Translational models for research on infectious diarrhea

Research emphasis:
I am interested in researching interactions between enteropathogenic organisms, resident microbes of the microbiota, and host intestinal epithelial cells. Increasing our understanding of these interactions will lead to development of innovative approaches to prevent infection and deleterious effects to gastrointestinal function. My PhD thesis with my mentor, Dr. Jody Gookin, is focused on Enteropathogenic E. coli (EPEC), which is a leading cause of diarrhea in animals and humans. EPEC is directly associated with higher hazard of death in children with diarrhea in developing countries. Shelter kittens recapitulate similar disease and mortality to that seen in children in developing countries. It is with the kitten model that we hypothesize an innovative approach to prevention of EPEC colonization by subverting EPEC-epithelial cell interaction using host-derived commensal bacteria.

Application:
- Host pathogen interaction in vitro – intestinal epithelial cells and bacteria
- Natural models of infectious causes of diarrhea (shelter animals)

Collaboration potential:
- Non-invasive methods to test intestinal function in vivo
- In vitro intestinal epithelial cells and pathogen interaction
- Histopathology and FISH

Selected publications: (limit 4)

Watson VE, Sycamore KF, Rissi DR. Pathology in Practice: Diffuse Gastric Wall Thickening in a Dog. JAVMA. (accepted for publication)

