Highlights from the Annual Scientific Symposium

The Digestive Health Center (DHC) held its Annual Scientific Symposium on Tuesday, February 28. Stephen Duncan, DPhil from Medical University of South Carolina presented the keynote address “Using iPSCs to Identify New Purposes for Old Drugs in the Treatment of Metabolic Liver Disease”. Posters were displayed by 39 researchers which represented 9 Divisions in the Department of Pediatrics and 6 Departments within the University of Cincinnati, College of Medicine. Additionally, there were 10 posters displayed highlighting research core services. Prizes were awarded for the best presented posters:

First Place: Katie Sinagoga (Graduate Student, Cincinnati Children’s, Developmental Biology, member of Dr. Jim Well’s lab) for “Distinct Roles for the mTOR Pathway in Postnatal Morphogenesis, Maturation, and Function of Pancreatic Islets”.

Tie for Second Place: Nina Bertaux-Skeirik (Graduate Student, University of Cincinnati, Molecular and Cellular Physiology, member of Dr. Yana Zavros’ lab) for “Patient-Derived in Vitro and in Vivo Organoid Models of Gastric Cancer”. Leila Valanejad, PhD (Research Fellow, Cincinnati Children’s, Pediatric Surgery, member of Dr. Nick Timchenko’s lab) for “PARP1-Dependent Chromosomal Domains Determine the Development of Aggressive Hepatoblastoma by Activating Multiple Pathways of Cancer”.

Tie for Third Place: Jayati Chakrabarti, PhD (Research Scientist, University of Cincinnati, Molecular and Cellular Physiology, member of Dr. Yana Zavros’ lab) for “Hedgehog Signaling Regulates PDL-1 Expression in Gastric Cancer Cells to Induce Tumor Proliferation”. Rie Ouchi, PhD (Research Fellow, Cincinnati Children’s, Gastroenterology member of Dr. Taka Takebe’s lab) for “In Vitro Human NAFLD Model Using Human iPSC Derived Liver Organoids”. Holly Poling (Research Assistant, Cincinnati Children’s, Pediatric Surgery, member of Dr. Michael Helmrath’s lab) for “Mechanically Induced Enterogenesis of Human Intestinal Organoids in Vivo”. See Page 2 for more highlights from the Annual Scientific Symposium.

Cincinnati Hosted the 2017 Midwest DDRCC Alliance Meeting

The DHC hosted the Midwest Digestive Diseases Research Core Centers (DDRCC) Alliance Meeting on Monday February 27, 2017. The Midwest DDRCC Alliance holds a rotating annual meeting among the 6 centers (see map to right) that is attended by Pilot and Feasibility Awardees and Center Directors. Pilot and Feasibility Awardees from the 6 centers presented their work and received feedback on their projects and career mentoring. All attendees, including Dr. Peter Perrin, the NIH representative who oversees all the DDRCCs, enjoyed visiting our center.
The collaborative, multicenter RISK Stratification study of DHC Associate Director and DHC member Dr. Lee (Ted) Denson was published online in *The Lancet* on March 1. The Risk Stratification and Identification of Immunogenetic and Microbial Markers of Rapid Disease Progression in Children with Crohn’s Disease (RISK) was designed as a prospective study to derive a risk-stratification model characterizing the natural progression of newly diagnosed Crohn’s disease in pediatric patients.

The research team identified a gene expression signature in the fibrosis process leads to the development of fibrostenosis and a gene expression signature in the inflammatory response results in the development of penetrating disease. The RISK study also discovered patients that receive early anti-TNFα therapy prevented penetrating complications.

The Crohn’s & Colitis Foundation funded the RISK study and the DHC grant subsidized the RNA-Seq experiments. The study spanned over 3 years and enrolled 1,800 patients of which 913 were part of the published study. The patients were from 25 institutions located in the United States and 3 institutions located in Canada. Many of the institutions in the United States are home to one of the 17 Silvio O. Conte Digestive Diseases Research Core Centers funded by NIDDK.

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**Thank you to the judges and outstanding organizers!**

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**Member’s Research Published in The Lancet**

The collaborative, multicenter RISK Stratification study of DHC Associate Director and DHC member Dr. Lee (Ted) Denson was published online in *The Lancet* on March 1.
Members’ Research Highlighted on Nature Medicine Cover

The research work of DHC Members Drs. Max Mahe (previous Pilot & Feasibility Recipient), Michael Helmrath and James Wells was featured on the cover of January issue of *Nature Medicine*. The research team used human pluripotent stem cells to generate human intestinal tissues with a functional enteric nervous system (ENS). They were able to use the intestinal tissue to study Hirschsprung’s disease, a severe intestinal nerve disorder. This study represents another major step towards generating healthy intestine for transplant into a patient.

Members’ Research Published in Nature

DHC members, Drs. Eitaro Aihara, Marshall (Chip) Montrose, and James Wells’ research was published in the January 12 issue of *Nature*. The research group used direct differentiation of human pluripotent stem cells to generate gastric organoids containing corpus/fundus type of epithelium. They showed that the Wnt/β-catenin signalling was key factor in the specification of the fundic domain during gastric development. The resulting human fundic gastric organoids contained chief cells and parietal cells capable of secreting acid in response to histamine. Two years ago, Drs. Yana Zavros and Wells used a similar approach to generate antral gastric organoids. Now researchers can generate both parts of the human stomach to study gastric function and disease.

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DHC Member Highlights and New DHC Member

**Yacyshyn is Named to Editorial Board**

Bruce Yacyshyn, MD was named to the editorial board of *Inflammatory Bowel Diseases*, the official journal of the Crohn’s & Colitis Foundation. Dr. Yacyshyn is a Professor in the Department of Internal Medicine, Division of Digestive Diseases at the University of Cincinnati.

**Way Receives Research Achievement Award**

Sing Sing Way, MD received the Cincinnati Children’s Research Achievement Faculty Award. In the past year he has been recognized by his peers for his outstanding research program by receiving the E. Mead Johnson Award, the NIH Director’s Pioneer Award, the inaugural Gale and Ira Drukier Prize in Children’s Health Research, and was appointed as a Faculty Scholar by the Howard Hughes Medical Institute (HHMI), the Simons Foundation, and the Bill & Melinda Gates Foundation. Dr. Way is a member in the Division of Infectious Diseases at Cincinnati Children’s.

**New DHC Member**

Sujit Mohanty, PhD, MVSc, DVM is an Instructor in the Division of Pediatric General and Thoracic Surgery, Department of Surgery, at Cincinnati Children’s. His research focuses on investigating the molecular mechanisms of liver and biliary injury with special emphasis on biliary atresia.
# Seminar Series - Tuesdays at Noon, Room S6.125

<table>
<thead>
<tr>
<th>Date</th>
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| 3/21/17   | Luis FZ Batista, PhD  
Washington University at St. Louis | “Generation of Stem Cell Derived Hepatocytes as a Platform to Study the Role of Telomerase Dysregulation in Liver Disease and Cancer” |
| 3/28/17   | Kasper Hoebe, PhD  
CCHMC: Immunobiology | “New Molecular Pathways Controlling T Cell Quiescence and Preventing Colitis” |
| 4/4/17    | Artem Barski, PhD  
CCHMC: Allergy & Immunology | “Analysis of Chip-Seq and RNA-Seq Data with BioWardrobe” |
| 4/11/17   | Kevin Hommel, PhD  
CCHMC: Behavioral Medicine and Clinical Psychology | “Using Health Technology to Improve Self-Management in Pediatric IBD” |
| 4/18/17   | Anna Peters, MD  
CCHMC: Gastroenterology | “Control of Cholangiocyte Proliferation by Innate Lymphoid Cells” |
| 4/25/17   | William Balistreri, MD  
CCHMC: Gastroenterology | “Viral Hepatitis - Does the “C” Stand for Cure....?” |
| 5/2/17    | Jenny Tong, MD  
Duke University | “Metabolic Regulation by Ghrelin in Mice and Men” |
| 5/9/17    | No Seminar due to Digestive Disease Week Annual Meeting | |
| 5/16/17   | Justin Wheeler, MD  
CCHMC: Gastroenterology | “Blame the Hormones? Hormone Signaling and Male Gender Predominance in Eosinophilic Esophagitis” |
| 5/23/17   | M. Raphaelle Jean, MD, MPH  
CCHMC: Gastroenterology | “Creating a Process to Obtain Hepatitis B Serology Among Patients Treated with Infliximab at a Large Urban Children’s Hospital” |
| 5/30/17   | Ana Catalina (Cata) Arce-Clachar, MD  
CCHMC: Gastroenterology | “The Role of TGR5 Signaling in Gender Specific Sclerosing Cholangitis Phenotype in the Mdr2 +/- Model” |

For all publications, please acknowledge the DHC as follows:

“This project was supported in part by PHS Grant P30 DK078392 ([insert name of core that you used]) of the Digestive Disease Research Core Center in Cincinnati.”

For more information regarding the DHC visit our [website](http://example.com) or contact one of the following:

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