Dean and Distinguished Professor Michael Lairmore, UC Davis School of Veterinary Medicine

Lessons Learned in One Health to Advance the Health of Humans, Animals, and the Environment

One Health is an emerging concept, based on a rich history of comparative medicine and trans-disciplinary approaches to solve complex issues facing our society. Increasingly, educational institutions have realized the value of linking the training of biomedical scientists, physicians, veterinarians, and other health professionals. By demonstrating examples of the benefits of this approach, this lecture will illustrate the power and potential of One Health and the significant needs for this collaborative approach to address the issues facing our society.

Dr. Terry Lehenbauer

Food Animal Production and Antibiotic Resistance – One Health Perspective

The Centers for Disease Control and Prevention report that each year more than two million people in the United States get infections that are resistant to antimicrobials resulting in at least 23,000 deaths. There is growing concern about the role and importance of antimicrobial use in food-producing animals for contributing to this public health problem. Dr. Lehenbauer will explore the ways that medically-important antimicrobials are currently being used in food animal production and will discuss major changes that are taking place in animal agriculture to improve stewardship of these vital resources for preventing, controlling, and treating infectious diseases. Challenges and opportunities for implementing strategies that do not rely on antimicrobials for improving food animal health will also be presented.

Dr. Jay Lund

Challenges of California Drought for Water & Environmental Management

The history of California’s water management is punctuated by droughts, floods, and lawsuits. Each drought helps focus public and political attention on water problems, and helps lead to long-term improvements in water management. This talk reviews the current drought in the context of contemporary water and environmental management in California. Improvements in management occurring from the drought will be discussed, as well as some remaining challenges.

Dr. John Madigan and Dr. Monica Aleman

The Transition of Consciousness at Birth in Foals: Implications for Kangaroo Mother Care and the Autism Spectrum Disorder

New discoveries in equine neonatal physiology have disclosed that birth transition of consciousness occurs when in utero levels of neurosteroids decline post birth and the foal ‘wakes up’ from its 11 months of in utero sedation and sleep. We have found that foals with the behavioral syndrome of Equine Neonatal Maladjustment Syndrome (ENMS) have a persistence and reversion to endogenous production of these in utero neurosteroids post birth. These neurosteroids act on the brain GABA receptor causing behavioral disturbances including but not limited to dissociation with the environment, lack of normal perception of fear, lack of maternal bonding, lack of normal nursing behavior, sleep disturbances and other behavioral abnormalities. The concept of failure of transition of consciousness at birth-based on ENMS is being further investigated in foals as well as infant Kangaroo Mother Care and potential relationship to autism spectrum disorder.
Dr. Barbara Natterson-Horowitz  
**How Veterinary Science is Transforming Human Medicine**  
Heart attacks in flamingos, breast cancer in jaguars, eating disorders in pigs, diabetes in dolphins: animals and humans get the same diseases, yet physicians and veterinarians rarely consult with one another. Barbara Natterson-Horowitz explains the concept of *Zoobiquity* and how animal and human commonality can be used to diagnose, treat, and heal patients of all species. Natterson-Horowitz illustrates how connecting knowledge across disciplines can improve our understanding and future of the physical and behavioral/mental health of all animals.

Drs. Woutrina Smith, Eranda Rajapaksha and Michael Wilkes  
**International Case Study: One Health at Human-Animal Interfaces in Sri Lanka**  
One Health approaches to problem solving involve multidisciplinary teams that can consider top-down and bottom-up strategies for improving health. Participants will immerse in and work through a One Health problem in Sri Lanka to consider human, animal, and environmental aspects of health at human-animal interfaces.