State of the Science and Future Needs for Nonhuman Primate Model Systems

Committee

Kenneth S. Ramos

Chair

Kenneth Ramos, M.D., Ph.D. (Chair), is Professor of Translational Medical Sciences, Alkek Chair of Medical Genetics, Executive Director of the Institute of Biosciences and Technology, Associate Vice President for Research, and Assistant Vice Chancellor for Health Services for the Texas A&M University System. He is an accomplished physician-scientist with designations in the National Academy of Medicine and National Academy of Sciences. He is a transformational leader recognized throughout the world for his scientific contributions in the areas of genomics, precision medicine and toxicology. With formal training in pharmaceutical sciences, chemistry, biochemistry, pharmacology, and medicine, Dr. Ramos is helping to steer the changing landscape of medicine, biotechnology and healthcare. In this context, he leads several translational, clinical research, and educational programs that integrate diverse approaches to elucidate genomic mechanisms of disease and to develop novel therapies for several oncologic, pulmonary, and vascular diseases. Dr. Ramos has provided academic, executive, administrative, and scientific leadership in the areas of genetics and genomic medicine and toxicology at various academic institutions and over the course of his career has positively influenced the career of numerous clinicians and scientists engaged in medical, veterinary and pharmaceutical practice. He is deeply committed to initiatives that advance modern technological applications to improve quality of healthcare and reduce disease burden and health-associated costs.

Christian R. Abee

Member

Christian Abee, D.V.M. has served as a Principal Investigator for nearly 40 years. He received his DVM from Texas A&M University and subsequently completed a postdoctoral fellowship and training program in comparative medicine at Wake Forest University School of Medicine. He began his career as a research scientist at Tulane National Primate Research Center (1974-1979). In 1979, he became Director of Animal Health and Resources at University of South Alabama College of Medicine where he later became Chair of the Department of Comparative Medicine and Distinguished University Professor. He moved to the University of Texas MD Anderson Cancer Center in 2005 to become the Doctor R. Lee Clark Professor and Chair of the Department of Comparative Medicine and Director of the Michale E. Keeling Center for Comparative Medicine and Research. He has served as Principal Investigator of NIH grants and contracts and previously directed several national research resources including the Squirrel Monkey Breeding and Research Resource, the Owl Monkey Breeding and Research Resource, the Rhesus Monkey Breeding and Research Resource, the Specific Pathogen Free Baboon Research Resource, and the National Center for Chimpanzee Care. He also served as chair of the NIH Comparative Medicine Review Committee; served on the ILAR Council, the AAALAC Council on Accreditation, and the Board of Directors of the National Association for Biomedical Research (NABR). He has served as president of the American College of Laboratory Animal Medicine (ACLAM), president of the Association of Primate Veterinarians (APV), and served on the National Scientific Advisory Boards of four national primate research centers. From September 2020 to February 2021 he served on an external advisory committee to the Oregon Health and Sciences University’s Oregon National Primate Research Center. He was an editor of both editions of Nonhuman Primates in Biomedical Research. He is a recipient of the Charles River Prize in recognition of his contributions to laboratory animal science and medicine, the Nathan R. Brewer Lifetime Achievement Award for contributions to animals and science, and received the Outstanding Alumnus Award in 2007 from the Texas A&M University College of Veterinary Medicine & Biomedical Sciences. He was awarded an Emeritus Professorship by the University of Texas MD Anderson Cancer Center after he retired in 2020.

Ashutosh Agarwal

Member

Ashutosh Agarwal, Ph.D., is an Associate Professor of Biomedical Engineering, and Director of Engineering and Applied Physics of the Desai Sethi Urology Institute at the University of Miami. The research mission of his Physiomimetic Microsystems Laboratory is to develop human relevant organ mimic platforms to replace or significantly reduce animal testing for discovery of therapies and drugs. Organs on chips are also being employed for modeling of disease states, for conducting mechanistic studies, and for differentiation, maturation and evaluation of human stem cells. The laboratory is supported by multiple consortium grants from NIH (NIDDK and NCI). Dr. Agarwal was selected as a Kavli Fellow to participate in the NAS Frontiers of Science symposium in Jerusalem (2019), featured speaker at a NAE-NAM Regional Meeting in Miami (2018), and co-organized a National Academies workshop on Microphysiological Systems for Efficacy and Safety Studies focused on advances in Organs-on-Chip Technologies for Animals. Dr. Agarwal holds patents related to microphysiological systems and is a co-founder of Bio-Vitro LLC, an early stage startup company established in 2018 with the mission of accelerating development of disease models and novel therapeutics by providing an easy-to-use platform for culture and assessment of 3D cellular constructs. He has also previously received funding from Mallinckrodt Pharmaceuticals related to lung on a chip research.

Szczepan Baran

Member

Szczepan Baran, V.M.D., M.S., is Chief Scientific Officer at VeriSIM Life, a company that has developed and offers pharmaceutical and biotech companies access to an artificial intelligence (AI)-enabled platform that can guide preclinical translational drug development by predicting clinical outcomes. A scientist and comparative medicine veterinarian turned “technology geek,” he is passionate about transforming the delivery of innovative medicines to patients through digital technologies and data enablement to be more efficient, cost-effective, and environmentally conscious while pushing the scientific envelope and reimagining patient engagement. Prior to joining VeriSIM Life, he was Head of Emerging Technologies within Comparative Medicine at Novartis. In this position, he led an integrated digital enterprise strategy to modernize and increase the agility of current processes, with a focus on the development and incorporation of patient-relevant AI technologies and digital endpoints. In parallel, Dr. Baran focused on stakeholder engagement to identify adaptation hurdles and develop regulatory qualification pathways for Microphysiological Systems (MPS) technologies. Dr. Baran has played instrumental roles in establishing and leading the Global Novartis Institutes for BioMedical Research (NIBR) Preclinical Digital Biomarkers and MPS Groups with a vision for strategic alignment and data agility. He has received multiple 3Rs Awards for implementation of emerging technologies including development of novel in vitro techniques to reduce nonhuman primate (NHP) use in malaria research. He is a graduate of the University of Delaware and the University of Pennsylvania School of Veterinary Medicine. He completed his residency in Laboratory Animal Medicine and received a Master of Science degree in Comparative Medicine from the University of Washington School of Medicine. Dr. Baran began his career at the Fred Hutchinson Cancer Research Center, where he was recruited to develop the first canine embryonic stem cell lines and collaborate on developing novel NHP and canine transplantation protocols to eliminate graft-versus-host disease. Before joining Novartis, he held multiple start-up and faculty positions and served on numerous boards. Currently, he is a member of the National Academies Institute for Laboratory Animal Research Roundtable and serves as a chair of the Translational Biomarker Initiative of the North American 3Rs Collaborative. He is a vice-chair of the IQ MPS Affiliate and leads the IQ MPS Affiliate Regulatory Outreach Group. He is a Medical & Scientific Advisory Board member at the Canines-N-Kids Foundation. He serves as an ad hoc member on the Scientific Advisory Committee on Alternative Toxicological Methods (SACATM), AAALAC ad hoc specialist, and is a member of the Boston Innovation Advisory Council. In December of 2022, Dr. Baran was appointed to an NIH Advisory Committee to the Director Working Group on Novel Alternative Methods.

Eliza Bliss-Moreau

Member

Eliza Bliss-Moreau, Ph.D., is a Professor in the Department of Psychology and a Core Scientist at the California National Primate Research Center at the University of California, Davis. She was formally trained as a social psychologist (graduate training) as well as a nonhuman primate neuroanatomist, behavioral neuroscientist, and primatologist (postdoctoral training). Her multi-species, multi-method, multi-disciplinary lab was started in 2016 and focuses on how emotions came to be across evolutionary time and come to be across developmental time, carrying out “womb-to-tomb” comparative and translational affective science and often working in the context of neurodevelopmental disease (e.g., fetal Zika virus infection, Alzheimer’s disease). Her research team is interested in the fundamental components of mood, what makes individuals (humans, monkeys, agricultural animals, plus a variety of other model species, e.g., aplysia) “well” and how features of the social and physical environment create the contexts for moods to emerge. She works across a variety of settings including the laboratory, field (in India and Malaysia), and agricultural barns. An increasing focus of her laboratory’s work is on how to improve nonhuman primate science, by increasing transparency to promote evaluation of scientific rigor. Dr. Bliss-Moreau receives research funding from the National Institutes of Health, National Science Foundation, and the University of California. She is a member of the Society for Neuroscience Committee on Animals in Research and participates in the University of California’s Animal Research Transparency Working Group. She recently served as a consultant for Biomere, Inc. related to the contract research organization’s nonhuman primate enrichment and training protocols. Dr. Bliss-Moreau has authored more than 70 publications and received national recognition for her innovative research, including the Association for Psychological Science’s “Rising Star” award in 2013, the American Psychological Association Distinguished Scientific Award for Early Career Contributions (in animal learning, cognition) in 2018, and being named a Fellow of an Association for Psychological Science Fellow in 2020. Prior to joining the Department of Psychology, she was a faculty member in the UC Davis School of Veterinary Medicine.

Ricardo Carrion, Jr.

Member

Ricardo Carrion, Jr., Ph.D., is Professor and Director of maximum containment contract research and Program Co-lead at the Texas Biomedical Research Institute and a core scientist at the Southwest National Primate Research Center. Dr. Carrion’s research program aims to develop and characterize animal models for BSL-4 hemorrhagic fever viruses and other high consequence pathogens. He was the first to show that the common marmoset faithfully mimics human ebolavirus disease, Marburgvirus disease and Lassa Fever, thus providing a novel small nonhuman primate (NHP) model for evaluating countermeasures to these diseases. He has characterized a number of models of virus induced disease which have been used for advanced preclinical development of vaccines and therapies to support eventual licensure via the animal rule pathway. Several filovirus vaccine platforms and therapeutics were advanced by Dr. Carrion’s group using cynomolgus and rhesus ebolavirus macaque models. In addition, his lab performed critical preclinical studies for the first approved Ebola antibody therapy. Most recently, Dr. Carrion’s lab has supported development of NHP COVID-19 models and has subsequently used these models for advanced preclinical development of several covid-19 countermeasures including: mRNA vaccines, subunit vaccines, DNA vaccines and monoclonal antibodies. Dr. Carrion’s current research is funded by the NIH, BARDA, DoD, Advanced Technology International, the Medical CBRN Defense Consortium, Novavax Inc., Inovio Pharmaceuticals, and Gilead Sciences.

J. Mark Cline

Member

J. Mark Cline, D.V.M., Ph.D., is an experienced researcher with over 25 years of continuous NIH funding, and is a board-certified veterinary pathologist specializing in the discovery and development of animal models of cancer and radiation effects. Much of his past work focused on primate studies of hormonal and dietary effects on the pathophysiology of breast and reproductive cancer risk, with comparative work in rodents, and translational studies in human subjects. He is now the Principal Investigator for the NIH/NIAID Wake Forest Primate Radiation Late Effects Program (U01 AI150578). This unique resource is funded from 2007-2027, includes long-term clinical assessments of multiple organ systems in male and female primates, and serves a network of over 50 investigators across the US. He also served as PI of a recently-concluded DOD/CDMRP Focused Program designed to assess cardiac, metabolic, immune, and genomic injury in irradiated nonhuman primates. He is Program Director for an NIH T32 Post-doctoral Training Program in Laboratory Animal and Comparative Medicine, focused on training graduate veterinarians to become independent researchers. More recently, his lab has developed the Primate Cancer Initiative, which conducts outreach to primate research facilities nationally, to find primates with naturally-occurring cancers and treat them, using novel immunotherapy approaches. This work has high translational value, and helps to support cancer therapy for nonhuman primates who might not otherwise be treated. His salary is supported primarily by competitively-awarded NIH grants, with limited salary support from Roche for immunotherapy studies.

Myrtle A. Davis

Member

Myrtle Davis, D.V.M., Ph.D., is the Scientific Vice President of Discovery Toxicology at Bristol-Myers Squibb (BMS). Myrtle joined BMS from the National Cancer Institute where she was the Chief of the Toxicology and Pharmacology Branch of the Developmental Therapeutics Program. Myrtle has previous experience as a Research Advisor in the Drug Safety group of Lilly Research Laboratories (Eli Lilly Pharmaceutical company). In both roles, she contributed to the advancement of several drug candidates and to the understanding of toxicological mechanisms. She also has several years of academic experience as an Associate Professor in the Department of Pathology in the School of Medicine at the University of Maryland. She is currently responsible for leading the scientific efforts in Discovery Toxicology to provide target and molecular hazard identification. She also leads and oversees the toxicology efforts needed to support mechanistic understanding of the toxicities of potential new drugs during their discovery. A native New Yorker, Dr. Davis completed a postdoctoral fellowship in Toxicologic Pathology at the University of Maryland. She earned a PhD in Toxicology from the University of Illinois Champaign-Urbana and obtained her Doctor of Veterinary Medicine degree from Tuskegee University School of Veterinary Medicine. She also completed undergraduate work in Chemistry and Math at Tuskegee University. Dr. Davis is a Fellow of the Academy of Toxicological Sciences, an active member of the Society of Toxicology (currently serving as Vice President for the Society), and a member of the Society of Toxicologic Pathology. She is currently serving on the Board of Scientific Councilors of the National Toxicology Program, and she is a reviewer for the Assay Development and Screening Technologies Laboratory of the National Center for Advancing Translational Sciences (NCATS). Myrtle served as an Associate Editor for Toxicological Sciences and Toxicologic Pathology, and served as Editor-in-Chief of the ILAR Journal (Institute for Laboratory Animal Research of the National Academy of Sciences). She has authored several book chapters and co-authored peer-reviewed publications on a range of topics. She has also developed course content and lectures for medical and graduate student education. In December of 2022, Dr. Davis was appointed to an NIH Advisory Committee to the Director Working Group on Novel Alternative Methods.

Asgerally Fazleabas

Member

Asgerally Fazleabas, Ph.D., is Professor and Associate Chair of Research in the Department of Obstetrics, Gynecology and Reproductive Biology and Director of the Center for Women's Health Research and Co-Director of the Reproductive and Developmental Sciences Program at Michigan State University. His research is focused on using the baboon as a non-human primate model to understand early embryo-maternal dialog and implications of implantation failure and the development of a baboon model for endometriosis to study early events in lesion development and impact on fertility. His laboratory was the first to conclusively demonstrate that signals from the primate embryo, like those of other species, induce cell specific changes in uterine gene expression. These changes are thought to play critical roles in establishing a synchrony between the maternal environment and the developing embryo that is a pre requisite for a successful pregnancy. The unique nature of the primate model that he has developed to study endometriosis and the strong multidisciplinary group that he has established has led to important and fundamental findings regarding the causative effects of endometriosis on aberrant gene expression in the eutopic endometrium that may contribute to infertility. Furthermore, studies from his laboratory has also identified the genes that may be involved with the process of angiogenesis and cell adhesion during the establishment of lesions in the peritoneal environment. He received his BS degree from California State University, Fresno and His PhD in Reproductive Physiology from the University of Illinois at Urbana - Campaign. Following his post-doctoral training in Reproductive Biology/Cell and Molecular Biology at the University of Florida in Gainesville, he joined the Department of Obstetrics and Gynecology at the University of Illinois at Chicago where he held the rank of Professor and Director of Women's Health and Reproduction until October 2009. He has received several awards for his work, including the Carl Hartman Award from the Society for the Study of Reproduction. Dr. Fazleabas is a member of the scientific advisory board of the Oregon National Primate Research Center, serving as an advisor to the Developmental and Reproductive Sciences Division. He receives research funding for work with nonhuman primate models from the NIH and Comanche Biopharma, a preclinical biopharmaceutical company developing a novel siRNA therapy for the treatment of preeclampsia. He is also a consultant with Ship of Theseus, a startup company focused on the development of mutated proteins for endometriosis treatment.

Melanie Graham

Member

Melanie Graham, M.P.H., Ph.D., is a Professor in the Departments of Surgery and Veterinary Population Medicine and Director of the Preclinical Research Center (PCRC) at the University of Minnesota, where she holds the Robert and Katherine Goodale Chair in Minimally Invasive Surgery. She trained in experimental surgery and as an epidemiologist at the University of Minnesota. She completed doctoral training at Utrecht University as a primatologist focused on animal welfare science, her thesis titled “Working on the 3Rs: Utilization of refinement to enhance the value of translational research in nonhuman primates”. Dr. Graham’s research focuses on validity in preclinical modeling and refining models of chronic disease to maximize their predictive accuracy to the clinic. She has published extensively in peer reviewed journals and has presented both nationally and internationally on her work addressing model limitations, methods for refining the animal experience, and novel approaches for improving experimental rigor. She is similarly recognized for her deep expertise in the study of metabolic diseases and interventions centered on regenerative medicine, specifically innovative cell-based therapies and immunomodulation. Accordingly, she has integrated this work to lead influential pivotal trials that include the successful demonstration of both long-term diabetes reversal after islet xenotransplant and immunosuppression-free transplantation in primates. She is committed to engaging scientists with the 3Rs in the most meaningful way by objectively demonstrating their impact on the scientific value of experimental animal models. Dr. Graham serves on the Academy of Surgical Research Board of Directors and participates in the NIAID Nonhuman Primate Transplantation Tolerance Cooperative and the NIAID Immunobiology of Xenotransplantation Cooperative Research Program. She is a Board of Directors Emeritus of the North American 3Rs Consortium, a nonprofit focused on refinement, reduction, and replacement of animal models in scientific research. Dr. Graham is a member of a scientific advisory group convened by the Medical Research Council and Wellcome Trust to conduct a review of the current status of nonhuman primate (NHP) academic research across funding bodies in the United Kingdom (UK) and future NHP research needs and opportunities in the UK. Her research is supported by the State of Minnesota, JDRF, and NIH.

Kelly A. Metcalf Pate

Member

Kelly Metcalf Pate, D.V.M, Ph.D., is the Director of the Division of Comparative Medicine and the Dorothy W. Poitras Associate Professor of Biological Engineering at Massachusetts Institute of Technology. She is a veterinarian-scientist and boarded specialist in laboratory animal medicine with more than 15 years of independent and collaborative expertise in the development and refinement of nonhuman primate and murine models of human disease, especially in the context of host-pathogen interactions. Dr. Metcalf Pate's laboratory focuses on the elucidation of the role of platelets in the immune response to infectious disease, with a focus on the downstream effects of the platelet's interactions with other cells throughout the pathogenesis of HIV and cytomegalovirus infection and how modulating the response of platelets to infection alters the course of disease. Recent work in her group has expanded to include the influence of environmental factors, especially social stress and the microbiome, on the immune response to viral infection, and on the translational validity and reproducibility of work with animal models. Her research is currently funded by DoD. Prior to joining M.I.T., Dr. Metcalf Pate was faculty at Johns Hopkins School of Medicine, where she facilitated the development and refinement of animal models of HIV pathogenesis as a co-chair of the Center for AIDS Research Cure Scientific Working Group, oversaw the research training programs funded by Boehringer Ingelheim and Charles River for veterinarians and veterinary students, and founded the J.H.U. summer Veterinary Scholars Research Program and the summer Laboratory Animal Fellowship. She currently serves as an ad hoc consultant for AAALAC International, as Vice Chair of the Scientific Advisory Committee for the American Association of Laboratory Animal Science (AALAS), as a member of the Primate Care Committee of the American Society of Primatologists (ASP), as a member of the Association of Primate Veterinarians (APV), as a member of the advisory board for the Center for Alternatives to Animal Testing (CAAT), and previously as chair of the Animal Welfare Advisory Board for Morris Animal Foundation. She is a diplomate of the American College of Laboratory Animal Medicine since 2011. In December of 2022, Dr. Davis was appointed to an NIH Advisory Committee to the Director Working Group on Novel Alternative Methods. Dr. Metcalf Pate received her BA from Boston University, her DVM from Purdue University School of Veterinary Medicine, and her PhD and comparative medicine fellowship training from Johns Hopkins School of Medicine.

Guo-li Ming

Member

Guo-li Ming, M.D., Ph.D. (NAM), is currently The Perelman Professor of Neuroscience and a member of Institute of Regenerative Medicine at the University of Pennsylvania School of Medicine. She received her medical training in Child and Maternal Care from Tongji Medical University in China in 1994 and Ph.D. from University of California, San Diego in 2002. After her postdoctoral training at the Salk Institute for Biological Studies, she became an Assistant Professor at Johns Hopkins University in 2003 and Professor in 2011. The research in her laboratory centers on understanding the molecular mechanisms underlying neuronal development and its dysregulation using mouse systems and patient derived induced pluripotent stem cells. She has received a number of awards, including the Charles E. Culpeper Scholarship in Medical Science in 2003, Alfred P. Sloan Research Fellow in 2005, Young investigator award from the Society for Neuroscience in 2012, and A. E. Bennett Research Award from the Society of Biological Psychiatry in 2014. She became a member of the National Academy of Medicine in 2019. She a co-founder of and sits on the scientific advisory board of 3Dnamics, a biotechnology company that generates disease-specific and organoid models for pre-clinical drug screening and efficacy/toxicity testing.

Steven Piantadosi

Member

Steven Piantadosi, M.D., Ph.D., is a clinical trials methodologist and Senior Statistician in the Department of Surgery at Brigham and Women’s Hospital, a member of the Dana Farber Cancer Institute, and Professor in Residence at Harvard Medical School. He has been Associate Group Chair for Strategy and Innovation since 2018 in the Alliance NCTN group, one of five cancer clinical trials groups supported by the National Cancer Institute. As of October 2022, he will serve as the contact PI for the Alliance NCTN grant. From 2007-2017, he was the inaugural Director of the Samuel Oschin Cancer Institute at Cedars-Sinai Medical Center and Professor at UCLA. From 2010-2017 he was a member of the National Academies National Cancer Policy Forum. Dr. Piantadosi served 20 years as founding division head for Biostatistics and Bioinformatics in the Cancer Center at Johns Hopkins School of Medicine. His research has been in clinical trials design, methods, and applications in diverse fields including cancer, neurodegenerative disease, and emphysema. Dr. Piantadosi has advised numerous public and commercial entities regarding clinical trials and taught extensively in domestic and international venues for over 30 years. Dr. Piantadosi holds a consulting contract with Janssen Pharmaceuticals to serve as the Chair of the data monitoring board for an international clinical trial for prostate cancer. In addition, he also serves as Chair of a Data and Safety Monitoring Board (DSMB) for an international retinitis pigmentosa clinical trial sponsored by the National Eye Institute. Dr. Piantadosi serves as a consultant to the MITRE Corporation for work related to electronic health record data and is also a consultant for a medical device startup, CrainiUS, focused on the intracranial delivery of drugs for gliomas.

John Quackenbush

Member

John Quackenbush, Ph.D., is Professor of Computational Biology and Bioinformatics and Chair of the Department of Biostatistics at the Harvard TH Chan School of Public Health and Professor in the Channing Division of Network Medicine at Brigham and Women’s Hospital and in the Department of Data Science at the Dana-Farber Cancer Institute. Dr. Quackenbush’s PhD was in theoretical physics, but in 1992 he received a fellowship to work on the Human Genome Project. This led him through the Salk Institute, Stanford University, and The Institute for Genomic Research (TIGR), before moving to Harvard in 2005. Dr. Quackenbush’s research is funded by NIH and uses massive data to probe how many small effects combine to influence our health and risk of disease. He has published more than 320 scientific papers that have collectively been cited over 85,000 times and among his honors is recognition in 2013 as a White House Open Science Champion of Change. In 2012, he founded Genospace, a precision medicine software company providing data platforms to hospitals, diagnostic testing labs, and other groups. In 2017, Genospace was purchased by the Hospital Corporation of America. He currently serves on the scientific advisory boards for Caris Life Sciences, Olema Pharmaceuticals, 3x Genomics, Stitch Bio, and RenalytixAI.

Peter L. Strick

Member

Peter L Strick, Ph.D., (NAS), is Thomas Detre Professor and Chair, Department of Neurobiology;
Scientific Director, University of Pittsburgh Brain Institute; Director, Systems Neuroscience Center; Co-Director, Center for Neuroscience, University of Pittsburgh. Dr. Strick is a member of the American Association of Anatomists, the Cajal Club, Society for Neuroscience, American Physiological Society and American Association for the Advancement of Science (elected Fellow, 1999). Strick co-founded the Neural Control of Movement Society (1990) and served as its Conference Co-Chair, Program Chair (1990-2007) and President (2007-2010). Dr. Strick has served on many national and international committees. He was elected, Scientific Councilor (1996-2000) and Treasurer (1998-2000) of the Society for Neuroscience. He was selected as Section Editor (1986-1995) and then Editor-in-Chief, Journal of Neurophysiology (1995-2002), and he currently serves as a Senior Editor, Cerebral Cortex (2003-present) and on the Editorial Board of Proceedings of the National Academy of Sciences (2016-present). Dr. Strick's major awards include the C.J. Herrick Award from the American Association of Anatomists (1979); Javits Neuroscience Investigator Award from NIH-NINDS (1986); Established Investigator Award from the National Alliance for Research on Schizophrenia and Depression (1995-1996); President's Award for Excellence and Leadership in Research, SUNY-Upstate Medical Center (1996); Senior Research Career Scientist Award from the Veterans Administration (1987-2015), University Distinguished Professor of Neurobiology (2011), and Chancellor's Distinguished Research Award, Senior Scholar (2013), Linne Lecture, Uppsala University, Sweden (2017), Paul D. MacLean Award, American Psychosomatic Society (2018), Carnegie Science Award in the Life Sciences (2018), NIH Director's Transformative Research Award (2018), Krieg Cortical Kudos Discover Award, Cajal Club (2019). Dr. Strick was elected to the American Academy of Arts and Sciences (2004) and to the National Academy of Sciences (2012). His research focuses on four major areas: the generation and control of voluntary movement by the motor areas of the cerebral cortex; the motor and cognitive functions of the basal ganglia and cerebellum; the neural basis for the mind-body connection; and unraveling the complex neural networks that comprise the central nervous system.

Jerrold Tannenbaum

Member

Jerrold Tannenbaum, J.D., is an established animal ethicist and lawyer and professor emeritus at the University of California Davis School of Veterinary Medicine, where he taught required courses in veterinary ethics and law from 1999 to 2013. Prior to this he taught at Tufts University School of Veterinary Medicine, where he helped found that school's signature program in Ethics and Values and its M.S. program in Animals and Public Policy. He completed graduate work in philosophy at Rockefeller University and Cornell University and obtained his JD from Harvard Law School. His current primary areas of interest are animal research ethics and animal research law. Prof. Tannenbaum has numerous publications in this area, including “Russell and Burch’s 3Rs Then and Now: The Need for Clarity in Definition Purpose” (with B. Taylor Bennett), which appeared in 2015 in the Journal of the American Association for Laboratory Animal Science, and “The Pursuit and Advancement of Knowledge as a Justification for the Use of Animals in Research,” which appeared in 2019 in the ILAR Journal. He is also the author of Veterinary Ethics, the first comprehensive book on veterinary ethics. Prof. Tannenbaum has spoken widely on ethical and legal issues relating to animals to a variety of audiences ranging from veterinary students to humane societies. He is a member of the National Academies Institute for Laboratory Animal Research Standing Committee for the Care and Use of Animals in Research.