Lee A. "Ted" Denson, MD
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Grant Title	Role	Sponsor/ Sponsor ID	Annual Direct Costs	Project Period
2'-Fucosyllactose in IBD	Multi-PI	R01 HD94862	$548,978	07/12/18-08/31/23
Biomarkers of Intestinal Fibrosis in Small Bowel Crohn's Disease	Multi-PI	Helmsley Foundation	$295,393	03/01/19-02/28/22
Deep Learning to Patient Classification of Inflammatory Liver and Gut Disorders	Multi-PI	ARC - CCR Foundation	$688,628	02/24/21-02/23/24
Human Intestinal Organoid Model System for Stricturing Ileal Crohn's Disease	PI	CCF	$115,000	01/020/20-12/31/22
Modeling Crohn's Disease using Machine Learning: Image Analysis and Multiomics	PI	CCF	$15,356	07/01/20-06/30/22
Reg Niche Cell Diff to Sustain Intest Stem Cell Regeneration Against Gut Inflamm	Co-Inv	R01 DK123299	$225,000	01/01/20-12/31/23
Fibrotic Remodeling in GI Inflamm	Co-Inv	R01 DK124617	$8,469	06/01/20-05/31/25
Dr. Denson is also PI of Gastro T32 DK007727 and Co-Investigator on R21 DK114657 (See Dillman); R01 AI148276 (see Kottyan); and Helmsley Fdn (See Minar); R01 NR017533 (See Hommel)				

Description of Research:

Dr. Denson studies pathogenic mechanisms that regulate both growth and mucosal inflammation in children with IBD. He was a Co-PI in two large pediatric IBD inception cohort studies (RISK and PROTECT; >1500 children). Studies in a multi-center collaborative research group used expression relative to clinical outcomes, identified mechanisms of disease which drive mucosal inflammation, and are guiding the development of new diagnostics and therapeutics. Dr. Denson now holds the IND and is PI for the multi-center NIH funded placebo-controlled randomized clinical trial (RCT) of the 2'-Fucosyllactose (2'FL) prebiotic in children and young adults with IBD. This RCT will identify 2'FL dose(s) that are safe and well tolerated and will shift microbiota and its metabolites in IBD patients receiving anti-TNF therapy. His investigative team uses genomic and microbial observations from these cohort studies to guide novel human intestinal organoid model systems to directly investigate mechanisms of disease and potential small molecule therapeutics. They investigate the role of NADPH oxidase gene variants in intestinal organoids and how HDAC3 modulates microbial metabolites on epithelial epigenetic architecture and function.

Collaborations and Core Use:

Dr. Denson collaborates with Drs. Kottyan to identify genomic signatures of IBD; with Drs. Alenghat, Dhaliwal, Dillman, Haslam, Helmrath, Hommel, Huppert, Khandelwal, Miethke, Minar, Morrow, Rothenberg, Takebe, VanDussen, and J.Wells on clinical & multi-omic patient classification and molecular mechanisms of IBD.

Projection of Core use: Gene Analysis Core, Integrative Morphology Core, Stem Cell/Organoid and Gene Editing Core and the Clinical Component