

# DBMR Research Conference

Date **June 7, 2021, 5 pm – 6 pm**

Title **Large animals in biomedical research: CRISPR, bisphosphonates and beyond**

Speaker **Prof. Dr. Larry J. Suva, Professor and Department Head, Veterinary Physiology and Pharmacology at Texas A&M University, College Station, TX, USA**

**Bio:** Dr. Larry J. Suva, originally from Melbourne, Australia, graduated as PhD in Medicine from the University of Melbourne in 1989. He did postdoctoral research at Merck during the development of the bisphosphonate (Fosamax) before joining the faculty of Harvard Medical School in 1992. Dr. Suva's entire research focus is on the skeletal consequences of disease. These interests include breast cancer bone metastasis and multiple myeloma as well as fracture healing, bone regeneration, bone anabolism, rare bone diseases and bone infections. Current research efforts include a focus on the development of large animal pre-clinical models of rare bone disease that have the potential to change the study of bone turnover as well as bone physiology, and provide novel insight into future therapeutic directions that target regulatory pathways important for bone physiology. He is currently Professor and Department Head of Veterinary Physiology and Pharmacology at Texas A&M University, College Station, TX, USA.

Peer-reviewed published work can be found at: <http://www.ncbi.nlm.nih.gov/pubmed/?term=suva+L>

**Abstract:** The use of genetic engineering has increased significantly in recent years, particularly with the wide acceptance of the CRISPR-Cas9 genome editing technology. The wide application of genome editing techniques provides a unique opportunity for musculoskeletal investigators to consider the examination of rare (and other) disease phenotypes in domestic animals. This idea is particularly important when considering the development of domestic animal (livestock) models of rare human bone disorders in which the bone remodeling process parallels that observed in humans. Certainly murine studies have significantly contributed to our understanding of human physiology yet it is also apparent that mice frequently respond to experimental interventions in ways that differ markedly from human responses. In a wide variety of experimental settings, we have developed ovine models of rare human disorders such as hypophosphatasia (HPP) and Progressive Pseudorheumatoid Arthropathy of Childhood (PPAC). The models provide opportunities to study disease progression but also provide unique tools with which to examine experimental therapeutic efficacy in a system that better models humans than mice. Similarly, we (and others) have utilized horses as a model to study non-bone effects of bisphosphonate treatment. We have a strategic focus on developing large animal models of specific human bone disorders that are not answered or not possible to answer in rodents.

## References

1. Suva LJ, Westhusin ME, Long CR, Gaddy D Engineering bone phenotypes in domestic animals: Unique resources for enhancing musculoskeletal research. *Bone*. 2020 Jan;130:115119. PMID:31712131
2. Suva LJ, Cooper A, Watts AE, Ebetino FH, Price J, Gaddy D. Bisphosphonates in veterinary medicine: The new horizon for use. *Bone*. 2020 Oct 24;142:115711. PMID: 33141069

**Prof. Dr. Larry J. Suva has been invited by Prof. Dr. phil. nat Willy Hofstetter**

The DBMR Research Conference will take place as a webinar via Zoom.

For those wishing to attend, please use this link

<https://unibe.ch.zoom.us/j/65250689553?pwd=YzN3RHAXVmpwUG90SnFxFpUY1Axdz09>

Meeting ID: 652 5068 9553

Passcode: 314352

or scan the QR code for the details



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## Next DBMR Research Conference

**September 6, 2021**

**Prof. Michal Schwartz, Weizmann Institute of Science, Rehovot, ISR**

Title «A novel approach to defeat Alzheimer's disease: Empowering the immune system to mobilize monocyte-derived macrophages»



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