Invitation for Public Comment on the List of Candidates for the EPA Science Advisory Board (SAB) Ecological Process and Effects Committee (EPEC) Augmented for the Review of the Lake Erie Phosphorus Objectives Review

September 3, 2104

The U.S. Environmental Protection Agency (EPA) Region 5 requested the Science Advisory Board (SAB) to form an SAB panel to provide early advice from the SAB on the appropriateness of modeling approaches to meet the Great Lakes Water Quality Agreement (GLWQA) Lake Ecosystem Objectives. Region 5 has also requested a subsequent SAB review of the modeled phosphorus targets and loads. The SAB staff Office plans to augment the Ecological Processes and Effects Committee with experts in one or more of the following areas, algal and cyanobacteria ecology, aquatic ecology, hydrology, limnology, ecosystem modeling, and nutrient fate and transport to provide early advice and conduct the subsequent review.

EPA Region 5 is co-leading a binational workgroup to develop and implement the Nutrients Annex (''Annex 4'') in accordance with Article 3(b)(i) of the 2012 GLWQA. Under Annex 4, the U.S. and Canada are charged with establishing binational Substance Objectives for phosphorus concentrations, loading targets and allocations for the nearshore and offshore waters of Lake Erie by February 2016. The general approach is to use an ensemble of Lake Erie ecosystem models to compute appropriate load-response relationships for eutrophication response indicators of concern. EPA Region 5 requested an SAB consultation (i.e., early advice) on the appropriateness of modeling approaches to meet the GLWQA Lake Ecosystem Objectives. EPA is also requesting a subsequent review of the modeled phosphorus targets and loads to obtain advice on (1) whether these targets and loads are sufficient to meet the Lake Ecosystem Objectives as defined in the GLWQA and (2) whether the modeled results reflect the best available information on the phosphorous sources and trophic status of Lake Erie.

The SAB Staff Office announced in a Federal Register Notice (79 FR 42006-42007) published on July 18, 2014 that it requests public nominations of scientific experts to augment the SAB Ecological Process and Effects Committee (EPEC) to form a panel to provide early advice on and subsequent review of preliminary binational phosphorous objectives, loading targets and allocations for the nearshore and offshore waters to achieve the Lake Ecosystem Objectives for Lake Erie, pursuant to the Nutrients Annex (Annex 4) of the 2012 GLWQA.

The SAB Staff Office identified 33 candidates based on their relevant expertise and willingness to serve on the panel. Biosketches of these candidates are provided below. The SAB Staff Office Director will make the final decision about who will serve on the Panel based on all relevant information. This will include a review of the confidential financial disclosure form (EPA Form 3110-48), relevant information gathered by staff, and public comments. For the EPA SAB Staff Office, a balanced 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 a candidate 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 appearance of a lack of impartiality; e) skills working in advisory committees and panels; and f) for the panel as a whole, diversity of scientific expertise and viewpoints.

We hereby invite comments on the attached List of Candidates for consideration by the SAB Staff Office in the formation of this Panel. Please be advised that comments received are subject to release under the Freedom of Information Act. Comments should be submitted to Mr. Thomas Carpenter, Designated Federal Officer, no later than September 24 2014. E-mailing comments to Mr. Carpenter at carpenter.thomas@epa.gov is the preferred mode of receipt.

List of Candidates for the Ecological Process and Effects Committee
Augmented for Lake Erie Phosphorous Objectives Review

Alber, Merryl

University of Georgia

Dr. Merryl Alber is a Professor in the Department of Marine Sciences at the University of Georgia. She is a marine ecologist who specializes in estuarine ecology and coastal policy. Dr. Alber is the Project Director of the National Science Foundation (NSF) sponsored Georgia Coastal Ecosystems Long Term Ecological Research program, which is focused on the effects of climate change and human activities on salt marshes and estuaries. She is also active in efforts to improve communication between scientists and coastal managers, and to that end has established the Georgia Coastal Research Council, which works closely with the State coastal management program. Dr. Alber has been on the faculty of the University of Georgia since 1994, where she teaches graduate and undergraduate courses in marine biology, marine ecology, and coastal policy. Dr. Alber is currently on the editorial boards of Estuarine, Coastal and Shelf Sciences and Biogeochemistry, and is the Editor of Coastal and Estuarine Science News. She has also served on the Board of the Coastal and Estuarine Research Federation as well as a Heinz Center panel on Coastal Management Performance Measures and Indicators. Dr. Alber's research is currently funded by grants from the National Science Foundation (Georgia Coastal Ecosystems LTER Program), the Georgia Coastal Management Program (Georgia Coastal Research Council; Wrack Disturbance in Salt Marsh Communities), Georgia Sea Grant (Georgia Coastal Research Council), and the National Park Service (South Atlantic Coast Water Quality Metadata Database). Dr. Alber holds a B.S. in Zoology/Botany from Duke University and a Ph.D. in Biology from the Boston University Marine Program.

Ammerman, James

Stony Brook University

Dr. James Ammerman is an Adjunct Faculty member in the School of Marine and Atmospheric Sciences at Stony Brook University and was the Director of New York Sea Grant until 2013. He is a Fellow of the American Association for the Advancement of Science (AAAS) in Biological Sciences and is an aquatic microbial ecologist and biogeochemist. His research has focused on estuarine, coastal, and open-ocean phosphorus cycling; conducting numerous studies in the Chesapeake Bay, the Sargasso Sea (NW Atlantic), and especially the Louisiana coast and hypoxic zone of the Gulf of Mexico. In 2006 he presented invited testimony on nutrient dynamics to the EPA SAB Panel that wrote Hypoxia in the Northern Gulf of Mexico: An Update by the EPA Science Advisory Board (EPA-SAB-08-004), and is frequently cited in that report. The resulting 2008 Gulf Hypoxia Action Plan (Mississippi River/Gulf of Mexico Watershed Nutrient Task Force) established both nitrogen and phosphorus reduction targets (phosphorus for the first time) based on the information from that SAB report. From 2008 until 2013, Dr. Ammerman was the Director of New York Sea Grant, a joint NOAA-state program found in all coastal and Great Lakes states. Lake Ontario and eastern Lake Erie border on New York State and Dr. Ammerman was heavily involved in the issues of phosphorus loading and toxic cyanobacteria blooms in New York waters and throughout these lakes, especially in the western basin of Lake Erie. He also met with other Great Lakes Sea Grant Directors and EPA Region 5 staff to discuss Great Lakes research priorities. Finally, Dr. Ammerman collaborated with Stony Brook colleagues on a NOAA grant and journal publications on the molecular mechanisms of phosphorus assimilation by the toxic cyanobacteria found in the Great Lakes.

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Antosch, Larry

Ohio Farm Bureau Federation

Dr. Larry Antosch has been employed at the Ohio Farm Bureau Federation (OFBF) since July 1999. He is responsible for overseeing, planning, developing and implementing programs and projects addressing policy development and emerging environmental and energy policy issues. In his position, Dr. Antosch provides leadership to the OFBF policy development process and serves as the conduit of unbiased environmental information for the OFBF Board of Trustees, Cabinet and county FB members. He is responsible for reviewing and analyzing environmental data, reports, and proposed rules and legislation to determine its impact on Ohio agriculture and producers. In addition, Dr. Antosch represents OFBF and county FB members on local, state, national and inter-national task forces, committees and work groups. Prior to joining OFBF, he spent 13 years employed by the Ohio Environmental Protection Agency in the Division of Surface Water. While at Ohio EPA, his areas of responsibility centered on Watershed Management. Programs that he managed, developed or implemented dealt with surface water quality topics such as Nonpoint Source Pollution Control, Drinking Water Source Water Protection and Total Maximum Daily Loads. Concurrently, Dr. Antosch is an Adjunct Assistant Professor in the School of Environment and Natural Resources at the Ohio State University. His professional and academic interests are in the area of applied research directed towards water resource management. He holds three multi-disciplinary degrees (B.S. in Environmental Science from the University of Wisconsin-Green Bay, M.S. in Environmental Science from the University of Texas at Dallas and a Ph.D. in Water Resources from Iowa State University) and has conducted research on water quality and watershed management issues in Pennsylvania while on the faculty at the Pennsylvania State University for 4 years prior to joining Ohio EPA in 1986.

Bartell, Steven

Cardno ENTRIX.

Dr. Steven M. Bartell is currently a Principal, Vice President, and Technical Director for Ecological Modeling at Cardno ENTRIX. He has been an adjunct faculty member in the Department of Ecology and Evolutionary Biology at the University of Tennessee-Knoxville since 1984. He has been actively involved in the development, application, and analysis of aquatic systems models directed at eutrophication issues since 1978. He is the author of five books and more than 150 papers in the peer reviewed technical literature. Under contract to NOAA, Dr. Bartell has developed an aquatic food web and ecosystem model to examine food web impacts of hypoxia related to phosphorus loading in the Central Basin of Lake Erie. The quality of his work has been recognized nationally and internationally through invited participation on agency committees and programmatic reviews. Dr. Bartell served on the USEPA SAB Ecological Processes and Effects Committee from 1995-2002 and the Research Strategies Advisory Committee from 2001-2003. He provided technical support to the USEPA Risk Forum in developing the agency Framework and Guidelines for Ecological Risk Assessment. Dr. Bartell earned his B.A. in Biology (magna cum laude) from Lawrence University in 1971. His M.S. in Botany/Plant Ecology was awarded by the University of Wisconsin-Madison in 1973. He earned his Ph.D. in Oceanography and Limnology from the University of Wisconsin-Madison in 1978. He was previously a Senior Scientist in the Institute of Ecology at the University of Georgia (1978-1980). Bartell is formerly a Senior Scientist and Group Leader in the Environmental Sciences Division at Oak Ridge National Laboratory (1980-1992). Prior to joining Cardno ENTRIX, Dr. Bartell held various technical and senior management positions in the private sector, including SENES Oak Ridge, Center

for Risk Analysis; The Cadmus Group; and E2 Consulting Engineers. Dr. Bartell's public sector research has been funded by the Department of Energy, the U.S. Environmental Protection Agency, the U.S. Department of Agriculture, the U.S. Department of the Interior, NOAA, and the U.S. Army Corps of Engineers.

Boynton, Walter

University of Maryland

Dr. Walter Boynton is a Professor at the Chesapeake Biological Laboratory (CBL), University of Maryland Center for Environmental Science and has been a faculty member at CBL since 1975. Boynton's research expertise is estuarine ecology, particularly issues related to eutrophication and ecosystem restoration. He has published over 100 scientific papers and many more technical reports related to water quality, habitat and restoration issues. Dr. Boynton currently has funding from Sea Grant, Maryland Department of Natural Resources, Maryland county and city government and the National Science Foundation. All of this research involves coastal and estuarine eutrophication and restoration of these ecosystems. Dr. Boynton serves on boards of the Patuxent Riverkeeper, the Maryland-DC Chapter of The Nature Conservancy and the Patuxent River Commission. He has served on several EPA Science Advisory Board panels reviewing the state of the hypoxic zone in the Gulf of Mexico, Florida nutrient criteria, an EPA workgroup developing national water quality standards for estuarine systems and, more recently, worked with the Department of Justice on Gulf of Mexico issues. He served on Maryland Governor O'Malley's transition team for environmental issues and is currently a member of the science advisory panel for the Chesapeake Bay Trust Fund. He and professor Michael Kemp were awarded the Odum Award for lifetime achievement from the Coastal and Estuarine Research Federation and he was also elected president of this scientific society. More locally, he has served as the vice-chair of the Calvert County Zoning Appeals Board for more than a decade and in this position has been involved in many Maryland Critical Area decisions. He teaches a graduate ecology course and seminar that ties together the ecosystems of Maryland from the western mountains to the coastal ocean.

Bruulsema, Thomas

International Plant Nutrition Institute

Dr. Tom Bruulsema resides in Guelph, Ontario, Canada. He was previously a research associate at the University of Minnesota (1994), and an agronomist with the Mennonite Central Committee in Bangladesh (1986-1990). A native of Ontario, Tom earned his BSc and MSc degrees in Crop Science at the University of Guelph in 1983 and 1985, and his PhD in Soil Science from Cornell University in 1994. Following his time at Cornell Dr. Bruulsema joined the Potash & Phosphate Institute in 1994, which in 2007 became the International Plant Nutrition Institute (IPNI). The IPNI is a not-for-profit, scientific organization dedicated to the responsible management of plant nutrition. The major themes of Tom's research and education programs include nutrient stewardship, nutrition security and adapting crop nutrient management to weather, with a focus on the Northeast region of North America. Dr. Bruulsema is involved in many professional societies. He is a Fellow of the American Society of Agronomy and of the Soil Science Society of America, and a Fellow of the Canadian Society of Agronomy. He is a Certified Crop Adviser and has served a number of leadership roles in the International Certified Crop Adviser Program.

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Burkholder, JoAnn
North Carolina State University
Dr. Burkolder's research has emphasized the effects of nutrient pollution on aquatic ecosystems, the ecology of harmful algae including cyanobacteria, and use of long-term datasets from real-time remote monitoring stations (RTRMs) to quantify and track trends in nutrient concentrations and loads to freshwaters and estuaries. She is a Professor and Director of North Carolina State University's Center for Applied Aquatic Ecology. She holds a Ph.D. from Michigan State University and a M.S. from the University of Rhode Island. She is a Fellow of the American Association for the Advancement of Science (AAAS). She authored or co-authored more than 160 peer-reviewed publications, including papers on toxic cyanobacteria and their interactions with nutrient supplies in drinking source waters. She and colleagues have also published a model relating long-term changes in watershed land use/land cover to quantitative changes in specific water quality parameters (phosphorus, nitrogen suite, total chlorophyll a, dissolved oxygen etc.) in watersheds drained by two major river systems. Dr. Burkholder received numerous awards for excellence in research and for service in water quality protection, such as the Scientific Freedom and Responsibility Award from AAAS. In addition, she has been invited to testify before Congress several times on issues involving water quality and harmful algae, and has served on several governor-appointed policy boards involving aquatic resource protection. The Center she directs developed ongoing partnerships with two cities, wherein we installed and are maintaining RTRMs to help safeguard the drinking water supplies depended upon by more than 750,000 people in the Research Triangle and Triad regions of North Carolina. This Center has amassed more than a decade of high-frequency data characterizing eutrophication and harmful algae in major drinking source waters of the area. The Center also has developed a major outreach education effort, the NC Floating Classroom Program, which thus far has provided hands-on education about aquatic science to more than 5,000 8th and 9th grade students, emphasizing students from economically depressed areas.
Carrick, Hunter
Central Michigan University
Dr. Hunter Carrick is a Professor of Aquatic Ecosystems Ecology at Central Michigan University. He is the author of 72 journal articles (referred), 1 book, 4 book chapters, and 30 technical reports (white papers). He has participated in multi-disciplinary research teams throughout his career and has published with more than 200 coauthors. Dr. Carrick has presented 177 professional presentations and successfully mentored 15 graduate students to completion of their research (3 in progress). His research focuses on understanding the mechanisms that govern food web dynamics and nutrient cycling in lake, stream, and coastal ecosystems; this research ultimately will help develop and understand of how these ecosystems will recover from disturbance. Dr. Carrick has taught 19 college level courses on subjects including- Environmental Science, Ecology, Limnology, Ecosystem Management, and Research Principles. More recently, he developed and designed the new Ph.D. degree in Earth and Ecosystem Science at Central Michigan University. The quality of Dr. Carrick's research and service has been recognized throughout his career. He has received several awards from the International Association for Great Lakes Research (Editor's Award, Appreciation for hosting conference, numerous student awards), the Pennsylvania State University (Recognition for recruitment campaign, College merit awards), and the South Florida Water Management District (Research excellence). Dr. Carrick has served as editor for two professional journals (Northeastern Naturalist, Journal for Great Lakes Research), editor on special issues, and reviewer for more than 30 journals and funding agencies. He has been recognized for

his teaching and education at the Bowling Green State University and the Pennsylvania State University. Dr. Carrick has 24 years of experience in the field of environmental science and education (post Ph.D). He received his B.S. Degree in Biology (minor in Botany) from Binghamton University in 1983, his M.S. Degree from the Bowling Green State University in 1985, and his Ph.D. from the University of Michigan in 1990. He was a post-doctoral fellow at the University of Florida from 1990-1992. He held research positions with state (South Florida Water Management District) and federal government (NOAA-GLERL), and served on the faculty at several major universities in the US (San Francisco State University, the University of Buffalo, the Pennsylvania State University, and now at Central Michigan University). Over this time, Dr. Carrick's has completed research on 44 research and higher education grants, totaling more than $7 million in extramural funding. His research has been supported by several state and federal agencies including- USEPA (hypoxia and harmful algal blooms in the Great Lakes), Pennsylvania-DEP (nutrient criteria development for TMDLs), National Oceanic and Atmospheric Administration (food dynamics in the Great Lakes), and the National Science Foundation (major instrument grants, comparative lake studies, development of undergraduate education).

Chen, Celia

Dartmouth College

Dr. Celia Chen is a Research Professor in the Department of Biological Sciences at Dartmouth College. She has been a lead scientist for 19 years in the Dartmouth Toxic Metals Superfund Research Program and has studied the fate and effects of metal contaminants in freshwater and estuarine ecosystems including the bioaccumulation and trophic transfer of mercury in lakes throughout the Northeast United States and coastal marshes from Maine to Maryland. Her mercury work has focused on the interactions between eutrophication and methylmercury biomass dilution in lakes and carbon loading and methylmercury bioavailability in estuaries. She has also conducted research on using genomic tools as biomarkers of metal exposure for the model organisms, Daphnia pulex and Fundulus heteroclitus. She has investigated the effects of multiple stressors on aquatic organisms by developing methods for quantifying the antagonistic, synergistic, and additive effects of stressors such as organic contaminants, pH, food availability, and temperature. Dr. Chen has also studied the impact of environmental changes related to climate on demography and phenology of aquatic invertebrates, and more recently on the cycling and fate of methylmercury in marine ecosystems. Dr. Chen received her undergraduate degree in Biology and Environmental Studies at Dartmouth College, a masters degree in Biological Oceanography at the Graduate School of Oceanography of the University of Rhode Island and a Ph.D. in Ecology from Dartmouth College. She worked as a Staff Officer at the Marine Board of the National Research Council and has chaired regional and international workshops on mercury in marine ecosystems. In 2010-2012, she led a science translation initiative, the Coastal Marine Mercury Ecosystem Research Collaborative comprised of over 70 mercury scientists, to bring mercury science to national and international policy-makers. She is currently a Review Editor for the journal, Ecohealth, and has been a guest editor of special issues in Environmental Research, Environmental Health Perspectives, Estuaries and Coasts, and Ecohealth. She currently serves on the U.S. EPA Science Advisory Board Ecological Processes and Effects Committee as well as the Board of the North Atlantic Chapter of the Society of Environmental Toxicology and Chemistry, Gelfond Fund Advisory Committee at Stony Brook University, and the Scientific Advisory Committee of the Lake Sunapee Protection Association in New Hampshire. Her research has recently been supported by the National Institute of Environmental Health Sciences, the National Science Foundation, and the U.S. Department

of Agriculture Forest Service.

Clements, William

Colorado State University

Dr. William H. Clements is a Professor in the Department of Fish, Wildlife and Conservation Biology and a faculty advisor in the Graduate Degree Program in Ecology at Colorado State University. Dr. Clements holds a B.S and M.S. in Biology from Florida State University, and a Ph.D. in Zoology from Virginia Tech. Dr. Clements has been on the faculty of the Colorado State University since 1989. Dr. Clements' research interests focus primarily on community and ecosystem responses to contaminants. He is especially interested in questions that address responses to multiple perturbations and interactions between contaminants and global climate change. He is the author/co-author of two textbooks in ecotoxicology (Community Ecotoxicology and Ecotoxicology: a Comprehensive Treatment) and has published numerous peer-reviewed papers and book chapters in ecotoxicology. At Colorado State University he teaches graduate and undergraduate courses in ecology, experimental design, and pollution ecology. Dr. Clements is active in several professional societies including the Society of Environmental Toxicology and Chemistry (SETAC) and the Society of Freshwater Science (SFS). He previously chaired the Executive Committee for SFS, served on the Board of Directors of SETAC and received the Presidential Citation from this Society in 2006. He currently serves as an Associate Editor for the journal Freshwater Science (formerly the Journal of the North American Benthological Society) and has previously served on the Editorial Board of SETAC (1995-1997), as a Guest Editor for the Journal of Ecosystem Stress and Recovery (2000) and Ecological Applications (2007). At the national level, Dr. Clements has served on a Department of Interior Federal Advisory Committee and on two separate National Academy of Sciences National Research Council committees investigating effects of dredging operations at U.S. EPA Superfund Sites and effects of coalbed methane development in the West. He served on a U.S. EPA Science Advisory Board panel that provided advice on effects of mountaintop mining (2010-2012). Current research in Dr. Clements' laboratory is funded by the National Institute of Environmental Health Sciences (remediation effectiveness for mining sites); the Colorado Division of Wildlife (quantitative assessment restoration effectiveness in the Arkansas River); the International Copper Association (the use of stream microcosms to quantify restoration effectiveness in metal-contaminated streams); the U.S. Geological Survey (metal uptake and transfer in stream and riparian communities); and the U.S. Environmental Protection Agency STAR Program (impact of climate change and variability on the Nation's water quality and ecosystem state).

Connolly, John P.

Anchor QEA, LLC

Dr. John Connolly is Senior Technical Advisor and Partner in Anchor QEA, LLC, and an environmental consulting firm located in Montvale NJ. He received a Ph.D. from the University of Texas at Austin in 1980. Dr. Connolly holds a B.S. and M.S. in Civil and Environmental Engineering from Manhattan College, and a Ph.D. in Civil and Environmental Engineering from the University of Texas, Austin. He has conducted research and consulted in the areas of contaminant fate and transport and bioaccumulation. He has conducted research in several areas, including toxic chemical fate, bioaccumulation, carbon cycling and the environmental and the fate of genetically engineered microorganisms. He has conducted remedial investigations, feasibility studies, aspects of remedial design and monitoring of remedial actions at many of the high profile contaminated sediment sites in the US. He was selected to the National Academy of Engineering and to be a Diplomate in the

American Academy of Environmental Engineers. He has testified before Congress on contaminated sediment issues. Since 2012, Dr. Connolly has worked intermittently on a National Institute of Environmental Health Services (NIEHS) grant to assess in-situ treatment of contaminated sediment.

David, Mark

University of Illinois

Dr. Mark David is a Professor in the Department of Natural Resources and Environmental Sciences at the University of Illinois at Urbana-Champaign (UIUC), where he has been on the faculty since 1985. He holds a B.S. in Forest Science from the Pennsylvania State University, an M.S. in Forest Biogeochemistry from the University of Maine, and a Ph.D. in Environmental Science from the State University of New York, College of Environmental Science and Forestry. Dr. David's research is focused on the biogeochemistry of nutrients in agricultural, forested, and aquatic ecosystems. He has conducted interdisciplinary research to study complex systems from a variety of approaches. Dr. David's recent and current research program examines agricultural and aquatic biogeochemistry of nitrogen and phosphorus, including linkages between agricultural and aquatic systems. He has studied nitrogen and phosphorus transformations and export at agricultural field, watershed, and regional scales; examined the use of cover crops, drainage water management, wetlands, and bioreactors for reducing downstream nutrient losses; and has evaluated the biogeochemistry of biofuels, particularly the response of the nitrogen cycle. Dr. David has authored or co-authored more than 134 refereed journal articles, and many oral and poster presentations at national meetings, along with other technical and non-technical publications. His research is highly cited: he was named as an Institute for Scientific Information (ISI) Highly Cited Researcher in Ecology and Environment. Dr. David has been elected as a Fellow in the Soil Science Society of America, the American Society of Agronomy, and the American Association for the Advancement of Science. Recently he received the American Society of Agronomy Environmental Quality Research Award. He has served as an associate editor for both the Soil Science Society of America Journal and for the Journal of Environmental Quality; has frequently served as a panel member for review of proposals for funding from the U.S. Department of Agriculture (USDA), National Science Foundation (NSF), and U.S. Environmental Protection Agency (EPA); and has served on review teams to assess departmental and programmatic activities at several other universities. Dr. David served on the EPA Science Advisory Board (SAB), Hypoxia Advisory Panel that conducted a reassessment of hypoxia in the Gulf of Mexico, including nutrient sources from the Mississippi River basin, as well a consultant to the SAB Ecological Processes and Effects Committee review of Nutrient Criteria Guidance. He is currently serving as an elected member of the Board of Directors of the American Society of Agronomy. National and state competitive grants have supported his recent biogeochemistry research in Illinois and the Midwest. This includes grants from USDA National Institute of Food and Agriculture, Illinois EPA, Illinois Nutrient Research and Education Council, Department of Energy, and the Energy Biosciences Institute.

Di Giulio, Richard

Duke University

Dr. Richard T. Di Giulio is Professor of Environmental Toxicology in the Nicholas School of the Environment at Duke University. At Duke, he also serves as Director of the Integrated Toxicology and Environmental Health Program, Director of the Superfund Research Center, and Co-Principal Investigator for the Center for the Environmental Implications of Nanotechnology. Dr. Di Giulio has published extensively on subjects including biochemical and molecular mechanisms of adaptation and

toxicity, biomarkers for chemical exposure and toxicity, effects of chemical mixtures and multiple stressors, and chemical contamination of sediments. His current work focuses on mechanisms by which polycyclic aromatic hydrocarbons (PAHs) and nanomaterials perturb embryonic development in fish models (zebrafish and killifish), the evolutionary consequences of hydrocarbon pollution on fish populations, and the ecological and human health impacts of mountaintop coal mining in Appalachia. Additionally, he has organized symposia and workshops, and written on, the broader subject of interconnections between human health and ecological integrity. Dr. Di Giulio's research is supported by the National Institute of Environmental Health Sciences, the National Science Foundation, U.S. EPA, and the Foundation for the Carolinas. Dr. Di Giulio is a member of the Computational Toxicology Committee for the Board of Scientific Counselors, U.S. EPA, is a member of the National Academy of Science Committee on Exposure Assessment in the 21st Century, and is associate editor for Environmental Health Perspectives. Dr. Di Giulio received a B.A. in comparative literature from the University of Texas at Austin, the M.S. in wildlife biology from Louisiana State University and the Ph.D. in environmental toxicology from Virginia Polytechnic Institute and State University. He is an active member of the Society of Environmental Toxicology and Chemistry (SETAC), where he previously served on the Board of Directors, and the Society of Toxicology (SOT).

Diaz, Robert

College of William and Mary

Dr. Robert Diaz is Professor Emeritus of Marine Science at the Virginia Institute of Marine Science, College of William and Mary. He received a Ph.D. from the University of Virginia in marine science and a Doctor Honoris Causa from Gothenburg University, Sweden, for his contributions to marine and estuarine ecology. In 2011 he was named Virginia Outstanding Scientist of the year. Professor Diaz has over 40 years of experience working on environmental issues in a variety of marine and freshwater habitats around the globe from the intertidal to the deep-sea. He has served on science advisory and review committees for private foundations, state and federal agencies, and international organizations. He specializes in documenting the effects of both natural and human disturbance to ecosystems, and is an internationally recognized expert on animal-sediment-interactions, the effect of eutrophication (over enrichment of the seas) and hypoxia (low dissolved oxygen dead zones) on ecosystem services and functions.

Endicott, Doug

Great Lakes Environmental Center

Mr. Douglas Endicott is senior environmental engineer at the Great Lakes Environmental Center. He is responsible for developing and conducting applied environmental engineering studies and projects, emphasizing water quality (nutrient/eutrophication and contaminant transport and fate), bioaccumulation, and aquatic ecosystem modeling. Mr. Endicott also conducts engineering studies for a wide range of environmental applications, including regulatory and cost-benefit analysis, technical guidance for water quality standards development and implementation, and total maximum daily load (TMDL) and mixing zone studies. His research has contributed to the development of both simple and complex models used to address water quality problems in the Great Lakes, their embayments and tributaries. He has published on his research in the areas of in-place pollutant transport and fate, food web bioaccumulation of PCBs and dioxins, model uncertainty analysis, and evaluation of treatment technologies to remove synthetic organic chemicals from water and wastewater.

Fitzpatrick, James J.

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HDR Engineering
Mr. James Fitzpatrick is a Project Principal Engineer with HDR Engineering. He has more than forty years of experience in the development and application of mathematical models to solve environmental problems with an emphasis on nutrient-related eutrophication. While employed by Hydroscience, Inc., he was one of the original developers of the USEPA supported WASP computer code developed in the 1970's for the USEPA Large Lakes Research Program. He was also one of the co-developers of a sediment diagenesis/nutrient flux submodel developed for the USEPA Chesapeake Bay Program and the USACE ERDC, while employed at HydroQual, Inc. Currently, he is the lead investigator for the development of a deterministic harmful algal bloom (HAB) model for the tidal James River in Virginia; the model will address both freshwater and marine HAB species. He has led or participated in over thirty modeling studies of eutrophication in lacustrine, estuarine and coastal systems and has presented results of these modeling efforts at numerous national conferences. Mr. Fitzpatrick received his B.E.E in Electrical Engineering from Manhattan College in 1971 and his M.E.E. in Environmental Engineering from Manhattan College in 1974. He was employed by Hydroscience, Inc. (Sr. Project Manager) from 1968 to 1980, and by HydroQual, Inc. from (Associate/Principal) 1980 until its acquisition by HDR Engineering in 2011. He is a member of the Long Island Sound Science and Technical Advisory Committee (STAC) and in 2013 Mr. Fitzpatrick served on the NOAA CSCOR Gulf of Mexico Hypoxic Zone Modeling Technical Review Panel, which reviewed the current state of empirical and deterministic models used to assess nutrient related hypoxia in the Gulf of Mexico.
Haffner, Gordon Douglas
University of Windsor
Dr. Haffner is an internationally acknowledged expert in the Great Lakes scientific community. His current research is based on the adage of 'dose makes the poison' and is directed towards understanding the processes that regulate the exposure dynamics of organic chemicals in lakes and rivers. This research has resulted in a new method of quantifying energy and nutrient flows in aquatic food webs using specific PCB congeners as ecological tracers. The Canada Research Chair in Great Lakes Environmental Health will enable Dr. Haffner's research team to develop quantitative assessments of chemical exposure dynamics in aquatic ecosystems, and predict how contaminant dynamics in food webs will respond to ecological changes related to eutrophication and species invasions. This research has now been extended to the Three Gorges Reservoir and the Plateau Lakes of China.
Heath, Robert T.
Kent State University
Dr. Robert Heath is an ecosystem ecologist and biogeochemist with particular expertise in the Laurentian Great Lakes, especially Lake Erie and the Cuyahoga River watershed. He and his students have published over 70 papers in the refereed scientific literature on the biogeochemistry of these lakes and rivers. He has also published a book, "Checking the Pulse of Lake Erie", in collaboration with Dr. Mohiuddin Muniwar of the Canadian Department of Fisheries and Oceans. Dr. Heath is Professor Emeritus of Biological Sciences and Director Emeritus of the Water Resources Research Institute at Kent State University. He is currently the Chairperson of the Ohio Coastal Resources Advisory Council, and a member of the Board of the Cleveland Water Alliance. He is Past-President of the International Association for Great Lakes Research, the largest collection of scientists, engineers, decision-makers and lake ecosystem managers devoted to improving and maintaining the health of large lakes of the world. As a researcher, he is a recognized authority on phosphorus, nitrogen and carbon dynamics and

biogeochemistry in the North American Great Lakes. Besides his numerous publications, he has also served as Keynote Speaker at major international scientific meetings in the United States, Europe, Africa, and Asia. He has been awarded over $2,000,000 to conduct his research, with funding coming from the National Science Foundation, National Oceanic and Atmospheric Administration, National Sea Grant College Program, the Ohio Sea Grant College Program, the U.S. Environmental Protection Agency, and the Lake Erie Protection Fund. In addition to his scientific research, he has been awarded over $250,000 for pedagogical programs to benefit middle school and high school students and their teachers, devising novel approaches to science education. He has served on the Old Woman Creek NERR Advisory Panel (since 1986), the ODNR Ohio Coastal Resources Advisory Council (since 1996), and the Great Lakes Compact Advisory Panel (2010). He was awarded a lifetime achievement award, the 2008 Ohio Lake Erie Award to an Outstanding Individual, by the Ohio Lake Erie Commission for his research, education and outreach activities devoted to the wise use and management of Lake Erie and its tributaries.

Johnson, Laura T.

Heidelberg University

Dr. Laura Johnson is a research scientist at the National Center for Water Quality Research (NCWQR) at Heidelberg University with expertise in stream biogeochemistry and watershed nutrient and sediment transport. Prior to joining the NCWQR in January 2013, Dr. Johnson was a postdoctoral research associate with Dr. Todd Royer at Indiana University and worked on a variety of topics including coupled biogeochemical cycling in streams, the influence of microbial diversity on ecosystem functioning, and greenhouse gas emissions from agricultural watersheds. She received her Ph.D. from the University of Notre Dame in 2008 where she worked with Dr. Jennifer Tank on the effect of human land use on stream nutrient processing. During graduate school, Dr. Johnson was a part of the Lotic Intersite Nitrogen eXperiment II (LINX II), a collaboration among 18 PI's across 17 different institutions that successfully conducted highly technical stable isotope tracer additions in 72 streams in North America. Since joining the NCWQR, Dr. Johnson has participated in the Lake Erie Ecosystem Priority workshop by the International Joint Commission, organized the “Phosphorus along the land-river-land continuum” research planning and coordination workshop, assisted in the 2014 NOAA harmful algal bloom forecast for western Lake Erie, and has given over 15 presentations at scientific meetings, local organizations, and environmental groups. In addition to on-going analysis of data from the Heidelberg Tributary Loading Program, Dr. Johnson is a co-PI on a two-year USEPA-GLRI project titled “Assessment of nutrient/eutrophication dynamics in Western Lake Erie” with lead PI Gail Hesse at the Ohio Lake Erie Commission and many other co-PIs, a 5-year project funded by the 4R research fund titled “Evaluating the 4R nutrient stewardship concept and certification program in the Western Lake Erie basin” with lead PI Kevin King at the USDA-ARS Soil Drainage Research Unit and many other co-PIs, and a 1-year project from the NOAA Great Lakes Observing System (GLOS) titled “An Online Tributary Loading Tool to Support Harmful Algal Bloom Forecasting in Lake Erie” lead by LimnoTech. The NCWQR, along with the USDA-ARS Soil Drainage Research Unit and the USDA-ARS National Soil Erosion Research Laboratory, is part of the Eastern Cornbelt site from the USDA Long-term Agroecosystem Research network. Thus far, her research has resulted in 20 publications in peer-reviewed scientific journals.

Johnson, Lucinda

University of Minnesota Duluth

Dr. Lucinda Johnson is Director of the Center for Water and the Environment at the University of Minnesota's Natural Resources Research Institute. Dr. Johnson holds a B.A in Botany from Duke University, an M.S. in Entomology from State University of New York, College of Environmental Science and Forestry, and a Ph.D. in Zoology from Michigan State University. Dr. Johnson is an aquatic and landscape ecologist whose research focuses on the impacts of multiple stressors on aquatic ecosystems with emphasis on human activities (e.g., land use) and climate change. Much of her work has involved quantifying interactions between terrestrial and aquatic ecosystems, with particular emphasis on effects on communities and habitats. Dr. Johnson's current research activities involve: validating indicators of condition for Great Lakes coastal ecosystems; assessing climate change and land use change impacts on amphibian communities in the Prairie Pothole Region; and predicting climate change impacts on cold water fish communities in northern lakes and streams. The latter effort involves modeling phosphorus loading to inland lakes. Her research on amphibians specifically addresses the concept of functional landscape connectivity of wetlands with respect to changing hydrologic conditions associated with climate change. In addition, Johnson and her team consider the connectivity and spatial position of landscape patches (especially urban, agricultural land use) in predicting ecosystem processes and community structure in streams. Dr. Johnson serves on numerous advisory committees advising the State of Minnesota on climate change impacts on aquatic systems. Dr. Johnson has held leadership positions in the Association of Ecosystem Research Centers (President, 2008-2010; Secretary 2013-2015) and the Society for Freshwater Science (formerly North American Benthological Society; President, 2010-2011). She is a member of the U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Ecological Processes and Effects Committee and the SAB panel for the review of the EPA Water Body Connectivity Report. Johnson also was recently appointed to the International Joint Commission's Science Advisory Board for a three year term. She has participated on the SAB panel evaluating the effects of Mountain Top Removal Mining and the Conductivity Benchmark (2010-2011), and was recently appointed to serve on the agency's review panel for the Report on the Environment. Dr. Johnson's research is currently funded by grants from the U.S. EPA Great Lakes Restoration Initiative, the Minnesota Pollution Control Agency, and the U.S. Geological Survey Climate Change Program, and the Michigan Water Center.

Klump, J. Val

Univ. of Wisconsin-Milwaukee

Dr. J. Val Klump is a Professor and Associate Dean of Research in the School of Freshwater Sciences at the University of Wisconsin-Milwaukee. His research on how nutrients and carbon are cycled in lakes has taken him from the deepest soundings in Lakes Superior and Michigan aboard a research submersible, to the largest and oldest lake in the world -- Lake Baikal in eastern Siberia. Since joining UWM's Center for Great Lakes Studies in 1980, Dr. Klump has been active in bringing more than $18 million in extramural research support to the University and the state. His current research focuses on the dynamics of seasonal hypoxia and the impact of changing climate on the biogeochemistry of the Green Bay ecosystem; new methods for measuring the benthic metabolism in the Great Lakes; and the use of radionuclides as tracers for determining process rates in freshwater systems. He currently serves as a board member of several regional and national organizations including: the International Joint Commission's Science Advisory Board Research Coordination Council, the NOAA Integrated Ocean Observing System Federal Advisory Committee, the National Association of Marine Laboratories Executive Board, the International Association for Great Lakes Research, and Discovery World Milwaukee boards of directors. He holds a degree in Law from Georgetown University and a PhD in

Marine Science from the University of North Carolina at Chapel Hill.

La Point, Thomas W.

University of North Texas

Dr. Thomas La Point is the former director of the Institute of Applied Sciences at the University of North Texas and is a Professor in the Department of Biological Sciences. He holds a B.S. in Zoology and Physiology from the University of Wyoming, an M.S. in Population Biology from the University of Houston, and a Ph.D. in Aquatic Biology from the Department of Biological Sciences at Idaho State University. Dr. La Point's primary research and teaching interests include contaminant effects on freshwater aquatic communities, specifically 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 National Science Foundation, U.S. Environmental Protection Agency (EPA), and U.S. Geological Survey 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. His research funding (2010 – present) has come from the U.S. EPA, the National Science foundation (NSF), and City of Denton, Texas. The research topics include round-robin testing for multi-generation tests with mysid shrimp (U.S. EPA); the interaction between water quality and education in urbanizing watersheds (NSF); and non-point source pollution prevention (City of Denton).

McLaughlin, Douglas

National Council for Air and Stream Improvement, Inc.

Since 2002, Dr. McLaughlin has served as Principal Research Scientist at the National Council for Air and Stream Improvement, Inc. (NCASI), Northern Regional Center in Kalamazoo, Michigan. His primary responsibility is to provide leadership and direction to NCASI's Water Technical Studies Program. In this capacity, Dr. McLaughlin designs and conducts water resources research projects to address the environmental information needs of NCASI's member companies. His current research is funded by NCASI member dues and is focused on approaches for the development of numeric water quality criteria for nutrients and other parameters, and the application of statistical models to evaluate stressor-response relationships. He has authored peer-reviewed articles on these topics. Throughout his career, Dr. McLaughlin has worked with others to develop, evaluate, and communicate results from statistical and computer simulation models in order to inform environmental management decisions made by the private sector, government agencies, and others. Dr. McLaughlin regularly interacts with NCASI member company and government agency scientists and managers on scientific and technical topics relating to water resources management. He has published numerous reports and given many presentations at scientific meetings and conferences. He served as a consulting expert augmenting the U.S. Environmental Protection Agency Science Advisory Board (SAB) Ecological Processes and Effects Committee to conduct a peer review of EPA's draft guidance document, "Empirical Approaches for Nutrient Criteria Derivation". He also was appointed to an SAB panel to review the draft EPA reports titled "Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields" and "Aquatic Life Benchmark for Conductivity in Central Appalachian Streams". Since 2003, Dr. McLaughlin has served on the Advisory Committee on Water Information (ACWI), a multi-organization committee established under the Federal Advisory Committee Act. He is currently a member of several ACWI sub-committees and working groups, including the National

Water Quality Monitoring Council (NWQMC). He is co-chair of the Water Quality Statistics and Assessment workgroup of the NWQMC. Dr. McLaughlin received a B.S. degree in Biological Resources Management in 1983 and an M.S. degree in Aquatic Biology in 1985, both from the University of Wisconsin-Green Bay. He received his Ph.D. in Land Resources from the University of Wisconsin-Madison in 1994, where is research focused on natural and induced transformations of polychlorinated biphenyls in aquatic sediments.

Miller, Carol

Wayne State University

Dr. Carol Miller of the Department of Civil and Environmental Engineering at Wayne State University (Detroit) has research interests spanning urban water sustainability, environmental pollutant transport, hydraulic simulation, and the energy/environment interface. She is co-director of the university's Urban Watershed Environmental Research Group. Dr. Miller is the previous Chair of the State of Michigan Board of Licensing for Professional Engineers and the current U.S. Chair of the bi-national Great Lakes Science Advisory Board of the International Joint Commission. She is leading the efforts related to the urban inputs to nutrient loadings into the western basin of Lake Erie. Her research has been funded by numerous agencies including the Great Lakes Protection Fund, US Army Corps of Engineers, National Science Foundation, US EPA, DTE Energy, the Great Lakes Commission, and others. Dr. Miller was named Engineer of the year and Engineering Educator of the Year by the Michigan Society of Professional Engineers.

Reckhow, Kenneth

Duke University

Dr. Kenneth Reckhow is Professor Emeritus at Duke University in the Nicholas School of the Environment. During his 30 year tenure as a Professor at Duke, Dr. Reckhow taught courses in water quality management and modeling, environmental decision analysis, and environmental statistics; his research at Duke was also focused on those topics. From 1996 to 2004, Dr. Reckhow served as Director of the University of North Carolina Water Resources Research Institute. He is a past president of the National Institutes for Water Resources, past President of the North American Lake Management Society, and past Chair of the North Carolina Sedimentation Control Commission. Dr. Reckhow has served as Chair of the National Academy of Sciences Panel on the U.S. EPA Total Maximum Daily Load Program (2001), as a member of the National Academy of Sciences Panel on the U.S. Geological Survey National Water Quality Assessment (2000-01), as a member of the National Academy of Sciences Panel on Restoration of the Everglades Ecosystem (2003-05), and as Chair of the National Academy of Sciences Panel on Chesapeake Bay Restoration. In 2010-11, he served on the U.S. EPA Science Advisory Board Nutrient Criteria Review Panel. He has published two books and over 100 papers, principally on water quality modeling, monitoring, and pollutant loading analysis, with a focus on uncertainty, risk, and decision analysis. Much of his work has emphasized nutrients and eutrophication. In addition, he has taught several short courses on water quality modeling and monitoring design, and he has written eight technical guidance manuals on these topics. He is currently serving, or has previously served, on the editorial boards of Journal of the American Water Resources Association, Water Resources Research, Water Resources Bulletin, Lake and Reservoir Management, Journal of Environmental Statistics, Urban Ecosystems, and Risk Analysis. Dr. Reckhow has a B.S. in Engineering Physics from Cornell University and a Ph.D. from Harvard University in Environmental Systems Analysis. Dr. Reckhow has recently received support for his work from the U.S. EPA EcoRisk

Program, the Upper Neuse River Basin Association (North Carolina), and the South Atlantic Landscape Conservation Cooperative.

Reddy, Ramesh

University of Florida

Dr. K. Ramesh Reddy is a Graduate Research Professor (distinguished professorship) and Chair of Soil and Water Science Department (SWSD) at the University of Florida (UF). He holds a B.S. and M.S from AP Agricultural University-India and a Ph.D. from the Louisiana State University, Baton Rouge, La. Dr. Reddy's research addresses problems in science and technology in topical areas of biogeochemistry with emphasis on macro-elemental cycling; soil and water quality; wetlands and aquatic ecosystem restoration; carbon sequestration and greenhouse gases. His early research as a biogeochemist focused on the fate of nutrients in flooded rice paddies, followed by applying biogeochemical principles to study nutrient/contaminant behavior in various ecosystems including freshwater and coastal wetlands, and lakes, as related to water quality and eutrophication. Dr. Reddy developed an interdisciplinary program on biogeochemistry of wetlands and aquatic systems through the Wetland Biogeochemistry Laboratory (WBL) established within the SWSD. Since its establishment in 1987, the WBL has provided a home for graduate students for various disciplines, and post-doctoral associates and visiting scientists. His research group effectively integrated biogeochemical principles to address these issues. This led to interdisciplinary work with scientists from various disciplines including ecology, biology, limnology, and engineering. Dr. Reddy published 350+ refereed journal articles and book chapters, edited 5 books, and author of one text book. His career research is now summarized in a text book authored by Dr. Reddy. Publications can be viewed at the WBL web site: http://wetlands.ifas.ufl.edu/publications. Dr. Reddy has served on numerous advisory committees at state, national, and international levels. He served on the U. S. National Committee on Soil Science, National Academy of Sciences. He currently serves on U. S. National Committee – Everglades Restoration, National Academy of Sciences. Dr. Reddy also served on U.S. Environmental Protection Agency, Science Advisory Board Panel. He was invited to participate in a think tank meeting hosted by the National Environment Research Council and the Global Environmental Research Committee of the Royal Society, London, England. Dr. Reddy currently serves as wetland consultant with the International Atomic Energy Commission. Dr. Reddy's select awards and honors include: UF-Graduate Research Professor, UF-Research Foundation Professor (1999-2002; 2009-2012); Doctoral Dissertation Advisory /Mentoring Award (2005); Fellow, World Innovation Foundation; 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; Fellow - Soil Science Society of America (1988); Fellow - American Society of Agronomy (1988); Gama Sigma Delta International Award (2006). Dr. Reddy's research is currently funded by grants from: the Florida Department of Agriculture and Consumer Services (Phosphorus Retention and Storage in Isolated Wetlands); St. Johns River Water Management District (Environmental Effects of Water Withdrawals, Carbon Flux and Loss Rates, and the Environmental Fate of Organic Contaminants); the National Science Foundation (Methanogenisis in the Florida Everglades); the U.S. Department of Interior (Soil biogeochemistry). His recent funding is from U.S. Department of Interior, National Science Foundation, St. Johns River Water Management District, Florida Department of Agriculture and Consumer Services, South Florida Water Management District.

Rosi-Marshall, Emma

List of Candidates for the Ecological Process and Effects Committee
Augmented for Lake Erie Phosphorous Objectives Review

Cary Institute of Ecosystem Studies
Dr. Emma J. Rosi-Marshall is an Associate Scientist at the Cary institute of Ecosystem Studies. She holds a Ph.D. and M.S. from the University of Georgia and a B.S. from the University of Michigan. Previously, Dr. Rosi-Marshall held a position as an Assistant Professor in the Departments of Biology and Natural Science, Loyola University of Chicago. Dr. Rosi-Marshall conducts research on factors that control and influence ecosystem function in human-dominated ecosystems. Her research focuses on aspects of human modifications to freshwater ecosystems such as land use change and restoration, widespread agriculture and associated crop byproducts, urbanization, and the release of novel contaminants, and hydrologic modifications associated with large dams. Her research spans a diversity of ecosystems from small streams to large rivers and has been conducted in rivers throughout much of the U.S. She employs diverse methods to explore ecological processes including biogeochemistry, production ecology, food webs, carbon cycling and the effects of emerging contaminants on ecosystem processes. Dr. Rosi-Marshall has received competitive grants from the National Science Foundation (NSF), the U.S. Geological Survey (USGS), and the U.S. Department of Agriculture (USDA) and has published findings from these studies in diverse national and international scientific journals. These grants have supported her research on the effects of crop byproducts on aquatic ecosystems (NSF), carbon budgets and energy flow in food webs of the Grand Canyon (USGS), nutrient uptake in large rivers (NSF) and the influence of forest age on nutrient cycling and metabolism of headwater streams (USDA). Rosi-Marshall is also a Co-Investigator on the Baltimore Ecosystem Study Long-term Ecological Research Site (NSF) where she is exploring the influence of emerging contaminants on aquatic ecosystem function. She serves on the editorial board of Ecosystems and has served as a reviewer for NSF, USDA and for numerous national and international scientific journals.
Schlesinger, William
Cary Institute of Ecosystem Studies
Dr. William H. Schlesinger is President Emeritus of the Cary Institute of Ecosystem Studies, a private ecological research institute on the grounds in Millbrook, NY. Completing his A.B. at Dartmouth (1972), and Ph.D. at Cornell (1976), he moved to Duke in 1980, where he retired in spring 2007 as Dean of the Nicholas School of the Environment and Earth Sciences and as James B. Duke Professor of Biogeochemistry. Dr. Schlesinger is the author or coauthor of over 200 scientific papers on subjects of environmental chemistry and global change and the widely-adopted textbook Biogeochemistry: An Analysis of Global Change (Academic Press, 3rd ed. with Emily Bernhardt, 2013). He has published editorials and columns in the Charlotte Observer, Chicago Tribute, Los Angeles Times, Philadelphia Inquirer, and the Raleigh News and Observer. He was elected a member of the National Academy of Sciences in 2003, and was President of the Ecological Society of America for 2003-2004. He is also a fellow in the American Academy of Arts and Sciences, the American Geophysical Union, the Ecological Society of America, and the Soil Science Society of America. Dr. Schlesinger currently receives no federal research funding.
Sharpley, Andrew N.
University of Arkansas
Dr. Andrew Sharpley joined the Department of Crop, Soil and Environmental Sciences, University of Arkansas, Fayetteville in 2006. He is Director of the Arkansas Discovery Farm Program, Chair of the Division of Agriculture's Environmental Task Force and Associate Director of the Watershed Research and Education Center. He received a B.Sc. from the University of North Wales, United Kingdom in

1973 and a Ph.D. from Massey University, New Zealand in 1977, and spent 25 years with the U.S. Department of Agriculture/Agricultural Research Service (USDA-ARS) in Oklahoma and then Pennsylvania. His research investigates the cycling of phosphorus in soil-plant-water systems in relation to soil productivity and water quality and includes the management of animal manures, fertilizers, and crop residues. He also evaluates the role of stream and river sediments in modifying phosphorus transport, response of receiving lakes and reservoirs, and the legacies of past land management on these responses. He developed decision tools for use by agricultural field staff to identify sensitive areas of the landscape and to target management alternatives and remedial measures to reduce risk of nutrient loss from farms; these tools are widely accepted by U.S. EPA, Natural Resource Conservation Service (NRCS), and the Comprehensive Nutrient Management Planning Strategy. He works closely with producers, farmers, and action agencies to disseminate and apply his research findings. He is the Editor-in-Chief of the Soil Science Society of America, Environmental Issues and Perspectives Editor for the Journal of Environmental Quality, Fellow of the American Society of Agronomy and Soil Science Society of America and received their Applied Soil Science and Environmental Quality Research Awards and received USDA's Secretary's Honor and Technology Transfer Award for his contribution to developing simple risk assessment tools for use by farmers and action agencies. In 2008 Dr. Sharpley was inducted into the USDA-ARS Hall of Fame, and in 2012 he received the Christopher Columbus Foundation Agriscience Award. Dr. Sharpley served on National Academy of Science's Committee on "Causes and Management of Coastal Eutrophication;" USDA-Cooperative State Research, Education, and Extension Service (CSREES)-EPA "National Livestock Curriculum Project;" and EPA Science Advisory Board panels on "Hypoxia in the Northern Gulf of Mexico," "Review of Empirical Approaches for Nutrient Criteria Derivation," and "Review of EPA's draft Approaches for Deriving Numeric Nutrient Criteria for Florida's Estuaries, Coastal Waters, and Southern Inland Flowing Waters." During the last two years, he received funding from: USDA-NRCS as part of the Mississippi River Basin Initiative; state Section 319 grants; EPA Region 6, Section 319 grants; competitively awarded USGS Section 104(G) grants; and the Walton Family Foundation to assess on farm conservation efficiencies and nutrient functioning along the fluvial continuum.

Smith, Eric P.

Virginia Polytechnic Institute and State University

Dr. Eric P. Smith is Chair of the Department of Statistics at Virginia Polytechnic Institute and State University. He holds a B.S. in Mathematics from the University of Georgia (1975), and an M.S. from University of Washington (1982) and Ph.D. from University of Washington (1982) in Biomathematics. Dr. Smith has been a member of the Virginia Tech faculty since 1982. His research focuses on the development and application of statistical methods to help understand and solve environmental and ecological problems. Dr. Smith was the Director of the Statistical Consulting Center 1995-2004. In that position he was responsible for providing statistical support to students, faculty and staff and provided training to statistics students on the art of consulting. Dr. Smith has worked on a variety of statistical and scientific problems from areas such as engineering, education and natural resources. He teaches courses on multivariate analysis and linear models (regression, analysis of variance). Dr. Smith is a former Associate Editor of Environmetrics, the Journal of Agricultural, Biological and Environmental Statistics, and the Journal of the American Statistical Association. He is a section editor for the Natural Resources section for the Encyclopedia of Environmetrics and associate editor for Environmental Management. He has supervised 14 Ph.D. students. Dr. Smith's research is currently funded by grants from the U.S. Forest Service (Macroinvertebrates and Air Pollution), the U.S. Forest Service and James

Madison University (Resiliency of Brook Trout habitat to Climate Change, Evaluating Stream Community Responses to Global Climate change) and the U.S. Department of Agriculture (Improvement and Marketing of the Food and Agricultural Education Information System), the National Marine Fisheries (Model complexity and stock assessment quality: an investigation of the performance of models of different complexity and implications for model selection in fisheries), and BAE Systems (Biometrics Training, Performance and Research Initiative (BTPRI)).

Stubblefield, William

Oregon State University

Dr. William Stubblefield is a senior research professor in the Department of Molecular and Environmental Toxicology at Oregon State University. Dr. Stubblefield has more than 25 years of experience in environmental toxicology, human and environmental risk assessment, derivation of water, sediment and soil criteria, 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 risk assessment. He has conducted a variety of research programs aimed at the evaluation of the toxicity of metals and hydrocarbons in the environment. Dr. Stubblefield's research has examined acclimation induced changes in the responses of aquatic organisms to copper, zinc, and cadmium; evaluated the acute and chronic toxicity of manganese, cobalt, aluminum, methyl tert-butyl ether, petroleum hydrocarbon mixtures and a variety of other compounds; quantified the effects of water quality characteristics, e.g., hardness, alkalinity, dissolved organic carbon, on the toxicity of several metals (e.g., nickel, lead, and silver). His current research examines methods/models that can be used to predict the toxicity of metals and hydrocarbons to aquatic organisms. Current sources of research funding include: the Cobalt Development Institute, European Aluminum Association, Iron Platform, and British Petroleum. Dr. Stubblefield is an active member of the Society of Environmental Toxicology and Chemistry (SETAC), where he served as President of the Society, member of the Society's Board of Directors, chairman of the SETAC's Metals Advisory Group, and member of the Editorial Board for Environmental Toxicology and Chemistry. He has been an invited participant at a number of national and international scientific and regulatory conferences, served on U.S. EPA and National Institute of Environmental Health Sciences (NIEHS) peer-review panels, and frequently act as a technical reviewer for a number of scientific publications. Dr. Stubblefield has a Ph.D. in Zoology and Physiology (emphasis 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.

Taylor, William

University of Waterloo

Dr. William David Taylor is a Professor of Biology at University of Waterloo. From 2003 until 2010 he was the Canada Research Chair in Limnology. He received his BSc and PhD (Zoology) from the University of Toronto. He was a Postdoctoral Fellow at University of Waterloo (with H.B. Noel Hynes) and Visiting Fellow at the National Water Research Institute, Environment Canada (with Brian F. Scott and David R.S. Lean) before joining the faculty of University of Waterloo in 1981. His research interests include aquatic food webs, especially the microbial loop, and nutrient cycling, and he has worked Great Lakes Ontario, Erie and Huron, and on smaller lakes, wetlands and rivers in the Great Lakes Basin. Much of his current research is on the freshwater phosphorus cycle. He also has worked on African Great Lakes Malawi and Victoria, and in many other locations around the world. He

currently serves on the Science Advisory Board of the International Joint Commission, including its working groups on nearshore eutrophication, invasive species, and beach health. Dr. Taylor serves on the Editorial Board of the African Journal of Aquatic Sciences, and he is a member of the American Society of Limnology and Oceanography, the International Society of Limnology, the Society of Canadian Limnologists, and the International Association for Great Lakes Research.

Valett, Maurice

University of Montana

Dr. Maurice Valett is a Professor of Systems Ecology at the University of Montana. He holds a B.S. in Animal Biology from Western Washington University (1982), an M.S. in Zoology from the University of Montana (1985), and Ph.D. in Zoology from Arizona State University (1991). Dr. Valett has been a member of the University of Montana faculty since 2009. His research focuses on ecosystem ecology and biogeochemistry, nutrient retention in lotic ecosystems, groundwater-surface water exchange, floodplain river interactions, and wetlands and streams as flow-through systems. Dr. Valett was Associate and Assistant Professor of Ecology at the Virginia Polytechnic Institute and State University from 1998-2009. He was Research Assistant Professor and Visiting Assistant Professor in the Department of Biology at the University of New Mexico from 1991-1994. Dr. Valett is a member of the American Geophysical Union, the American Society of Limnology and Oceanography, the Ecological Society of America, the North American Benthological Society, and the Geological Society of America. He previously served as a member of the National Science Foundation Geobiology and Low-Temperature Geochemistry Panel and the Carbon and Water in Earth Sciences Panel. Dr. Valett is associate editor of Limnology and Oceanography and from 1998 – 2001 was associate editor of the Journal of the North American Benthological Society. Dr. Valett's research is currently funded by grants from the National Science Foundation (Elemental Cycling in Streams, Exurbation and Climate Interaction in the Southeast).