

Review of Proposals to the Bureau of Land Management on Wild Horse or Burro Sterilization or Contraception

Committee

David M. Powell

Chair

Dr. David M. Powell (Chair) is a research associate at the Smithsonian Institution's National Zoological Park and associate curator of mammals at the Bronx Zoo, overseeing hoofed animals and carnivores. His research interests lie in studies of the role of dominance and subordination in animal societies. As a zoo biologist, Dr. Powell is interested in application of behavioral knowledge to management of animals in captivity with the goal of promoting captive breeding, preparing animals for reintroduction, and ensuring optimal animal welfare. He has studied a variety of species both in captivity and in the field, including feral horses, gorillas, flamingos, lions, golden lion tamarins, kori bustards, octopuses, small carnivores, and giant pandas. He served on the National Research Council committee that produced the 2013 report *Using Science to Improve the BLM Wild Horse and Burro Program: A Way Forward*. He is a member of the Association of Zoos and Aquariums Animal Welfare Committee, Equid Taxon Advisory Group, Caprine Taxon Advisory Group, and Contraceptive Advisory Board. Dr. Powell also participated in the International Union for Conservation of Nature Conservation Breeding Group's Horses of Assateague Island Population and Habitat Viability assessment workshop. Dr. Powell received his BS in biology from University of Miami and his PhD in zoology from the University of Maryland.

Bruce W. Christensen

Member

Dr. Bruce W. Christensen joined the Department of Population Health and Reproduction as Assistant Professor for Equine Reproduction at the University of California, Davis, in 2012. He is also chief of the Equine Reproduction Service in the William R. Pritchard Veterinary Medical Teaching Hospital, providing diagnostic services in equine reproduction for veterinary patients. At the hospital, he is engaged in clinical instruction of professional students in equine reproduction, didactic and laboratory teaching in equine reproduction to professional students, mentorship and clinical training of large animal reproduction residents, and graduate instruction in equine reproduction or related areas of research expertise. Dr. Christensen has considerable experience in the study and practice of clinical reproduction not only in horses, but also in comparative aspects of large and small animal domestic species. He has a particular interest in reproductive issues in the preservation of endangered species, and his research has included studies in Mexican gray wolves, okapis, Somali wild asses, Fennec foxes, and African elephants. Dr. Christensen holds a DVM from Cornell University's College of Veterinary Medicine. Following a one-year small animal rotating medicine and surgery internship, Dr. Christensen began a residency in equine and canine theriogenology at the University of Florida that he completed in 2006, becoming board certified in the American College of Theriogenology. The following year, while remaining there as a staff clinician, he also completed a MS in reproductive physiology. Dr. Christensen then both practiced and taught reproduction in Australia, the Cayman Islands, and Hungary, until he became an assistant professor of clinical production at Iowa State University's College of Veterinary Medicine, where he taught until assuming his current position at the University of California, Davis.

Cheryl Dyer

Member

Dr. Cheryl Dyer is a founder of SenesTech and a member of the Board of Directors. She has served as president of the Company and as a director since July of 2004. As chief research officer, she oversees all of SenesTech's research activities for relevance to the company's business goals, adherence to scientific standards and assurance of regulatory, legal, and contractual compliance. Prior to joining SenesTech, Dr. Dyer served as a NIH-funded Principal Investigator at The Scripps Research Institute and at Northern Arizona University, where she maintained an independently funded research program and laboratory. She was the first research professor in the Department of Biology at Northern Arizona University in 1995 and the first established investigator for the American Heart Association in the state of Arizona. Dr. Dyer earned a bachelor's degree in biology from the University of California at San Diego in 1974 and a PhD in physiology and pharmacology in 1986 in the School of Medicine at University of California at San Diego.

Larry Katz

Member

Dr. Larry Katz is the director of Rutgers Cooperative Extension and the associate director of the New Jersey Agricultural Experiment Station. His laboratory studies the endocrine, environmental, and social factors that affect reproductive behavior and performance in ruminants. Dr. Katz joined Rutgers in 1989 and has chaired the Department of Animal Sciences since 2001. He has served on committees at the university, state, and national level regarding agricultural animal care and wildlife damage control. Over the years, he has received numerous awards for his teaching, including being named Outstanding Teacher seven times by the Cook College Leadership Committee on Teaching and Advising Excellence. Dr. Katz received his bachelor's in animal science and master's degrees in reproductive physiology from Cornell University and his doctorate in animal behavior from the University of California-Davis.

Thomas Lenz

Member

Dr. Thomas Lenz is a past President of the American Association of Equine Practitioners (AAEP) and has been a lifelong advocate for the health and welfare of the horse. He graduated from the University of Missouri's College of Veterinary Medicine in 1975, earned a Master of Science degree in Equine Reproduction from Texas A&M in 1988, and is a Diplomate of the American College of Theriogenologists (Animal Reproduction). He has chaired the AAEP's Welfare Committee, served on the American Veterinary Medical Association's (AVMA) Welfare Committee, and currently serves on the welfare committees of the American Horse Council and the Professional Rodeo Cowboys' Association as well as the American Quarter Horse Association's Welfare Commission. For his work in equine welfare, he received the AVMA's 2010 Animal Welfare Award. Dr. Lenz is a trustee of the American Horse Council and the immediate past chair of its Unwanted Horse Coalition. He received the AAEP's Distinguished Service Award in 2005 and its Distinguished Lifetime Achievement Award in 2009 for his contributions to the equine industry and equine veterinary medicine. Dr. Lenz is an honorary vice president of the American Quarter Horse Association, for which he chaired the Research Committee and currently serves on its Board of Directors. He has written a monthly horse health column for over 23 years for the Quarter Horse Journal and Quarter Horse Racing Journal. He is currently the senior director of equine technical services for Zoetis Animal Health.

Lowell Miller

Member

Dr. Lowell Miller is the principal and owner of Circle M Products, which consults on immunocontraceptive treatment for pest and zoo animals. Dr. Miller recently retired as project leader for reproductive control methods in the Product Development Program Section of the U.S. Department of Agriculture's National Wildlife Research Center. Most of his professional career has been focused on the development of antifertility agents for population management of problem wildlife and feral species. Among the most notable achievements is the development of the registered GnRH vaccine, GonaCon, which has been shown to be safe and effective for contraception of several mammalian species for multiple years after a single injection. Dr. Miller has also been involved in the development of nicarbazin (registered as OvoControl) for use as an oral contraceptive for geese and pigeons and Diazacon for use with mammals and bird species. Dr. Miller's expertise in the development and application of reproductive control technology is recognized internationally and has led to numerous collaborations with scientists in the United Kingdom, New Zealand, Australia, Norway, Mexico, and South Africa among other nations. Dr. Miller received his PhD in physiology/immunology from Colorado State University.

Budhan Pukazhenth

Member

Dr. Budhan Pukazhenth has a diverse clinical and research background. After training and practicing as a clinical veterinarian in India, Dr. Pukazhenth obtained research training in biochemistry, cell biology, and molecular biology at the University of Maryland. He joined the Smithsonian National Zoological Park and its Conservation and Research Center in 1992 to pursue a PhD. Capitalizing on his unique background, Dr. Pukazhenth introduced a new dimension (utilizing molecular approaches to answer whole animal problems) to the research conducted within the Department of Reproductive Sciences. His most significant achievements include (1) demonstrating the link between cellular mechanisms and sperm function, including the phenomenon of teratospermia in felids (the production of malformed sperm common in some species) and (2) understanding the mechanisms that dictate the successful cryopreservation of cells, especially spermatozoa in felids, ungulates, and elephants. The primary goal of Dr. Pukazhenth's research is the conservation of critically endangered species including ungulates and elephants in captivity and in the wild. His research interests include understanding the fundamental reproductive biology of rare and endangered species, mitigating infertility, developing assisted reproductive technologies (artificial insemination and in vitro fertilization/embryo transfer), and gamete and embryo cryopreservation. Currently his research is focused on the Przewalski's horse, Grevy's zebra, Persian onager, Brown antlered deer (Eld's deer), tufted deer, Dama gazelle, Scimitar horned oryx, Baird's tapir, and elephants. Recently his team produced the world's first Przewalski's horse foal via artificial insemination. Dr. Pukazhenth received a bachelor's degree in veterinary sciences from the Madras Veterinary College, India (1987) and master's (1992) and doctoral degrees (1996) from the University of Maryland. He completed a post-doctoral fellowship at the National Zoo and is a recipient of the prestigious National Institutes of Health Special Emphasis Research Career Award (1998-2003).

Adel Talaat

Member

Dr. Adel Talaat is a veterinarian with a long-term interest in better understanding the pathogenesis of emerging infectious diseases. His expertise in genomics and vaccine development technologies has taken him into new frontiers of mycobacterial infections. His research involves developing new technologies and innovative approaches to understand bacterial pathogenesis and to generate useful therapies (drugs and vaccines). Currently his laboratory is working on the functional genomics of *Mycobacterium tuberculosis* and *M. avium* subsp. *paratuberculosis*. In particular, he is employing next-generation sequencing technology combined with molecular techniques to understand the nature of host-pathogen interactions. Several genes and gene groups were discovered to be only expressed in living animals at a critical point of infection and could be considered as leading candidates for vaccine and drug development against mycobacterial infections in both humans and animals. Dr. Talaat has a biotechnology company that develops vaccine-based patents generated by his laboratory into products useful to improve human and animal health. He has served as a mentor to a number of undergraduate and graduate students and post-doctoral fellows while at the University of Wisconsin-Madison. Dr. Talaat earned his bachelor's and master's in veterinary medicine from Cairo University and his PhD from the University of Maryland.

Barbara Wolfe

Member

Dr. Barbara Wolfe is a clinical associate professor in the Department of Veterinary Preventive Medicine in The Ohio State University College of Veterinary Medicine. She holds a joint appointment with the School of Environment and Natural Resources and serves as chief science officer for the Columbus Zoo and Aquarium and the Wilds, a 10,000-acre wildlife conservation and research center. A diplomate of the American College of Zoological Medicine, Dr. Wolfe has previously served as a clinical veterinarian and researcher for the Smithsonian National Zoo, the Wilds, the Columbus Zoo, and the North Carolina Zoological Park. She is chairman of the editorial board of the *Journal of Zoo and Wildlife Medicine*, veterinary advisor to the Association of Zoos and Aquariums' Taxon Advisory Groups on Indian Rhino and Antelope, and past chair of the Morris Animal Foundation Wildlife Scientific Advisory board. She has conducted research and conservation projects throughout North America, Thailand, Laos, China, and Costa Rica and specializes in wildlife health, stress, and reproductive physiology and conservation medicine in species as diverse as freshwater mussels and elephants. Dr. Wolfe earned her DVM and PhD from Texas A&M University.