

CEPL Personnel



Dr. Michael S. Davis is the director of the Comparative Exercise Physiology Laboratory. Dr. Davis earned a Doctor of Veterinary Medicine at Texas A&M, and after 4 years in private veterinary practice, returned to academia to earn a Masters of Science at Virginia Tech. During this program, Dr. Davis also completed a residency in equine internal medicine, leading to board certification in veterinary internal medicine by the American College of Veterinary Internal Medicine. From there, Dr. Davis earned a Doctor of Philosophy in respiratory physiology from Johns Hopkins University, including a dissertation on the deleterious effects of cold weather exercise on pulmonary function. Upon arrival at Oklahoma State University in 1998, Dr. Davis formed the Comparative Exercise Physiology Laboratory, and expanded the research focus to include both dogs and horses, and also to examine multiple organ systems and the biochemistry of strenuous exercise (particularly with regards to oxidative stress). Since that time, Dr. Davis has been awarded over \$1.4 million in research grants to study strenuous exercise, in projects that have included both laboratory experiments as well as field studies at racetracks, training centers, and as far away as the Alaskan backcountry.

Dr. Katherine Williamson is a research associate in the Department of Physiological Sciences at the Oklahoma State University College of Veterinary Medicine. Dr. Williamson has spent virtually all of her adult life working with equine athletes. She has worked on breeding/racing farms in Kentucky and Maryland, and as a private practitioner or racing official at Prairie Meadows, Canterbury Downs, Pimlico, and Laurel racetracks. In addition to her extensive knowledge on the practical aspects of training and conditioning racehorses, Dr. Williamson has a strong interest in the pharmacology of exercise, including the changes in pharmacokinetics and pharmacodynamics of drugs due to exercise conditioning. Her interests have practical application in the determination of appropriate drug dosing routes and schedules for athletes, as well as prevention of illegal drug residues at the time of competition. Dr. Williamson also serves as anesthesiologist for CEPL research projects.

Dr. Todd C. Holbrook is an equine internist with the Boren Veterinary Medical Teaching Hospital with a special interest in sports medicine. He graduated with honors from the University of Georgia, where he received his Doctor of Veterinary Medicine in 1989. Subsequently he completed a one-year rotating large animal internship at North Carolina State University. Dr. Holbrook then returned to the University of Georgia for a residency in large animal medicine, which led to board certification in veterinary internal medicine by the American College of Veterinary Internal Medicine. Dr. Holbrook then entered private equine practice where he spent 7 years working with a variety of performance horses. During this time he developed a special interest in equine endurance, providing veterinary care at numerous

national and international endurance competitions. He is currently an appointed member of the Veterinary Board of the American Endurance Ride Conference. In 2002 Dr. Holbrook joined the faculty at Oklahoma State College of Veterinary Medicine as an Assistant Professor in Equine Medicine. Dr. Holbrook's current research projects related to equine sports include the assessment of cardiovascular stress markers in endurance horses, and the force plate analysis of horses with navicular disease.

Dr. Terence Risby is a Professor of Toxicological Sciences in the Department of Environmental Health at the Johns Hopkins University School of Hygiene and Public Health and an Adjunct Professor of Physiological Sciences, College of Veterinary Medicine, Oklahoma State University. Dr. Risby is by training an Analytical Chemist and received his Ph.D. from Imperial College of Science, Technology and Medicine, University of London in 1970. Dr. Risby's interests in breath biomarkers of tissue injury, disease progression, and reperfusion injury began nearly fifteen years ago when he quantified for the first time reperfusion injury in humans and separate from ischemic damage. This injury was quantified during organ transplant, cardiopulmonary bypass and during the repair of complex aneurysms. Since these initial studies, Dr. Risby has brought his expertise in chromatography and mass spectrometry to identify biomarkers of renal, hepatic and metabolic disorders. Dr. Risby serves as a valuable consultant on the use of breath biomarkers to detect oxidative stress, tissue injury and disease. In the Comparative Exercise Physiology Laboratory, Dr. Risby's principle interest is the commercial development of rapid, non-invasive diagnostic tests to determine the onset of disease processes associated with strenuous exercise.