

2020/2021 NJABR 3Rs Webinar Series

Webinar 1 – September 16, 2020 – 2pm Eastern – Complimentary NA3RsC Webinar

Applications in Developing Technologies for Rodent Health Surveillance

Patricia L. Foley, DVM, DACLAM, Director, Division of Comparative Medicine and Professor, Department Microbiology & Immunology, Georgetown University

Chris Manuel, DVM, PhD, DACLAM, Associate Director, Office of Laboratory Animal Resources, and Associate Professor, Department of Pathology, University of Colorado Denver

Christina Pettan-Brewer, DVM, MSC, Associate Director, Department of Companion Medicine, University of Washington

Learning Objectives

After participating in this webinar, attendees will:

- have a better understanding of the strengths and limitations of using the latest diagnostic technologies for rodent health surveillance;
- be able to make more informed decisions on how to use the latest diagnostic technologies in their health surveillance programs;
- be able to make more informed decisions on how to use the latest diagnostic technologies in their health surveillance programs; and
- be able to guide and make recommendations to developers and suppliers for the advancement of technologies in this area.

Webinar 2 - September 23, 2020 – 1pm Eastern

Fast tracking research recovery - More study animals. Less labor. Less cost.

Carrie A. LeDuc, BS, Colony Product Manager, Transetyx, Inc.

Learning Objectives

- Learn to use tools to plan mouse production efficiently and effectively to meet study goals with little to no waste of animals;
- Learn to use tools to track breeding progress in order to refine strategies in real time to meet study goals and minimize waste of animals; and
- Discuss additional best practices to support reliable mouse production.

Webinar 3- September 30, 2020 – 1pm Eastern

The Importance of Human Translation for Successful Preclinical Drug Discovery and Cardiac Safety

Andre Ghetti, PhD, Chief Executive Officer, AnaBios Corporation

Abstract

The translation from preclinical animal pain models to human outcomes continues to be unreliable at best. Cross-species difference in pharmacological and toxicological responses are well documented and extremely common. Over the last several years, AnaBios has pioneered a novel preclinical discovery strategy, which relies on the utilization of primary cells and tissues ethically recovered from organ donors. By combining novel technologies and reagents, which minimize donor organ ischemia-reperfusion damage, with innovative cell- and tissue-interrogation methods, it is now possible to measure, at the preclinical stage, drug effects in human ex-vivo preparations. This approach can provide data highly predictive of clinical outcomes and avoids cross species extrapolation risks in development. An additional benefit is the ability to test drug activity in human cells and tissue recovered from patient donors in the relevant pathological state. Finally, the effects measured in the human ex-vivo preparations, provide a quantitative assessment of drug potency and therapeutic window and furthermore, can be used to guide dosing during the first-in-human clinical studies. We have applied these methodologies to the advancement of discovery programs in several therapeutic areas and case studies in pain and cardiac disease will be discussed.

The use of human adult primary cells also has the potential to advance safety sciences. Current efforts aimed at improving the strategies for preclinical cardiac safety assessment have not only created significant opportunities but have also highlighted critical knowledge- and methodological- gaps in characterizing the safety of human therapeutics. The integration of human primary cell-based paradigms in preclinical safety assessment, have a significant, heretofore unrecognized potential to fill these critical knowledge and translational gaps.

Webinar 4 – October 6, 2020 – 1pm Eastern

The Welfare of Those Who Care for Laboratory Animals: Compassion, Dedication, and Resilience

Steven J. Schapiro, PhD, Associate Professor of Comparative Medicine, Department of Veterinary Sciences, Michale E. Keeling Center for Comparative Medicine and Research, The University of Texas MD Anderson Cancer Center

Learning Objectives

Participants will be introduced to:

- The basics of behavioral management procedures for laboratory animals, especially nonhuman primates;
- The value of behavioral management for laboratory animals, especially nonhuman primates;
- The effects on the welfare of laboratory animal caregivers of specific difficult situations (e.g., Hurricane Maria in Puerto Rico); and
- Manifestations of the inherent compassion and resilience of laboratory animal caregivers when dealing with specific difficult situations (e.g., chimpanzee relocations).

Webinar 5 – October 20, 2020 – 1pm Eastern

Making human organs and the path to replacement

Ping Yeh, Co-Founder and Chief Executive Officer, Stemonix, Inc.

Learning Objectives

This webinar will:

- Review the history of pluripotent stem cells and applications in drug discovery and basic research;
- Discuss a unique stem cell technology that uses augmented intelligence software to model human health and disease in the heart, brain and pancreas; and
- Discuss future directions and possibilities for augmenting or replacing animal models with more predictive, human tissue models to inform personalized treatment strategies

Webinar 6 – November 11, 2020 - 11am Eastern

Automated cognitive testing in socially housed monkeys: Implications for research, care, and management

Regina Paxton Gazes, PhD, Associate Professor of Psychology and Animal Behavior, Bucknell, University

Learning Objectives

This webinar will:

- Present basic methods for developing automatic computerized cognitive testing systems for socially housed monkeys;
- Present data on the research efficacy and demographics of animal use of these systems; and
- Discuss the implications of this work for research, care, management, and housing of non-human primates in laboratory settings.

Webinar 7 – November 20, 2020 – 1pm Eastern

Maintaining Germ Free and Gnotobiotic Mice: Considerations for Reduction, Replacement, Refinement (3Rs) and Reproducibility (4th R) in Microbiome Research

Betty R. Theriault, DVM, DACLAM, Professor, Department of Surgery, Animal Resources Center, The University of Chicago

Learning Objectives

This webinar will:

- Discuss axenic animal models past history and current applications;
- Review of the 3Rs and biomedical research reproducibility specifically as it applies to axenic and gnotobiotic mouse models of human disease;
- Review of recent contributions to the field of microbiome research that touch upon reproducibility and consideration for their implementation; and
- The importance of the laboratory animal professional in the field of germ free and gnotobiotic research.

Webinar 8 – November 24, 2020 – 1pm Eastern

Beyond the 3Rs to a more comprehensive framework of principles for animal research ethics

David D. Degrazia, PhD, Senior Research Fellow, Department of Bioethics, National Institutes of Health, and Elton Professor of Philosophy at George Washington University

Abstract

Tom Beauchamp and I recommend an ethical framework for animal research in our book, *Principles of Animal Research Ethics*, published earlier this year by Oxford University Press. In this talk, I will explain the motivation for our project and present the framework of principles. I will begin by arguing that a new framework is both needed and timely. I will next challenge assertions of an unbridgeable gulf dividing the animal-research and animal-protection communities by indicating common ground in the core values of social benefit and animal welfare. Next, I will present and briefly defend our framework: three principles of social benefit and three principles of animal welfare. These six principles, I will argue, constitute a more suitable and comprehensive framework than the canonical 3 Rs.

Webinar 9 – January 6, 2021 – 1pm Eastern

Responsibility of the IACUC for Ensuring Reproducibility, Scientific Rigor, and Transparency

William Greer, CPIA, RLAT, Assistant VP, Animal Program Compliance Oversight, University of Michigan and Lauren M.A. Danridge, LSSS, SSGB, CPIA, Associate Director, Animal Care & Use Office, University of Michigan

Abstract

Amidst concerns about reproducibility, scientific rigor, and transparency in all areas of research, recent attention has been placed on the role the IACUC *should* play in ensuring rigor in animal research. IACUCs are expected to apply the “Three Rs” during review and approval and should “evaluate scientific elements of the protocol as they relate to the welfare and use of the animals.” Should the IACUC also ensure PIs are properly applying the experimental method? For protocols that are not associated with a peer-reviewed grant, should IACUCs solicit a merit review beyond ensuring Government Principle II, III, and IX? In the context of reducing burden, what additional responsibilities make sense, if any? To facilitate this discussion, we will analyze the IACUC review and approval process, revisit the regulations and our interpretations of these regulations, as well as discuss some recent literature and initiatives.

Webinar 10 – January 19, 2021 – 1pm Eastern

Lean Management Projects to Standardize Animal Enrichment and Bedding

Matthew Keller, MBA

Program Coordinator, Rutgers University Animal Care (RUAC)

Abstract

Historically, there has been high variation in the types of enrichment and bedding used across different colonies within the same institution. These product assortments were due to many factors, but can be mostly attributed to historical usage, PI/Husbandry Staff preference and specific use cases. Due to the flexible nature of these offerings, a large variety of products were being regularly purchased, making procurement, inventory management and adequate cost recovery difficult to accomplish. Facilities were finding themselves managing dozens of different product types, despite only have a few rodent species, greatly increasing the costs to serve. By standardizing various aspects of enrichment and bedding offerings, the institution is better able to plan and react to changes in the research landscape, while maintaining a high level of animal care. At Rutgers, we went through the process of standardizing aspects of our enrichment and bedding offerings and would like to share our journey with you.

Webinar 11 – February 3, 2021 – 1pm Eastern

Refining experiments using zebrafish: Impact of enrichment and analgesia

Lynne Sneddon, PhD, Director of Bioveterinary Science, Institute of Integrative Biology, University of Liverpool

Abstract

Zebrafish are an increasing popular laboratory model and are used in increasing numbers across the globe. Implementation of enrichment in zebrafish housing is lacking yet there is empirical evidence that zebrafish choose enrichment over standard barren conditions and that many biological functions are enhanced in the presence of enrichment. Zebrafish are subject to a wide range of invasive procedures that cause tissue damage and may give rise to pain. Thus being able to assess and reduce pain would be an important refinement. Using a automated intelligent monitoring software to detect pain and further the assessment of the efficacy of a range of drugs with analgesic properties will be discussed.

Webinar 12 – February 16, 2021 – 1pm Eastern – Complimentary NA3RsC Webinar

Tickling rats for better welfare: practical applications of heterospecific play

Megan LaFollette, M.S., PhD, 3Rs Fellow, The North American 3Rs Collaborative

Abstract

Routine handling of laboratory rats can result in unintended negative outcomes such as increased fear, stress, difficulty during handling, poor welfare and less valid research data. Fortunately, a handling refinement technique called rat tickling – which mimics aspects of rat rough-and-tumble play – is an effective method to ameliorate these effects and increase positive emotions in rats. In this talk you will learn about rat tickling's purpose & benefits, its practical implementation including efficient timing, and a variety of useful tips. You will also learn how to interpret rat responses to rat tickling. Past, current, and future research about the technique will be discussed to give participants a well-rounded, practical introduction to the exciting enrichment of rat tickling.