


**NIH** National Institute of Diabetes and Digestive and Kidney Diseases

**NASPGHAN Annual Meeting**

**Perspectives from NIDDK  
Related to NASPGHAN**

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Director, National Institute of Diabetes and Digestive  
and Kidney Diseases  
National Institutes of Health

October 10, 2015




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**Multiple NIH Institutes and Centers  
Support Research in Digestive Diseases**

<u>NIH</u> 27 Institutes and Centers	<u>Digestive Diseases</u>
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- OD
- NIDDK
- NCI
- NIAID
- NICHD
- NIAAA
- NIA
- Others

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**NIDDK & NASPGHAN  
Shared Research Agenda**




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## Inflammatory Bowel Diseases

- PROTECT-UC clinical trial



- IBD Genetics Consortium



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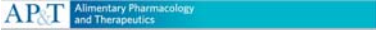
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## Functional GI and Motility Disorders

- Pediatric IBS and low-carb diet, role of gut microbiome



APIT Alimentary Pharmacology and Therapeutics

**Randomised clinical trial: gut microbiome biomarkers are associated with clinical response to a low FODMAP diet in children with the irritable bowel syndrome**

B. P. Chhabra<sup>1</sup>, J. L. Cook<sup>1</sup>, E. B. Hollibaugh<sup>2</sup>, C. M. Tarr<sup>1</sup>, A. R. Stokman<sup>3</sup>, B. A. Lund<sup>4</sup>, J. Vermeulen<sup>5</sup> & R. J. Stricker<sup>1\*</sup>

\*Microbiome

**RESEARCH** Open Access

**Structure and function of the healthy pre-adolescent pediatric gut microbiome**

Emily B. Hollibaugh<sup>1\*</sup>, Kevin Reuter<sup>2\*</sup>, Ruth Ann Lund<sup>3</sup>, Erica M. Weider<sup>4\*</sup>, Michelle Russo Gonzalez<sup>5\*</sup>, Tomoko Watanabe<sup>6</sup>, Seleni Patel<sup>7</sup>, Virginia R. Dominguez<sup>8</sup>, George A. Kherif<sup>9</sup>, Corina M. Huang<sup>9</sup>, Richard A. Giblin<sup>10</sup>, Joseph P. Passaro<sup>11</sup>, Robert J. Stricker<sup>12\*</sup> and James Versalovic<sup>13</sup>

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## Liver Disorders


- Pediatric Acute Liver Failure Study Group



- Childhood Liver Disease Research and Education Network



- Nonalcoholic Steatohepatitis Clinical Research Network



- Biliary atresia and environmental triggers

RESEARCH ARTICLE

**BILIARY ATRESIA**

**Identification of a plant isoflavonoid that causes biliary atresia**

Kristin Lorent,<sup>1\*</sup> Wellong Gong,<sup>1\*</sup> Kyung A. Ko,<sup>2\*</sup> Orith Waldbord-Zimmer,<sup>3,4\*</sup> Sara Karjane,<sup>5</sup> Xiao Zhan,<sup>1</sup> Ian Sealy,<sup>6</sup> Ross N. Kettleborough,<sup>7</sup> Derek L. Stemple,<sup>8</sup> Peter A. Windsor,<sup>9</sup> Stephen J. Whittaker,<sup>7</sup> John R. Porter,<sup>7</sup> Rebecca G. Wells,<sup>10</sup> Michael Pack<sup>11,12</sup>

*Sci Transl Med* 7, 286ra67, 2015.

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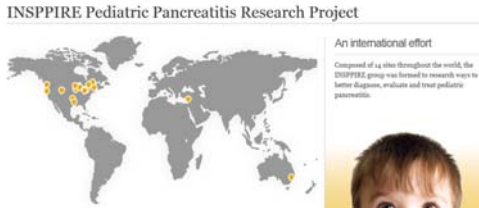
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## Pancreatic Disorders

- New Consortium for the Study of Chronic Pancreatitis, Diabetes and Pancreatic Cancer:
  - INSPPIRE (International Study group of Pediatric Pancreatitis: In search for a cuRE) to Study Pediatric Chronic Pancreatitis, Awarded September 2015




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## Allergy, Intestinal Failure, and Infection

- Eosinophilic GI Disease Consortium
- Celiac research: "TEDDY" Study
- NEC and Breast Milk




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## Nutritional Disorders

- Teen-LABS (*bariatric surgery*)
- Lifestyle Interventions for Expectant Moms: LIFE-Moms
- New Office of Nutrition Research




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## Gut Microbiome & Pediatric GI Disease

- NIH Human Microbiome Project
- Antibiotic treatment & gut microbiome development
- Pediatric malnutrition
  
- New NIDDK funding announcement: *A Community Research Resource of Microbiome-Derived Factors Modulating Host Physiology in Obesity, Digestive and Liver Diseases, and Nutrition (RFA-DK-15-012)*



NIH HUMAN MICROBIOME PROJECT

### Altering the Intestinal Microbiota during a Critical Developmental Window Has Lasting Metabolic Consequences

Letter

#### Persistent gut microbiota immaturity in malnourished Bangladeshi children

Research Article

Functional characterization of IgA-targeted bacterial taxa from undernourished Malawian children that produce diet-dependent enteropathy

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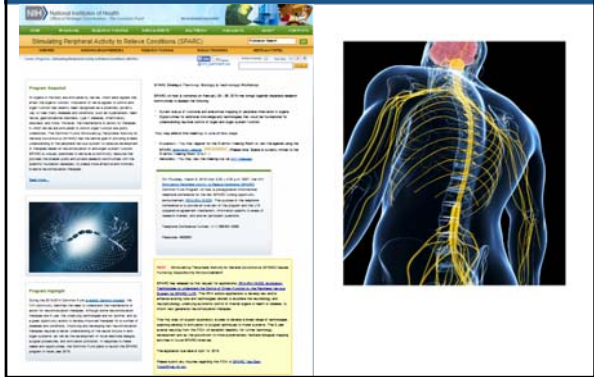
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## NIH Common Fund: SPARC Stimulating Peripheral Activity to Relieve Conditions



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## New GI-related SPARC Awards

New! Exploratory Technologies to Understand the Control of Organ Function by the Peripheral Nervous System (U18)

12 awards issued September 28, 2016

Please click the color-coded shapes below to view individual award abstracts

Approaches	Lenses (Color)	System (Shape)	Condition and Organ (Color)	Quantitative (Shape)
General Research	Black square	Triangle	Green circle	Grey circle
Drug Approaches and Interventions	Red circle	Blue triangle	Blue triangle	Yellow square
Single Cloning and Cell Imaging				Yellow square
Transgenic and Animal Models			Blue star	Yellow square
Organoids				Green triangle
Utilization of Human Biobanking	Orange diamond			Purple square
Microfluidics	Blue triangle			
Minimally Invasive	Blue triangle			Grey circle

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## NIDDK Division of Digestive Diseases & Nutrition

- Mission: Support basic, translational and clinical research
- Disease Areas
  - Alimentary GI tract
  - Liver
  - Exocrine Pancreas
  - Clinical Obesity Research
  - Nutrition Research



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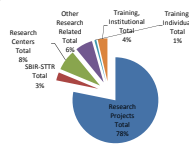
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## NIDDK Division of Digestive Diseases & Nutrition

- How is research supported?
  - Investigator initiated grants
  - Large research programs
  - Clinical trials
  - Research Centers
  - Training and Career Development
  - Small Business
  - Public communication



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