposures" and have "helped shape national and state policies." Dr. McKone received his M.S. and Ph.D. in engineering from the University of California at Los Angeles.

Milford, Jana

University of Colorado, Boulder, CO

Dr. Milford is an Associate Professor in the Department of Mechanical Engineering at the University of Colorado at Boulder. She has previously worked as a Congressional Fellow, an Analyst at the Congressional Office of Technology Assessment, an Assistant Professor in the Department of Civil Engineering at the University of Connecticut, and a Senior Scientist and Staff Attorney at Environmental Defense. Dr. Milford holds a B.S. in Engineering Science from Iowa State University, a M.S. in Civil Engineering from Carnegie Mellon University, a Ph.D. in Engineering and Public Policy from Carnegie Mellon University, and a J.D. from the University of Colorado, School of Law. Dr. Milford's research interests focus on photochemical air quality modeling, air pollution receptor modeling, sensitivity and uncertainty analysis of environmental models, and air quality management. She is co-author, with Anu Ramaswami and Mitchell Small, of Integrated Environmental Modeling: Pollutant Transport, Fate, and Risk in the Environment (John Wiley and Sons, 2005). She has served on the Colorado Air Quality Control Commission, the National Research Council Committee on Air Quality Management in the United States, and the National Research Council Committee on Energy Futures and Air Pollution in Urban China and the United States. She has also served as a consultant to the Science Advisory Board's National Air Toxics Assessment Subcommittee, Environmental Models Subcommittee, Radiation Advisory Committee, and Air Toxics Monitoring Strategy Subcommittee.

Mogolesko, Fred

Entergy Corporation

Dr. Mogolesko is currently a Senior Project Manager for the Entergy Corporation and a private environmental consultant. He has an earned PhD and MS from New York University in Oceanography and Meteorology, and an earned MS and BS from the Polytechnic Institute of Brooklyn in Aerospace Engineering and Applied Mechanics. Dr. Mogolesko has had responsibilities for circulation and dispersion modeling for the ocean and atmosphere with specific emphasis on sea breeze/land breeze scenarios, he has studied and published results associated with the probable maximum hurricane event, has evaluated emergency planning scenarios using the DOE's MACCS2 code, has responsibility for risk assessments, and has assessed various dispersion models developed by EPA and DOE for Emergency Planning needs. In addition, from the consulting side, he developed early guidance for wind energy projects sponsored by the Solar Energy Research Institute. Dr. Mogolesko is a Certified Consulting Meteorologist under the sponsorship of the American Meteorological Society. He was Chairman of a Nuclear Energy Institute

Task Force charged with reviewing the state-of-the-art for atmospheric dispersion models. Dr. Mogolesko was a peer reviewer for EPA's Industrial Source Complex Dispersion Model and the Sampled Chronological Model. In addition, Dr. Mogolesko participated in DOE atmospheric dispersion modeling workshops. He was an Associate Editor for the Journal of Applied Meteorology and Chairman of the BWROG's Committee on Instrument Uncertainty.

O'Donoghue, John

University of Rochester, Rochester, NY

Dr. O'Donoghue received his VMD (1970) and Ph.D. (Pathology, 1979) degrees from the University of Pennsylvania. He was appointed to the adjunct faculty of the University of Rochester, School of Medicine and Dentistry in 1975. He has taught in the fields of general toxicology, neurotoxicology, neuropathology, toxicologic pathology, and forensic toxicology. He currently holds the position of Associate Professor. In 1974, he joined the Health and Environment Laboratories of Eastman Kodak Company as a pathologist retiring as Vice President, Health, Safety and Environment in 2004. As Vice President, he was responsible for research and development activities in the areas of toxicology, pathology, epidemiology, industrial hygiene, environmental engineering, and product safety. Dr. O'Donoghue has served on numerous national research review and advisory panels including committees of the US Environmental Protection Agency, the National Academy of Sciences, and the Institute of Medicine. In addition, Dr. O'Donoghue has served on the editorial boards of Neurotoxicology, Toxicological Sciences, and Fundamental and Applied Toxicology. He has held positions on the Executive Board of the Neurotoxicology Specialty Section of the Society of Toxicology and the Chemical Industry Institute of Toxicology. He is a Diplomate of the American Board of Toxicology, licensed in the practice of veterinary medicine in multiple states, and an accredited veterinarian with the US Department of Agriculture since 1970. His research has focused on occupational and environmental neurotoxicants as risk factors for developmental and degenerative diseases of the central and peripheral nervous systems. Currently his research involves the effects of environmental chemicals on the developing neuroendocrine system and the effects of lifetime exposures to environmental sources of mercury on the human brain.

Orlov, Alexander

State University of New York, Stony Brook, NY

Dr. Orlov is an Assistant Professor of Materials Science and Engineering at State University of New York, Stony Brook, USA. He is also a faculty member of the Consortium for Interdisciplinary Environmental Research. Previously he was a Research Fellow in Science and Engineering at the University of Cambridge/King's College, UK. Dr. Orlov is appointed by the UK Secretary of State to advise the current Labour Government on such environmental issues as hazardous substances and environmental impact of nanotechnology. Previously, he was a member of the UK Conservative Party Task Force charged with a development of the Science Policy for the next Conservative Government. Dr. Orlov's research experience also served him in his position as consultant to several USA congressmen, the EU Commission and the Ukrainian Ministry of Ecology and Natural Resources. Alexander has 5 degrees from various European and the US institutions, including: Doctoral and Master's degrees in Chemistry from the University of Cambridge (UK) and Master's degree in Engineering from the University of Michigan (USA). His major research and teaching activities are in environmental science, materials science, sustainable development, environmental aspects of energy production, environmental technology and nano-technology areas. Dr. Orlov is a recipient of National Endowment for Science Technology and Arts CRUCIBLE award (UK), focused on developing skills in communicating science to general public and policy makers. Alexander's opinions, interviews and comments appeared in Nature, BBC, Daily Telegraph and Cambridge Evening News.

Raun, Loren

Rice University and City of Houston, Houston, TX

Dr. Raun (PhD) teaches graduate applied environmental statistics and human health risk assessment at Rice University in Houston and serves as the Senior Environmental Analyst for the Mayor's Office of Environmental Programming in the City of Houston. Her expertise lies in environmental statistics, human-health risk assessment and contaminant modeling with a focus on toxic air pollution. Her applied research and quantitative analysis skills from her work at Rice facilitate: statistical assessment of Houston toxic air pollution monitoring data (e.g. trends, redundancy, data gaps, distributional analysis) and the toxic emission inventory (e.g., ambient/emission inventory ground truthing, empirical source apportionment analysis), and carcinogenic/noncarcinogenic human health risk assessment from air toxics. She is the principal author of a voluntary benzene reduction plan for industry in Houston that was based on an analysis of pollution reduction measures that could significantly reduce health risks in Houston. Dr. Raun provided the technical expertise regarding risk reduction on which the City based a proposed ordinance to address ambient air concentrations of certain hazardous air pollutants. She has represented the City on panels discussing risk assessment methodology. She was the primary contributor to the City's extensive comments regarding the EPA's recent proposed rules to address residual risks from refinery emissions, and she provided oral testimony in that rulemaking. In Summary: Educational Background 1998 Ph.D. Environmental Science and Engineering, Rice University Thesis

research: Statistical Investigation of Air Pollution, Human Exposure Assessment; empirical modeling of ozone monitoring data using 3-D kriging, correlated to personal monitoring and exposure, asthma incidence and decrease in lung function in children and athletes 1989 M.S., Environmental Science and Engineering, Rice University Thesis research: Groundwater Pollution, Stochastic Groundwater Fate and Transport Modeling; developed probabilistic input distributions for groundwater transport parameters for a range of hydrogeologic environments and lithologies and evaluated EPA Land ban model EPACML, (Monte Carlo) 1986 B.S., Geophysics, University of Texas Current Professional Affiliations Lecturer, Rice University, Statistics Department, Quantitative Environmental Decision Making and Human Health Risk Assessment. Air Pollution Researcher/Senior Environmental Analyst, Mayor's Office, City of Houston Office of Environmental Programming. Areas of Interest Dr. Raun has written numerous technical papers, taught environmental statistics and risk assessment to professionals across the U.S. and has 20 years of experience in the environmental field as an environmental consultant for private industry, academician, and government contractor/employee.

Rood, Mark

University of Illinois, Urbana, IL

Dr. Rood is the Ivan Racheff Professor of Environmental Engineering in the Department of Civil and Environmental Engineering at University of Illinois (Urbana-Champaign). He received his BSE degree in Environmental Engineering from Illinois Institute of Technology and his MSE and PhD degrees in Environmental Engineering from University of Washington. Professor Rood's interests are in the areas of sustainability, physical-chemical treatment processes using nanomaterials, and aerosol optics and chemistry. Professor Rood's research group has received more than 17 national awards from the Association of Environmental Engineering and Science Professors (AEESP), Air and Waste Management Association (AWMA), American Carbon Society, and American Chemical Society. His distinguished service is recognized with his past appointments as the Chief Editor of ASCE's Journal of Environmental Engineering, as Treasurer and member of the Executive Board of the AEESP, and as an associate editor for Journal of AWMA.

Smith, Douglas G.

ENSR International, Inc., Westford, MA

Dr. Smith, Sc.D. is a Principal Scientist in ENSR's Risk Assessment group with degrees in Environmental Health Sciences (specializing in Air Pollution and Industrial Hygiene) and Physics. He has 28 years of experience in risk assessment of toxic airborne materials, including atmospheric transport and diffusion modeling, with applications to environmental siting and permitting. Most recently, Dr. Smith has also led more than a dozen multi-pathway risk assessment projects in support of RCRA permitting and strategic planning for chemical industry members who use incinerators, or boilers and industrial furnaces (BIFs) for waste disposal and energy recovery. These projects are active in U.S. EPA Regions 2, 3, 4, 5, and 6 and have included supporting applications or updates for permits in New York, New Jersey, Ohio, Pennsylvania, Illinois, Georgia, Kentucky, Tennessee, W. Virginia, Louisiana, and Texas. In early 2000, Dr. Smith presented ENSR's team findings in response to an EPA request for an independent external peer review of their "Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities. Dr. Smith has also provided expert testimony on several other occasions for chemical industry clients in toxic tort proceedings and has authored more than 25 publications and technical presentations on hazardous air pollutants, modeling issues and accidental releases. His Sc.D. and M.S. degrees in Environmental Health Sciences are from Harvard University School of Public Health, and his A.B. in Physics is from Franklin and Marshall College. In addition, Dr. Smith has provided expert advice and support to clients in the chemical and pharmaceutical industries on exposure and risk analysis, as well as emergency response planning, preparedness and communication requirements for effective risk management programs. This support has included overall program design, as well as training and auditing for OSHA's Process Safety Management (PSM) rule, and U.S. EPA's Risk Management Planning (RMP) rule.

Stubblefield, William

Parametrix, Inc., Corvallis, OR

Dr. Stubblefield is a senior environmental toxicologist with Parametrix, Inc. in Corvallis, Oregon; he also holds a courtesy faculty appointment in the Department Molecular and Environmental Toxicology at Oregon State University. Dr. Stubblefield has more than 15 years of experience in environmental toxicology, ecological risk assessment, water quality criteria derivation, and aquatic and wildlife toxicology studies. He has authored more than 50 peer-reviewed publications and technical presentations in the areas of aquatic and wildlife toxicology and environmental risk assessment. He is a co-editor of a recently published book entitled, "Re-evaluation of the State of the Science for Water Quality Criteria," that specifically examines the issues and approaches to be used in the evaluation of environmental impacts associated with contaminants in multiple media. Dr. Stubblefield's research efforts have looked at the fate and effects of metal and hydrocarbon contaminants in the environment and the relationships between these contaminants in the water/sediment/soil compartments. He has also investigated food chain concerns through research efforts such as the investigation of metals transfer in resident aquatic and

terrestrial organisms on Alaska's North Slope. His most recent research uses a combination of laboratory and field methods to investigate the effects of storm water-associated short-term pulse exposures of metals to aquatic organisms and examines the fate and disposition of storm water-associated metals in natural systems. About 70% of Parametrix projects are funded by municipal and other government agencies the remainder are industrial clients. Funding for the majority of Dr. Stubblefield's metal related work comes from industrial trade associations or not-for-profit research organizations working in cooperation with U.S. EPA. Dr. Stubblefield is an active member of the Society of Environmental Toxicology and Chemistry, where he serves as the Society's vice-president, member of the Board of Directors, chairman of the Publications Advisory Council, chairman of the SETAC's Metals Advisory Group, past member of the Editorial Board for Environmental Toxicology and Chemistry, and 2002 annual meeting co-chair. He has been an invited participant at a number of scientific and regulatory conferences, served on U.S. EPA peer-review panels, and frequently acts as a technical reviewer for a number of scientific publications. Dr. Stubblefield has a Ph.D. in Environmental Toxicology from the University of Wyoming, a M.S. degree in Toxicology/Toxicodynamics from the University of Kentucky, and a B.S. in Biology from Eastern Kentucky University.

Veranth, John

University of Utah, Salt Lake City, UT

Veranth, John M. POSITION TITLE Research Associate Professor Department of Pharmacology and Toxicology a) Professional Affiliations Jun 1999- Dec 2001 Research Assistant Professor, Department of Chemical Engineering, University of Utah, Salt Lake City, UT Jan 2002 - Present Research Assistant/Associate Professor, Department of Pharmacology and Toxicology, University of Utah, Community Service Related to Air Quality b. Areas of Expertise Air pollution control, hazardous waste treatment, air quality, particulate matter, chemical toxicology. c. Leadership positions in national associations. Chair, Health-related aerosols working group, American Association for Aerosol Research. Current term. Peer reviewer for multiple journals: Atmospheric Environment, Particle & Fibre Toxicology, Toxicological Sciences, Journal of the Air & Waste Management Association, Science of the Total Environment, Environmental Science & Technology, Aerosol Science & Technology, etc. d. Education EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.) INSTITUTION AND LOCATION DEGREE (if applicable) YEAR(s) FIELD OF STUDY Massachusetts Institute of Technology BS 1971 Mechanical Eng Massachusetts Institute of Technology MS 1974 Mechanical Eng University of Utah MBA 1979 Business University of Utah PhD 1998 Chemical Eng e. Service on Advisory Panels Member and Chair, Utah Air Quality Board. This is the politically-appointed body with rule-making authority for the state Department of Air Quality. Member, Western Regional Air Partnership, Technical Oversight Committee. Review Panel - US EPA STAR and GRO Fellowship Programs, February 2005. EPA-STAR Human Exposure and Bioavailability research proposals. 2007 Invited participant: Workshop on research needs for assessment and management on non-point air emissions from DoD activities 2008

Walcek, Chris

State University of New York, Albany, NY

Dr. Chris Walcek is a Senior Research Scientist at the Atmospheric Sciences Research Center of the State University of New York at Albany. He holds B.S., M.S. and Ph.D. degrees in Atmospheric Sciences from the University of California Los Angeles. His area of expertise and research activities focus on physical meteorology atmospheric chemistry and cloud physics, with specific emphasis on acid rain, ozone formation, heterogeneous chemistry, numerical methods, pollution dispersion, and modeling regional tropospheric pollution. He chaired the American Meteorological Society Atmospheric Chemistry committee from 1996 to 2000. Over the past 10 years he has served on numerous EPA grant and fellowship review panels providing technical review of air pollution related research projects administered by the EPA.

ATTACHMENT 3

List of Public Commenters on the “Short List” Candidates

Colin O’Brien	Natural Resources Defense Council (NRDC)
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