Board on Agriculture and Natural Resources

Committee

Jill J. McCluskey

Chair

Jill J. McCluskey is Regents Professor and Director of the School of Economic Sciences at Washington State University. She specializes in the economics of product quality, reputation, new technology, and women in STEM. She served as President of the Agricultural and Applied Economics Association (AAEA) and has published over 130 journal articles. She is currently the editor of the American Journal of Agricultural Economics and serves on the executive board of the International Association of Agricultural Economists. She is an elected Fellow of the AAEA, the Western Agricultural Economics Association, and the American Association for the Advancement of Science. She received her B.A. in Business Economics and Political Science from the University of California, Santa Barbara, her M.S. in Economics from Georgetown University, and her M.S. and Ph.D. in Agricultural and Resource Economics from the University of California, Berkeley, where she was alumna of the year in 2022.

Amy W. Ando

Member

Amy Ando is Professor and Chair in the Department of Agricultural, Environmental, and Development Economics (AEDE) at The Ohio State University. Prior to joining AEDE in 2023, she was a Professor at the University of Illinois Urbana-Champaign in the Department of Agricultural and Consumer Economics and before that, she was a Research Fellow at Resources for the Future, where she still is affiliated as a University Fellow. Ando studies the economics of conservation and the provision of ecosystem services. Ando is a Fellow of the Association of Environmental and Resource Economics, for which she also has served as Vice President and Board members. She currently serves on the Board of the American
Agricultural Economics Association and is an editor of the American Journal of Agricultural Economics. She has provided expert advisory service to agencies and NGOs including the U.S. Department of Agriculture, the U.S. Environmental Protection Agency, the Doris Duke Charitable Foundation, and The Nature Conservancy in Illinois. Dr. Ando earned a B.A. in economics from Williams College in 1990 and a Ph.D. in economics from MIT in 1996.

Aristos Aristidou

Member

Aristos Aristidou is Chief Scientific Officer for Biomason, a company that is reinventing concrete using bacteria. He previously worked for Cargill in multiple roles, including Platform Lead for Biotechnology and BioIntermediates and, prior to that, as Director of Biotechnology Research & Development Center. Dr. Aristidou is an entrepreneurial leader with more than 20 years of international technical and operational leadership experience in bioprocess and biocatalyst development with expertise in leading teams of multi-disciplinary scientists involved in the development, scale-up, and technology transfer of commercial processes. He was one of the founding members of two of the world's leading bio-based product companies, NatureWorks and Gevo, which make biobased alternatives to petroleum-based feedstocks. He is an elected member of the National Academy of Engineering. He holds a B.S. and Ph.D. in chemical engineering, both from Rice University, in Houston, Texas.

Bruno Basso

Member

Bruno Basso is John A. Hannah Distinguished Professor at the Department of Plant, Soil, and Microbial Sciences at Michigan State University, and was a University Foundation Professor in the Department of Earth and Environmental Sciences and W.K. Kellogg Biological Station at Michigan State University. He is an ecosystems scientist whose research focuses on the long-term sustainability, circularity and resilience of agricultural systems; remote sensing; and modeling of water, nutrients and carbon fluxes across agricultural landscapes under current and future conditions. He holds global patents on AI, crop model systems to evaluate land productivity and environmental sustainability. He is a Fellow of the American Association for the Advancement of Science; Soil Science Society of America; and American Society of Agronomy. He is the recipient of the 2021 Morgan Stanley Sustainability Solutions Prize, 2016 recipient of the Innovation of the Year Award, and 2019 Outstanding Faculty Award at Michigan State University. He is a member of the scientific advisory board of Field to Market, Invaio and various European firms. He is the cofounder and Chief Scientist of CiBO Technologies. He is Editor of European Journal of Agronomy, Scientific Reports, Remote Sensing, Frontiers in Agronomy. He was the chair of the National Academies of Sciences, Engineering, and Medicine planning committee for a workshop on A Dynamic Soil Information System, and a planning committee member and speaker at the Complex Agriculture-Food Systems Forum organized by the US National Academy of Engineering. He received his Ph.D. from Michigan State University.

Bernadette M. Dunham

Member

Bernadette Dunham joined the Milken Institute School of Public Health at George Washington University in 2016, where her focus is on One Health issues. She served as advisor to the Food and Drug Administration's One Health Initiative from 2019-2021, and as Director of the FDA-Center for Veterinary Medicine from 2008-2016. Dr. Dunham serves on the Leadership Council for the National Institute for Antimicrobial Resistance, Research and Education, Ames, IA, and on the Executive Advisory Board for the Center for Animal and Human Health in Appalachia, Lincoln Memorial University, TN. She is a Distinguished Fellow of the National Academies of Practice; an Honorary Diplomate and Awardee of the K.F. Meyer - James H. Steele Gold-Headed Cane Award from the American Veterinary One Health Society (founded as the American Veterinary Epidemiology Society). She has served on peer review panels for the National Academies of Sciences, Engineering, and Medicine (NASEM); the American Heart Association - New York State Affiliate; United States Department of Agriculture-Cooperative State Research, Education and Extension Service, Competitive Programs; and the National Institutes of Health. She is a current member of the NASEM consensus study Committee on Heritable Genomic Modification in Food Animals. She received her D.V.M. degree from the Ontario Veterinary College, University of Guelph, Ontario, Canada and her Ph.D. from Boston University, MA.

Kaiyu Guan

Member

Kaiyu Guan is the Levenick Professor in Agroecosystem Modeling and Sensing and the Founding Director of Agroecosystem Sustainability Center at the University of Illinois Urbana-Champaign (UIUC). Dr. Guan is also the Chief Scientist for the NASA Acres–the NASA domestic agricultural flagship program. His research group uses computational models, satellite data, field work, and Artificial Intelligence to address how climate and human practices affect crop productivity, environmental sustainability, water resource availability, and ecosystem functioning. Guan's group aims to increase our society's resilience and adaptability to maintain sustainability of ecosystem services, food security and water resources under the influence of climate change and anthropogenic drivers. Guan is the awardee of NSF CAREER Award, NASA New Investigator Award, AGU Early Career Award in Global Environmental Change, Blavatnik National Award for Young Scientist Finalist, Global Highly Cited Researcher, and FoodShot Global GroundBreaker Prize. In 2024, Guan was awarded AGU James Macelwane Medal and became an AGU fellow. He earned his Ph.D. in Environmental Engineering at Princeton University and was a postdoctoral fellow at Stanford University before he joined UIUC in 2016.

Jessica E. Halofsky

Member

Jessica E. Halofsky is the Director of the USDA Northwest Climate Hub and the Forest Service Western Wildland Environmental Threat Assessment Center at the Pacific Northwest Research Station. In her role, Jessica promotes development and use of applied climate change science and adaptation in natural resource management across the western U.S. Jessica has a background in forest and wildfire ecology but has been conducting climate change science and adaptation work in the western U.S. for over a decade. In her previous position, she pioneered one of the first climate change vulnerability assessment and adaptation projects with Olympic National Forest and Park. Since that initial project, Jessica has co-led ten other regional climate change vulnerability assessment and adaptation partnerships around the West. In 2019, Jessica was recognized with the National Climate Change Adaptation Leadership Award for Natural Resources for demonstrating exemplary leadership in reducing climate-related threats and promoting adaptation of the nation’s natural resources. The award was sponsored by the Association of Fish and Wildlife Agencies and various Federal agencies. She received a Ph.D. in Forest Science from Oregon State University, an M.S. degree in Forest Resources from Penn State University, and a B.S. degree in Environmental Science from Bucknell University.

Ermias Kebreab

Member

Ermias Kebreab is Associate Dean of Global Engagement and Director of World Food Center at University of California, Davis. He holds the Sesnon Endowed Chair in Sustainable Agriculture. He conducts research in animal nutrition, mathematical modeling of biological systems and the impact of livestock on the environment. He is a contributing author to the 2019 Intergovernmental Panel on Climate Change update on enteric methane emissions. He co-chaired the feed additive and methane committees of the Food and Agriculture Organization of the United Nations. He has authored over 250 peer-reviewed articles and received several awards including Excellence in Ruminant Nutrition and International Agriculture from the American Society of Animal Science. He served on two consensus study committees of the National Academies of Sciences, Engineering and Medicine: Improving Characterization of Methane Emissions in the U.S., and the Nutrient Requirements of Dairy Cattle. He is a regularly invited speaker, including TED and TEDx talks. His research was in the top 10 of all research conducted at the University of California system in 2021. He received a Ph.D. in 1998 in ecological modeling from the University of Reading, UK.

Jayson Lusk

Member

Jayson Lusk is the Vice President and Dean of Oklahoma State University (OSU) Division of Agricultural Sciences and Natural Resources. He leads the Ferguson College of Agriculture and two state agencies: OSU Extension and OSU Ag Research. From 2017 to 2023, he served as Distinguished Professor and Head of the Agricultural Economics Department at Purdue University, where he founded the Center for Food Demand Analysis and Sustainability. Lusk is a food and agricultural economist who studies what we eat and why we eat it. He studies consumer preferences for and the policy and market impacts of new food attributes and food technologies. His primary areas of contribution have related to livestock and meat markets and understanding the merits of new survey and experimental approaches to eliciting consumer preferences. He has won numerous awards, including the Borlaug Communication Award from the Council for Agricultural Science and Technology, the R.J. Hildreth Public Policy Award from the Farm Foundation, and the Lou Ann Aday award from Purdue University. He is a Fellow and Past President of the Agricultural and Applied Economics Association and a fellow of the American Association for the Advancement of Science. He has testified before the agricultural committees for both houses of the U.S. Congress and has served on numerous advisory boards including the executive committee of the USDA National Agricultural Research, Extension, Education, and Economics (NAREEE) Advisory Board. He holds a Ph.D. in agricultural economics from Kansas State University.

Marty D. Matlock

Member

Marty D. Matlock is a Professor of Biological and Agricultural Engineering in the University of Arkansas Systems Division of Agriculture. In 2021-2022, he served as Sr. Advisor to USDA Marketing and Regulatory Programs on food systems resiliency. He has worked with the global food supply chain over the past 25 years to measure and improve sustainability, increase efficiency, reduce environmental impacts, and expand resiliency. He received the CAST-Borlaug Communications Award in 2018, more than 50 national and international design awards, and served on the board of directors for Field to Market from 2010-2016. Prior to his position at USDA, he was the founding Executive Director of the University of Arkansas Resiliency Center and Chair of the Cherokee Nation Environmental Protection Commission. He received a B.S. in agronomy, M.S. in botany, and Ph.D. in biosystems engineering from Oklahoma State University in Stillwater, Oklahoma.

Holly Mayton

Member

Holly Mayton leads external research partnerships and science policy engagements as a member of John Deere's Emerging Technologies and Architecture team. In this role, Holly connects science and technology with public policy on issues that impact farmers productivity, profitability, and sustainability, including biofuels and climate-smart agriculture. Holly has previously served as the Managing Director of the Internet of Things for Precision Agriculture (IoT4Ag) research center and as a Science and Technology Policy Fellow in the U.S. Department of State's Office of Agriculture Policy. Holly is also a member of National Academies of Sciences, Engineering, and Medicine New Voices program, a founder and Board Member of the National Science Policy Network (NSPN), and a National Advisory Board Member of the Union of Concerned Scientists. Holly holds a Ph.D. in Chemical and Environmental Engineering with a Designated Emphasis in Public Policy from the University of California, Riverside and B.S. from the University of Virginia.

John P. McNamara

Member

John McNamara is Professor Emeritus at the Center for Reproductive Biology at Washington State University (WSU), having served 33 years as a Professor of Animal Sciences. He has more than 100 peer-reviewed research papers, as many invited proceedings and other publications and trained several graduate students. He taught companion animal biology and published a well-known textbook, Principles of Companion Animal Nutrition. His work on dairy cattle and sows identified key pathways, enzymes and genes that defined the most efficient animals. He served on several USDA/NIFA panels and summits and was an original committee member of the National Resources Support Program (0808/0909) National Animal Nutrition Program. He served 25 years on the Board of Washington Science Teachers Association and is a past-president, being highly active in preparation and education of science teachers. He is a member of the Washington Academy of Sciences, a Fellow of the American Dairy Science Association (2012), and Fellow of the American Association of Animal Sciences (ASAS) (2016), one of only 12 so recognized. He has several WSU Teaching and Research awards, the ASAS Corbin Award in Companion Animal Biology (2007) and the ADSA Zoetis Award in Animal Physiology (2015). He earned a B.S. and M.S. degree in agricultural and dairy sciences working with NAS member Dale Bauman. He received a Ph.D. from the University of Georgia in 1982.

Naima Moustaid-Moussa

Member

Naima Moustaid-Moussa is Executive Director, Institute for One Health Innovation, Paul W. Horn Distinguished Professor in Nutritional Sciences, and Director of the Obesity Research Institute at Texas Tech University (TTU). Before joining TTU in 2012, she served as professor and co-director of the Obesity Research Center at the University of Tennessee (UT) Knoxville and the UT Institute of Agriculture. Dr. Moustaid-Moussa leads an externally funded basic and integrated nutrition and obesity research program, focusing on nutrigenomics and the endocrine function of adipose tissue in metabolic diseases. Her lab uses cell, animal models and model organisms (C. elegans) of obesity, aging and Alzheimer's disease. Her secondary areas of interest include beta cell function in diabetes, and obesity/childhood obesity prevention. Dr. Moustaid-Moussa has received several national/international awards including the 2012 Outstanding Investigator award and 2015 Pfizer Consumer Healthcare Nutritional Sciences award, both from the American Society of Nutrition (ASN); and in 2020, she received the Korean Nutrition Society Award and was elected to the ASN Board of Directors. She is currently Vice President of ASN (2024-2025). Dr. Moustaid-Moussa completed her B.S. in Cell Biology & Physiology at the University of Paris XI-Orsay and her Ph.D. in Endocrinology at the Sorbonne University (1989) (formerly University of Paris, P & M Curie). She obtained post-doctoral training in molecular nutrition at Harvard School of Public Health.

Linda S. Prokopy

Member

Linda Prokopy is Professor and Department Head in the Department of Horticulture and Landscape Architecture at Purdue University. Dr. Prokopy is an interdisciplinary social scientist who is recognized nationally and internationally for her work incorporating social science into the fields of agricultural conservation, agricultural adaptation to climate change, and watershed management. Dr. Prokopy has published over 140 peer-reviewed articles in consistently high-tier journals, she has generated over $33 million in competitive research funds, and she has graduated and mentored numerous graduate students and postdocs. She is currently the Project Director for a $10 million Sustainable Agriculture Systems grant from USDA-NIFA that is focused on diversifying the agricultural landscape of the Corn Belt. Dr. Prokopy received her M.S. and Ph.D. from the University of North Carolina, Chapel Hill.

Pamela C. Ronald

Member

Pamela Ronald is Distinguished Professor of Plant Pathology at the University of California, Davis. She uses genetic techniques to understand the plant response to infection and tolerance to environmental stress. She is known for her lead in isolating the Sub1A gene locus from rice that imparts tolerance to submergence in transgenic plants, for which she and her collaborators received the 2008 USDA National Research Initiative Discovery Award and the 2012 Tech Award for the innovative use of technology to benefit humanity. In 2019, she received the American Society of Plant Biologists Leadership Award and an honorary doctorate from the Swedish Agricultural University. In 2020 she was named a World Agricultural Prize Laureate by the Global Confederation of Higher Education Associations for Agricultural and Life Sciences. In 2022 she was awarded the Wolf Prize in Agriculture. In 2019, Ronald was elected member of the U.S. National Academy of Sciences. Dr. Ronald completed her Ph.D. at UC Berkeley (1990), earned a B.S. from the Reed College (1982), an M.S. from Stanford University and an M.S. from the University of Uppsala, Sweden.

V. Alaric Sample

Member

V. Alaric (Al) Sample is an Adjunct Professor of Environmental Science and Policy at George Mason University in Fairfax, Virginia and he was previously President Emeritus and Senior Fellow at the Pinchot Institute for Conservation in Washington, DC, where he served as President and CEO from 1995 to 2015. His current research surrounds and delves into adaptations to climate change in order to sustain and fortify ecological systems. His past research was focused on integrating climate change mitigation, adaptation, and resilience into the evolving institutional, legal, and policy framework for natural resource management. His professional experience spans the public, private and nonprofit sectors and includes assignments with the U.S. Forest Service, Champion International, The Wilderness Society, and the Prince of Thurn und Taxis in Bavaria, Germany. He specialized in resource economics and natural resource policy as a Senior Fellow at the World Wildlife Fund in Washington, DC, as Vice President for Research at the American Forestry Association, and as a Research Affiliate on the faculty of the Yale School of Forestry and Environmental Studies. Dr. Sample has served on numerous national task forces and commissions, including the President’s Commission on Environmental Quality task force on biodiversity on private lands, and the National Commission on Science for Sustainable Forestry. He received a B.S. degree in forest management from the University of Montana and a Ph.D. in natural resources policy and economics from Yale University.

Roger E. Wyse

Member

Roger Wyse is Founder and Managing Partner at Spruce Capital Partners, a venture capital management company with $320 million under management. Spruce invests in innovative companies with technologies that enable disruptive solutions to the challenges facing the agrifood sector. Previously, he was President and COO of BioGreentech at Burrill & Company where he built the venture franchise in food, agriculture, and industrial biotechnology. Before joining Burrill in 1998, Dr. Wyse served for five years as Dean of the College of Agricultural and Life Sciences at the University of Wisconsin-Madison. Before that, Dr. Wyse served as Executive Associate Dean of Research at Cook College, Rutgers University and Director of the NJ Agriculture Experiment Station. Dr. Wyse spent 16 years as a plant scientist in the USDA-ARS earning international recognition for his fundamental research on the physiological factors that determine yield potential in crop plants. In 1982, he received the Arthur Flemming Award as the outstanding Scientist in Federal Service. Dr. Wyse was elected a Fellow of CSSA, ASA, and AAAS. Dr. Wyse currently serves on the boards of several private companies including Lanzatech, Inscripta, Amfora, Pivot Bio, Evolve Biosystems, and Napigen. He also serves on the board of the Biotechnology Innovation Organization and chairs its Investor Advisory Committee. Dr. Wyse received a B.S. degree in Agronomy at Ohio State University and a Ph.D. in plant Physiology at Michigan State University, where he completed a post-doctoral fellowship in the Department of Biochemistry.

Roberta A. Schoen

Director

Robin Schoen is the Director of the Board on Agriculture and Natural Resources (BANR) of the congressionally chartered, not-for-profit National Academies of Science, Engineering, and Medicine. BANR is the program unit of the Academies responsible for bringing scientific experts together around issues related to food and agricultural production, forestry, wildlife, and the use of land, water, and other natural resources, in response to requests from Congress and the federal agencies, states, and the private sector. BANR’s recent work is diverse and includes a study to identify science breakthroughs to advance food and agricultural research by 2030; a review of the citrus greening research portfolio of the Florida citrus growers; and a technical document of the nutrient requirements of poultry, among other activities. Robin joined BANR in 2005 from the Academies’ Board on Life Sciences and Office of International Affairs, and before that, the National Institutes of Health. A native Washingtonian, Robin received a B.S. in biology and chemistry from Frostburg State College, Maryland, and an M.A. in Science and Technology Policy from George Washington University.