

## Tissue Science and Molecular Biology, Stem Cells & Separation Techniques

June 06-07, 2019 | London, UK

### Translation of basic research into cell-based therapies in tissue regeneration

**Madhu Dhar, David E Anderson, Henry S Adair, James Schumacher and Dennis Geiser**

University of Tennessee, USA

The large animal regenerative medicine program, started in 2010 conducts research in the use of mesenchymal stem cells, biomaterials and other forms of cell-based therapies that will translate to both veterinary and human medicine. Our ultimate goal is to make basic discoveries and to expand these discoveries into the development of diagnostic modalities and treatment protocols to solve complex medical problems related to musculoskeletal, and nerve injuries. We carry out specific *in vitro* assays to evaluate cell adherence, proliferation and potential for differentiation

into osteocytes, chondrocytes or neural-like progenitors. We then conduct controlled studies, using rodents, to confirm the biocompatibility and efficacy of mesenchymal cells used alone or in combination with biomaterials. Finally, we translate these findings into controlled, preclinical studies using large animals, including goats, sheep, pigs and horses. We perform the *in vitro* and rodent studies to improve clinical outcomes for large animal and human patients.

e: mdhar@utk.edu