Recipient of the 2024 IETS Pioneer Award: Dr Edward Squires

Dr Squires grew up on a small farm in Morgantown, West Virginia, the home of West Virginia University. At age 11, he got his first job working at a stable, so it was only natural that he stayed at home and continued to work with horses and attend the University. After obtaining a BS in Animal Sciences he was solicited to work on a Master of Science degree under the guidance of a prominent reproductive biologist, Keith Inskeep. It was Dr Inskeep that encouraged him to attend the University of Wisconsin for a PhD, under the mentorship of a previous pioneer award winner, O. J. Ginther. Dr Ginther had several PhD students working at that time on various aspects of mare reproduction. Dr Squires was assigned to study the follicular and luteal development in pregnant mares. One of his early papers demonstrated that the primary CL in the pregnant mares was viable to 120–150 days of gestation and that eCG rescued the primary CL from regression. Squires went on to demonstrate the role of the ovary and placenta in pregnancy maintenance. In 1976, Squires took a position at Colorado State University and joined the team at the Animal Reproduction Laboratory. He remained as part of that productive group for 33 years. In 1981 he published a novel paper on surgical and non-surgical equine embryo transfer. His team went on to develop the techniques for maintaining the viability of embryo stored at 5°C. Through the training of veterinarians from all over the country, the practice of collecting and shipping embryos to recipient stations became commonplace. One other area of great interest was the application of the oral progestin altrneogest, for managing the mare’s cycle. Squires and his students published numerous papers on the use of Altrneogest in a neal transition as well as cycling mares. Other studies showed the value of Altrneogest for pregnancy maintenance in broodmares and recipients.

With the help of Dr Terry Nett, Squires investigated the seasonal changes in hypothalamic GnRH, GnRH receptors and pituitary LH and FSH. Squires also investigated the use of GnRH for ovulation control and follicular development.

Also, during those early years at CSU, Squires took the opportunity to work with Bill Pickett, the famous stallion reproductive physiologist. They published on many aspects of stallion management, such as factors affecting sperm output and sexual behaviour. His work also included identifying the best extenders for cooling and freezing semen. With the help of Dr Amann, they determined the proper cooling curve needed for maintaining viability of semen cooled to 5°C. Jim Graham, at CSU was also instrumental in designing experiments to evaluating the use of liposomes and cholesterol in semen extenders.

Squires is best known for his work in developing assisted reproductive techniques for the mare and stallion. This technology was transferred to the veterinarians and breeders through short courses. These 3–5-day courses were started in the early 1970 and continue to the present. Thousands of breeders and veterinarians were taught the techniques of AI with cooled and frozen semen, embryo transfer, ultrasound and cryopreservation of oocytes, sperm, and embryos.

Obtaining funding for equine research is a continual problem. A turning point in the equine research program at CSU occurred in the late 1990s. This was the creation of a privately funded research program, called the Preservation of Equine Genetics (PEG). The emphasis was equine Assisted Reproductive Technology (ART), not genetics, and several million dollars were given to CSU by breeders. These funds were used competitively to fund graduate students and faculty doing ART. It was through these funds that scientists such as Drs Carnevale, McKinnon, Seidel, Nett, Graham were able to...
He has lectured extensively nationally and internationally to veterinary and scientific groups and horse breeders in nearly 40 foreign countries. He feels strongly that IETS should be a source of information for the practitioner and governing bodies and should be a leader in presenting new technologies.

Squires has received numerous awards including to be inducted into the Equine Research Hall of Fame, Distinguished Alumni Award College of Agriculture West Virginia University, George Stubb Award from the American Association of Equine Practitioners, Honorary member of the College of Theriogenology, honorary vice president American Quarter Horse Association, past president of the Equine Science Society and chair of the International Symposium on Equine Reproduction and most recently Honorary Chair of the XIII International Symposium on Equine Reproduction.

He is a father of four sons and has seven grandchildren all living in the west within two hours of Denver. He and his wife Norma enjoy the farm they have in Colorado and spend time with the kids riding horses and camping. He currently has a consulting business and serves as a large animal technical specialist for Vetoquinol and research advisor for Select Breeders service.

References


