Large animal models of barrier health and disease

**Research emphasis:**
My research is focused on understanding the mechanisms of drug movement into the gastrointestinal tract to mitigate negative impacts on systemically administered antimicrobials including antibiotic-associated diarrhea and selection of antimicrobial resistant fecal organisms. I have developed both an in vivo model in cattle and an ex vivo model to assess this movement of antimicrobials into the intestine that can be translated to other large animal species. I have also investigated methods of measuring active antibiotic concentrations at the site of infection including the airway and the interstitial fluid to predict antibiotic efficacy.

**Application:**
- Gastrointestinal physiology
- Infectious disease
- Food safety
- Antimicrobial efficacy

**Collaboration potential:**
Large animal model of:
- Drug delivery
- Mucosal barrier function
- Antimicrobial resistance
- Zoonotic infections

**Selected publications:** (limit 4)

