



THE ENVIRONMENTAL HEALTH MATTERS INITIATIVE

## REDUCING THE HEALTH IMPACTS OF THE NITROGEN PROBLEM

A VIRUTAL WORKSHOP OF THE ENVIRONMENTAL HEALTH MATTERS INITIATIVE

**THURSDAY, JANUARY 28**

*WHAT IS THE NITROGEN PROBLEM?*

### SPEAKER BIOGRAPHIES

**Thomas A. Burke** is the Jacob I. and Irene B. Fabrikant Professor and Chair in Health Risk and Society at Johns Hopkins University's Bloomberg School of Public Health, Department of Health Policy and Management. He holds joint appointments in the Department of Environmental Health Sciences and the School of Medicine Department of Oncology. He is also Director of the Johns Hopkins Risk Sciences and Public Policy Institute. Burke was nominated by President Barack Obama to serve as EPA Assistant Administrator for the Office of Research and Development. From January 2015 until January 2017, Burke was the EPA Science Advisor and Deputy Assistant Administrator for Research and Development. His research interests include environmental epidemiology and surveillance, evaluation of population exposures to environmental pollutants, assessment and communication of environmental risks, and application of epidemiology and health risk assessment to public policy. Before joining the University faculty, Burke was Deputy Commissioner of Health for the State of New Jersey and Director of Science and Research for the New Jersey Department of Environmental Protection. In New Jersey, he directed initiatives that influenced the development of national programs, such as Superfund, the Safe Drinking Water Act, and the Toxics Release Inventory. Burke served as a member of the National Academies Board on Environmental Studies and Toxicology. He was Chair of the National Academies Committee on Improving Risk Analysis that produced the report *Science and Decisions*, and chaired the National Academies Committee on Human Biomonitoring for Environmental Toxicants and the Committee on Toxicants and Pathogens in Biosolids Applied to Land. He also served on the National Academies Committee on Science for EPA's Future and the Committee on the Toxicological Effects of Methylmercury. He is a Fellow of the Society for Risk Analysis and a lifetime National Associate of the National Academies. He was Inaugural Chair of the Advisory Committee to the Director of the U.S. Centers for Disease Control and Prevention National Center for Environmental Health and a member of EPA Science Advisory Board and Board of Scientific Counselors. Burke received his BS from St. Peter's College, his MPH from the University of Texas and his PhD in epidemiology from the University of Pennsylvania.

**Ken Cassman** is Emeritus Professor of Agronomy at the University of Nebraska and is an agricultural consultant. Over a 40 year career, Dr. Cassman's research has focused on ensuring local to global food

security while conserving natural resources and protecting the environment. He has worked on many of the world's major cropping systems—from rice-based systems in the tropics of Asia and South America, to maize-soybean systems in the US, Brazil, and Argentina, and high-value irrigated crops in California, Tasmania, Peru, and Egypt. He currently works at the intersection of intensive agriculture and environmental advocacy to improve yields, profit, soils, and environmental performance. Dr. Cassman led development of the Global Yield Gap Atlas ([www.yieldgap.org](http://www.yieldgap.org)), a map-based web platform developed to estimate exploitable gaps in yield and water productivity of major food crops worldwide. He co-authored *Crop Ecology*, a seminal upper-division/graduate school textbook, served as inaugural Editor-in-Chief of the *Global Food Security* journal, and was a member of the US-EPA Science Advisory Committee on Integrated Nitrogen Management. In 2017, he received the Bertebos Prize from the Swedish Royal Academy of Agriculture and Forestry in recognition of his contributions to agricultural science. Dr. Cassman holds a Ph.D. in Agronomy and Soil Science from the University of Hawaii.

**James N. Galloway** is Sidman P. Poole Professor of Environmental Sciences at the University of Virginia. Dr. Galloway is a biogeochemist known for his work on the magnitude and consequences of the human alteration of biogeochemical cycles. His research includes investigations on the natural and anthropogenic controls on chemical cycles at the watershed, regional and global scales. He started first with trace metal biogeochemistry of the coastal ocean, and then expanded to investigations on the increased acidification of the atmosphere, soils and fresh waters. Most recently he has focused on the nitrogen cycle. He was elected to Fellow of the American Association for the Advancement of Science in 2002, and to Fellow of the American Geophysical Union in 2008. Also, in that year he, together with Harold Mooney, Stanford University, received the Tyler Prize for Environmental Achievement. In 2020 he was elected to the US National Academy of Sciences. He graduated from Whittier College with a BA in Biology and Chemistry, and from UCSD in 1972 with a PhD in Chemistry for his research on the fate of trace metals in a coastal ocean.

**Catherine L. Kling** is the Tisch University Professor of Environmental, Energy, and Resource Economics in the Dyson School of Applied Economics at Cornell University and the Faculty Director of the Atkinson Center for a Sustainable Future. She specializes in the economic valuation of ecosystem services and the integrated assessment modeling for water quality modeling. Dr. Kling currently chairs the National Academies' Water Science and Technology Board and is a member of the PNAS editorial board. She has been a member of nine Academies study committees, including several focused on water resources and agricultural issues. She served as president of the Association of Environmental and Resource Economists, held editorial positions at ten economics journals, and has published over 100 journal articles and book chapters. She is currently the editor of the *Review of Environmental Economics and Policy*. She is an elected Fellow of the Association of Environmental and Resources Economists, the Agricultural & Applied Economics Association, and the American Association for the Advancement of Science. She is also a University Fellow at Resources for the Future, a member of the National Academy of Sciences, and served for ten years on EPA's Science Advisory Board. She received her B.A. in business and economics from the University of Iowa and Ph.D. in economics from the University of Maryland, College Park.

**Craig Cox** leads EWG's research and advocacy work in agriculture and tap water. He has devoted his working life to conservation since joining the Minnesota Department of Natural Resources in 1977 as a field biologist. In 1989 Craig moved to Washington D.C to accept a position as Senior Staff Officer with the Board on Agriculture of the National Academy of Sciences, where he completed three major studies, including *Soil and Water Quality: An Agenda for Agriculture*. In 1994, he joined the staff of the Senate Committee on Agriculture, Nutrition and Forestry to lead the development of the conservation title of the

farm bill that was passed in March 1996. He then joined the USDA Natural Resources Conservation Service as a Special Assistant to the Chief and served briefly as Acting Deputy Under-Secretary for Natural Resources and Environment in the Department of Agriculture before moving to Iowa in 1998 to become Executive Director of the Soil and Water Conservation Society. In August 2008 he joined the Environmental Working Group (EWG). He leads the organization's research and advocacy work on agriculture and public health, environment and climate. He has degrees in Wildlife Ecology (B.S) and Agricultural and Applied Economics (M.S) from the University of Minnesota.

**Eric Davidson** is Professor and Director of the Appalachian Laboratory of the University of Maryland Center for Environmental Science. His research includes terrestrial nutrient cycling, greenhouse gas emissions from soils, global biogeochemical cycles, and sustainable agriculture. Davidson is a Past President and Fellow of the American Geophysical Union, Fellow of the American Association for the Advancement of Science, and Publons Highly Cited Researcher. He served as the North American Center Director for the International Nitrogen Initiative and as the NASA Project Scientist for the Large Scale Biosphere-Atmosphere Experiment in Amazonia. He currently serves as Senior Editor for *AGU Advances*. He previously served as an editor for *Global Biogeochemical Cycles*, *Global Change Biology*, and *Soil Science Society of America Journal*. Davidson received his Ph.D. from the Department of Forestry at North Carolina State University.

**Matt Helmers** is the Director of the Iowa Nutrient Research Center, the Dean's Professor in the College of Agriculture and Life Sciences, and a Professor in the Department of Agricultural and Biosystems Engineering at Iowa State University, where he has been on the faculty since 2003. Matt received his Ph.D. from the University of Nebraska-Lincoln in 2003, a M.S. from Virginia Tech in 1997, and B.S. from Iowa State in 1995. Dr. Helmers' research areas include studies on the impact of nutrient management, cropping practices, drainage design and management, and strategic placement of buffer systems on nutrient export from agricultural landscapes. He has a regional Extension program working to increase adoption of practices that have the potential to reduce downstream nutrient export. He served as the nitrogen science team lead on the Iowa Nutrient Reduction Strategy Science Assessment.

**Mary H. Ward** is a Senior Investigator in the Occupational and Environmental Epidemiology Branch in the Division of Cancer Epidemiology and Genetics (DCEG) at the National Cancer Institute, Rockville, Maryland. Her research focuses on environmental causes of cancer, with special emphasis on nitrate in drinking water and pesticides in relation to the etiology of childhood leukemia, non-Hodgkin's lymphoma, gastrointestinal cancers, and thyroid cancer. Dr. Ward develops interdisciplinary collaborations to develop new methods of exposure assessment for epidemiologic studies of cancer risk in relation to drinking water contaminants and agricultural pesticides using environmental sampling and Geographic Information Systems. She has served on numerous review panels and committees including as Epidemiology Committee Chair for the International Agency for Research on Cancer Monograph review of the carcinogenicity of ingested nitrate and nitrite and on the Steering Committee for the International Childhood Cancer Cohort Consortium. She was co-organizer for two National Academy of Science (NAS) workshops on nitrogen and health and served on the Steering Committee for the Research Coordination Network on Reactive Nitrogen. Dr. Ward was a Reviewer for several Institute of Medicine reports on Veterans and Agent Orange Biennial Updates and served on the Committee for the Best Use of the Agent Orange Reconstruction Model. She is a Fellow in the American College of Epidemiology and was awarded the NCI Women Scientists Leadership and Mentoring Award. Dr. Ward received an M.S. in Ecology from the University of Tennessee and a Ph.D. in Epidemiology from the John Hopkins School of Public Health.