

## Recipient of the 2012 IETS Pioneer Award: Oliver Joseph (O. J.) Ginther, VMD, PhD

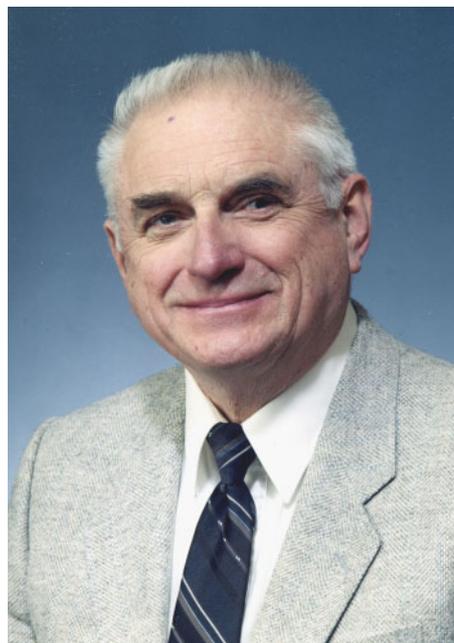
Dr O. J. Ginther was born and raised on a farm in Pennsylvania. Upon graduation from high school, he served in the US Air Force during the Korean War (1951–1955). He received a BSc from Pennsylvania State University in 1958, and the VMD from the University of Pennsylvania in 1961. In 1964, he enrolled as a graduate student at the University of Wisconsin under former IETS Pioneer Awardee, Dr L. E. Casida. He received his PhD in 1967 and joined the Department of Veterinary Science (now Department of Pathobiological Sciences) at the University of Wisconsin, where he has remained. In 2001, he founded the Eutheria Foundation with a mission to provide facilities, animals, equipment, supplies and personnel for scientific research into basic reproductive mechanisms in farm animals.

Dr Ginther is recognised for the development of many techniques that embryo transfer practitioners take for granted, including his remarkable work on ultrasonography and the study of ovarian function in cattle and horses in particular. He is the sole author of five hard-cover text and reference books currently used worldwide by scientists, students and veterinarians. He has served as major research advisor for more than 75 graduate and postdoctoral students, many of whom have become leaders in reproductive biology.

Dr Ginther's scholarship and innovation are well represented in his impressive list of publications and by recognition by his peers through the receipt of numerous awards and honors. His creative hypotheses have been tested using an exciting array of experimental methodologies and have resulted in quantitatively well-documented conclusions published in more than 500 peer-reviewed manuscripts. In addition, Dr Ginther has produced classic reviews that have consolidated a large and often bewildering body of knowledge in our field, and monographs that are icons in reproductive biology. Single-author textbooks are increasingly rare and Dr Ginther's books represent the best of single-author writing by maintaining continuity and flow between topics and chapters.

Dr Ginther has received numerous scientific and professional awards from a wide range of organisations. In 2003, he was identified by the Institute for Scientific Information (ISI) as one of the top 0.5% cited scientists in the world in the category of Plants and Animals. In 2010, his worldwide rank for number of scientific publications for various reproduction categories in all species, including humans, included first for ovarian follicles and follicular fluid, second for luteolysis and third for the oestrous cycle and ovulation.

In the area of embryo transfer, Dr Ginther began his work on utero-ovarian relationships with Dr Casida in the early 1960s. He continued with his classical anatomical studies of the utero-ovarian vasculature and on which he based hypotheses for luteal regression and maternal recognition of pregnancy, which were tested by his graduate students in the 1970s. In the early 1970s, Dr Ginther also initiated studies on superstimulation in the mare,



and it was he and his graduate students who were among the first to report on successful nonsurgical embryo collection and transfer in the cow. In addition, the first reports of *in vitro* fertilisation of *in vitro* matured equine oocytes, the first set of multiple foals from a superovulated donor and the first superovulations in mares were from his laboratory. He was also one of the first to critically analyse practitioner data for the purpose of improving embryo transfer results. He used these data to propose new hypotheses that his graduate students proceeded to test. His pioneering work on ovarian follicular wave dynamics led to a demonstration of the importance of initiating gonadotropin treatments at the time of follicular wave emergence, and the reasons for asynchrony in recipients following standard protocols.

Dr Ginther's astounding productivity in the area of follicle dynamics chronicles how new approaches may be used to solve age-old enigmas; in this instance, how a single follicle can survive while all others cannot in monovular species. In his quest, he embraced a tremendous variety of technical approaches and animal models to investigate mechanisms controlling ovarian function. This multi-faceted and comparative approach brought great insight to our understanding of the ovary. He used whole-animal, cellular, molecular and immunobiochemical approaches with 13 different farm and laboratory species. In his classic 1996 review of follicle selection in cattle, Dr Ginther postulated a 2-step mechanism of follicle selection

involving FSH deprivation followed by acquisition of LH responsiveness. In the following years, he systematically posed and tested specific hypotheses to verify this mechanism. In his 2001 review, he summarised data documenting a close functional coupling between FSH and follicles within a wave. He explained the paradox between the dependence of follicles on FSH and the FSH-suppressing effect of follicular products. He showed that initially, all follicles within a wave contribute to FSH suppression, but after selection, only products of the dominant follicle are responsible for suppressing FSH. The maturity of the dominant follicle permits its survival in an FSH-starved environment, while the subordinate follicles succumb before they can reach a critical diameter.

Dr Ginther does not find it easy or natural to assume administrative offices, and instead has made a conscious decision to make his contribution through graduate student training and scientific publication. Dr Ginther has always been in great demand as a speaker and has presented his work world-wide. He has an exceptional ability to render a complex subject into clearly understandable concepts for a broad audience. Without exception, his presentations are well organised, well prepared, and extremely well received.

Dr Ginther's extraordinary career has spanned 50 years and now in his 80s, he remains an extremely productive and relevant scientist. He has been a pioneer in the truest sense through his early discoveries of the role of utero-ovarian veno-arterial pathways in the control of luteal function, foundational characterisation of the reproductive biology of the mare, development and use of ultrasonography for the study of reproductive processes in several species, and most recently his contributions that have culminated in a comprehensive, yet very simple theory of follicle selection and dominance in monovular species. He has followed the principles of the scientific approach in a way to which we may all aspire; i.e. he has made keen observations, developed testable hypotheses, designed incisive experiments and derived objective results. His creative approach has and will continue to influence hypothesis testing and experimental design in reproductive biology for many years.

There can be no doubt of the importance of Dr Ginther's pioneering contributions to the practice of embryo transfer and to our basic understanding of reproductive biology. We can think of no one who is more deserving of recognition for his body of work over a long and distinguished career.

In recognition of the significant contributions he has made over the last 50 years, the IETS is proud to award Dr O. J. Ginther with the 2012 Pioneer Award.

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