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Animal Models Core Co-
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Large Animal Models and Intestinal Disease

Research emphasis: Dr. Gonzalez' research focuses on the use of large animal models (porcine and equine) to study intestinal disease with an emphasis on intestinal stem cell biology and ischemic injury. Ischemia causes mucosal epithelial injury that is observed in diseases such as neonatal necrotizing enterocolitis, volvulus, cardiopulmonary disease and hemorrhagic shock. The limitations of directly studying human disease in a clinical setting necessitates animal model use in order to expand basic science knowledge. Despite major research advances using murine models and increasingly accepted potential therapeutic benefits of stem cell or stem cell-targeted therapies, a greater level of physiological understanding is needed to make regenerative medicine a clinical reality. Large animal models provide a translationally relevant means to study pathophysiologic conditions and advance clinical therapies.

Application :

- Human/ veterinary intestinal disease
- Epithelial regeneration
- Novel therapeutics
- Tissue viability

Collaboration potential:

- Intestinal injury/repair
- Intestinal stem cells
- Markers of tissue viability
- Large animal model development

Selected publications: (limit 4)

Gonzalez LM, Moeser AJ, Blikslager AT. Animal models of ischemia-reperfusion induced intestinal injury: progress and promise for translational research. *Am J Physiol Gastrointest Liver Physiol* 2014

Gonzalez LM, Moeser AJ, Blikslager AT. Porcine models of digestive disease: the future of large animal translational research. *Translational Research* 2015

Gonzalez LM, Fogle CF, Baker WT, Hughes FE, Law JM, Motsinger-Reif AA, Blikslager AT. Operative Factors Associated with Short-term Survival in Horses with Large Colon Volvulus: 47 cases from 2006 to 2013. *Equine Vet J* 2014

Gonzalez LM, Williamson I, Piedrahita JA, Blikslager AT, Magness ST. Development of a porcine model to study stem cell driven regeneration of the intestinal epithelium. *PLoS ONE* 2013