



## NIDDK P30 Center for Molecular Studies in Digestive and Liver Diseases Research Seminar



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### *“Mechanisms of Obesity-Associated Colorectal Cancer”*

Thursday, April 28, 2022  
12:00 – 1:00 PM EST  
901 Biomedical Research Building  
[Zoom Link](#)

### **ABOUT THE ROPER LAB**

My laboratory is interested in understanding the molecular mechanisms of stem cell function in the normal intestine and in colorectal cancer using innovative three-dimensional organoid and in vivo platforms. We demonstrated that high fat diet-induced obesity activates peroxisome proliferator-activated receptor delta (PPAR $\delta$ ) signaling in intestinal stem cells and progenitor cells, which increases stem cell regeneration and tumor initiation in the colon. We also pioneered novel orthotopic transplantation and in situ CRISPR/Cas9 gene editing models of colorectal cancer that recapitulate the adenoma-carcinoma-metastasis sequence. Research in the laboratory is focused on three main areas: 1) Immune regulation of the intestinal epithelium and colorectal cancer; 2) The effects of diet-induced obesity on regeneration in the intestine; and 3) analysis of colorectal cancer heterogeneity with single-cell mRNA sequencing and genetically engineered mouse models. The overall goal of this research is to develop new treatment approaches for intestinal diseases such as inflammatory bowel disease and colorectal cancer. I am also a gastroenterologist at Duke University Hospital and the Durham VA Hospital. My clinical interests include colorectal cancer screening and gastrointestinal cancer genetics.

The meeting will start promptly at 12:00 pm. Please be on time.  
Everyone inside and outside of the division is welcome to attend.