

Review of Transmission and Geographic Spread of Chronic Wasting Disease in U.S. Cervid Populations

Committee

Lonnie J. King

Chair

Lonnie King is an Academy Professor and Dean Emeritus in the College of Veterinary Medicine at the Ohio State University (OSU). He previously served as OSU's Vice-President for Agriculture and was the first Director for the National Center for Zoonotic, Vector-borne, and Enteric Diseases at the Centers for Disease Control and Prevention and the administrator of the U.S. Department of Agriculture's Animal Plant Health Inspection Service (APHIS) where he also was the nation's Chief Veterinary Officer for five years. King's research interests and expertise include emerging infectious diseases, zoonotic diseases, antimicrobial resistance, food safety and security, global health, One Health, and leadership development. He received an honorary degree from Tufts University in 2022, was awarded the Global One Health Award from the World Veterinary Medical Association, and the Meritorious Award from the World Organization for Animal Health. King received a B.S. and DVM from OSU, an M.S. in epidemiology from the University of Minnesota, and an MPA from American University. He is boarded in the American College of Veterinary Preventive Medicine and completed the Senior Executive Fellowship in leadership from Harvard University. He has served on numerous National Academy consensus study committees as well as the Forum on Microbial Threats and the One Health Action Collaborative.

Sonja A. Christensen

Member

Sonja Ann Christensen is an assistant professor and faculty member in the Department of Fisheries and Wildlife at Michigan State University. Prior to her current position, she worked for the Massachusetts Division of Fisheries and Wildlife as a deer and moose project leader with statewide wildlife management responsibilities. Her research program uses quantitative modeling, field ecology, and social science methods to study wildlife disease ecology and epidemiology and wildlife management, with a special focus on population impacts of disease on ungulate species. Christensen's outreach program includes working with the Association of Fish and Wildlife Agencies to provide technical support and coordination around fish and wildlife health issues. She also serves as an uncompensated member of the USGS Biological Threats and Invasive Species Research Program Council where she provides state agency perspectives for research programs for that group. Christensen received an M.S. in fisheries and wildlife science from the Pennsylvania State University and a Ph.D. in fisheries and wildlife with a specialization in disease ecology and conservation medicine from Michigan State University.

Christensen has received compensation for service as the Fish and Wildlife Health Coordinator from the Association of Fish and Wildlife Agencies, which has generated a best practices document related to chronic wasting disease.

Matthew C. Dunfee

Member

Matthew C. Dunfee is the Director of Special Programs for the Wildlife Management Institute (WMI) and served as the Conservation Program Specialist in WMI's Headquarters working on projects related to North American wildlife conservation, private lands habitat programs, and free-ranging cervid disease management. He also serves as the Director of the Chronic Wasting Disease (CWD) Alliance, the Chair of the North American Wildlife and Natural Resources Conference, Co-Chair of the National Hunting and Shooting Sports Action Plan, Chair of the CWD Applied Research Management Grant Program, and Administrator for the International CWD Information and Data Sharing Hub. Dunfee serves on numerous professional committees and boards including the Association of Fish and Wildlife Agencies' (AFWA) Fish and Wildlife Health Committee. He has led state, regional, and national strategic decision-making processes targeting effective management of CWD in wild cervid populations, including in Colorado, Tennessee, Kansas, and North Dakota, and the USGS. He was awarded the IHEA-USA's Dr. Edward Kozicky Award and a Distinguished Service award from the Council to Advance Hunting and the Shooting Sports. Dunfee received a B.S. in fish, wildlife, and conservation biology from Colorado State University.

Dunfee served as a science and technical advisor for several conservation non-governmental organizations within the past five years, including, for example, the National Wildlife Federation, the Boone and Crockett Club, and the National Military Fish and Wildlife Association. Dunfee has provided talks and interviews for numerous podcasts, organizations, and media outlets on the history, status, and available CWD management tools.

David C. Finnoff

Member

David Finnoff is a Wyoming Excellence Chair and Professor of Economics at the University of Wyoming. His research focus is on risk management in coupled human, natural systems. He has led many research projects that include management of grizzly bears and wolves, optimal endangered species listing decisions, management of wild game species facing threats of brucellosis and chronic wasting disease (CWD), and on management of forests under threat of beetle outbreaks. He has been awarded federal grants to conduct research, including projects aimed at managing coupled systems facing tipping points, the development integrated economic/epidemiological models for management of infectious diseases that threaten humans, and for the development of linked economic/ecosystem models. Other funded projects include several aimed at the development of integrated models for management of economic and ecological systems subject to the risk of invasive species. Recently, Finnoff has extended a line of work on optimal social investments to reduce pandemic risks to consider the economic and social effects of the COVID-19 pandemic, the role of public policy in reducing the risks associated with COVID-19, and on developing modeling frameworks to consider the implications of future novel disease risks that incorporate risk driven behavioral responses and how concern for others influences decisions. Finnoff received a B.S. and Ph.D. in economics from the University of Wyoming.

Finnoff is a co-author on a paper in which a predictive model simulating animal welfare related to CWD transmission in a variety of wildlife management scenarios related to elk feedgrounds is described.

Thomas Gidlewski

Member

Thomas Gidlewski retired from the USDA, Animal Plant Health Inspection Service (APHIS) in 2021 after 35 years of service. He is currently an instructor for the APHIS foreign animal disease courses at the Plum Island Animal Disease Center in New York. Prior to retirement from USDA APHIS, he was the Program Manager for the Wildlife Services, Wildlife Disease Program as well as the Attending Veterinarian for the National Wildlife Research Center (NWRC) in Fort Collins, Colorado. Prior to this position he served APHIS in various roles, including Senior Staff Veterinarian with the Chronic Wasting Disease Program; pathologist in the General Pathology and Pathology Investigations Section of the Pathobiology Laboratory at the National Veterinary Services Laboratories (NVSL) in Ames, Iowa; Port Veterinarian at the Port of Sweetgrass, Montana; and field Veterinary Medical Officer in Lawrenceburg, Kentucky and Logan, Utah. Gidlewski's research in domestic animal and wildlife diseases primarily includes avian influenza, brucellosis, foot and mouth disease, rabbit hemorrhagic disease, heartwater, tuberculosis, and chronic wasting disease. Gidlewski received an M.S. in poultry nutrition from Virginia Polytechnic Institute and State University, an M.S. in veterinary pathology from Iowa State University and a DVM from the University of Pennsylvania.

Nicholas J. Haley

Member

Nicholas Haley is an associate professor in the Department of Microbiology and Immunology at Midwestern University. His research has focused on chronic wasting disease (CWD) management in captive cervid populations through both live animal testing and selective breeding for animals with less susceptible PRNP (prion protein) genotypes. He has been given “Friend of the Industry” awards from both the North American Elk Breeders and Whitetails of Wisconsin, and in 2021 received the Zoetis Distinguished Teacher award for outstanding teaching and achievement in the field of Veterinary Medicine. Haley received a DVM from Cornell University and a Ph.D. from Colorado State University.

Haley’s research involves collaboration with captive cervid facilities from which he collects samples for genomic testing. He has published extensively on topics related to CWD transmission and management of captive cervids in the last five years.

Deborah I. McKenzie

Member

Debbie McKenzie is a professor in the Department of Biological Sciences at the University of Alberta, where she also serves as the Associate Dean of the Graduate Faculty of Science. Her lab uses several different model systems, ranging from cell-free to cell culture to primary neuronal cultures to whole lab animals, to address questions regarding the etiology and pathogenesis of chronic wasting disease (CWD) and the research is performed in the state-of-the art Centre for Prions and Protein Folding Diseases. Her research focuses on the role of Prnp genetics on susceptibility to prion infection, CWD strains, prion disease intra- and inter-species transmission, and development of biomarkers for prion diseases. McKenzie received a Ph.D. in medical biochemistry from the University of Calgary.

Michael W. Miller

Member

Michael W. Miller served as a wildlife veterinarian with the Colorado Division of Parks and Wildlife from 1989 until his retirement from State service in 2022. In that capacity, he studied a variety of topics related to the ecology and management of infectious diseases affecting wildlife in Colorado and elsewhere. As a veterinarian and scientist, he has extensive experience trying to understand and control chronic wasting disease (CWD) in both captive and free-ranging cervids. Miller has received regional and international awards recognizing his achievements in advancing wildlife health sciences and management, including his work on CWD. Miller received a B.S. in zoology with a biochemistry minor, a DVM, and a PhD from Colorado State University.

Miller's former employer, the Colorado Division of Wildlife has a long history of setting policies, regulations, plans, and management actions related to the control of CWD. He served on ad hoc working groups providing scientific opinions on CWD to the European Food Safety Authority on behalf of European Commission, and chaired the Western Association of Fish & Wildlife Agencies' Wildlife Health Committee, which advised the group's directors on topics related to CWD and its control. He has given many scientific presentations and published numerous papers on CWD throughout his career.

Rodrigo F. Morales

Member

Rodrigo Morales is a Professor in the Department of Neurology at The University of Texas Health Sciences Center at Houston. He has 20 years of experience in the field of protein misfolding diseases, specifically in prion and Alzheimer's diseases. His main research topics involve the prion-like nature of A β aggregates in Alzheimer's disease, the contribution of peripheral tissues and blood in amyloid pathology, the study of environmental components contributing to chronic wasting disease (CWD) dissemination, the strain and species barrier phenomena in prion diseases, and the pathological interaction between amyloidogenic proteins. Morales received a Ph.D. from the University of Chile. Morales is listed as an inventor in a patent related to a Protein Misfolding Cyclic Amplification (PMCA) technology used for estimating prion concentration in fluids and tissue.

Margo Pybus

Member

Margo Pybus leads Alberta, Canada's provincial wildlife disease program area and directly or indirectly contributes to ongoing disease and management-related programs, policies, recommendations, and education/outreach, including chronic wasting disease (CWD). She is a long-standing member of the Wildlife Disease Association and The Wildlife Society. Pybus recently received the Wildlife Disease Association Tom Thorne & Beth Williams Memorial Award for life-time achievement. She also is a former President of the Alberta Chapter of The Wildlife Society and recipient of the highest Chapter honors. Subsequent to her groundbreaking masters thesis work, a nematode species now bears her name. Pybus received a B.Sc. and M.Sc. from the University of Guelph and a Ph.D. in wildlife parasites and diseases from the University of Alberta.

Tiffany M. Wolf

Member

Tiffany Wolf is an assistant professor of Ecosystem Health at the College of Veterinary Medicine and co-director of the Minnesota Center for Prion Research and Outreach (MNPRO) at the University of Minnesota (UMN). Prior to becoming faculty, she was an associate veterinarian of the Minnesota Zoo for 10 years. Wolf is a wildlife epidemiologist and veterinarian who works closely with natural resource managers and community partners to understand wildlife disease patterns with the goal of developing science-based strategies that mitigate their impacts on both wildlife populations and the people that depend on them. In much of her research, she partners with Tribal Nations and other Indigenous communities in addressing their research priorities on issues such as zoonotic disease emergence, dog health, and chronic wasting disease (CWD). Wolf is the recipient of the UMN Community Engaged Scholar Award, Academy of Excellence in Team Science Award, and McKnight Land Grant Professorship. Notably, the Team Science award was based on the accomplishments of the MNPRO team in research and education on CWD and other prion diseases. Wolf received a DVM from Louisiana State University and a PhD from UMN.

As co-director of MNPRO, Wolf has provided public testimony to Minnesota legislators on CWD science and MNPRO research and outreach activities to inform management decisions related to the control of CWD in the state.

Sammantha Magsino

Staff Officer