### Clinical Course • Providing the best clinical care for our patients

**Thursday, August 15, 2019**

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>4:00–6:00 pm</td>
<td>Registration</td>
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**Friday, August 16, 2019**

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<tr>
<td>7:00–5:30 pm</td>
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<tr>
<td>7:00–7:45 am</td>
<td>Breakfast • Visit Exhibits</td>
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<tr>
<td>7:45–8:00 am</td>
<td>Welcome • Introduction • Beverley Greenwood-Van Meerveld, John Pandolfino</td>
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</tbody>
</table>
| 8:00–10:00 am | **Esophagus**
|               | Moderators: Dustin Carlson, Rena Yadlapati   |
| 8:00–8:25 am  | Non-obstructive dysphagia and phenotyping the patient
|               | Dustin Carlson                               |
| 8:00–8:30 am  | High-resolution anorectal manometry
|               | Proper catheter placement, learn to perform high-quality high-resolution manometry, identify dyssynergic defecation patterns, editing parameters
|               | Jason Baker                                  |
| 8:30–9:00 am  | Pelvic floor physical therapy
|               | Define pelvic floor physical therapy, explain methods for relaxing pelvic floor, methods in relation to pelvic floor and fecal incontinence
|               | Vonna Karoghlanian                           |
| 9:00–9:30 am  | FLIP topography
|               | Learn the attributes of the FLIP catheter, review FLIP catheter placement techniques, esophageal motility patterns using FLIP, review gastroesophageal function
|               | John Pandolfino                              |
| 8:50–9:15 am  | Mucosal impedance studies of the esophagus
|               | Michael Vaezi                                |
| 9:15–9:40 am  | Non–minimally invasive esophageal tissue sampling, e.g., Cytosponge, string test, transnasal esophagoscopy (TNE)
|               | Ikuo Hirano                                  |
| 9:40–10:00 am | Panel Discussion                             |
| 10:00–10:30 am| Break • Visit Exhibits                       |

**10:30 am–12:30 pm**

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| 10:30–10:55 am| Stomach/Small Bowel
|               | Moderators: Braden Kuo, Henry Parkman                |
| 10:55–11:20 am| New frontiers in studying motility of the stomach and small intestine
<p>|               | Braden Kuo                                            |</p>
<table>
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| 11:20–11:45 am  | Emerging capsule technologies for functional gastrointestinal and motility disorders: The future is now!  
William Chey   |
| 11:45 am–12:10 pm | Motility modifying agents - are we getting anywhere?  
Mark Pimentel |
| 12:10–12:30 pm  | Panel Discussion                                                        |
|                 | **Parallel Lunches • Choose one • Visit Exhibits**                     |
| 12:30–1:15 pm   | Lunch • no speaker • Visit Exhibits                                     |
| 12:30–1:15 pm   | Lunch Symposium • Alnylam sponsored • Visit Exhibits  
Medical Mystery: A case of unexplained, severe, diffuse, abdominal pain  
Manisha Balwani, Gregory Sayuk |
| 1:15–2:45 pm    | Anorectal Disorders  
Moderators: William Chey, Satish Rao |
| 1:15–1:40 pm    | New treatments for anorectal disorders  
Satish Rao       |
| 1:40–2:05 pm    | Colon motility in constipation: When and how should I assess this?  
Richard Saad    |
| 2:05–2:30 pm    | Review radiopaque marker, wireless motility capsule, and advanced imaging in assessing colon motility in constipation  
Darren Brenner  |
| 2:30–2:45 pm    | Panel Discussion                                                        |
| 2:45–3:00 pm    | Break • Visit Exhibits                                                  |
| 3:00–4:30 pm    | Mind–Medicine Interplay in Gastroenterology  
Moderators: Laurie Keefer, Tiffany Taft |
| 3:00–3:25 pm    | New concepts into the mechanisms of Brain–Gut interactions  
Kirsten Tillisch |
| 3:25–3:50 pm    | Choosing behavioral approaches for my patients – shifting to a more positive psychology/resilience model in psychogastroenterology  
Laurie Keefer  |
| 3:50–4:15 pm    | When the diagnosis is functional: Supporting the psychological needs of pediatric/young adult patients and their parents from evaluation through treatment  
Julie Snyder  |
| 4:15–4:30 pm    | Panel Discussion                                                        |
|                 | **Concurrent Sessions • Women in Neurogastroenterology • 4:00–6:00 pm • Marijuana and Opioids • 4:30–5:30 pm** |
| 4:00–6:00 pm    | Women in Neurogastroenterology  
Moderators: Lin Chang, Beverley Greenwood-Van Meerveld, Linda Nguyen |
| 4:00–4:30 pm    | Welcome Reception                                                       |
| 4:30–4:35 pm    | Introduction and objectives of developing a Women in Neurogastroenterology program  
Beverley Greenwood-Van Meerveld |
| 4:35–4:45 pm    | Women in Neurogastroenterology survey results  
Lin Chang       |
| 4:45–5:15 pm    | Work–life integration  
Linda Nguyen     |
**Friday, August 16, 2019**  

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| 5:15–5:50 pm  | Panel discussion with representatives from academia, industry, and private practice, followed by a group Q & A  
*Lin Chang, Susan Lucak, Linda Nguyen* |
| 5:50–6:00 pm  | Group discussion on creating an enduring Women in Neurogastroenterology program, and planning future events |
| 6:00 pm       | Adjourn                                                                                         |
| 4:30–5:30 pm  | **Marijuana and Opioids**  
*Moderators: John Pandolfino* |
| 4:30–4:55 pm  | The link between cannabis, opioids, and chronic pain  
*Ryan Zaklin* |
| 4:55–5:20 pm  | Opioid constipation: New nomenclature, therapeutics, and guideline recommendations  
*Darren Brenner* |
| 5:20–5:30 pm  | Panel Discussion                                                                                   |
| 5:30 pm       | Adjourn                                                                                         |

**Scientific Program • Advancing patient care through cutting-edge research**

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| 8:00–9:30 am  | **Concurrent Sessions**  
**Concurrent Session 1**  
Neurodevelopmental programming of the GI tract  
*Moderators: Kara Margolis, Shanthi Srinivasan*  
**Concurrent Session 2**  
What's in your head: Central control of the GI tract  
*Moderators: Beverley Greenwood-Van Meerveld, R. Alberto Travagli* |
| 8:00–8:20 am  | The effects of early-life stress on the development of FGIDs  
*Lin Chang* |
| 8:20–8:40 am  | Intestinal microbiota influence the early postnatal development of the ENS  
*Elyanne Ratcliffe* |
| 8:40–9:00 am  | Mapping out ENS development at the single cell level  
*Meenakshi Rao* |
| 9:00–9:15 am  | Bacterial products affect enteric neural crest derived cell maturation  
*J Popov, J Bandura, J Huang, F Markovic, R Borovevic, N Pai, EM Ratcliffe*  
Hamilton, ON, Canada, Toronto, ON, Canada  
*McMaster University*  
**Abstract 1**  
Effects of translumbosacral neuromodulation therapy (TNT) on gut and brain interactions and anorectal neuropathy in fecal incontinence (FI)  
*S Rao, YS Yan, XS Xiang, AS Sharma, TS Patcharatrakul, KS Rattanakovit, DS Ayyala, S Hamdy*  
Augusta, GA, Manchester, United Kingdom  
*Augusta University*  
**Abstract 3** |

*program continued*
### Saturday, August 17, 2019

**9:15–9:30 am**  
Sacral nerve stimulation inhibits the MAPK/NF-KB signaling pathway and promotes TREG -TH1/TH17 cell balance and self-renewal of enteric nervous system in TNBS-induced inflammation in rats  
*Y Meng, J Chen*  
Baltimore, MD  
*Johns Hopkins University*  
*YIF Participant*  
Abstract 2

Pre-exposure to an enriched environment is protective against stress-induced viscerosomatic hypersensitivity  
*A Orock, J Love, C Ligon, AC Johnson, B Greenwood-Van Meerveld*  
Oklahoma City, OK  
*University of Oklahoma Health Sciences Center*  
*YIF Participant*  
Abstract 4

**9:30–10:00 am**  
Break • Visit Exhibits

**10:00–10:30 am Concurrent Sessions**

**Concurrent Session 1**  
New advances in behavioral treatments for GI diseases  
*Moderator: Laurie Keefer, Jeffrey Lackner*

**Brain–gut psychotherapies for non-psychologists**  
*Laurie Keefer*

**Patient experiences with behavioral medicine**  
*Sarah Quinton*

**Factors associated with response to placebo in patients with irritable bowel syndrome and constipation**  
*Sarah Ballou*

**Using EndoFlip to compare static and dynamic pyloric motor function before and after G-POEM for treatment of refractory gastroparesis**  
*L Watts, J Baker, A Lee, N Bowers, R Law, W Hasler*  
Ann Arbor, MI  
*University of Michigan*  
Abstract 5

**Concurrent Session 2**  
Gut neurogenesis: What’s the latest  
*Moderators: Simon Gibbons, Jackie Wood*

**The role of stem cells in peripheral nervous system development**  
*Jamie Belkind-Gerson*

**Neurogenesis in the adult enteric nervous system**  
*Subhash Kulkaarni*

**Gene environment interactions and neural plasticity**  
*Robert Heukeroth*

**11:00–11:15 am**  
Using EndoFlip to compare static and dynamic pyloric motor function before and after G-POEM for treatment of refractory gastroparesis  
*L Watts, J Baker, A Lee, N Bowers, R Law, W Hasler*  
Ann Arbor, MI  
*University of Michigan*  
Abstract 5

Transcriptional and epigenetic mechanisms underlying WNT-TRP53-mediated loss of interstitial cell of Cajal stem cells (ICC-SC) in aging  
*Y Hayashi, J Lee, DR Linden, SJ Gibbons, T Ordog*  
Rochester, MN  
*Mayo Clinic College of Medicine and Science*  
Abstract 8

**11:15–11:30 am**  
Safety, tolerability and pharmacodynamics of TAK-906, a dopamine 2, 3 antagonist, in patients with diabetic or idiopathic gastroparesis  
*G Dukes, C Scimia, B Kuo, W Zhang, S Gupta, C Chen, E Chuang, M Camilleri*  
Raleigh, NC, Boston, MA, Cambridge, MA, Park City, UT, Rochester, MN  
*Takeda Pharmaceuticals*  
Abstract 6

Exploring the roles of voltage-gated calcium channels in mouse enteroendocrine cell mechanotransduction  
*C Alcaino, K Knutson, V Nayak, P Strege, H Kacmaz, A Treichel, J Li, A Leiter, G Farrugia, A Beyder*  
Rochester, MN, Worcester, MA  
*Mayo Clinic*  
*YIF Participant*  
Abstract 9

**11:30–11:45 am**  
Impact of fecal bile acid diagnostic testing in 966 patients with chronic functional diarrhea: reduction in health care utilization, positive diagnosis and prediction of response to bile acid sequestrant  
*P Vijayvargiya, G Calderon, D Gonzalez, S Tawfic, S Batbold, H Saifuddin, P Duggan, V Melo, T Thomas, M Heeney, A Beyder, J Miller, Jr, K Valles, K Oyemade, J Fenner, V Chedid, M Camilleri*  
Rochester, MN  
*Mayo Clinic College of Medicine and Science*  
*YIF Participant*  
Abstract 7

Role of muscularis macrophages in enteric nervous system plasticity  
*G Cipriani, S Ji, M Mischopoulou, A Wright, MJ Silva, L Sha, DR Lindem, T Ordog, SJ Gibbons, G Farrugia*  
Rochester, MN  
*Mayo Clinic*  
*YIF Participant*  
Abstract 10

**11:45 am–2:00 pm**  
Lunch • Poster Session

(program continued)
# Concurrent Sessions

## Concurrent Session 2

### 2:00–3:30 pm

**Sex differences: Are they important in the control of the GI tract**  
Moderator: Muriel Larauche, Miguel Saps

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<td>Role of sex and puberty in functional pain disorders</td>
<td>Bruno Chumpitazi</td>
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<tr>
<td>2:20–2:40 pm</td>
<td>Estrogen–gut microbiome axis and women’s health</td>
<td>Melissa Herbst-Kralovetz</td>
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<tr>
<td>2:40–3:00 pm</td>
<td>Sex and stress: Effects on the brain–gut axis</td>
<td>Yanyan Jiang</td>
</tr>
<tr>
<td>3:00–3:15 pm</td>
<td>The molecular origin of sex differences in chronic visceral pain following unpredictable early life stress</td>
<td>T Louwies, B Greenwood-Van Meerfeld, Oklahoma City, OK, Oklahoma University Health Sciences Center</td>
</tr>
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**Food intolerances: Laboratory to table**  
Moderator: Bethany Doerfler, Helen Raybould

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<td>Bitter taste receptors in the gut: Luminal sensing and signaling</td>
<td>Catia Sternini</td>
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<tr>
<td>2:20–2:40 pm</td>
<td>Interactions between diet and the microbiota in the modulation of visceral sensation</td>
<td>Alan Lomax</td>
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<td>2:40–3:00 pm</td>
<td>Diet therapies for IBS: Where are we going?</td>
<td>William Chey</td>
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<td>3:00–3:15 pm</td>
<td>Mechanisms responsible for regulation of caloric intake following acute high fat diet are developmentally regulated</td>
<td>C Clyburn, RA Travaglì, KN Browning, Hummelstown, PA, Hershey, PA, Penn State University College of Medicine</td>
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## Concurrent Session 1

### 2:00–3:30 pm

**Next generation therapeutics: Targeting microbiology, life style, and host factors**  
Moderators: Eammon Quigley, Tamas Ordog

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<td>Gut microbiome: Nurture, design, and replace</td>
<td>Purna Kashyap</td>
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<td>2:20–2:40 pm</td>
<td>Cannabinoids: Use and abuse</td>
<td>Keith Sharkey</td>
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<td>2:40–3:00 pm</td>
<td>Epigenetics: Erasing painful transcriptional memories</td>
<td>John Wiley</td>
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<td>Olorinab (APD371), a peripherally restricted, highly selective, full agonist of the cannabinoid receptor type 2 (CB2), reduces visceral hypersensitivity in animal models</td>
<td>B Lindstrom, J Castro, J Maddern, S Garcia-Caraballo, A Lumsden, J Adams, SM Brierley, Adelaide, S Australia, San Diego, CA, Arena Pharmaceuticals</td>
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**Neuroinflammation and bowel dysfunction**  
Moderators: Fievos Christofi, Meenakshi Rao

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<td>Gary Mawe</td>
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<td>2:20–2:40 pm</td>
<td>Interaction between enteric neurons, glia, and nociceptors in neuroinflammation, motility, and pain</td>
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<td>The guts of the opioid crisis: Microbiome and opioid tolerance</td>
<td>Hamid Akbarali</td>
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<td>Enteric glial A2Br signaling regulates gut barrier function, immune responses, and behavior after acute colitis</td>
<td>V Grubisic, V Bali, DE Fried, HK Eltzschig, MS Mazei-Robison, BD Gulbransen, East Lansing, MI, Houston, TX, Michigan State University</td>
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## Break

### 3:30–4:00 pm

**Visit Exhibits**

**Visit Exhibits**

### 4:00–5:45 pm

**Concurrent Session 1**

**Next generation therapeutics: Targeting microbiology, life style, and host factors**  
Moderators: Eammon Quigley, Tamas Ordog

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**Concurrent Session 2**

**Neuroinflammation and bowel dysfunction**  
Moderators: Fievos Christofi, Meenakshi Rao

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## Break

### 5:15–5:30 pm

**Visit Exhibits**

**Visit Exhibits**

## Abstracts

**Abstract 11**  
Mechanisms responsible for regulation of caloric intake following acute high fat diet are developmentally regulated  
C Clyburn, RA Travaglì, KN Browning, Hummelstown, PA, Hershey, PA, Penn State University College of Medicine

**Abstract 12**  
Gonadal androgens act via the enteric nervous system to regulate colonic motility in mice  
D Rastelli, L Matthews, W Dan, P Yim, M Rao, Boston, MA, New York, NY, Harvard Medical School

**Abstract 13**  
Eating and psychiatric disorders are independent risk factors for rumination syndrome  
JX Cai, D Wong, D Lee, WW Chan, Boston, MA, Harvard Medical School

**Abstract 14**  
Mechanisms responsible for regulation of caloric intake following acute high fat diet are developmentally regulated  
C Clyburn, RA Travaglì, KN Browning, Hummelstown, PA, Hershey, PA, Penn State University College of Medicine

**Abstract 15**  
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**Abstract 17**  
Enteric glial A2Br signaling regulates gut barrier function, immune responses, and behavior after acute colitis  
V Grubisic, V Bali, DE Fried, HK Eltzschig, MS Mazei-Robison, BD Gulbransen, East Lansing, MI, Houston, TX, Michigan State University
**Comparing symptom outcomes after recommending prokinetic agents for diabetic vs. non-diabetic patients with suspected gastroparesis**

WL Hasler, B Kuo, A Lee, L Nguyen, B Moshiree, H Parkman, J Wo, M Schulman, I Sarosiek, R McCallum, S Rao

Ann Arbor, MI, Boston, MA, Palo Alto, CA, Charlotte, NC, Philadelphia, PA, Indianapolis, IN, Largo, FL, El Paso, TX, Augusta, GA

University of Michigan

**Enteric glia contribute to visceral hypersensitivity through interactions with nociceptors**

W Morales-Soto, BD Gulbransen

East Lansing, MI

Michigan State University

YIF Participant

Abstract 16

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**Concurrent Theme Symposia • Visceral Pain • 6:00–7:00 pm • Gastroparesis • 6:00–7:30 pm**

**6:00–7:00 pm**

**Concurrent Theme Symposium • Visceral Pain (CME)**

The endocannabinoid system and visceral pain: Its relevance to irritable bowel syndrome

Moderator: Kirsteen Browning

6:00–6:25 pm

An overview of the endocannabinoid system in the brain–gut axis

Keith Sharkey

6:25–6:50 pm

Role of the cannabinoid system in pain control: Therapeutic implications

John Wiley

6:50–7:00 pm

Q & A

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**6:00 pm–7:30 pm**

**Concurrent Theme Symposium • Gastroparesis (non-CME)**

Challenges and controversies in gastroparesis: Motor, sensory or brain-gut dysfunction?

Moderator: Brian Lacy

6:00–6:10 pm

Introduction: Review epidemiology, quality of life, economic impact, and current FDA treatment options

Brian Lacy

6:10–6:25 pm

Gastroparesis: It’s a motor disorder

Henry Parkman

6:25–6:40 pm

Gastroparesis: It’s a sensory disorder

Linda Nguyen

6:40–6:55 pm

Gastroparesis: It’s all in the pylorus

Michael Camilleri

6:55–7:10 pm

Gastroparesis: It’s a disorder of the brain-gut axis

Brian Lacy

7:10–7:15 pm

Conclusions

Brian Lacy

7:15–7:30 pm

Q & A
### Sunday, August 18, 2019

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<td><strong>W. Jerry Dodds, MD and Sushil K. Sarna, PhD Lectureship</strong></td>
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<td></td>
<td><em>Introduction: Beverley Greenwood-Van Meerveld</em></td>
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<td></td>
<td><strong>Handshake research, mechanistic thinking, and management of patients:</strong></td>
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<td><em>Combine basic science and clinical medicine: Half human, half fish</em></td>
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<td><strong>Michael Camilleri</strong></td>
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<td>9:00–10:00 am</td>
<td><strong>Young Investigator Forum • Presentations</strong></td>
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<td><em>Moderators: Brian Gulbransen, Maria Vazquez, Co-Chairs, Young Investigator Forum</em></td>
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<td>Rochester, MN, Worcester, MA, Mayo Clinic</td>
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<td>Proton pump inhibitor therapy reduces risk of repeat ablation for atrial fibrillation in patients with gastroesophageal reflux disease</td>
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<td><em>ME Hanscom, DJ Loane, T Shea-Donoue, AI Faden</em></td>
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<td>Baltimore, MD, Dublin, Ireland, Bethesda, MD, University of Maryland</td>
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<td>Effects of comprehensive self-management intervention on extraintestinal pain, fatigue, and sleep in adults with IBS.</td>
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<td><em>KK Kamp, KR Weaver, LB Sherwin, SK Hwang, P Yang, BR Burr, K Cain, MM Heitkemper</em></td>
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<td>Seattle, WA, Baltimore, MD, Columbia, MO, Yangsan, South Korea, University of Washington</td>
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<td></td>
<td>The molecular origin of sex differences in chronic visceral pain following unpredictable early life stress</td>
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<td><em>T Louwies, B Greenwood-Van Meerveld</em></td>
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<td>Oklahoma City, OK, Oklahoma University Health Sciences Center</td>
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<td>Mechanotransduction in enteric glia may cause direct presynaptic facilitation of non-cholinergic neuromuscular contractions.</td>
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<td><em>E Mazzotta, E Villalobos-Hernandez, I Grants, S Bergese, B Gulbransen, J McClain, A Harzman, BA</em></td>
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<td>Blakeney, J Grider, FL Christofi</td>
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<td>Columbus, OH, East Lansing, MI, Richmond, VA, The Ohio State University</td>
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<td>Sacral nerve stimulation inhibits the MAPK/NF-KB signaling pathway and promotes TREG-TH1/TH17 cell balance and self-renewal of enteric nervous system in TNBS-induced inflammation in rats</td>
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<td><em>Y Meng, J Chen</em></td>
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<td>Baltimore, MD, Johns Hopkins University</td>
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<td>Enteric glia contribute to visceral hypersensitivity through interactions with nociceptors</td>
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<td><em>W Morales-Soto, BD Gulbransen</em></td>
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<td>East Lansing, MI, Michigan State University</td>
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### Young Investigator Forum • Presentations continued

**9:00–10:00 am**  
**Pre-exposure to an enriched environment is protective against stress-induced viscero-somatic hypersensitivity**  
*A Orock, J Love, C Ligon, AC Johnson, B Greenwood-Van Meerveld, Oklahoma City, OK, University of Oklahoma Health Sciences Center*  
Abstract 18K

**Symptom severity predicts short-term response to gastric electrical stimulation in children with refractory nausea and vomiting**  
*DK Orsagh-Yentis, K Ryan, N Bali, K Vaz, D Yacob, C Di Lorenzo, PL Lu*  
*Columbus, OH, Nationwide Children's Hospital*  
Abstract 18L

**4D MRI allows for dynamic estimation of gastric motility in humans.**  
*R Sclocco, C Nguyen, R Staley, H Fisher, A Mendez, V Napadow, B Kuo*  
*Charlestown, MA, Boston, MA, Massachusetts General Hospital, Harvard Medical School*  
Abstract 18M

**Impact of fecal bile acid diagnostic testing in 966 patients with chronic functional diarrhea: reduction in health care utilization, positive diagnosis and prediction of response to bile acid sequestrants**  
*P Vijayvargiya, G Calderon, D Gonzalez, S Tawfic, S Batbold, H Saifuddin, P Duggan, V Melo, T Thomas, M Heeney, A Beyder, J Miller, Jr., K Valles, K Oyemade, J Fenner, V Chedid, M Camilleri*  
*Rochester, MN, Mayo Clinic College of Medicine and Science*  
Abstract 18N

**"First in man" routine patch clamp recordings in neurons and glia in isolated networks of human myenteric ganglia - A model of the human little brain**  
*EC Villalobos-Hernandez, F Ochoa-Cortes, E Mazzotta, S Bergese, I Grants, S Cole, A Harzman, FL Christofi*  
*Columbus, OH, The Ohio State University*  
Abstract 18O

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**10:00–10:30 am**  
**Break • Visit Exhibits**

**10:30 am–12:00 pm**  
**ANMS Distinguished Lectures**  
Moderators: *Jim Galligan, Satish Rao*

**10:30–11:00 am**  
**UES its journey from laboratory to clinic**  
*Reza Shaker*

**11:00–11:30 am**  
**Bugs, guts, and brains: How your gut microbiota shapes your body and mind**  
*Helen Raybould*

**11:30 am–12:00 pm**  
**A renaissance for ‘myogenic’ regulation of GI motility**  
*Kenton Sanders*

**12:00 pm**  
**Adjourn**
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<td>8:00–8:30 am</td>
<td><strong>Registration with Coffee and Doughnuts</strong></td>
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<td>8:30–8:40 am</td>
<td><strong>Welcome</strong> • <em>John Pandolfino</em></td>
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<td>8:40–9:10 am</td>
<td><strong>Gastroparesis &amp; functional dyspepsia</strong> • <em>Linda Nguyen</em></td>
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<td>9:10–9:40 am</td>
<td><strong>Irritable bowel syndrome (IBS) &amp; small intestinal bacterial overgrowth (SIBO)</strong> • <em>William Chey</em></td>
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<tr>
<td>9:40–10:10 am</td>
<td><strong>Break • Q &amp; A with speakers</strong></td>
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<tr>
<td>10:10–10:40 am</td>
<td><strong>How to navigate eating</strong> • <em>Bethany Doerfler</em></td>
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<td>10:40–11:10 am</td>
<td><strong>Exploring brain–gut therapies</strong> • <em>Tiffany Taft</em></td>
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<tr>
<td>11:10–11:40 am</td>
<td><strong>Stories that matter: The patient’s voice</strong></td>
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<tr>
<td>11:40 am–12:00 pm</td>
<td><strong>Q &amp; A (all speakers)</strong></td>
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Poster No.

1  Predictors of hospitalization for children with cyclic vomiting syndrome
   ZM Abdulkader, N Bali, K Vaz, D Yacob, C Di Lorenzo, PL Lu
   Columbus, OH
   Nationwide Children's Hospital, Ohio, State University
   Abstract 19

2  Trends and costs of hospitalization for children and adolescents with cyclic vomiting syndrome: 2015-2018
   ZM Abdulkader, N Bali, K Vaz, D Yacob, C Di Lorenzo, PL Lu
   Columbus, OH
   Nationwide Children's Hospital, Ohio, State University
   Abstract 20

3  Altered lysosphatidic acid receptor expression in chronic intestinal pseudo-obstruction
   MM Ahmadzai, R De Giorgio, BD Gulbransen
   East Lansing, MI, Ferrara, Italy
   Michigan State University
   Abstract 21

4  Efficacy and safety of DOR fundoplication in patients with severe gastroparesis and refractory gastroesophageal reflux disease
   I Al-Bayati, S Al-Obaidi, Y Romero, K Aguirre, B Davis, I Sarosiek, R McCallum
   El Paso, TX
   Texas Tech University Health and Science Center
   Abstract 22

5  Cesarean delivery and functional gastrointestinal disorders (FGID): Could an altered gut microbiome at birth increase the risk for FGID?
   CH Axelrod, S Gutierrez, M Saps, C Velasco
   Davie, FL, Miami, FL, Cali, Colombia
   University of Miami
   Abstract 23

6  Abnormal bolus reflux on impedance-pH monitoring independently predicts 3-year mortality in patients with idiopathic pulmonary fibrosis
   M Bailey, LF Borges, HJ Goldberg, K Hathorn, S Gavini, W Lo, WW Chan
   Boston, MA, Dallas, TX
   Brigham and Women’s Hospital, Harvard Medical School
   Abstract 24

7  Characterization of anorectal manometry of children with attention deficit hyperactivity disorder (ADHD)
   C Baker, C Silvernale, C Zar-Kessler
   Belmont, MA, Boston, MA
   MassGeneral Hospital for Children
   Abstract 25

8  Clinical characteristics, trends and outcomes in inpatient pediatric cyclic vomiting syndrome in the United States
   C Baker, A Adejumo, B Kuo, C Zar-Kessler
   Belmont, MA, Boston, MA
   MassGeneral Hospital for Children
   Abstract 26

9  Demographics and associated diagnoses of readmission of pediatric cyclic vomiting syndrome hospitalizations in the United States
   C Baker, A Adejumo, C Zar-Kessler, B Kuo
   Belmont, MA, Boston, MA
   MassGeneral Hospital for Children
   Abstract 27

10 Does anorectal manometric parameters predict which patients expel a water-filled balloon using a commercial stool device following a failed balloon expulsion test?
    JR Baker, L Watts, K Collins, M Armstrong, B Nojkov, R Saad, S Menees, WD Chey
    Newport, MI, Ann Arbor, MI
    University of Michigan
    Abstract 28

11 Physiological responses to sacral nerve stimulation in rodent colon
    BB Barth, WM Grill, X Shen
    Durham, NC
    Duke University
    Abstract 29

12 A novel in vivo model of colonic aganglionosis using diphtheria toxin-mediated ablation of the enteric nervous system
    SM Bhave, E Arceiro, C Baker, N Ho, AM Goldstein, R Hotta
    Boston, MA
    Harvard University
    Abstract 30

13 Abnormal enteric innervation and altered gut motility may contribute to post pull-through morbidity in Hirschsprung disease
    SM Bhave, C Baker, E Arceiro, M Ahmed, L Kim, N Ho, A Nair, AM Goldstein, R Hotta
    Boston, MA
    Harvard University
    Abstract 31

14 Multichannel electrogastrography distinguishes gastric slow wave spatiotemporal parameter differences in pediatric chronic nausea
    LA Bradshaw, S Somarajan, ND Muszynski, JD Olson, AC Russell, SA Acra
    Nashville, TN
    Vanderbilt University Medical Center
    Abstract 32

15 Effect of secretin on gastric accommodation, emptying, and symptoms in health: A randomized, controlled, cross-over trial
    J Brandler, LJ Miller, X Wang, P Vijayvargiya, K Arndt, I Busciglio, D Burton, WS Harmsen, A Acosta, M Camilleri
    Rochester, MN, Scottsdale, AZ
    Mayo Clinic College of Medicine and Science
    Abstract 33
16 Abnormal reflux on combined hypopharyngeal–esophageal impedance–pH testing predicts poorer health-related quality of life in laryngopharyngeal reflux patients
JX Cai, S Salgado, D Sikavi, R Din, K Hathorn, W Lo, T Carroll, WW Chan
Boston, MA
Harvard Medical School
Abstract 34

17 Proton pump inhibitor therapy reduces risk of repeat ablation for atrial fibrillation in patients with gastroesophageal reflux disease
JX Cai, S Kapur, WW Chan
Boston, MA
Harvard Medical School
YIF Participant
Abstract 35

18 Postreflux swallow-induced peristaltic wave index (PSPW) independently correlates with symptoms in laryngopharyngeal reflux patients
JX Cai, S Salgado, R Din, D Sikavi, D Lee, TL Carroll, WW Chan
Boston, MA
Harvard Medical School
Abstract 36

19 Tradipitant, a novel NK-1 receptor antagonist, significantly improved nausea and other symptoms of gastroparesis in a phase II trial
JL Carlin, VR Lieberman, A Dahal, MS Keefe, C Xiao, G Birznieks, MH Polymeropoulos
Washington, DC
Vanda Pharmaceuticals, Inc.
Abstract 37

20 Tradipitant, a novel NK-1 receptor antagonist, significantly improved nausea in both diabetic and idiopathic gastroparesis
JL Carlin, MS Keefe, VR Lieberman, A Dahal, C Xiao, G Birznieks, MH Polymeropoulos
Washington, DC
Vanda Pharmaceuticals, Inc.
Abstract 38

21 Clinical efficacy of per-oral endoscopic myotomy (POEM) for spastic esophageal disorders – a systematic review and meta-analysis
S Chandan, BP Mohan, OC Chandan, LK Jha, HS Mashiana, AT Hewlett, MA Khashab
Omaha, NE, Tucson, AZ, Baltimore, MD
University of Nebraska Medical Center
Abstract 39

22 Real-world evaluation of economic burden for diabetic gastroparesis in the US
YJ Chen, Z Huang, M Luo, H Pang, C Almansa, G Dukes, HP Parkman
Cambridge, MA, Raleigh, NC, Philadelphia, PA
Takeda Pharmaceuticals
Abstract 40

23 Enteric glial MHC II contributes to T-lymphocyte activation in LPS stimulation
AK Chow, BD Gulbransen
East Lansing, MI
Michigan State University
Abstract 41

24 Immunoreactivity for the Na⁺/HCO₃⁻ cotransporter (NBCe1, SLC4A4) in pacemaker interstitial cells of Cajal is selectively reduced by knocking down SLC4A4 gene expression using an Etv1-Cre driver in mouse
MG Colmenares Aguilar, A Mazzone, W Zhao, PR Streege, ST Eisenman, JM Silva, L Sha, GE Shull, MF Romero, G Farrugia, SJ Gibbons
Rochester, MN, Shenyang, LN, China, Cincinnati, OH
Mayo Clinic
Abstract 42

25 Upper gastrointestinal symptoms are related to the kind of alcoholic beverage
NF Cordova Valenzuela, JA Magaña León, A Delgado Moreno, FA Félix Téllez, AL Mateos Viramontes, AA Leó Martínez, JM Avendaño Reyes, AR Flores Rendón
Mexicali, BC, Mexico
Facultad de Medicina Universidad Autónoma de Baja California
Abstract 43

26 Characterization of esophageal motility in children with operated esophageal atresia using high-resolution impedance manometry and pressure flow analysis
O Courbette, T Omari, A Aspirot, C Faure
Montreal, QC, Canada, Adelaide, SA, Australia
University of Montreal
Abstract 44

27 Role of the endocannabinoid system in the regulation of intestinal barrier function: Effects of diet
H Cuddihy, J Cavin, WK MacNaughton, KA Sharkey
Calgary, AB, Canada
University of Calgary
Abstract 45

28 The efficacy of celiac plexus block as a non-invasive procedure in treating median arcuate ligament syndrome (MALS) patients
A Dada, S Alam, R Naga, S Usmani, M Nasri, H Mistry, A Suleman
Plano, TX, McKinney, TX
Emory University
Abstract 46

29 Pharyngeal and upper esophageal sphincter motor dynamics during normal swallow
A Damrongmanee, K El-Chammas, L Fei, H Zang, N Santucci, A Kaul
Cincinnati, OH
Cincinnati Children’s Hospital Medical Center
Abstract 47
30 Efficacy of probiotic I3.1 symptomatic improvement in patients with lactose intolerance
AD Cano Contreras, N Pérez y López, JI Minero Alfaro, VM Medina López, JR Reyes-Huerta
Mexico City, Mexico
Universidad Autonoma de Mexico

31 Retrograde gastroesophageal intussusception despite fundoplication
JK Deutsch, A Davis, MJ Sanchez
New Haven, CT
Yale University

32 Enteric glia express the cytosolic DNA sensor Sting
C Dharshika, CM Waters, BD Gulbransen
East Lansing, MI
Michigan State University

33 Ameliorating effects of sacral nerve stimulation for visceral hypersensitivity and mechanisms involving nerve growth factor and TRPV1 in rats with irritable bowel syndrome
Y Dong, J Yin, J Chen
Baltimore, MD
Johns Hopkins University

34 Sub-serosal interstitial cells of Cajal contribute to nitricergic innervation and influence the excitability of longitudinal smooth muscle in the mouse proximal colon
BT Drumm, BE Rembetski, SA Baker, KM Sanders.
Reno, NV
University of Nevada, Reno School of Medicine

35 Frequency of manometery and esophagram abnormalities in jackhammer esophagus
B Elger, AS Abdussalam, RS Gorantla, KS Nandipati, JS Stavas, SS Chandra
Omaha, NE
Creighton University School of Medicine

36 Efficacy of nutrition intervention on key nutrients and fiber intake in patients with constipation and dyssynergic defecation
CM Flatley, SS Satish Rao, R Parr, S Fiedler, J Anglin
Augusta, GA
Augusta University

37 Epigenetic factors in enteric nervous system development and disease
J Ganz, E Melancon, C Wilson, A Amores, P Batzel, M Strader, I Braasch, P Diba, J Kuhlman, J Postlethwait, J Eisen
East Lansing, MI, Eugene, OR, Ames, IA
Michigan State University

38 Transcutaneous vagal nerve stimulation improves symptoms, pain, and gastric emptying in patients with idiopathic gastroparesis
AC Gottfried, E Poon Adler, N Fernandez-Becker, JO Clarke, A Habtezion, LA Nguyen
Stanford, CA
Stanford University

39 Exploring the relationship between prematurity and functional gastrointestinal disorders in children
S Gutierrez, A Axelrod, V Velasco, M Saps
Miami, FL, Cali, Italy
Jackson Memorial Hospital, University of Miami

40 Acute colitis following chronic traumatic brain injury in mice induces persistent neurobehavioral deficits
ME Hanscom, DJ Loane, T Shea-Donohue, AI Faden
Baltimore, MD, Bethesda, MD, Dublin, Ireland.
YIF Participant

41 Measurement of trans-esophagogastroduodenal pressure gradients during straight leg raise (SLR) maneuver can augment evaluation of the EGJ barrier during esophageal HRM
SL Hasak, V Hansalia, B Rogers, C Gyawali
Saint Louis, MO
Washington University in St. Louis

42 Characterization of abdominal pain response to Rifaximin in patients with irritable bowel syndrome with diarrhea (IBS-D), by baseline (BL) pain severity
Z Heimanson, A Lembo, BD Cash
Bridgewater, NJ, Boston, MA, Houston, TX
Salix Pharmaceuticals

43 Rifaximin for improving abdominal pain and bloating symptoms in patients with irritable bowel syndrome with diarrhea (IBS-D) using modified definitions of pain response
Z Heimanson, B Lacy, M Pimentel
Bridgewater, NJ, Jacksonville, FL, Los Angeles, CA
Salix Pharmaceuticals

44 Decreased ileocecal junction pressure does not correlate with the presence of small intestinal bacterial overgrowth: A retrospective evaluation
AA Herekar, YS Yan, JS Bhagatwala, SS Rao, AS Sharma
Augusta, GA
Augusta University

45 Nestin-expressing cells isolated from ganglionic region of mice with Hirschsprung disease can give rise to functioning neurons
R Hotta, SM Bhave, M Ahmed, C Baker, EJ Arciero, N Ho, A Nair, AM Goldstein
Boston, MA
Harvard Medical School
Poster No. 46 Does etiology, prior therapy and operative time affect outcome of G-POEM in refractory gastroparesis? – A systematic review and meta-analysis
L K Jha, S Chandan, BP Mohan, OC Chandan, AT Hewlett, I Bhat
Omaha, NE, Tucson, AZ
University of Nebraska Medical Center

Poster No. 47 High stress level is associated with low motivation, confidence and rating of social support for weight management in participants in a clinical trial on pharmacologic management of obesity
H C Kadouh, MM Clark, S Kalsy, K Grothe, K Graszer, H Halawi, V Chedid, M Camilleri
Rochester, MN
Mayo Clinic College of Medicine and Science

Poster No. 48 Association of obesity class with gastric motor functions, appetite measures, gut hormones and body composition in individuals with obesity
H C Kadouh, H Halawi, V Chedid, D Burton, M Camilleri
Rochester, MN
Mayo Clinic College of Medicine and Science

Poster No. 49 Gastric dysmotility and its relationship to upper gastrointestinal symptoms in patients with long-standing diabetes mellitus
T Kamiya, H Fukuta, S Osaga, H Hagiwara, M Shikano, E Kubota, H Kataoka
Nagoya, Japan
Nagoya City University Graduate School of Medical Sciences

Poster No. 50 Effects of comprehensive self-management intervention on extraintestinal pain, fatigue, and sleep in adults with IBS
K K Kamp, KR Weaver, LB Sherwin, SK Hwang, PL Yang, BL Burr, K Cain, MM Heitkemper
Seattle, WA, Baltimore, MD, Baltimore, MD, Yangsan, South Korea
University of Washington
YIF Participant

Poster No. 51 Real-world analysis of symptoms, diagnostic patterns, and provider perspective on acute hepatic porphyria
J Ko, S Murray, M Merkel, C Karki, K Krautwurst, R Mustafina, S Agarwal
Cambridge, MA, Mahwah, NJ
Alynylam Pharmaceuticals

Poster No. 52 The patient odyssey to confirmed acute hepatic porphyria diagnosis: Clinical characteristics and healthcare utilization of patients preceding diagnosis of acute hepatic porphyria
Cambridge, MA, Winston, Salem, NC, Hackensack, NJ
Alynylam Pharmaceuticals

Poster No. 53 ‘Non-pathological’ reflux contributes to chronic cough
M Lalehzari, S Chaudhuri, M Nguyen, M Gaeta, R Ryabtsev, A Masoud, M Sanchez
New Haven, CT
Yale University

Poster No. 54 The association between BMI and cough severity in patients referred for esophageal manometry testing
M Lalehzari, S Chaudhuri, M Nguyen, M Gaeta, R Ryabtsev, A Masoud, M Sanchez
New Haven, CT
Yale University

Poster No. 55 The association between esophageal dysmotility and cough
M Lalehzari, S Chaudhuri, M Gaeta, M Nguyen, R Ryabtsev, A Masoud, M Sanchez
New Haven, CT
Yale University

Poster No. 56 Lower basal esophagogastric junction pressures associated with regurgitation severity
M Lalehzari, S Chaudhuri, M Gaeta, M Nguyen, R Ryabtsev, A Masoud, M Sanchez
New Haven, CT
Yale University

Poster No. 57 GC-C agonism with linaclotide attenuates chronic stress-induced colonic hypersensitivity independently of elevated CRF expression in the central amygdala
C O Ligon, G Hannig, P Ge, C Higgins, B Greenwood-Van Meerveld
Oklahoma City, OK, Cambridge, MA
University of Oklahoma Health Sciences Center

Poster No. 58 Inter-observer reliability for stool consistency between the bristol stool scale and the brussels infant and toddler stool scale (BITSS) when using Rome IV criteria in younger children
A Llano`s-Chea, CA Velasco-Benitez, M Saps
Miami, FL, Cali, Italy
University of Miami

Poster No. 59 Baseline impedance on high-resolution esophageal impedance-manometry correlates with impedance parameters of reflux in lung transplantation
W Lo, V Rangan, HJ Goldberg, WW Chan
Boston, MA
Brigham and Women’s Hospital, Harvard Medical School

Poster No. 60 Gastroesophageal reflux is associated with chronic rejection after lung transplantation independent of underlying pulmonary physiology
W Lo, HJ Goldberg, WW Chan
Boston, MA
Brigham and Women’s Hospital, Harvard Medical School

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<td>Obesity is independently associated with increased risk of fecal incontinence and rectal hyposensitivity</td>
<td>N Lodhia, L Horton, A Goldin, W Chan</td>
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<td>Clinical phenotypes of GERD patients non-responder to double doses of PPIs: A prevalence study based on esophageal pH monitoring results</td>
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<td>Influence of high fat diet on the enteric nervous system during pregnancy</td>
<td>F Markovic, K Kennedy, D Sloboda, E Ratcliffe</td>
<td>McMaster University</td>
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<td>Distribution of transient receptor potential vanilloid type 2 channel in rat gastrointestinal tract: alteration in TNBS-induced colitis</td>
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<td>Mechanotransduction in enteric glia may cause direct presynaptic facilitation of non-cholinergic neuromuscular contractions</td>
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<td>Neuroanatomical and connectivity abnormalities identified by brain MRI analysis in CVS patients with and without marijuana use</td>
<td>RW McCallum, M Ramirez, I Sarosiek, H Sandoval, C Mullins, J Gavito, V Calhoun, T Davis El Paso, TX, Albuquerque, NM, Lubbock, TX Texas Tech University Health Science Center</td>
<td>University of North Carolina, Atrium Health</td>
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<td>67</td>
<td>Evidence for the abnormal anchoring between the lower esophageal sphincter and crural diaphragm in patients with achalasia esophagus</td>
<td>RK Mittal, M Caplin, A Zifan La Jolla, CA, San Diego, CA University of California San Diego</td>
<td>Nationwide Children's Hospital</td>
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<td>Electrophysiological and mechanical characteristics of rectal compliance and role of enteric nervous system and interstitial cells in gastrointestinal smooth muscle</td>
<td>SB Ryoo, TS Sung, RD Corrigan, J Lee, HM Kim, D Koh Seoul, Korea, Reno, NV, Wonju, Korea Seoul National University College of Medicine</td>
<td>Temple University</td>
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**Friday • 6:00 PM—8:00 PM • Odd Numbers**

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<td>Importance of CGRP-mediated mechanisms in visceral organ cross sensitization</td>
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<td>Initial experience with abdominal massage during pediatric colonic manometry</td>
<td>S Mostamand, L Busing, A Sirico, J Punati, TF Danialifa Los Angeles, CA Children's Hospital Los Angeles</td>
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<td>Clinical phenotypic presentation of rectal prolapse varies with age</td>
<td>L Neshatian, A Lee, SL Wallace, E Enemchukwu, LJ Rogo-Gupta, K Mishra, P Garcia, L Nguyen, B Gurland Stanford, CA Stanford School of Medicine</td>
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<td>Symptom severity predicts short-term response to gastric electrical stimulation in children with refractory nausea and vomiting</td>
<td>DK Orsagh-Yentis, K Ryan, N Bali, K Vaz, D Yacob, C Di Lorenzo PL Lu Columbus, OH Nationwide Children's Hospital</td>
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<td>74</td>
<td>Resilience in irritable bowel syndrome is lower compared to the general population and other chronic gastrointestinal conditions</td>
<td>CH Parker, BD Naliboff, W Shihi, AP Presson, L Kilpatrick, C Liu, L Chang Toronto, ON, Canada, Los Angeles, CA, Loma Linda, CA, Salt Lake City, UT University of Toronto</td>
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