



THE ENVIRONMENTAL HEALTH MATTERS INITIATIVE

REDUCING THE HEALTH IMPACTS OF THE NITROGEN PROBLEM

A VIRUTAL WORKSHOP OF THE ENVIRONMENTAL HEALTH MATTERS INITIATIVE

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*WHAT LANDSCAPE-LEVEL ACTIONS AND INNOVATIVE TECHNOLOGIES COULD BE USED TO
ADDRESS THE NITROGEN PROBLEM??*

SPEAKER BIOGRAPHIES

Ana Claudia Arias is a Professor at the Electrical Engineering and Computer Sciences Department at the University of California in Berkeley and a faculty director at the Berkeley Wireless Research Center (BWRC). Prior to joining the University of California she was the Manager of the Printed Electronic Devices Area and a Member of Research Staff at PARC, a Xerox Company, Palo Alto, CA. She went to PARC from Plastic Logic in Cambridge, UK where she led the semiconductor group. Her research focuses on devices based on solution processed materials and application development for flexible sensors and electronic systems. Dr. Arias is a co-founder of InkSpace Imaging, a startup company that aims to commercialized flexible MRI coils for pediatric patients. She received her PhD in Physics from the University of Cambridge, UK. Prior to that, she received her master and bachelor degrees in Physics from the Federal University of Paraná in Curitiba, Brazil.

Steve Culman is an Associate Professor and State Extension Specialist in Soil Fertility in the School of Environment and Natural Resources at Ohio State University. Before joining Ohio State, Steve was a postdoctoral researcher at the University of California at Davis and the Kellogg Biological Station at Michigan State University. Dr. Culman's research and extension programs focus on improving soil fertility and nutrient management holistically through management practices that enrich nutrient cycling, active organic matter pools and soil health. He conducts research with, educates and learns from a wide variety of growers on nutrient management and soil fertility issues. Dr. Culman was selected a New Innovator in Soil Health by the Foundation for Food and Agriculture Research. Steve earned his PhD in Agronomy and MS in Soil Science from Cornell University.

Kit Franklin is a Senior Lecturer of Agricultural Engineering & a Principal investigator of Hands Free Farm at Harper Adams University in the United Kingdom. His research is focused on future farming systems, AgriTech and agricultural automation. Mr. Franklin was named a Rising Star of UK Agriculture by the Farmers Weekly in 2017 and he is currently a trustee and executive for the Institution of Agricultural Engineers (IAgrE). The Hands Free projects have been recognized in the Queens Anniversary Prize, IAgrE Awards, The Times Higher Education Awards and BBC Food & Farming Awards. Mr. Franklin holds a Masters of Engineering (MEng) in Agricultural Engineering from Harper Adams University.

Rajiv Khosla is Professor and Head of Agronomy at Kansas State University and is a globally recognized authority and a pioneer of Precision Agriculture. He has been engaged in precision agriculture since inception and has made significant contributions in the development and spread of Precision Agriculture worldwide. Dr. Khosla's research specializes in harnessing spatial and temporal heterogeneity in managed agro-ecosystems and translating those into better decision models. His group has extensively used remote sensing and other geo-spatial tools to enhance production, resource use efficiency, profitability, and sustainability of managed agro-ecosystems. Their on-going precision nitrogen management work has demonstrated significant reductions in nitrous oxide (N₂O) emissions on farm fields. Most recently, his laboratory in collaboration with two other institutions are developing the next generation of soil-moisture and soil-nitrate sensors that are in-expensive, passive (battery-less), small, and bio-degradable. He has co-authored over 100 publications (book chapters, refereed journal articles, extension articles, proceedings, bulletins, reports, popular press articles, digital media, and others). He has been invited globally to over 30 countries. He is the Founder and Past-President of the International Society of Precision Agriculture. Most recently, he served as the member of National Academy of Science Executive Committee on Science Breakthrough 2030. In 2017, his research was recognized with the "Werner L. Nelson Award for Diagnosis of Yield-Limiting Factors Award" by the American Society of Agronomy. Previously, he has been recognized as the "Precision Ag Educator of the Year 2015" by the US agricultural industry. In 2012, Dr. Khosla was named the Jefferson Science Fellow by the National Academy of Sciences and was appointed as the Senior Science Advisor on Food Security to the U.S. Department of State. In 2011, he was inducted by NASA to the US "Presidential Advisory Board on Positioning, Navigation and Timing" to work on the US space-based GPS policy. Dr. Khosla is the Fellow of American Society of Agronomy; Fellow of Soil Science Society of America; Fellow of Soil and Water Conservation Society and Honorary Life Fellow of International Society of Precision Agriculture. Dr. Khosla received his BS in Agricultural Sciences at the University of Allahabad, India, MS in Soil Physics from Virginia Tech, and PhD in Soil Fertility and Crop Management from Virginia Tech.

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.

Greg LaBarge is a Field Specialist, Agronomic Systems and Professor with Ohio State University Extension, Columbus Ohio. His research interests are primarily related to nutrient management impacts on crop production and water quality. He has service to a variety of committee including Ohio Phosphorus Task Force-Phase 2, board of the 4R Certified Ag Retailer Program and many other committees incorporating his agronomic production and water quality expertise. He received his Master of Science in Agronomy from University of Missouri-Columbia.

Mark Lubell is a Professor of Environmental Science and Policy at the University of California at Davis. He is a social scientist who studies cooperation, governance, and decision-making in the context of environmental and agricultural issues. His current projects include climate change adaptation, sustainable groundwater management, and nitrogen management in agriculture. Dr. Lubell publishes in a wide range

of social science disciplinary and environmental interdisciplinary journals. He received his PhD in Political Science from the State University of New York at Stony Brook.

Steven Wallander is an economist with USDA's Economic Research Service. His research is focused on land and water conservation, drought resilience, program incentive design, and climate change. He has served as lead investigator on research projects related to conservation auctions, managed aquifer recharge, cover crop adoption, and irrigation organizations. He has served on expert advisory panels for NSF and NIFA grants, on multi-state research teams, and as a peer reviewer for multiple journals. He presented information on use of USDA administrative data to the National Academies of Sciences' Panel on Improving Data Collection and Reporting about Agriculture with Increasingly Complex Farm Structures. He holds a PhD in environmental economics from Yale University.

Roger Wolf is director of the Iowa Soybean Association's Research Center for Farming Innovation. He is responsible for advancing innovative programs, integrating knowledge development, and application of enhanced cropping systems, robust resource management, and active farmer and collaborator engagement leading to more resilient agricultural environments. Mr. Wolf also serves as Executive Director of the Agriculture's Clean Water Alliance, an Iowa nonprofit organization of agricultural retailers and associate members with the mission to identify and advance solutions that reduce nutrient loss, build healthier soils, and improve Iowa's waters. Mr. Wolf is an active proponent of the One Water Management approach, fostering leadership from agriculture, conservation, and the water sector capitalizing on new and innovative ways to reduce nutrient pollution, improving natural resource management in Iowa and the Mississippi River basins. In 2009, Mr. Wolf served on a National Research Council Committee on the Mississippi River and the Clean Water Act: Scientific, Modeling and Technical Aspects of Nutrient Pollutant Load Reduction Allocation and Implementation. In 2020, the Iowa Soybean Association received the US Water Prize in the category of Outstanding Nonprofit Organization for innovative solutions that benefit watersheds and watershed residents. Mr. Wolf holds a bachelor's degree in Geography from the University of Iowa.