

Animal Welfare Challenges in Research and Education on Wildlife, Non-Model Animal Species and Biodiversity

Speaker Biographies

Robert Sikes, Ph.D.

Robert Sikes, is professor of biology at the University of Arkansas at Little Rock, with primary interests in behavioral and evolutionary ecology. Sikes's research experience has been exclusively with wild vertebrates, both in the field and in captivity, with mammalian subjects ranging in size from shrews to giant pandas. He is past president of the American Society of Mammalogists (ASM), currently co-chairs the ASM's Animal Care and Use Committee, was lead author on the last 2 revisions of that professional society's guidelines for the use of wild mammals in research, and has authored a number of additional publications regarding the ethical use of wild animals in research. Sikes is a former member of the ILAR Council and a current member of the AAALAC Council on Accreditation. Sikes holds a B.S. in biology from the University of Arkansas at Little Rock (1985), an M.S. in biology from Memphis State University (1990), and a Ph.D. in zoology from the University of Minnesota (1994).

Anne Maglia, Ph.D.

Dr. Anne Maglia is the Associate Vice Chancellor for Research Administration and Integrity at the University of Massachusetts Lowell. She oversees the Offices of Research Integrity and Research Administration and the Research Support Services group. Her primary responsibility is to build the research portfolio while ensuring effective administration of the university's sponsored research portfolio and compliance with terms and conditions, policies, laws and regulations relating to the conduct of research. She previously served at the National Science Foundation as a Program Director and Animal Welfare Officer. Prior to NSF, she was an Associate Professor of Biological Sciences at Missouri University of Science and Technology where her research program focused on amphibian skeletal development and biodiversity. Dr. Maglia served on the ILAR Roundtable, the Governing Board of the American Society of Ichthyologists and Herpetologists, and the Executive Committee of the Society for Integrative and Comparative Biology. She holds a B.S. in Pre-Veterinary Medicine from Ohio University, an M.S. in Biology from East Tennessee State University, a Ph.D. in Ecology and Evolutionary Biology from the University of Kansas and is a certified Project Management Professional.

Carol Clarke, D.V.M., DAACLAM

Carol L. Clarke received her Bachelor's degree in the Natural Sciences from Johns Hopkins University, and her D.V.M. degree from the Tuskegee School of Veterinary Medicine. After receiving her D.V.M., she practiced small animal medicine in New York City for 13 years before entering the laboratory animal medicine training program at SmithKline Beecham Pharmaceuticals. Upon completion of the program,

she entered the National Institutes of Health in 1998 as the primate facility Attending Veterinarian for the Veterinary Resources Program. In 2001, she accepted a position with the Comparative Medicine Branch of the National Institute of Allergy and Infectious Diseases (NIAID) and became a Diplomate of the American College of Laboratory Animal Medicine in 2005. During her 10 years with NIAID, she served as IACUC coordinator, Vice Chair of the Rodent Gnotobiotic Committee, and Chief of Shared and Central Facility Operations. In addition, she prepared all federally required annual reports on animal usage. Dr. Clarke accepted a position with the US Department of Agriculture (USDA) in 2011, and currently serves as the Research Program Manager for Animal Care. Her duties include representing the USDA on various Federal interagency committees, serving as a member of the Roundtable Committee for the National Academies of Sciences, participating in investigative actions, writing policies, and providing outreach to the public. She also served as the Project Officer for Module #26 -Nonhuman Primate Transportation for the National Veterinary Accreditation Program; and has received senior leadership training from the American University (2012-2013) and the President's Management Council Interagency rotation through the Department of Health and Human Services (2017-2018).

Nicolette Petervary, V.M.D., M.S., DACAW

Nicolette Petervary, VMD, MS, DACAW is part of the Division of Policy and Education in the Office of Laboratory Animal Welfare at the National Institutes of Health, and was formerly the National Animal Welfare Specialist for Animal Welfare Operations, USDA, APHIS, Animal Care. Prior to her government positions, she was in private small and exotic animal practice, and worked as a research associate at the University of California (Davis and San Francisco Campuses). Dr. Petervary obtained her veterinary medical degree from the University of Pennsylvania School of Veterinary Medicine. She completed a Master of Science degree in Comparative Biomedical Sciences from North Carolina State University focusing on research in behavioral neuroscience, and is a diplomate of the American College of Animal Welfare.

Jeff Wyatt, D.V.M., MPH, DACLAM

Jeff Wyatt, Emeritus AAALAC Council member and AZA Accreditation Commissioner, graduated from The Ohio State University College of Veterinary Medicine in 1982, became ACLAM specialty board certified in 1989 and earned an MPH from the University of Rochester School of Medicine in 1995. Dr. Wyatt, Professor & Chair of Comparative Medicine at the University of Rochester School of Medicine & Dentistry, uses a "One-Health- One Medicine" approach to evaluate and promote ecosystem health in the field and in the laboratory. His wildlife research has included characterizing the epidemiology of human postexposure prophylaxis in the face of the mid-Atlantic raccoon rabies epizootic, assessing population health of federally endangered Chittenango Ovate Amber snails enrolled in mark & recapture studies and evaluating the health of denning black bears and cubs as bioindicators of Upstate NY ecosystem health. Ongoing projects assess lemur and human health through a climate change lens in southeast Madagascar, validate repatriated lake sturgeon as bio-monitors of legacy pollutants in the Rochester Embayment EPA Area of Concern, and capacity building in a multidisciplinary "One Health" program reversing poverty, transforming community health, and saving the rainforest home of 2,500 orangutans in Indonesian Borneo. Dr. Wyatt represents the American Association of Fish Veterinarians on the AVMA Animal Welfare

Committee, is a Fulbright Specialist awardee for developing a planetary health curriculum at Bogor's IPB University in Indonesia and a Senior Scientific Advisor to Morris Animal Foundation.

Adam W. Ferguson, Ph.D.

Adam is an evolutionary ecologist interested in the natural history, conservation, and diseases of small carnivores (members of the order Carnivora <15 kg) and other neglected small mammals. He joined the Field Museum in 2017 as the Negaunee Collections Manager of Mammals after completing a 2.5 year post-doc studying genets and mongooses in Kenya and a PhD in Biology from Texas Tech University where he studied skunks.

Laurie A. Baeten, D.V.M., Ph.D.

Laurie Baeten is the Attending Veterinarian and Chair of the National Parks Service IACUC. Previously she worked for USDA-APHIS-WS-National Wildlife Research Center as their Attending Veterinarian. Her wildlife veterinary career began at the USGS-National Wildlife Health Center where she did field research and provided veterinary support for captive animal research projects in the ABSL3. She has also worked for the Colorado Parks and Wildlife managing their wildlife health laboratory. Laurie continues to volunteer as the Attending Veterinarian for USGS Science Centers in Fort Collins and Alaska.

Laurie is a graduate of University of Wisconsin School of Veterinary Medicine and completed a residency/PhD in veterinary microbiology at Colorado State University.

Caleb R. Hickman, Ph.D.

Dr. Caleb Hickman is Supervisory Biologist for the Eastern Band of Cherokee Indians (EBCI) within the southern Appalachians. With a small team, he works to study and conserve a variety of game and non-game fish and wildlife species and their habitats. He uses a combination of science-based management coupled with a socio-ecological perspective that includes an eye toward preserving traditional knowledge for the benefit of future generations. He is board member for the Center for Native Health and serves on the Cultural IRB review panel for EBCI. He is a Certified Wildlife Biologist and has authored and co-authored numerous publications at the edge of ecology and social science. Prior to working for the tribe, he earned his PhD in zoology from the University of Wisconsin-Madison, master's degree in biology from Missouri State University, and bachelor's degree in biology from Missouri Valley College. Caleb spent the past 20 years working across various ecosystems studying the ecologies and behaviors of a variety of species.

Heather L. Bateman, Ph.D.

Heather Bateman, PhD is an Associate Professor at Arizona State University and has conducted vertebrate animal research for over 15 years and authored over 50 journal articles. Dr. Bateman is a wildlife ecologist interested in how human land-use and management affects vertebrate populations and habitats,

especially in riparian ecosystems. Her research interests lie in exploring wildlife responses to habitat alteration, with a particular interest in amphibians, reptiles, and birds. Current projects include research to link instream flows to terrestrial wildlife in Southwestern riparian areas. Other research avenues include exploring urban ecology and the social-ecological factors predicting human-wildlife interactions. Dr. Bateman teaches herpetology and ornithology where students conduct research and participate on field trips. Dr. Bateman mentors undergraduate and graduate students in wildlife ecology and is the recipient of the 2021-2022 Outstanding Master's Mentor Award at Arizona State University.

Lawrence R. Heaney, Ph.D.

Lawrence R. Heaney began research on the evolution, ecology, and conservation of island mammals in the Philippines in 1981, conducted in collaboration with museums, universities, conservation organizations, and government agencies. This has included training for dozens of young Filipino biologists in the Philippines and the US, and led to the founding of the Biodiversity Conservation Society of the Philippines. The project's discovery of over 40 previously unknown species of mammals has contributed substantially to conservation programs and to the establishment of many national parks. Larry is the Negaunee Curator of Mammals at the Field Museum of Natural History in Chicago. He teaches and advises students at the University of Chicago and University of the Philippines, and is a Research Fellow at the Philippine National Museum of Natural History.

Lisa A. Tell, D.V.M

Dr. Lisa A. Tell is a Professor in the Department of Medicine and Epidemiology, School of Veterinary Medicine at the University of California, Davis and a Diplomate in the American College of Zoological Medicine and the American Board of Veterinary Practitioners (Avian). After obtaining her DVM degree (UCD 1991), she trained (1991-1994) at the National Zoological Park in Washington, D.C. as a zoological medicine intern and resident. In 1994 Dr. Tell joined the UC Davis SVM faculty and from 1994-2006 she was the Chief of Service for the Veterinary Medical Teaching Hospital's Companion Avian and Exotic Pet Medicine Service. In 2006, Dr. Tell's academic career shifted to a focus on human food safety when she was appointed as the Western Region Director and the avian specialist for the Minor Use Animal Drug and Food Animal Residue Avoidance and Depletion (FARAD) Programs. In addition, she successfully finished an apprenticeship that established her as a Master Hummingbird Bander and became the Director of the Hummingbird Health and Conservation Program. Over the course of Dr. Tell's academic career, she has enjoyed mentoring numerous undergraduate and veterinary students, training several clinical house officers and human pharmacists, and serving as major professor or co-major professor for graduate students. Her research has focused on diagnosing and treating avian diseases; classical pharmacokinetic studies in birds and small ruminants in relation to residue avoidance; and hummingbird disease ecology. Dr. Tell has been a leader in establishing health parameters for hummingbirds, banded and/or subcutaneously placed radio frequency identification tags in thousands of hummingbirds representing five different species, and developed welfare conscious approaches and techniques for studying diseases that impact hummingbirds.

Christopher L. Parkinson, Ph.D.

Dr. Christopher Parkinson attended Ohio University for his undergraduate education then went on to earn his Ph.D. from the University of Louisville and carried out postdoctoral work at Indiana University and the Carnegie Museum of Natural History. Dr. Parkinson is currently a Professor in the Departments of Biological Sciences and Forestry and Environmental Conservation at Clemson University where he and his team utilize genomic approaches to investigate the evolution, conservation, and systematics of venomous snakes. Over the last 25 years, Dr. Parkinson has worked extensively with the biogeography, systematics and taxonomy of pitvipers, and of late investigates the evolution of venom and venom variation. Dr. Parkinson has extensive experience conducting fieldwork and leading expeditions in over 20 countries. Dr. Parkinson has been a University IACUC member and chair, is currently the Chair of the American Society of Ichthyologist and Herpetologists Herpetological Animal Care Committee, has lectured for SCAW on utilizing wild animals in research and safely conducting fieldwork, and has participated as an invited speaker at AALAS on safely utilizing venomous snakes in research.

Jonathan Reichard, Ph.D.

Jonathan has 20 years of experience in basic research in ecology and physiology of mammals and applied science for management of bats. He received his B.S. in Natural Resource Management from Cornell University in the School of Agriculture and Life Sciences. He then served as a natural resource extension agent with the U.S. Peace Corps in Mali, West Africa, and as a high school science educator in Boston, MA. He earned his M.A. and Ph.D. in Biology at Boston University conducting field research on physiology, ecology, and disease in bats of Texas and New England. Jonathan currently serves as the U.S. Fish and Wildlife Service's Assistant Coordinator for the National Response to White-nose Syndrome in bats.

Jonathan's work currently focuses on research and management of hibernating bats. White-nose syndrome is caused by a non-native fungal pathogen that is responsible for the deaths of millions of bats in North America and is a high management priority for Federal, State and other agencies to prevent population losses from this disease. Jonathan coordinates research prioritization, partnerships, communication, and development and implementation of management tools in order to advance conservation for bats.

John A. Bryan, II, D.V.M., M.S.

Dr. Bryan is a native Georgian who received his undergraduate education from Emory University, and his professional (DVM + Certificate in International Veterinary Medicine) and graduate (MS: *Veterinary Pathology*) degrees from the University of Georgia. Following veterinary school, Dr. Bryan received post-doctoral training at the Southeastern Cooperative Wildlife Disease Study (SCWDS) in the diagnosis, epidemiology, of pathology wildlife disease. From 2009 to 2014, Dr. Bryan served as a veterinary medical officer/wildlife veterinarian with the Biological Resource Management Division of the National Park Service (NPS), where he served as Chair and Attending Veterinarian of the NPS Institutional Animal Care and Use Committee, Veterinary Diagnostic Service Coordinator, and as a Field Wildlife Veterinarian. In 2014, Dr. Bryan returned to SCWDS as a Public Service Assistant and Wildlife Veterinarian focusing on exotic invasive species and wildlife disease. In 2018, Dr. Bryan left SCWDS to establish Zachery Consulting,

LLC; a freelance wildlife veterinary consulting service specializing in a broad spectrum of wildlife issues including disease investigation and diagnosis, welfare compliance and oversight, research, and management. Dr. Bryan is a member of The Wildlife Society, the Wildlife Disease Association, the American Association of Wildlife Veterinarians, and the American Society of Mammalogists (ASM) where he currently serves on the ASM Institutional Animal Care and Use Committee and as the ASM Delegate to the Association for Assessment and Accreditation of Laboratory Animal Care, International (AAALAC, Int.). Dr. Bryan also serves as an Ad-Hoc Consultant to AAALAC, Int. and holds current veterinary licensure in the states of Colorado and Georgia.

Karen Lips, Ph.D.

Dr. Karen Lips is Professor of Biology at the University of Maryland. She has a B.S. in Zoology from the University of South Florida, and a Ph.D. in Biology from the University of Miami. She is an ecologist who studies how global change (e.g., wildlife disease, climate change, land use) affects biodiversity of amphibians and reptiles in Latin America and the US. A primary focus of her research is determining the ecological and environmental factors that influence amphibian species' response to disease, and how that information might be used in conservation and recovery plans. She is interested in how the loss of biodiversity affects communities and ecosystems, and how human activities contribute to the spread of disease and loss of biodiversity. Dr. Lips was a Jefferson Science Fellow at the Department of State, where she worked in the Bureau of Western Hemisphere Affairs and served as an Embassy Science Fellow in Colombia. Dr. Lips has been a Research Associate at the US Museum of Natural History and at the Smithsonian Tropical Research Institute, and is an elected Fellow of AAAS and the Ecological Society of America.

Vance T. Vredenburg, Ph.D.

Vance Vredenburg is Professor and Associate Chair of the Department of Biology at San Francisco State University, Fellow of the California Academy of Sciences, Research Associate at the Museum of Vertebrate Zoology at University of California Berkeley, and Fulbright Fellow (Spain & Morocco). He grew up in Mexico and the U.S., received his bachelor's degree from the University of California Santa Barbara, and his Ph.D. from University of California Berkeley. His Ph.D. research included field experiments that revealed a method to rapidly recover threatened frog populations, and this has been implemented in mountain habitats globally. His current research focuses on the impacts of an emerging infectious disease (chytridiomycosis) and climate change on amphibians and the role of the amphibian skin microbiome in health and disease. Vredenburg is co-founder and Associate Director of AmphibiaWeb.org an online bioinformatics tool promoting science and conservation of the world's amphibians and supports over 7.5 million queries per year.

Mark Drew, D.V.M, M.S., DACZM

Mark Drew received his MS (Zoology) from the University of Edmonton in Alberta, and his DVM in 1987 from the University of Minnesota. He completed a residency in Zoo and Wildlife Medicine at the

University of California. Mark was the wildlife veterinarian for California Department of Fish and Game and then taught Zoological Medicine at Texas A&M University. Mark was the Wildlife Veterinarian for the Idaho Department of Fish and Game for 22 years. He is a Diplomate and past President of the American College of Zoological Medicine, and the past President of the American Association of Wildlife Veterinarians.

Jeanne M. Fair, Ph.D.

Jeanne Fair is a scientist with the Biosecurity & Public Health Group at Los Alamos National Laboratory with a focus in epidemiology and animal disease ecology. Dr. Fair is the founder of for a long-term (27 years) research project on the impacts of stress on avian populations. In 2012, Dr. Fair was Editor-in-Chief of the *Guidelines for the Use of Wild Birds in Research*. Since 1989, Dr. Fair has captured, banded and collected information from over 25,000 wild birds on three continents. In addition, she has been involved as the PI on numerous laboratory animal infection studies and has extensive experience with handling wild rodents and bats for global biosurveillance programs. Dr. Fair, has over 90 publications, primarily in wildlife ecology and epidemiology. She routinely works with the North American Ornithological Council on animal care and use issues on behalf of the North American ornithological community. Since 2011, she has taught, in association with IACUC 101, a Wildlife IACUC course, including one in Washington, D.C. in 2016 that had a panel of experts of the Directors of AAALAC, OLAW, and USDA. Dr. Fair was IACUC Chair at Los Alamos National Laboratory from 2004-2013. From 2013-2016 she was on assignment as a science program manager with the Cooperative Biological Engagement Program for the Defense Threat Reduction Agency. In this position, she worked with partner countries to develop a biosafety and biosecurity culture and worked with animal care facilities to obtain AAALAC accreditation.

George James Kenagy, Ph.D.

George James (Jim) Kenagy has been at the University of Washington since 1976, where he continues as emeritus Professor in the Biology Department, College of Arts and Sciences, and Curator of Mammals at the Burke Museum of Natural History and Culture. He received his BA in Zoology from Pomona College (1967), followed by a PhD in Zoology at UCLA (1972). His postdoctoral experiences in behavioral physiology and ecophysiology were as Fellow of the Alexander von Humboldt Stiftung at the Max-Planck-Institut für Verhaltensphysiologie, Erling-Andechs, Germany; and as Postdoctoral Fellow in the Department of Biology at UCLA and the Physiological Research Laboratory, Scripps Institution of Oceanography, UC San Diego. His research, supported by the National Science Foundation, includes both field and laboratory studies at the interface of ecology, behavior, physiology, and evolution. His work with small mammals addresses a variety of topics including daily and seasonal patterns of activity and energy allocation, reproduction, hibernation, chronobiology, and geographic analysis of population genetic structure.

Daniel M. Mulcahy, Ph.D., D.V.M., Dipl ACZM

Dan Mulcahy has been both a research biologist and a wildlife veterinarian. He first earned a Ph.D. degree in Microbiology (1977) from Oregon State University in Corvallis, Oregon. Mulcahy worked in the US Fish and Wildlife Service and the US Geological Survey for more than thirty years, beginning with research on infectious fish diseases in Seattle and then served as the first Chief of Research at the National Wildlife Health Center in Madison, Wisconsin directing projects on wildlife disease research. Mulcahy then obtained a Doctor of Veterinary Medicine from the University of Wisconsin in Madison, Wisconsin (1992) and moved to Alaska, obtained board certification with the American College of Zoological Medicine (1998), and worked as a federal wildlife veterinarian specializing in field surgeries, particularly transmitter implantations in Alaska and internationally, until his retirement. Mulcahy then served as the Editor of the Journal of Wildlife Diseases for five years. He has served on four Institutional Animal Care and Use Committees dealing with research on free-ranging animals and has published about 100 articles and chapters, including several pertaining to animal welfare issues with free-ranging wildlife.

Michael W. Miller, D.V.M., Ph.D.

Dr. Michael Miller has served as a wildlife veterinarian and staff scientist with the Colorado Division of (Parks &) Wildlife since 1989. In addition to providing veterinary services, he has actively researched a variety of topics related to the ecology and management of wildlife diseases in Colorado and elsewhere. Dr. Miller worked with agency administrators and in-house research groups to establish and register one of the first institutional animal care and use committees within a wildlife management agency. The CDPW formally registered with the US Department of Agriculture as a research facility over 30 years ago, with all captive and field research involving mammalian and avian species subject to CDPW's IACUC oversight for over three decades. This program is one of several examples that can serve to catalyze progress elsewhere. Dr. Miller received a B.S. in zoology (biochemistry minor), a D.V.M., and a Ph.D. in wildlife biology, all from Colorado State University.

Kevin Monteith, Ph.D.

Kevin is an Associate Professor and Wyoming Excellence Chair in the Haub School of Environment and Natural Resources and the Wyoming Cooperative Fish and Wildlife Research Unit, Department of Zoology and Physiology at the University of Wyoming. Before his stint in Wyoming, Kevin received his BSc and MSc in Wildlife and Fisheries Sciences from South Dakota State University, and his PhD in Biology from Idaho State University in 2011. Today, Kevin leads a team of researchers, the Monteith Shop, at UW where their program is focused on integrating nutrition, population, and quantitative ecology to understand behavior, resource allocation, and life history of large mammals. Often, their work uses individual-based and intensive field studies to gain a mechanistic understanding of what influences large mammals and how they cope with a changing world. Some of their long-term, cross generational work has contributed to understanding effects of human disturbance and changing environmental conditions, to various aspects of life history including ontogeny of migration, resource allocation and reproductive chronology.

Margaret A. Wild, D.V.M, Ph.D., CWB®

Dr. Wild's work focuses on protecting and promoting the health of wildlife, primarily through the study of emerging infectious diseases. She received her BS in wildlife biology, DVM, and PhD in zoology, all from Colorado State University. After working as a researcher with the Colorado Division of Wildlife, she was the chief wildlife veterinarian for the National Park Service for 18 years. In 2018, she moved to Washington State University where she is currently a professor in the College of Veterinary Medicine focused on studying an emergent hoof disease in elk.

Andrew Engilis, Jr., M.S.

Born and raised in Sacramento and Davis, California, Andy Engilis is the Curator of the Museum of Wildlife Fish Biology (MWFB) in the Department of Wildlife, Fish, and Conservation Biology at the University of California Davis. He has held that position since 2000. Andy is also a Research Associate of the Bishop Museum, Hawaii where he has conducted research in New Guinea and the Hawaiian Islands dating back to the 1960s. His primary research is on specimen-based, avian, mammalian, and herpetological diversity and biogeography studies in the United States and globally. He has collected bird and mammal specimens on five continents over the span of his career working with challenges facing specimen-based collections where modern advancements in euthanasia are not readily available. Andy has conducted basic research on the efficacy of Rapid Cardiac Compression (formally known as Thoracic Compression) and developed standardized methodology for the use of this form of euthanasia. He has worked with the Ornithological Council on euthanasia issues and methods. Andy has published 80 professional papers dealing with specimen-based and basic research questions centered primarily on avian and mammalian distribution and diversity, systematics, ecology, and life histories in the United States, Central America, Chile, Tanzania, SE Asia, Mexico, and New Guinea. From 1987–1989 he was a Nongame Biologist for the State of Hawaii coordinating endangered forest and water bird recovery programs. In 1989 he joined Ducks Unlimited as a Senior Biologist for 10 years where he coordinated and supervised wetland programs in 10 western states and represented DU conservation programs in Mexico, Australia, New Zealand, and the Pacific Rim. Andy has been an avid hunter and birder since his youth.

Rebecca J. Rowe, Ph.D.

Rebecca Rowe is an Associate Professor in the Department of Natural Resources and the Environment at the University of New Hampshire. Rebecca received her B.A. degree in Biology at Bowdoin College in 1997, her Ph.D. from the Committee on Evolutionary Biology at the University of Chicago in 2006, and conducted her Postdoctoral Research at the Natural History Museum of Utah at the University of Utah.

Rebecca's research investigates the population and community ecology of small mammals (rodents and shrews) over space and time, as well as the functional role animals play in ecosystems. Emphasis is placed on how changes in climate and land use shape resource use, population density, species distributions, community structure, and functional diversity. Current research projects are located in the Great Basin of western North America, northern New England, and arctic Alaska.

At the University of New Hampshire, Rebecca has served as a member of the Institutional Animal Care and Use Committee since 2011 and as Chair of that committee since 2018.

Jeffrey Buckel, Ph.D.

Jeffrey Buckel is professor in the Department of Applied Ecology at North Carolina State University. He is a fisheries scientist with a focus on estimating abundance and vital rates of marine and estuarine fishes. Buckel is an editor for the American Fisheries Society's *Marine and Coastal Fisheries* journal; vice-chair of the South Atlantic Fishery Management Council's Science and Statistical Committee; a panel review member for the National Academies of Sciences NRC post-doctoral program; treasurer of the Early Life History Section of the American Fisheries Society; and member of the American Fisheries Society's Award of Excellence Committee. Buckel received a B.S. in biology from the University of Maryland and a Ph.D. in coastal oceanography from Stony Brook University.

David S. Miller, D.V.M, CWB, PhD, DACZM, DACAW

Dave Miller is a veterinarian that has experience with all of the major zoological animal taxa and all domestic animal species. He has worked domestically and internationally in zoo, university, private practice, research, nonprofit, consultant, and government settings. This includes work with wildlife under controlled and free-ranging settings. His PhD training emphasized epidemiology and infectious agent transmission across wildlife interfaces, and his research has been in the areas of wildlife epidemiology and animal welfare. Dave has veterinary specialty board certification in zoological medicine (DACZM) and animal welfare (DACAW). His AVMA service includes leadership roles with the Animal Welfare Committee and Panels on Euthanasia and Depopulation, as well as service on other committees and task forces. He has provided animal welfare, wildlife, One Health, epidemiology, and other courses at colleges and universities. These topics are also among the continuing education presentations that he has provided at veterinary and wildlife professional meetings, as well as to stakeholders and the general public.

Eileen A. Lacey, Ph.D.

Dr. Eileen Lacey is a Professor of Integrative Biology and a Curator in the Museum of Vertebrate Zoology, both at the University of California, Berkeley. Dr. Lacey is a behavioral ecologist whose research examines the ecological and evolutionary bases for variation in the social behavior of wild mammals, with an emphasis on rodents. Currently, she is using comparative analyses of free-living and captive tuco-tucos (genus *Ctenomys*) to explore the causes and consequences of differences in social relationships. Dr. Lacey has served as Vice Chair and Chair of Berkeley's IACUC and is currently the Co-Chair of the American Society of Mammalogists' Animal Care and Use Committee.

L. Michael Romero, Ph.D.

Dr. Romero received his Ph.D. from Stanford in 1993 and has been a professor at Tufts University since 1996. His research interests focus on the vertebrate stress response in wild animals. Research in Dr.

Romero's laboratory is aimed at increasing our understanding of the reasons for, and the mechanisms underlying, stress in wild animals. His research takes an integrative approach, with work in several different fields simultaneously (e.g., neuroscience and ecology). Approximately a third of the work is done in the field in order to understand how an animal fits into its environment, but detailed mechanistic studies are performed in the lab on captive animals. The captive studies have primarily been on various avian species, but field work has included studies from nearly 50 wild species, including birds, reptiles, amphibians, and mammals. Dr. Romero's research thus consists of intimately intertwined laboratory and field studies in the areas of physiology, ecology, and neuroscience, all with the goal of increasing our comprehension of the causes and effects of stress in wild animals. Dr. Romero has also served on the Tufts IACUC for over 20 years, including periods as chair and vice-chair.

Michael Smotherman, Ph.D.

Michael Smotherman is a Professor of Biology and Chair of the Institute for Neuroscience at Texas A&M University. He received his BS from Occidental College in Los Angeles, an MS in Zoology from the University of Maine at Orono, and completed his PhD in Physiology at UCLA in 1998. He was a Grass Fellow in Neurophysiology at Woods Hole Marine Biological Laboratory in 2002 and joined Texas A&M as an assistant professor in 2004. His primary research explores the neurophysiology of the vertebrate auditory system, investigating how the ascending auditory pathways and cortical circuits encode complex sounds and sequences. Dr. Smotherman has studied a wide range of species, including horseshoe crabs, frogs, cephalopods, songbirds and mice, but his lab mainly works with wild-caught echolocating bats. In addition to neurophysiology, his lab conducts complimentary fieldwork and behavioral experiments in bat echolocation, social communication, olfaction and magnetosensation. He currently serves as the director of the Biology department vivarium, and recently completed 10 years on the Texas A&M IACUC, including the last four years as its vice chair.

Michael Stoskopf, D.V.M., Ph.D., DACZM

Michael Stoskopf, is professor of wildlife and aquatic health and the Director of the Environmental Medicine Consortium at North Carolina State University. His research focuses include population, ecosystem and landscape approaches to health management of wildlife, broadly defined to include aquatic and marine species including invertebrates and vertebrates, and their physiologic responses to environmental changes. He is past president of the International Association for Aquatic Medicine (IAAAM), was active in the establishment of the AVMA's Committee on Aquaculture and has also served on the ILAR Council of the National Academy of Sciences. He has spoken widely and authored several publications regarding the ethical use of wild animals in research. Stoskopf earned his DVM at Colorado State University (1975) and his PhD in Environmental and Biochemical Toxicology at Johns Hopkins University (1986). He was instrumental in the establishment of the American College of Zoological Medicine, passing the first examination offered, and serving in various roles, including president, where he encouraged the inclusion of aquatic and wildlife medicine as subspecialties of the developing organization.

William Greer

Bill graduated from The Pennsylvania State University in 1985 with a degree in Microbiology. He currently oversees the animal care and use, biosafety, lab safety, controlled substances and autonomous systems research compliance programs. His previous roles included the Associate Director for Research Compliance, IACUC Vice-Chair, and Biosafety Committee Chair at The Pennsylvania State University, and the production manager and safety director at Intervet, State College, PA (Formally Tri Bio Laboratories). Bill has overseen animal care and biosafety programs for over 30 years.

In 2005, he organized and held the very first research administrators Best Practice Meeting, which establish a venue for research oversight professionals to informally meet and discuss programmatic concerns. He continues to facilitate at least five annual Best Practice meetings covering both biosafety and animal care and use programs. In 2010, he chaired the founding committee for the non-profit education based IACUC Administrators Association (IAA), and continues to serve as the organization's president and chair of the board of directors. Since 2007, Bill has served as ad hoc consultant to AAALAC Council where he performs institutional program reviews, assessments, and status determinations.