Conservation, Animal Health Research, and New Approach Methods

Fall 2025 Meeting of the Board on Animal Health Sciences, Conservation, and Research

THURSDAY, OCTOBER 23, 2025

10:00am – 10:30am ET　**Welcome, Introductions, Meeting Focus**
Barbara Natterson-Horowitz, University of California, Los Angeles

10:30am – 2:30pm ET　**A New Era of New Approach Methods for Scientific Progress and Regulatory Decision-Making**
For years, both public and private sector funders and researchers have sought to leverage new advances in computation, materials science, engineering, and other disciplines to develop new methodologies and technologies for use in basic life sciences and biomedical research. These approaches and technologies aim to decrease the research and development timeline and cost for various biotechnology products for agricultural and health uses, and to reduce the number of animals involved in biomedical research. Some researchers also seek to create NAMs, particular *in silico* models of cells and systems (including human systems) to model effects, responses, and other physiological changes before conducting studies in *in vitro* models and/or animals. Regulators use studies in animals as a benchmark for assessing the utility and relevance of NAMs for assessing products for human and animal use and toxicity levels of various chemicals in the environment. The board will discuss the feasibility, needs, and opportunities for developing NAMs for advancing basic life sciences and biomedical research and for improving regulatory decision-making.

10:30am – 11:30am ET　**Scientific and Policy Drivers for Development and Use of New Approach Methods**
As knowledge about human and animal physiology increases and new scientific and technological tools are created, opportunities for developing and validating the new approach methods to replace or reduce the use of animals in research emerge.

Facilitator
Barbara Natterson-Horowitz, University of California, Los Angeles

Discussion Leaders for Consideration
Naomi Charalambakis, Americans for Medical Progress
Brianna Skinner, Food and Drug Administration
Monique Perron, Environmental Protection Agency

11:30am – 12:30pm ET

Successes and Challenges for Developing New Approach Methods for Scientific Advancement and Regulatory Decision-making
Development of effective NAMs relies on actual knowledge and data about physiological systems, whether human or animal. Developing and validating technologies such as tissues-on-a-chip and microsphysiological systems, 3D-printed organs and organoids, digital twins and other computational models, and other technologies for their accuracy at simulating actual human and animal physiological states and responses are critical for basic research and regulatory decision-making. During this discussion, funders and regulators will discuss their experiences in developing, validating, and integrating NAMs into scientific practice and regulatory decision-making. Through the use of examples, they will highlight successes, challenges, and outstanding needs for generating the knowledge and data for designing, testing, and using NAMs for various purposes.

Facilitator
Caroline Zeiss, Yale University

Discussion Leaders for Consideration
Opportunities for Developing Digital Twins for Biomedical Research
Charles (Charley) Taylor, University of Texas

Lessons Learned for Translational Research from Animal Models
Kelly Metcalf Pate, Massachusetts Institute of Technology

Successes and Challenges in Developing and Using Organs-on-a-Chip for Research and Development
Donald Ingber, Harvard University Wyss Institute

Establishing Validation and Qualification Network for NAMs as a Public-Private Partnership
Stacey Adam, Foundation for the National Institutes of Health

12:30pm – 1:30pm ET

Lunch

1:30pm – 2:30pm ET

Scientific, Technological, and Data Gaps and Needs for New Approach Method Development and Use in Research and Regulatory Decision-making
Developing and using NAMs for studying basic biology in microbes, plants, animals, and humans relies on having strong foundational scientific knowledge about their functions, processes, and interactions at various levels from the molecular to community levels. Despite the existence of significant amounts of this knowledge, numerous gaps exist limiting our ability to effectively develop and use NAMs that accurately simulate human and animal physiological systems for various exploratory and applied scientific pursuits and regulatory decision-making. These knowledge gaps also include information about the relationships between animal and human microbiomes with their host species and across such species. Funding mechanisms are critical to filling these knowledge gaps to drive the design and development of NAMs. Building on the previous session's discussions, this conversation will focus on the scientific and technological gaps and needs for generating the knowledge and data to develop, test, and verify different types of NAMs for their use in basic and applied life sciences and for regulatory decision-making process. This conversation also may highlight critical resources needed to support such efforts.

Facilitator
Jori Leszczynski, University of Colorado Denver | Anschutz

Discussion Leaders
Lisa Hara Levin, Coridea
Szczepan Baran, Baran Café
William Beltran, University of Pennsylvania

2:30pm ET   **END OF DAY**

FRIDAY, OCTOBER 24, 2025

9:00am – 9:30am ET	**Welcome, Introductions, Meeting Focus** Barbara Natterson-Horowitz, University of California, Los Angeles

9:30am – 10:30am ET **Updates from BAHSCR**

Facilitators
Kavita Berger, National Academies of Sciences, Engineering, and Medicine
Robin Schoen, National Academies of Sciences, Engineering, and Medicine

Digital Format for the *Guide for the Care and Use of Laboratory Animals*
Susana Rodriguez, National Academies of Sciences, Engineering and Medicine

Meetings of Experts Hosted by the Roundtable on the Science and Welfare of Animals Involved in Research
Nia Johnson, National Academies of Sciences, Engineering and Medicine

10:30am – 10:45am ET **Break**

10:45am – 11:30am ET **A Conversation in Prioritizing Ecological and Conservation Issues through Animal Health**
This discussion will focus on international and national level efforts to address issues at the nexus of animal health and conservation, highlighting approaches for prioritizing and implementing programs, areas that have been funded well, opportunities for leveraging science and technologies, challenges in implementing these activities, and outstanding needs to address wildlife health issues.

Facilitator
Jonathan Losos, Washington University in St. Louis

Discussion Leader
François Diaz, World Organization for Animal Health

11:30am – 12:30pm ET **Lunch**

12:30pm – 1:30pm ET **Science and Technology Innovation for Diagnosing Disease in Wildlife Populations**
Diagnosing, preventing, and managing disease in wild animal populations is critical to both conservation efforts and initiatives to prevent and detect the spread of infectious diseases between species. Advances in computing, data science, material sciences, and other disciplines with life science, health, and veterinary fields are enabling new opportunities for improving existing approaches for diagnosing disease in wild animals, identifying ways to prevent such disease, and developing means to manage the disease to reduce overall harms to wildlife populations on land and at sea. Through the use of case studies, panelists will focus on science and technology innovations across each of these functions – diagnosis, prevention, and management of disease in wild animals – to highlight recent successes and reveal potential knowledge and technology gaps and needs.

Facilitator
Cynthia Smith, National Marine Mammal Foundation

Discussion Leaders for Consideration
Imageomics for Tracking and Analyzing Animal Populations and Ecology
Tanya Berger-Wolf, The Ohio State University
Chuck Stewart, Rensselaer Polytechnic Institute

Innovative, Underwater Technologies for Studying Reproductive Biology in Whale Sharks
Alistair D.M. Dove, Museum of Science and History

1:30pm – 2:30pm ET

Needs and Opportunities for Managing Wildlife Health for Conservation and Human Welfare
Interactions between wildlife and biodiversity with human activity continue to expand rapidly affecting both humans and ecosystems. As human populations grow and the demand for land increases, this interface between people and wildlife will intensify. Wildlife conservation efforts can have both positive and negative effects on people, highlighting the importance of anticipating these effects and possible trade-offs that they may represent. Successful conservation efforts can exacerbate the negative consequences (i.e., human-wildlife conflict) if not well planned. Such conflicts can involve zoonotic disease transmission, loss of crops or predation of livestock by wildlife, lost off animal and non-animal human life, among other negative effects. The development of effective conservation efforts and interventions relies on proactive and clear analysis of economic impact and sustainability of the program goals. In the absence of such analyses, conservation policies and programs, however well-intentioned, may affect ecosystems and humans negatively. In many parts of the world, biodiversity and conservation efforts may contribute to diversified, resilient opportunities for livelihoods of local communities, through such activities as subsistence hunting, ecotourism, and/or ecosystem services. The discussion will explore examples of efforts aimed at navigating human prosperity and conservation, focusing on challenges and opportunities for veterinarians managing animal health at the wildlife-domestic animal-human health interface.

Facilitator
Steven Osofsky, Cornell University

Discussion Leaders for Consideration
Daniel Blumstein, University of California, Los Angeles
Eyal Frank, University of Chicago
Jennifer Raynor, University of Wisconsin-Madison

2:30pm ET

END OF DAY