Greetings! I hope this edition of *The GI Digest* from Michigan Medicine Gastroenterology and Hepatology finds you healthy in body and strong in spirit as we begin to open up after the COVID-19 pandemic. Last year, Digestive Disease Week (DDW) was cancelled for the first time in its history. This year, I am grateful that the GI and Hepatology community will convene once again, and experience DDW in a new, virtual format on May 21–23, 2021. I am proud to report that, despite the extraordinary year behind us, our programs have remained rich and robust. Our faculty, fellows, research scientists, and mid-level providers have seized the unparalleled opportunity to showcase our many accomplishments to our peers throughout the world.

Our Division of Gastroenterology and Hepatology has an impressive history of leadership and recognition at DDW. On Friday and Saturday, May 14 and 15, we celebrated our 2020 and 2021 AGA Recognition Award recipients. I was pleased to see many familiar faces at the virtual celebrations of our prestigious awardees: Dr. Robert Fontana, AGA Distinguished Educator Award (2020); Dr. Nobuhiko Kamada, AGA Young Investigator Award in Basic Science (2020), Dr. Linda Samuelson, AGA Institute Council Research Mentor Award – Cellular & Molecular Gastroenterology (2020), and Dr. Elliot Tapper, MD, AGA Young Investigator Award in Clinical Science (2021). Dr. Deborah Gumucio will give the AGA Morton I. Grossman Distinguished Lecture during DDW. In 2020, the ASGE awarded Dr. Michelle Anderson the ASGE Distinguished Service Award and Dr. Joel Rubenstein an ASGE Research Award. Dr. Grace Elta gave the ASGE Basil I. Hirschowitz, MD Endowed Lecture at the ASGE Annual Postgraduate Course on April 24, 2021.

We are also very proud of the many faculty serving in leadership roles and on many committees. Dr. Carethers joined the AGA Governing Board in June 2020 as vice president and will serve as its president-elect in 2021 before taking over as president in 2022. At the AGA Institute Council level, Dr. Peter Higgins is the chair of the Immunology, Microbiology & Inflammatory Bowel Diseases Section.

The Division again has a strong showing at DDW, reflected in the number of presentations by our faculty and fellows. We have 45 platform presentations – notably, 1 state-of-the-art lecture and 6 distinguished abstracts at the plenary sessions – and 43 posters, including 8 posters of distinction. The wide range of important topics that will be covered include stem cell biology, epithelial cell differentiation and morphogenesis, visceral hypersensitivity, gastroparesis, gut microbiome, inflammatory bowel disease, gastric metaplasia, intestinal mucosal inflammation and fibrosis, colon and pancreatic cancer, and NAFLD. Many of our faculty will serve as moderators and will participate in live Q&As, panel discussions, and networking sessions.
Grace H. Elta, MD, MASGE

ASGE Basil I. Hirschowitz, MD Endowed Lecture • 2021

The Basil I. Hirschowitz, MD Endowed Lecture is presented annually during DDW, and was established by the ASGE Foundation and generous contributions from friends, trainees and colleagues of Dr. Hirschowitz.

Dr. Elta’s lecture Pancreatic Cysts was presented at the virtual ASGE Annual Postgraduate Course on April 24, 2021. “Dr. Hirschowitz performed some of his pioneering fiberoptic studies at the University of Michigan in conjunction with our college of engineering. His image is proudly shown at the entrance to our hospital-based endoscopy unit. I am truly honored to be named the 2021 ASGE Basil I. Hirschowitz Endowed Lecturer!”

Deborah L. Gumucio, PhD

AGA Morton I. Grossman Distinguished Lectureship • 2021

Recognized for outstanding research related to the discipline of gastroenterology, the lecturer is invited to deliver a lecture on the topic of their choosing during DDW. The Grossman lecturer is a thought leader in any area of gastroenterology. The lecture and research area reflect the very best science in the field of digestive diseases.

Communicate!! The Essential Nature of Crosstalk in Development, Disease and Science

Dr. Gumucio will introduce the BioArtography outreach project and discuss its power to communicate research breakthroughs in basic and clinical spheres to the lay public. Then, she will examine the dramatic ability of signals from the intestinal mesenchyme (stroma) to facilitate lengthening of the embryonic intestinal epithelial tube; interruption of such communication results in drastically shortened intestines in mice and may be relevant to Congenital Short Bowel Syndrome in humans. Finally, she will discuss how the process of villus formation presents a textbook example of how back-and-forth communication between epithelium and mesenchyme during intestinal development spawns the growth of a beautiful garden of highly patterned intestinal villi.
We are proud to announce the following award recipient from the University of Michigan Division of Gastroenterology and Hepatology who will be recognized at DDW 2021.

Robert J. Fontana, MD
Distinguished Educator Award • 2020
American Gastroenterological Association

AGA Distinguished Educator Award recognizes the achievements of an outstanding educator who has a long record of major contributions to education in the field of gastroenterology and/or hepatology on both local and national levels.

AGA honors Robert Fontana, MD, with the Distinguished Educator Award, which recognizes an individual who has made outstanding contributions as an educator in gastroenterology on both local and national levels. Dr. Fontana’s greatest teaching impact has been the establishment of one of the most highly successful transplant hepatology fellowship training programs in the country. He has taught countless medical students, residents, and fellows, as well as faculty members via his clear, concise, and well-organized lectures and presentations. Dr. Fontana is a professor of medicine, medical director of liver transplantation, and director of transplant hepatology fellowship ACGME-accredited training program at the University of Michigan, Ann Arbor.
We are proud to announce the following news from the ASGE.

**Michelle A. Anderson, MD, MSc, FASGE**

**ASGE Distinguished Service Award - 2020**

American Society for Gastrointestinal Endoscopy (ASGE)

This honor is presented to an individual who has made long-term contributions to GI endoscopy and is a strong supporter of the mission of the Society.

Dr. Anderson attended Wayne State University School of Medicine (1989-1993) and completed a residency in Internal Medicine (1993-1996) and fellowship in Gastroenterology (1996-1999) at the University of Michigan. In 2005, she was awarded a Master’s Degree in Clinical Research and Statistics from the University of Michigan School of Public Health. Dr. Anderson joined the faculty at the University of Michigan in 1999 and was promoted to Associate Professor with tenure in 2013. Her research and clinical career is focused on gastrointestinal disease with a specific concentration on pancreatic diseases including chronic pancreatitis and pancreatic cancer. Using advanced endoscopy techniques including endoscopic ultrasound (EUS) and endoscopic retrograde cholangiopancreatography she cares for the full spectrum of benign and malignant pancreatic disorders. Dr. Anderson successfully completed an NIH-sponsored study centered on the discovery and validation of minimally invasive clinical biomarkers for the diagnosis of pancreatic cancer. Currently, she serves as the Physician Lead for the Interventional Endoscopy team at UM and the co-Director of the University of Michigan Comprehensive Cancer Center Multidiscipline Pancreatic Tumor Board.

On a national level, Dr. Anderson has served on the Standards of Practice Committee for the American Society for Gastrointestinal Endoscopy (ASGE) for five years and in 2016 completed a three year term as the Chair of the ASGE Institute for Training Technology Committee. Dr. Anderson also completed her term as Counselor on the ASGE Governing Board. She remains active with ASGE and is currently co-leading the Diagnostic EUS Training Program that was launched in 2019. She speaks regularly on topics of pancreatic diseases and teaches advanced endoscopic techniques nationally and internationally. In the arena of chronic pancreatitis, Dr. Anderson led the development of National Guidelines in the care of patients with painful chronic pancreatitis. Additional work in this field include the publication of three peer-reviewed papers focused on pain, chronic pancreatitis and EUS including two of which involved a multi-center prospective cohort study of patients with chronic pancreatitis.
Nobuhiko Kamada, PhD
AGA Young Investigator Award in Basic Science • 2020

The AGA Young Investigator Award recognizes two young investigators, one in basic science and one in clinical science, for outstanding research achievements.

AGA honors Nobuhiko Kamada, PhD, with the Young Investigator Award in Basic Science. Dr. Kamada is known for his innovation combining fields examining the microbiota and the immune system in IBD, specifically, the interplay between diet, commensal and pathogenic microbes, and the immune system. He has published stellar findings that have been highly cited within short periods of time due to their innovation.

Joel Rubenstein, MD, MSc, FASGE
ASGE Research Award • 2020

American Society for Gastrointestinal Endoscopy (ASGE)

ASGE Research Awards are offered to investigators for projects in basic, translational and clinical research with a relationship to gastrointestinal endoscopy. The research committee considers funding pilot projects if there is an explicit outline for subsequent projects, and their funding plan (e.g. NIH, VA Merit), based on the preliminary data generated by the proposed pilot.

“We are very excited to accept this award, for, to our knowledge, this will be the first study to assess the long-term incidence of Barrett’s esophagus in a national database following a normal index endoscopy, and we will also assess whether acid reducing medications decrease the incidence of new Barrett’s esophagus.”

Linda C. Samuelson, PhD
AGA Institute Council Section Research Mentor Award • 2020
Cellular & Molecular Gastroenterology Section

The AGA Institute Council Cellular & Molecular Gastroenterology Section occupies a unique niche within AGA as membership is not disease-based but focuses sharply on issues and themes related to the basic science underlying digestive diseases and gastrointestinal cell biology, with particular emphasis on conceptual and technical innovations in the field. The AGA Institute Council Section Research Mentor Award acknowledges AGA members for their achievements as section members who have demonstrated a track record of outstanding mentorship in gastrointestinal research.

Dr. Samuelson, PhD is recognized based on her fundamental findings on mechanisms of gastrointestinal stem cell biology, her impact mentoring trainees and junior faculty in basic gastrointestinal research, and her keen vision to developing basic science research programming at DDW.

Elliot B. Tapper, MD
AGA Young Investigator Award in Clinical Science • 2021

AGA Young Investigator Award recognizes two young investigators, one in basic science and one in clinical science, for outstanding research achievements.

AGA honors Elliot Benjamin Tapper, MD, with the Young Investigator Award in Clinical Science. Dr. Tapper’s research focuses on improving the outcomes, quality of life and freedom from adverse events for patients with decompensated cirrhosis, with a specific focus on those with or at risk for hepatic encephalopathy. He is also active in quality improvement studies, modeling of medical decision making and health care cost-effectiveness. Dr. Tapper is an assistant professor of medicine in the division of gastroenterology at the University of Michigan, Ann Arbor.
# DDW Awards • 2008–2021

## DDW 2008

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard J. Saad, MD, MS</td>
<td>AGA Research Scholar Award</td>
</tr>
<tr>
<td>Michael L. Volk, MD, MSc</td>
<td>AGA Research Scholar Award</td>
</tr>
</tbody>
</table>

## DDW 2009

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna S. Lok, MD, FRCP, Juanita L. Merchant, MD, PhD</td>
<td>AGA Foundation for Digestive Health and Nutrition Outstanding AGA Women in Science Award</td>
</tr>
</tbody>
</table>

## DDW 2010

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tadataka Yamada, MD</td>
<td>AGA Distinguished Mentor Award</td>
</tr>
</tbody>
</table>

## DDW 2011

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chung Owyang, MD</td>
<td>AGA Distinguished Mentor Award</td>
</tr>
<tr>
<td>Joel H. Rubenstein, MD</td>
<td>GRG/AGA Young Investigator Award in Clinical Science</td>
</tr>
<tr>
<td>James M. Scheiman, MD</td>
<td>AGA Mentor Award + Esophageal, Gastric &amp; Duodenal Disorders Section ASGE Senior Investigator Mentoring Award</td>
</tr>
<tr>
<td>Andrea Todisco, MD</td>
<td>R. Robert and Sally Funderburg Research Scholar Award in Gastric Biology Related to Cancer Biology</td>
</tr>
</tbody>
</table>

## DDW 2012

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Del Valle, MD</td>
<td>AGA Distinguished Educator Award</td>
</tr>
<tr>
<td>Grace H. Elta, MD</td>
<td>AGA Mentor Award + Imaging and Advanced Technology Section</td>
</tr>
<tr>
<td>Timothy T. Nostrant, MD</td>
<td>AGA Distinguished Clinician Award</td>
</tr>
</tbody>
</table>

## DDW 2013

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grace H. Elta, MD</td>
<td>AGA Distinguished Clinician Award</td>
</tr>
<tr>
<td>Chung Owyang, MD</td>
<td>AGA Julius Friedenwald Medal</td>
</tr>
</tbody>
</table>

## DDW 2014

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joseph C. Kolars, MD</td>
<td>AGA Distinguished Educator Award</td>
</tr>
<tr>
<td>Richard S. Kwon, MD, MS</td>
<td>AGA–Covidien Research and Development Pilot Award in Technology</td>
</tr>
<tr>
<td>Juanita L. Merchant, MD, PhD</td>
<td>AGA Mentor Award + Regulatory Peptides, Cell Signaling &amp; Molecular Biology Section</td>
</tr>
<tr>
<td>M. Bishr Omary, MD, PhD</td>
<td>AGA Mentor Award + Liver and Biliary Section</td>
</tr>
<tr>
<td>Linda C. Samuelson, PhD</td>
<td>AGA Institute Council Morton I. Grossman Lectureship</td>
</tr>
</tbody>
</table>

## DDW 2014 continued

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>John A. Williams, MD, PhD</td>
<td>AGA Distinguished Achievement Award</td>
</tr>
</tbody>
</table>

## DDW 2015

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>William D. Chey, MD</td>
<td>AGA Distinguished Clinician Award</td>
</tr>
<tr>
<td>M. Bishr Omary, MD, PhD</td>
<td>AGA Distinguished Mentor Award</td>
</tr>
</tbody>
</table>

## DDW 2016

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna S. Lok, MD, FRCP</td>
<td>AGA William Beaumont Prize in Gastroenterology</td>
</tr>
</tbody>
</table>

## DDW 2017

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>John M. Carethers, MD</td>
<td>AGA Distinguished Mentor Award</td>
</tr>
<tr>
<td>Hari S. Conjeevaram, MD, MS</td>
<td>AGA Distinguished Educator Award</td>
</tr>
<tr>
<td>Juanita L. Merchant, MD, PhD</td>
<td>AGA Distinguished Achievement Award in Basic Science</td>
</tr>
</tbody>
</table>

## DDW 2018

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grace H. Elta, MD</td>
<td>ASGE Rudolf V. Schindler Award</td>
</tr>
<tr>
<td>Deborah L. Gumucio, PhD</td>
<td>AGA Mentor Award + Growth, Development &amp; Child Health Section</td>
</tr>
</tbody>
</table>

## DDW 2019

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>John I. Allen, MD, MBA</td>
<td>AGA Julius Friedenwald Medal</td>
</tr>
<tr>
<td>Costas A. Lyssiotis, PhD</td>
<td>AGA Young Investigator Award in Basic Science</td>
</tr>
</tbody>
</table>

## DDW 2020

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michelle A. Anderson, MD, MSc</td>
<td>ASGE Distinguished Service Award</td>
</tr>
<tr>
<td>Robert J. Fontana, MD</td>
<td>AGA Distinguished Educator Award</td>
</tr>
<tr>
<td>Nobuhiko Kamada, PhD</td>
<td>AGA Young Investigator Award in Basic Science</td>
</tr>
<tr>
<td>Joel H. Rubenstein, MD, MSc</td>
<td>ASGE Research Award</td>
</tr>
<tr>
<td>Linda C. Samuelson, PhD</td>
<td>AGA Mentor Award + Cellular &amp; Molecular Gastroenterology Section</td>
</tr>
</tbody>
</table>

## DDW 2021

<table>
<thead>
<tr>
<th>Individual</th>
<th>Award Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grace H. Elta, MD</td>
<td>ASGE Basil I. Hirschowitz, MD Endowed Lecture</td>
</tr>
<tr>
<td>Deborah L. Gumucio, PhD</td>
<td>AGA Morton I. Grossman Distinguished Lectureship</td>
</tr>
<tr>
<td>Elliot B. Tapper, MD</td>
<td>AGA Young Investigator Award in Clinical Science</td>
</tr>
</tbody>
</table>
### Plenary Sessions • State-of-the-Art Lecture

**Friday, May 21, 2021**

<table>
<thead>
<tr>
<th>AGA Basic Science Plenary</th>
<th>5:33 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discrete LGR4 expressing BDNF neurons in the paraventricular hypothalamus controls thermogenesis in brown adipose tissues: Impairment by high fat feeding</td>
<td>Ji-Yao Li, Xiaoyin Wu, Gintautas Grabauskas, Chung Owyang</td>
</tr>
</tbody>
</table>

**Saturday, May 22, 2021 (cont'd)**

<table>
<thead>
<tr>
<th>AGA Clinical Science Plenary</th>
<th>10:44 AM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A multicomponent intervention reduces proton pump inhibitor use without evidence of harm: A quasi-experimental study of over 4 million US veterans</td>
<td>Jacob Kurlander, Sameer Saini, Loren Laine, Hyungjin Myra Kim, Christopher B. Roberts, Michelle Shank, Yu-Xiao Yang</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGA Liver &amp; Biliary Distinguished Abstract Plenary</th>
<th>1:30 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A multicomponent intervention reduces proton pump inhibitor use without evidence of harm: A quasi-experimental study of over 4 million US veterans</td>
<td>Jacob Kurlander, Sameer Saini, Loren Laine, Hyungjin Myra Kim, Christopher B. Roberts, Michelle Shank, Yu-Xiao Yang</td>
</tr>
</tbody>
</table>

**Saturday, May 22, 2021**

**AGA Clinical Science Plenary**

**AGA Immunology, Microbiology & Inflammatory Bowel Diseases Distinguished Abstract Plenary**

**AGA Morton I. Grossman Distinguished Lectureship**

**AASLD Clinical Science Plenary**

**AGA Clinical Practice Distinguished Abstract Plenary**

**Live Q&A • Panels**

**Friday, May 21, 2021**

<table>
<thead>
<tr>
<th>11:10 am</th>
<th>ASGE Topic Forum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advances and Refinements in Bariatric Endoscopy Roundtable Discussion</td>
<td>Allison R. Schuman, Erik B. Wilson</td>
</tr>
<tr>
<td>Tips and tricks for endoscopic therapy to treat weighty regain or complications after bariatric surgery</td>
<td>Diane Bimczok, John Y. Kao, Anne Muller, Jose Saenz, Daniel E. Stange</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4:44 PM</th>
<th>AGA Funderburg Symposium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastric Tumorigenesis Models: Organoids and Mice Live Q&amp;A</td>
<td>Joseph Ahn, Bashar Aqel, Jasmohan Bajaj, Waihong Chung, Neehar Parikh, Andy Tien</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6:45 PM</th>
<th>AGA Basic Science Plenary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live Q&amp;A</td>
<td>Kathleen DelGiorno, Mark Donowitz, Yuan Fang, Klaus H. Kaestner, Ji-Yao Li, Simon M. Mwangi, Michael Pack, Chi Chun Wong</td>
</tr>
</tbody>
</table>

**Saturday, May 22, 2021**

**11:10 AM | AGA Clinical Symposium**

| Barrett’s Esophagus: What’s New From Diagnosis Through Treatment Live Q&A | Joel H. Rubenstein, Nicholas J. Shaheen |

**1:17 PM | ASGE Presidential Plenary II**

| Impact of health care reform on the practice of gastroenterology Panel Discussion | John I. Allen, Michael Chernew |

**2:00 PM | AASLD Clinical Science Plenary**

| Panel Discussion | Joseph Ahn, Bashar Aqel, Jasmohan Bajaj, Waihong Chung, Neehar Parikh, Andy Tien |

**2:10 PM | AGA Morton I. Grossman Distinguished Lectureship**

| Live Q&A | Deborah Gumucio, Linda Samuelson |

**Sunday, May 23, 2021**

**2:12 PM | AGA Clinical Science Plenary**

| Live Q&A | Emilie C. Breekveldt, Sine Buhl, Li-Chun continued |

**Sunday, May 23, 2021**

**2:17 PM | ASGE Presidential Plenary II**

| Impact of health care reform on the practice of gastroenterology Panel Discussion | John I. Allen, Michael Chernew |

**2:00 PM | AASLD Clinical Science Plenary**

| Panel Discussion | Joseph Ahn, Bashar Aqel, Jasmohan Bajaj, Waihong Chung, Neehar Parikh, Andy Tien |

**2:10 PM | AGA Morton I. Grossman Distinguished Lectureship**

| Live Q&A | Deborah Gumucio, Linda Samuelson |

**Sunday, May 23, 2021**

**2:12 PM | AGA Clinical Science Plenary**

| Live Q&A | Emilie C. Breekveldt, Sine Buhl, Li-Chun continued |
Sunday, May 23, 2021 cont’d

Chang, John M. Inadomi, Fasiha Kanwal, Jacob E. Kurlander, Benjamin H. Mullish
2:17 PM • AGA Research Symposium
Metabolites and Bioactive Lipids in GI Disease
Live Q&A
Matthew Ciorba, Sean Colgan, Ravinder Gill, Costas Lyssiotis, Shipra Vaishnava
4:36 PM • AGA Cellular & Molecular Gastroenterology Distinguished Abstract Plenary

Live Q&A
Kathleen DelGiorno, Yuki Hayata, Izumi Kaji, Emilia J. Orzechowska, Saeed Soleymanjahi, Linda C. Samuelson, Xiaohong Wang
4:47 PM • AGA Immunology, Microbiology & Inflammatory Bowel Diseases Distinguished Abstract
Live Q&A
Jeffrey Bernstein, Mark Daly, Peter Higgins, Yuval Itan, Sun-Ho Lee, James Lewis, Florence-Damilola Odulufa, Fernando Velayos
5:00 PM • DDW Symposium
Diversity Symposium Networking Session
John Carethers, Aline Charabaty, William Dewitt, Pilar Ortega, Matthew Walsh, Julius Wilder

Friday, May 21, 2021

10:00 AM • AASLD Research Forum
COVID-19 and the Liver
Moderator: Robert Fontana

11:30 AM • DDW Networking
Grand Rounds: Gastrointestinal Oncology
Moderator: Michelle Anderson

3:30 AM • AGA Funderburg Symposium
Gastric Tumorigenesis Models: Organoids and Mice
Moderator: John Kao

1:00 PM • AGA Research Forum
Molecular and Immune Profiling of GI Cancers
Moderator Introduction: Yatrik M. Shah

5:30 PM • AGA Research Forum
Exploring Issues of Diversity & Disparity in Gastroenterology
Moderator: John Carethers

5:30 PM • AGA Translational Symposium
AGA-CSG: Best of DDW in Chinese
Moderator Introduction: John Y. Kao

Saturday, May 22, 2021 cont’d

1:00 PM • AGA State-of-the-Art Lecture
AGA Morton I. Grossman Distinguished Lectureship
Welcome and Introduction
Linda C. Samuelson

3:30 PM • AGA Research Forum
Inflammation and GI Cancers
Moderator Introduction: John Kao

5:30 PM • AGA Clinical Symposium
Gender Disparities in GI: Progress and Challenges
Moderator Introduction: Megan A. Adams

5:30 PM • AGA Research Symposium
Kiron and Kamala Das Symposium
Cell Death in the Intestinal Epithelium
Moderator Introduction: Yatrik M. Shah

Sunday, May 23, 2021 cont’d

10:00 AM • AGA Clinical Symposium
Bringing QI to GI: Translating Quality Measures to Practice
Moderator Introduction: Megan A. Adams

10:00 AM • AGA Research Forum
Novel Approaches to Studying Physiology of the Esophagus
Moderator: Joan Chen

continued
### Friday, May 21, 2021

1:03 PM • AGA Clinical Symposium  
Path to partnership in private practice  
John I. Allen

5:32 PM • AGA Translational Symposium  
AGA-CSG: Best of DDW in Chinese  
IBD and microbiota related to GI disorders  
John Y. Kao

5:54 PM • DDW Clinical Symposium  
How do I integrate behavior and dietary therapy in irritable bowel syndrome?  
William D. Chey

---

### Saturday, May 22, 2021 cont'd

5:50 PM • AGA Research Symposium  
Kiron and Kamala Das Symposium: Cell Death in the Intestinal Epithelium  
Ferroptosis in the intestinal epithelium  
Yatrik M. Shah

6:02 PM • AGA Clinical Symposium  
Identifying and Managing Issues of Pancreatic Insufficiency  
Nutritional evaluation and dietary management  
Amanda Lynett

6:17 PM • AGA Clinical Symposium  
Identifying and Managing Issues of Pancreatic Insufficiency  
Charting a pathway of success in enzyme replacement  
Matthew J. DiMagno

### Sunday, May 23, 2021

11:01 AM • AGA Research Symposium  
The risks and benefits of JAK inhibitors in acute severe UC  
Peter D. Higgins

1:02 PM • AASLD Clinical Symposium  
Management of HBV in the Young Population  
Management of the “immune tolerant” patient: How to evaluate, to treat or not to treat?  
Anna S. Lok

---

### Saturday, May 22, 2021

10:06 AM • AGA Clinical Symposium  
Barrett’s Esophagus: What’s New From Diagnosis Through Treatment  
Who is at risk and should we screen?  
Joel H. Rubenstein

3:32 PM • AGA Clinical Symposium  
Genetics of obesity – The hammer or the nail?  
Elizabeth Speliotes

3:48 PM • AGA Translational Symposium  
Association of deleterious DUOX2 variants with a preclinical hallmark of disturbed microbiota-immune homeostasis and risk of inflammatory bowel disease  

5:33 PM • AGA Clinical Symposium  
Promotions and pay structure  
John I. Allen

---

### Sunday, May 23, 2021 cont'd

10:31 AM • AGA Clinical Symposium  
Advances in Peptic Ulcer Disease and Non-Variceal Upper GI Bleeding  
Jacob E. Kurlander, John N. Mafi, Elliot B. Tapper, Geoffrey Barnes, Caroline R Richardson, Joel H. Rubenstein, Sameer D. Saini, Patrick D Meek

10:45 AM • AGA Clinical Symposium  
Bringing Qt to GI: Translating Quality Measures to Practice  
Implementing quality measures in integrated healthcare delivery systems: Endoscopic overuse  
Sameer D. Saini
Endoluminal functional lumen imaging probe (EndoFLIP) can be used to assess severity of gastric sleeve stenosis
Jessica X. Yu, Kevin D. Platt, Sean Bhalla, Lydia Watts, Allison R. Schulman

Risk of progression to hepatocellular carcinoma in patients with indeterminate (LI-RADS 3) observations

Specificity and positive predictive value of international classification of diseases-10 diagnosis codes for cirrhosis
Isabel J. Moran, Daniel A. Burkholder, Jacob V. DiBattista, Vincent L. Chen

How often does Squatty Potty correct an abnormal balloon expulsion test in chronically constipated patients?
Eden Koo, Gabrielle Ezell, William D. Chey, Jason Baker, Moira Armstrong, Borko Nojkov

Working smarter not harder: Using simulation to evaluate evidence-based strategies to offload colonoscopy backlogs related to COVID-19
Adam VanDeusen, Sameer Dev Saini, Eve A. Kerr, Amy Cohn, Timothy Hofer, Andrew Gawron, Jason A. Dominitz, Jacob Eli Kurlander

A prediction model for metachronous advanced neoplasia after colorectal polypectomy utilizing polypl, demographic, and quality factors
Samir Gupta, Ranier Bustamante, Ashley Earles, Joshua Demb, Hanin Yassin, Maria Elena Martinez, Sameer Dev Saini, Deborah A. Fisher, Andrew J Gawron, Tonya R. Kaltenbach, Olga V Patterson, Scott L DuVall, Karen Messer, Lin Liu

Efficacy and safety of mirikizumab after 52-weeks maintenance treatment in patients with moderate-to-severe Crohn's disease

Demographic and clinical factors associated with severe abdominal bloating in FGIDs: Female sex, constipation, and dyspepsia, but not psychological factors are associated with severe bloating.
Catherine Parkhurst Gardiner, Prashant Singh, Sarah Ballou, Rafia Hassan, Vanessa Yu, Anthony Lembo, Judy Nee, Johanna Iturrino

Crohn's disease, anxiety and depression, and baseline C-reactive protein level predict risk for incident irritable bowel syndrome-like symptoms in quiescent inflammatory bowel disease

Mast-cell activation leading to colonic barrier dysfunction following high-FODMAP diet is mediated via lipopolysaccharide
Prashant Singh, Gintautas Grabauskas, Shi-Yi Zhou, Yawen Zhang, Chung Owyang

Viscoelastic testing prior to procedures reduces blood product utilization without increasing bleeding risk in cirrhosis: A systematic review and meta-analysis
Abhishek Shenoy, Jeremy Louissaint, Carol Shannon, Elliot Tapper, Anna Lok

B cell clonotypes underlying Helicobacter-induced gastric pre-neoplasia in mice
Mohamad El-Zaatari, Min Zhang, Helmut Grasberger, Marilia Cascalho, John Y. Kao

Inflammatory bowel disease risk variants are associated with an increased risk of skin cancer
Kelly Cushing, Xiaomeng Du, Yanhua Chen, LC Stetson, Annapurna Kuppa, Vincent L. Chen, J Michelle Kahlenberg, Johann Gudjonsson, Peter D.R. Higgins, Elizabeth Speliotes

CB6, a novel gut-selective BCL-2 inhibitor, attenuates intestinal fibrosis in myofibroblast cell models and the mouse S. typhimurium model of intestinal fibrosis
Yongjia Feng, Laura Johnson, Meng Zhang, Stephen Collins, Shaomeng Wang, Peter D.R. Higgins
Functional dyspepsia and gastroparesis are interchangeable syndromes with common clinical and pathological features


Alpha-1 antitrypsin Pi*MZ genotype associates with more rapid decompensation and decreased transplant-free survival among patients with compensated cirrhosis

Daniel A. Burkholder, Isabel J. Moran, Jacob V. DiBattista, Elizabeth Speliotes, Vincent L. Chen

Endoscopy and systematic biopsy of patients with chronic gastrointestinal symptoms leads to high discovery rate of patients who meet histologic criteria for eosinophilic gastritis and/or eosinophilic duodenitis


Efficacy of high-dose dual therapy and bismuth quadruple therapy in first-line and rescue Helicobacter pylori eradication – a final report of multi-center, randomized control study

Chien-Chih Tung, Chi-Tan Hu, Chun-Jung Lin, I-Nan Kuo, Bor-Ru Lin, Hong-Long Wang, Jin-De Chen, Mu-Liang Cheng, Chia-Tung Shun, John Y. Kao, Jyh-Chin Yang

Ameliorating effects and mechanisms of auricular vagal nerve stimulation in a rodent model of functional dyspepsia

Liwei Hou, Juan Han, Wei Wei, Jiande Chen, Jiliang Fang, Jinying Zhang, Junying Wang, Peijing Rong

Prevalence of bowel disorders in multiple sclerosis and Parkinson's disease: Results from a nationwide survey of nearly 90,000 Americans

Christopher Velasquez Almario, William D. Chey, Carolyn S. Higgins, Brennan Spiegel

Estimating the system-level costs of for-profit journals on academic gastroenterology research

Emily Harding-Theobald, Bharat Maraj

Continuity of care for patients with chronic gastrointestinal disease: A latent class analysis of patients with high-intensity specialty care needs

Shirley Cohen-Mekelburg, Liberty Greene, Akbar K. Waljee, Timothy Hofer, Sameer Dev Saini, Donna Zulman

Doylestown Plus algorithm as a novel biomarker to detect hepatocellular carcinoma in patients with cirrhosis

Amit G. Singal, Nabihah Tayob, Anand Mehta, Austin J. Fobar, Qingchun Jin, Cristian Saenz de Viteri, Jorge A. Marrero, Neehar D. Parikh

Stage migration after transarterial chemoembolization as a predictor of survival in patients with hepatocellular carcinoma

Ihab Kassab, Sagar Joshi, Amit G. Singal, Vincent L. Chen, Neehar D. Parikh

TLR4 signal transduction pathway mediates upregulation of 2-pore domain potassium TRESK channel and is responsible for high-fat diet-induced vagal afferent dysfunction

Shi-Yi Zhou, Xiaoyin Wu, Ji-Yao Li, Gintautas Grabauskas, Merritt Gilliland, Chung Owyang
Fr562 Detection of pks+ Escherichia coli associates with the presence of tubular adenomas and left-side colonic polyps in healthy patients undergoing screening colonoscopy
Victoria L Campodónico, Myron Jackson, Madison Mcmann, Emma Spence, Celina Santiago, Carisse Lansiquot, Samara Rifkin, Julia L Drewes, Courtney Stevens, Joell J Gills, Amy Lynn Schiller, Pamela Scheerer, Stacy Gerhart, David M Cromwell, Marshall Bedine, Eduardo Gonzalez-Velez, Hazel Marie Galon Veloso, Gerard Mullin, David Kafonek, Louis La Luna, Linda Hylind, Francis Giardiello, Cynthia L Sears

Fr553 Patient perceptions on transition from clinic-based infusions to home-based infusions for inflammatory bowel disease patients during the COVID-19 pandemic: a qualitative quality improvement study
Janson Jacob, Daniel Aintabi, Melissa DeJonckheere, John I. Allen, David Irani, A. Mark Hendrick, Akbar K. Waljee, Peter D.R. Higgins, Jeffrey Berinstein

Sa343 Comparison of scoring systems for diagnosing hepatic steatosis in the absence of imaging using real-world health data
Jacob V. DiBattista, Daniel A. Burkholder, Anna Lok, Vincent L. Chen, continued
**Sa357**
Disease knowledge, health-related quality of life and lifestyle behavior change in patients with non-alcoholic fatty liver disease
Lisa Glass, Haila Asefa, Michael Volk, **Anna Lok**, Monica A. Tincopa

**Sa387**
Dietary monosodium glutamate (MSG) acts on TAS1R1/TAS1R3 expressing gastric tuft cells to stimulate ATP release and induce visceral hypersensitivity
Yawen Zhang, **Gintautas Grabauskas**, Xiaoyin Wu, Jun Gao, **Chung Owyang**

**Sa393 • AGA Poster of Distinction**
Gastroparesis patients with greater short-term symptom improvements after G-POEM demonstrate less severe pyloric dysfunction on EndoFLIP testing
Lydia Watts, Moira Armstrong, Gabrielle Ezell, Jason R Baker, Nicole Bowers, Ryan Law, **William L. Hasler**

**Sa399**
Wireless motility capsule identifies a distinct phenotype of gastric dysmotility with an associated differential response to drug therapy
Trisha Satya Pasricha, John Russell Semler, **Allen Lee**, Baha Moshiree, **William L. Hasler**, Braden Kuo

**Sa403**
Coefficients of variation of pyloric diameter and distensibility and reproducibility of EndoFLIP testing in gastroparesis patients undergoing pyloric therapy
Moira Armstrong, Lydia Watts, Gabrielle Ezell, Jason R Baker, Nicole Bowers, Ryan Law, **William L. Hasler**

**Sa409**
Terminology impacts simulated defecation responses during anorectal manometry: Analysis of the London classification for disorders of anorectal function
Jason R. Baker, Mackenzie Jarvis, Elyse Thakur, **William D. Chey**, Rafat Rizk, Darren M. Brenner, Eric D. Shah, Baha Moshiree

**Sa423**
Quantifying healthcare utilization and delay in treatment of gastric stenosis following sleeve gastrectomy
Jiwon V. Park, Maxwell T. Sievers, Paris D. Rollins, Alyssa M. Hardin, Hootan M. Omidvar, Laura Mazer, **Allison R. Schultman**

**Sa542**
Initial results from a multicenter prospective registry evaluating pouch-related outcomes

**Sa593**
Fermentation product propionic acid produced by specific gut bacteria induces barrier dysfunction and subclinical mucosa inflammation
Yawen Zhang, Jun Gao, **Shi-Yi Zhou**, Binrui Chen, Ning Dai, Xin Wang, **Chung Owyang**

**Su007 • ASGE Poster of Distinction**
Variability in endoscopic assessment of Nissen fundoplication wrap integrity and hiatus herniation: A multi-center study
Erin J. Song, Rena H. Yadlapati, **Joan W. Chen**, Alice Parish, Matthew J. Whiston, Karthik Ravi, Amit Patel, Dustin Carlson, Abraham Khan, Donna Niedzwiecki, David A. Leiman

**Su085**
Prevalence and burden of illness of Rome IV irritable bowel syndrome in the U.S.
Christopher Velasquez Almario, **William D. Chey**, Carolyn S. Higgins, Brennan Spiegel

**Su092**
Who reports post-prandial diarrhea? Analysis of a cohort of patients with chronic diarrhea
Rafia Hassan, **Prashant Singh**, Sarah Ballou, Vanessa Yu, Vikram Rangan, Judy Nee, Johanna Iturrino, Anthony Lembo... (continued)
<table>
<thead>
<tr>
<th>Session Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Su140</td>
<td>Chronic psychological stress alters gene expression in rat colon epithelial cells associated with barrier dysfunction, inflammation, and chromatin remodeling</td>
<td>John W. Wiley, Gerald A. Higgins, Shuangsong Hong</td>
</tr>
<tr>
<td>Su343</td>
<td><strong>AASLD Poster of Distinction</strong> Ammonia testing is overused and leads to excess lactulose use: A prospective, blinded assessment of ammonia test utility among front-line clinicians</td>
<td>Su343: Ammonia testing is overused and leads to excess lactulose use: A prospective, blinded assessment of ammonia test utility among front-line clinicians. Authors: Juan J. Gonzalez, Elliot B. Tapper</td>
</tr>
<tr>
<td>Su364</td>
<td>Pill or procedure? Understanding patient preferences regarding beta-blockers as an alternative to endoscopic variceal screening during the COVID-19 pandemic</td>
<td>Zheng Che, Jeremy Louissaint, Ihab Kassab, Elliot B. Tapper</td>
</tr>
<tr>
<td>Su474</td>
<td>Healthcare utilization among inflammatory bowel disease patients receiving opioids: A systematic review and meta-analysis</td>
<td>Jessica L. Sheehan, Janson Jacob, Calen Andrew Steiner, Sameer K Berry, Carol Shannon, Shirley Cohen-Mekelburg, Peter D.R. Higgins, Jeffrey Berinstein</td>
</tr>
<tr>
<td>Su485</td>
<td>Cannabis users with inflammatory bowel disease in clinical remission have increased levels of subclinical inflammation</td>
<td>Madeline Bertha, Diego Jimenez Lara, Jami Kinnucan, Stephen B. Hanauer</td>
</tr>
<tr>
<td>Su562</td>
<td>Does mucosal Akkermansia abundance predict omega fatty acids and PGE2 production after dietary intervention?</td>
<td>Su562: Does mucosal Akkermansia abundance predict omega fatty acids and PGE2 production after dietary intervention? Authors: Samara Rifkin, Ananda Sen, D. Kim Turgeon, Mack T. Ruffin, Dean E Brenner, Patrick D Schloss, Zora D juric</td>
</tr>
<tr>
<td>Su576</td>
<td>Are all FODMAPs created equal? A blinded, randomized reintroduction trial to determine which FODMAPs drive clinical response in IBS patients</td>
<td>Su576: Are all FODMAPs created equal? A blinded, randomized reintroduction trial to determine which FODMAPs drive clinical response in IBS patients. Authors: Shanti L. Eswaran, Prashant Singh, Samara Rifkin, William D. Chey</td>
</tr>
<tr>
<td>Su577</td>
<td>Does the gut microbiome explain the clinical benefits of green kiwifruit, psyllium, or prunes in US patients with chronic constipation?</td>
<td>Su577: Does the gut microbiome explain the clinical benefits of green kiwifruit, psyllium, or prunes in US patients with chronic constipation? Authors: Samuel Chey, Christine Marie Bassis, Vincent Bensan Young, William D. Chey, Shanti L. Eswaran</td>
</tr>
</tbody>
</table>
FRIDAY, MAY 21

10:00 AM • AASLD Research Forum
COVID-19 and the Liver
Moderator: Robert Fontana

10:29 AM • ASGE Topic Forum
Endoluminal functional lumen imaging probe (EndoFLIP) can be used to assess severity of gastric sleeve stenosis
Jessica X. Yu, Kevin D. Platt, Sean Bhalla, Lydia Watts, Allison R. Schulman

11:00 AM • AASLD Research Forum
Risk of progression to hepatocellular carcinoma in patients with indeterminate (LI-RADS 3) observations

11:10 AM • ASGE Topic Forum
Advances and Refinements in Bariatric Endoscopy
Roundtable Discussion: Tips and tricks for endoscopic therapy to treat weighty regain or complications after bariatric surgery
Allison R. Schulman, Erik B. Wilson

11:30 AM • DDW Networking
Grand Rounds: Gastrointestinal Oncology
Moderator: Michelle Anderson

1:15 PM • AASLD Research Forum
Specificity and positive predictive value of international classification of diseases-10 diagnosis codes for cirrhosis
Isabel J. Moran, Daniel A. Burkholder, Jacob V. DiBattista, Vincent L. Chen

1:16 PM • AGA Research Forum
How often does Squatty Potty correct an abnormal balloon expulsion test in chronically constipated patients?
Eden Koo, Gabrielle Ezel, William D. Chey, Jason Baker, Moira Armstrong, Borko Nokjov

1:16 PM • AGA Research Forum
Working smarter not harder: Using simulation to evaluate evidence-based strategies to offload colonoscopy backlogs related to COVID-19
Adam VanDeusen, Sameer Saini, Eve Kerr, Amy Cohn, Timothy Hofer, Andrew Gawron, Jason Dominitz, Jacob Kurlander

1:26 PM • AGA Research Forum
A prediction model for metachronous advanced neoplasia after colorectal polypectomy utilizing polyp, demographic, and quality factors
Samir Gupta, Ranier Bustamante, Ashley Earles, Joshua Demb, Hanin Yassin, Maria Elena Martinez, Sameer Dev Saini, Deborah A. Fisher, Andrew J Gawron, Tonya R. Kaltenbach, Olga V Patterson, Scott L DuVall, Karen Messer, Lin Liu

1:54 PM • AGA Research Forum
Efficacy and safety of mirikizumab after 52-weeks maintenance treatment in patients with moderate-to-severe Crohn’s disease

2:30 PM • AASLD Research Forum
Exploring the role of the hypothalamus in the response to food intake
Hiroshi Ono, University of Tokyo, Japan

3:30 PM • AGA Research Symposium
Funderburg Symposium — Gastric Tumorigenesis Models: Organoids and Mice
Moderator: John Kao

4:44 PM • AGA Research Symposium
AGA Funderburg Symposium
Gastric Tumorigenesis Models: Organoids and Mice
Live Q&A
Diane Bimczok, John Y. Kao, Anne Muller, Jose Saenz, Daniel E. Stange

5:30 PM • AGA Research Forum
Exploring Issues of Diversity & Disparity in Gastroenterology
Moderator: John Carethers

5:32 PM • AGA Translational Symposium
AGA-CSG: Best of DDW in Chinese
Moderator Introduction: John Y. Kao

5:33 PM • AGA Plenary
AGA Basic Science Plenary
Discrete LGR4 expressing BDNF neurons in the paraventricular hypothalamus controls thermogenesis in brown adipose tissues: Impairment by high fat feeding
Ji-Yao Li, Xiaoyin Wu, Gintautas Grabauskas, Chung Owyang

5:54 PM • AGA Clinical Symposium
How do I integrate behavior and dietary therapy in irritable bowel syndrome?
William D. Chey

Spring 2021 The GI Digest 15
Fr429 • AGA Poster of Distinction
TLR4 signal transduction pathway mediates upregulation of 2-pore domain potassium TRESK channel and is responsible for high-fat diet-induced vagal afferent dysfunction
Shi-Yi Zhou, Xiaoyin Wu, Ji-Yao Li, Gintautas Grabauskas, Merritt Gilliland, Chung Owyang

Fr438
Prevalence and burden of illness of Rome IV chronic idiopathic constipation, opioid-induced constipation, and opioid-exacerbated constipation in the U.S.
Christopher Velasquez Almario, William D. Chey, Carolyn S. Higgins, Brennan Spiegel

Fr440
Women’s health factors are not associated with altered bowel habits: Results of a national health and nutrition examination survey
Sophie L. Brigtstocke, Judy Nee, Sarah Ballou, Shuji Mitsuhashi, Vikram Rangan, Prashant Singh, Rafia Hassan, Carsten Langholm, Johanna Itturino

Fr445
Do chronically constipated patients with an evacuation disorder have impaired constipation-specific quality of life?
Borko Nojkov, Jason R Baker, Gabrielle Ezell, Moira Armstrong, Lydia Watts, William D. Chey

Fr546
Interventions to increase vaccinations rates with inflammatory bowel disease and rheumatoid arthritis: a systematic review and meta-analysis
Jalpa Patel, Dina Fakhouri, Mohamed Noureldin, Iris Koor-Gough, Francis A Farraye, Bradley Warren, Akbar K. Waljee, Marc Steven Piper

Fr553
Patient perceptions on transition from clinic-based infusions to home-based infusions for inflammatory bowel disease patients during the COVID-19 pandemic: a qualitative quality improvement study
Janson Jacob, Daniel Aintabi, Melissa DeJonckheere, John I. Allen, David Irani, A. Mark Fendrick, Akbar K. Waljee, Peter D.R. Higgins, Jeffrey Berenstein

Fr562
Detection of pks’ Escherichia coli associates with the presence of tubular adenomas and left-side colonic polyps in healthy patients undergoing screening colonoscopy
Victoria L Campodónico, Myron Jackson, Madson Mcmann, Emma Spence, Celina Santiago, Carisse Lansiquot, Samara Rifkin, Julia L Drewes, Courtney Stevens, Joell J Gills, Amy Lynn Schiller, Pamela Scheerer, Stacy Gerhart, David M Cromwell, Marshall Bedine, Eduardo Gonzalez-Velez, Hazel Marie Galon Veloso, Gerard Mullin, David Kafonek, Louis La Luna, Linda Hylind, Francis Giardiello, Cynthia L Sears

POSTER SESSIONS • Friday

Fr080
Prevalence of bowel disorders in multiple sclerosis and Parkinson’s disease: Results from a nationwide survey of nearly 90,000 Americans
Christopher Velasquez Almario, William D. Chey, Carolyn S. Higgins, Brennan Spiegel

Fr085
Estimating the system-level costs of for-profit journals on academic gastroenterology research
Emily Harding-Theobald, Bharat Maraj

Fr105 • AGA Poster of Distinction
Continuity of care for patients with chronic gastrointestinal disease: A latent class analysis of patients with high-intensity specialty care needs
Shirley Cohen-Mekelburg, Liberty Greene, Akbar K. Waljee, Timothy Hofer, Sameer Dev Saini, Donna Zulman

Fr384
Doylestown Plus algorithm as a novel biomarker to detect hepatocellular carcinoma in patients with cirrhosis
Amit G. Singal, Nabihah Tayob, Anand Mehta, Austin J. Fobar, Qingchun Jin, Cristian Saenz de Viteri, Jorge A. Marrero, Neehar D. Parikh

Fr393
Stage migration after transarterial chemoembolization as a predictor of survival in patients with hepatocellular carcinoma
Ihab Kassab, Sagar Joshi, Amit G. Singal, Vincent L. Chen, Neehar D. Parikh
10:10 AM • AGA Clinical Symposium
Barrett’s Esophagus: What’s New From Diagnosis Through Treatment

Live Q&A
Douglas A. Corley, Rebecca C. Fitzgerald, Joel H. Rubenstein, Nicholas J. Shaheen

11:10 AM • AGA Clinical Symposium
Raghavendra Paknikar, Nicole E. Rich, Matthew Schipper, Amit G. Singal

2:00 PM • AASLD Plenary
AASLD Clinical Science Plenary
Panel Discussion
Joseph Ahn, Bashar Agel, Jasmoohan Bajaj, Waihong Chung, Neelhar D. Parikh, Andy Tien

10:30 AM • AASLD Research Forum
Viscoelastic testing prior to procedures reduces blood product utilization without increasing bleeding risk in cirrhosis: A systematic review and meta-analysis
Abhishek Shenoy, Jeremy Louisaint, Carol Shannon, Elliot B. Tapper, Anna Lok

10:44 AM • AGA Plenary
Liver & Biliary Distinguished Abstract Plenary
GALAD demonstrates high sensitivity for early-stage detection of hepatocellular carcinoma in a cohort of patients with cirrhosis
Amit G. Singal, Nabihah Tayob, Austin J Fobar, Qingchun Jin, Cristian Saenz de Viteri, Jorge A. Marrero, Neelhar Dilip Parikh

11:00 AM • AGA Research Forum
CB6, a novel gut-selective BCL-2 inhibitor, attenuates intestinal fibrosis in myofibroblast cell models and the mouse S. typhimurium model of intestinal fibrosis
Yangjia Feng, Laura Johnson, Meng Zhang, Stephen Collins, Shaomeng Wang, Peter D.R. Higgins

11:10 AM • AGA Clinical Symposium
Gastrointestinal infections in patients with chronic inflammatory bowel disease
Mohamad El-Zaatari, Yawen Zhang, Marilia Cascalho, John Y. Kao

12:00 AM • AASLD Plenary
Alpha-1 antitrypsin Pi*MZ genotype associates with more rapid decompensation and decreased transplant-free survival among patients with compensated cirrhosis
Daniel A. Burkholder, Isabel J. Moran, Jacob V. DiBattista, Elizabeth Speliotes, Vincent L. Chen

12:00 AM • AGA Research Forum
Alpha-1 antitrypsin Pi*MZ genotype associates with increased risk of skin cancer
Kelly Cushing, Xiaomeng Du, Yanhua Chen, LC Stetson, Annapurna Kuppa, Vincent L. Chen, J Michelle Kahlenberg, Johann Gudjonsson, Peter D.R. Higgins, Elizabeth Speliotes

1:00 PM • AGA State-of-the-Art Lecture
AGA Morton I. Grossman Distinguished Lectureship
Welcome and Introduction of Lectureship and Lecturer: Linda C. Samuelson

1:10 PM • AGA State-of-the-Art Lecture
AGA Morton I. Grossman Distinguished Lectureship
Communicate!! The Essential Nature of Crosstalk in Development, Disease and Science
Deborah L. Gumucio

1:16 PM • AGA Research Forum
Functional dyspepsia and gastroparesis are interchangeable syndromes with common clinical and pathological features

1:17 PM • ASGE Plenary
ASGE Presidential Plenary II
Panel Discussion
Impact of health care reform on the practice of gastroenterology
John I. Allen, Michael Chernew

1:20 PM • AASLD Plenary
AASLD Clinical Science Plenary
The association of sustained virologic response on treatment outcomes in patients with hepatocellular carcinoma with hepatitis C

3:30 PM • AGA Research Forum
Inflammation and GI Cancers
Moderator Introduction: John Y. Kao

3:32 PM • AGA Clinical Symposium
Genetics of obesity – The hammer or the nail?
Elizabeth Speliotes

3:48 PM • AGA Translational Symposium
Association of deleterious DUOX2 variants with a preclinical hallmark of disturbed microbiota-immune homeostasis and risk of inflammatory bowel disease

4:00 PM • AGA Research Forum
Endoscopy and systematic biopsy of patients with chronic gastrointestinal symptoms leads to high discovery rate of patients who meet histologic...
criteria for eosinophilic gastritis and/or eosinophilic duodenitis

5:30 PM • AGA Clinical Symposium
Gender Disparities in GI: Progress and Challenges
Moderator Introduction: Megan A. Adams

5:30 PM • AGA Research Symposium
Kiron and Kamala Das Symposium: Cell Death in the Intestinal Epithelium
Moderator Introduction: Yatrik M. Shah

5:33 PM • AGA Clinical Symposium
Promotions and pay structure
John I. Allen

5:50 PM • AGA Research Symposium
Kiron and Kamala Das Symposium: Cell Death in the Intestinal Epithelium
Ferroposis in the intestinal epithelium
Yatrik M. Shah

6:02 PM • AGA Clinical Symposium
Identifying and Managing Issues of Pancreatic Insufficiency
Nutritional evaluation and dietary management
Amanda Lynett

6:14 PM • AGA Research Forum
Efficacy of high-dose dual therapy and bismuth quadruple therapy in first-line and rescue Helicobacter pylori eradication – a final report of multicentered, randomized control study
Chien-Chih Tung, Chi-Tan Hu, Chun-Jung Lin, I-Nan Kuo, Bor-Ru Lin, Hong-Long Wang, Jin-De Chen, Mu-Liang Cheng, Chia-Tung Shun, John Y. Kao, Jyh-Chin Yang

6:17 • AGA Clinical Symposium
Identifying and Managing Issues of Pancreatic Insufficiency
Charting a pathway of success in enzyme replacement
Matthew J. DiMagno

6:31 • ASGE Clinical Symposium
Putting it all together: How to set up your bariatric program
Allison R. Schulman

POSTER SESSIONS • Saturday

Sa058
Rapid onset of time to first spontaneous bowel movement (SBM) and predictable efficacy of oral once daily naloexogel: Pooled analysis of two global randomized controlled trials
William D. Chey, Carol B. Rockett, Enoch Bortey, June Almenoff

Sa059
Naloexogel given orally once daily achieved rapid and sustained improvement of opioid-induced constipation (OIC) symptoms: A pooled analysis of two global randomized placebo-controlled trials
William D. Chey, Carol B. Rockett, Enoch Bortey, June Almenoff

Sa121
Polymorphic Δ27bpMSH3, enriched in colorectal cancer and ulcerative colitis, relies on the NF-κB-associated protein NEMO for stability after MSH2 dissociation by IL-6
Stephanie Tseng-Rogenski, John M. Carethers

Sa250 • AGA Poster of Distinction
The suitability of the current EUCAST H pylori amoxicillin resistance breakpoints in predicting high-dose amoxicillin-PPI dual salvage therapeutic efficacy and in assessing amoxicillin resistance rates in the U.S.
Ashley Cawthon, Chien-Chih Tung, Min Zhang, Mohamad El-Zaatari, Helmut Grasberger, Jyh-Chin Yang, John Y. Kao

Sa343
Comparison of scoring systems for diagnosing hepatic steatosis in the absence of imaging using real-world health data
Jacob V. DiBattista, Daniel A. Burkholder, Anna Lok, Vincent L. Chen

Sa357
Disease knowledge, health-related quality of life and lifestyle behavior change in patients with non-alcoholic fatty liver disease
Lisa Glass, Haila Asefa, Michael Volk, Anna Lok, Monica A. Tincopa

Sa387
Dietary monosodium glutamate (MSG) acts on TAS1R1/TAS1R3 expressing gastric tuft cells to stimulate ATP release and induce visceral hypersensitivity
Yawen Zhang, Gintautas Grabauskas, Xiaoqin Wu, Jun Gao, Chang Owyang

Sa393 • AGA Poster of Distinction
Gastroparesis patients with greater short-term symptom improvements after G-POEM demonstrate less severe pyloric dysfunction on EndoFLIP testing
Lydia Watts, Moira Armstrong, Gabrielle Ezell, Jason R Baker, Nicole Bowers, Ryan Law, William L. Hasler

Sa399
Wireless motility capsule identifies a distinct phenotype of gastric dysmotility with an associated differential response to drug therapy
Trisha Satya Pasricha, John Russell Semler, Allen Lee, Baha Moshiree, William L. Hasler, Braden Kuo

Sa403
Coefficients of variation of pyloric diameter and distensibility and reproducibility of EndoFLIP testing in gastroparesis patients undergoing pyloric therapy
Moira Armstrong, Lydia Watts, Gabrielle Ezell, Jason R Baker, Nicole Bowers, Ryan Law, William L. Hasler

Sa409
Terminology impacts simulated defecation responses during anorectal manometry: Analysis of the London classification for disorders of anorectal function
Jason Baker, Mackenzie Jarvis, Elyse Thakur, William D. Chey, Rafat Rizk, Darren M. Brenner, Eric D. Shah, Baha Moshiree

Sa423
Quantifying healthcare utilization and delay in treatment of gastric stenosis following sleeve gastrectomy
Jiwan V. Park, Maxwell T. Sievers, Paris D. Rollins, Alyssa M. Hardin, Hootan M. Omidvar, Laura Mazer, Allison R. Schulman
**SUNDAY, MAY 23 (cont'd)**

10:00 AM • AGA Clinical Symposium

**Bringing QI to GI: Translating Quality Measures to Practice**

Moderator Introduction: Megan A. Adams

10:00 AM • AGA Research Forum

**Novel Approaches to Studying Physiology of the Esophagus**

Moderator: Joan Chen

---

**SUNDAY, MAY 23**

10:00 AM • AGA Research Forum

**Microbiome and Host Response in IBD**

Moderator Introduction: Nobuhiko Kamada

10:31 AM • AGA Clinical Symposium

**The forgotten indication: National estimates of proton pump inhibitor prescribing for prevention of upper gastrointestinal bleeding in the United States from 2005–2016**

Jacob E. Kurlander, John N. Mafi, Elliot B. Tapper, Geoffrey Barnes, Caroline R. Richardson, Joel H. Rubenstein, Sameer Dev Saini, Patrick D Meek

10:45 AM • AGA Clinical Symposium

**Implementing quality measures in integrated healthcare delivery systems: Endoscopic overuse**

Sameer D. Saini

11:01 AM • AGA Research Symposium

**The risks and benefits of JAK inhibitors in acute severe UC**

Peter D. Higgins

1:00 PM • ASGE Clinical Symposium

**ERCP 101**

Moderator: Grace Elta

1:02 PM • AASLD Clinical Symposium

**Management of the “immune tolerant” patient: How to evaluate, to treat or not to treat?**

Anna S. Lok

1:02 PM • AGA Clinical Symposium

**Artificial intelligence in IBD imaging and endoscopy**

Ryan Stidham

1:02 PM • AGA Research Forum

**Ameliorating effects and mechanisms of auricular vagal nerve stimulation in a rodent model of functional dyspepsia**

Llwei Hou, Juan Han, Wei Wei, Jiande Chen, Jiliang Fang, Jinling Zhang, Junying Wang, Peijing Rong

1:02 PM • AGA Research Symposium

**Metabolites regulating gastrointestinal neoplasms**

Costas A. Lyssiotis

---

**1:30 PM • AGA Plenary**

**AGA Clinical Science Plenary**

A multicomponent intervention reduces proton pump inhibitor use without evidence of harm: A quasi-experimental study of over 4 million US veterans

Jacob Eli Kurlander, Sameer Dev Saini, Loren Laine, Hyungjin Myra Kim, Christopher B. Roberts, Michelle Shank, Yu-Xiao Yang

2:07 PM • AASLD Clinical Symposium

**Liver transplantation for DILI: Predicting the need and managing the patient**

Robert J. Fontana

2:12 PM • AGA Plenary

**AGA Clinical Science Plenary**

Live Q&A

Emilie C. Breekveldt, Sine Buhl, Li-Chun Chang, John M. Inadomi, Fasiha Kanwal, Jacob E. Kurlander, Benjamin H. Mullish

2:17 PM • AGA Research Symposium

**Metabolites and Bioactive Lipids in GI Disease**

LIVE Q&A

Matthew A. Ciorba, Sean P. Colgan, Ravinder K. Gill, Costas A. Lyssiotis, Shipra Vaishnava

3:25 PM • DDW Clinical Symposium

Best of DDW 2021

Best of AASLD

Grace Su

3:30 PM • AGA Plenary

**Cellular & Molecular Gastroenterology Section Distinguished Abstract Plenary**

Moderator: Linda Samuelson

3:30 PM • AGA Plenary

**Immunology, Microbiology & Inflammatory Bowel Diseases (IMIBD) Section Distinguished Abstract Plenary**

Moderator Introduction: Peter D. Higgins

3:30 PM • AGA Research Forum

**Advances in the Pathogenesis, Diagnosis and Treatment of Gastroesophageal Reflux Disease**

Moderator Introduction: Joan W. Chen
**SUNDAY, MAY 23**

3:30 PM • ASGE Clinical Symposium
**ERCP at the Cutting Edge**
Welcome: *Michelle A. Anderson*

4:11 PM • AGA Plenary
**AGA Immunology, Microbiology & Inflammatory Bowel Diseases Section**
Distinguished Abstract Plenary
Clinical coordination and intense proactive monitoring to improve utilization of resources and reduce expenditures in high-risk IBD patients (CAPTURE IBD): A randomized, controlled quality improvement trial  
*Jeffrey Berinstein*, Gillian Greenberg, Shirley Cohen-Mekelburg, Peter D.R. Higgins

4:27 PM • DDW Symposium
DDW Diversity Symposium: Unique Patient Populations with GI Diseases Experiencing Barriers to Care  
**Socioeconomic barriers to gastroenterological care**  
*John M. Carethers*

4:36 PM • AGA Plenary
**AGA Cellular & Molecular**  
Gastroenterology Section  
Distinguished Abstract Plenary  
**Live Q&A**
Kathleen DelGiorno, Yuki Hayata, Izumi Kaji, Emilia J. Orzechowska, Saeed Soleymanjabi, Linda C. Samuels, Xiaohong Wang

4:47 PM • AGA Plenary
**AGA Immunology, Microbiology & Inflammatory Bowel Diseases Section**
Distinguished Abstract Plenary  
**Live Q&A**
Jeffrey Berinstein, Mark J. Daly, Peter D. Higgins, Yuval Itan, Sun-Ho Lee, James D. Lewis, Florence-Damilola Odufalu, Fernando Velayos

5:00 PM • DDW Symposium
Diversity Symposium Networking Session  
**Live Q&A**
John Carethers, Aline Charabaty, William Dewitt, Pilar Ortega, Matthew Walsh, Julius Wilder

5:30 PM • AGA Research Forum
**Biologic and Disease Monitoring in IBD**
Moderator: Shirley Cohen-Mekelburg

6:28 PM • AGA Plenary
**Clinical Practice Distinguished Abstract Plenary**
**Validation of tools for predicting incident adenocarcinoma of the esophagus or esophagogastric junction**  
*Joel H. Rubenstein*, Trivellore Raghunathan, Cecilia Doan, Jennifer L Schneider, Wei K. Zhao, Valbona Metko, Kimberly Nofz, Maryam Khodadost, Douglas A. Corley

**POSTER SESSIONS • Sunday**

**Su007 • ASGE Poster of Distinction**
Variability in endoscopic assessment of Nissen fundoplication wrap integrity and hiatus herniation: A multi-center study  
Erin J. Song, Rena H. Yadlapati, Joan W. Chen, Alice Parish, Matthew J. Whitson, Karthik Ravi, Amit Patel, Dustin Carlson, Abraham Khan, Donna Niedzwiecki, David A. Leiman

**Su085**
Prevalence and burden of illness of Rome IV irritable bowel syndrome in the U.S.  
Christopher Velasquez Almario, William D. Chey, Carolyn S. Higgins, Brennan Spiegel

**Su092**
Who reports post-prandial diarrhea? Analysis of a cohort of patients with chronic diarrhea  
Rafia Hassan, Prashant Singh, Sarah Bailou, Vanessa Yu, Vikram Rangan, Judy Nee, Johanna Iturrino, Anthony Lembo

**Su140**
Chronic psychological stress alters gene expression in rat colon epithelial cells associated with barrier dysfunction, inflammation, and chromatin remodeling  
John W. Wiley, Gerald A. Higgins, Shuangsong Hong

**Su343 • AASLD Poster of Distinction**
Ammonia testing is overused and leads to excess lactulose use: A prospective, blinded assessment of ammonia test utility among front-line clinicians  
Juan J. Gonzalez, Elliot B. Tapper

**Su364**
Pill or procedure? Understanding patient preferences regarding beta-blockers as an alternative to endoscopic variceal screening during the COVID-19 pandemic  
Zheng Che, Jeremy Louissaint, Ihab Kassab, Elliot B. Tapper

**Su474**
Healthcare utilization among inflammatory bowel disease patients receiving opioids: A systematic review and meta-analysis  
Jessica L. Sheehan, Janson Jacob, Calen Andrew Steiner, Sameer K Berry, Carol Shannon, Shirley Cohen-Mekelburg, Peter D.R. Higgins, Jeffrey Berinstein

**Su485**
Cannabis users with inflammatory bowel disease in clinical remission have increased levels of subclinical inflammation  
Madeline Bertha, Diego Jimenez Lara, Jamie Kinnucan, Stephen B. Hanauer

**Su554 • AGA Poster of Distinction**
Prevalence of sucrase-isomaltase deficiency in adults with irritable bowel syndrome and diarrhea and functional diarrhea: An interim analysis from a prospective US trial  
Samuel Chey, William D. Chey, Shanti L. Eswaran

**Su562**
Does mucosal *Akkermansia* abundance predict omega fatty acids and PGE2 production after dietary intervention?  
Samara Rifkin, Ananda Sen, D. Kim Turgeon, Mack T. Ruffin, Dean E Brenner, Patrick D Schloss, Zora Djuric

**Su576**
Are all FODMAPs created equal? A blinded, randomized reintroduction trial to determine which FODMAPs drive clinical response in IBS patients  
Shanti L. Eswaran, Prashant Singh, Samara Rifkin, William D. Chey

**Su577**
Does the gut microbiome explain the clinical benefits of green kiwifruit, psyllium, or prunes in US patients with chronic constipation?  
Samuel Chey, Christine Marie Bassis, Vincent Bensan Young, William D. Chey, Shanti L. Eswaran
## Index

### Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADAMS, Megan</td>
<td>8</td>
</tr>
<tr>
<td>ALLEN, John</td>
<td>6, 7, 9, 12</td>
</tr>
<tr>
<td>ANDERSON, Michelle</td>
<td>1, 4, 6, 8</td>
</tr>
<tr>
<td>BISHU, Shrinivas</td>
<td>9, 10</td>
</tr>
<tr>
<td>CARETHERS, John</td>
<td>1, 6, 8, 9, 12</td>
</tr>
<tr>
<td>CHEN, Jiande</td>
<td>11, 13</td>
</tr>
<tr>
<td>CHEN, Joan</td>
<td>8, 13</td>
</tr>
<tr>
<td>CHEN, Vincent</td>
<td>10, 11, 12</td>
</tr>
<tr>
<td>CHEY, Bill</td>
<td>6, 9, 10, 11, 12, 13, 14</td>
</tr>
<tr>
<td>COHEN-MEKELBURG, Shirley</td>
<td>7, 8, 11, 14</td>
</tr>
<tr>
<td>CUSHING, Kelly</td>
<td>10</td>
</tr>
<tr>
<td>DIMAGNO, Matthew</td>
<td>9</td>
</tr>
<tr>
<td>ELTA, Grace</td>
<td>1, 2, 6, 8</td>
</tr>
<tr>
<td>EL-ZAATAR, Mo</td>
<td>9, 10, 12</td>
</tr>
<tr>
<td>ESWARAN, Shanti</td>
<td>14</td>
</tr>
<tr>
<td>FONTANA, Bob</td>
<td>1, 3, 6, 8, 9</td>
</tr>
<tr>
<td>GILLILLAND, Merritt</td>
<td>11</td>
</tr>
<tr>
<td>GRABAUSKAS, Gintas</td>
<td>7, 10, 11, 13</td>
</tr>
<tr>
<td>GRASBERGER, Helmut</td>
<td>9, 10, 12</td>
</tr>
<tr>
<td>GUMUCIO, Deborah</td>
<td>1, 2, 6, 7</td>
</tr>
<tr>
<td>HASLER, Bill</td>
<td>13</td>
</tr>
<tr>
<td>HIGGINS, Peter</td>
<td>1, 7, 8, 9, 10, 12, 13, 14</td>
</tr>
<tr>
<td>HONG, Shuangsong</td>
<td>14</td>
</tr>
<tr>
<td>KAMADA, Nobu</td>
<td>1, 5, 6, 8, 9</td>
</tr>
<tr>
<td>KAO, John</td>
<td>7, 8, 9, 10, 11, 12</td>
</tr>
<tr>
<td>KINNUCAN, Jamir</td>
<td>14</td>
</tr>
<tr>
<td>KITAMOTO, Hiroko</td>
<td>9</td>
</tr>
<tr>
<td>KITAMOTO, Sho</td>
<td>9</td>
</tr>
<tr>
<td>KOI, Minoru</td>
<td>12</td>
</tr>
<tr>
<td>KURLANDER, Jacob</td>
<td>7, 8, 9, 10</td>
</tr>
<tr>
<td>LEE, Allen</td>
<td>10, 13</td>
</tr>
<tr>
<td>LI, Ji-Yao</td>
<td>7, 11</td>
</tr>
<tr>
<td>LOK, Anna</td>
<td>6, 9, 10, 12, 13</td>
</tr>
<tr>
<td>LYNNET, Amanda</td>
<td>9</td>
</tr>
<tr>
<td>LYSSIOFITIS, Costas</td>
<td>6, 8, 9</td>
</tr>
<tr>
<td>NOJKOV, Borko</td>
<td>10, 12</td>
</tr>
<tr>
<td>OWYANG, Chung</td>
<td>6, 7, 10, 11, 13</td>
</tr>
<tr>
<td>PARIKH, Neelav</td>
<td>7, 10, 11</td>
</tr>
<tr>
<td>RIFKIN, Samara</td>
<td>12, 14</td>
</tr>
<tr>
<td>RIZK, Raf</td>
<td>13</td>
</tr>
<tr>
<td>RUBENSTEIN, Joel</td>
<td>1, 5, 6, 7, 8, 9</td>
</tr>
<tr>
<td>SAINI, Sameer</td>
<td>7, 9, 10, 11</td>
</tr>
<tr>
<td>SAMUELSON, Linda</td>
<td>1, 5, 6, 7, 8</td>
</tr>
<tr>
<td>SCHULMAN, Allison</td>
<td>7, 9, 10, 13</td>
</tr>
<tr>
<td>SHAH, Yatriki</td>
<td>8, 9</td>
</tr>
<tr>
<td>SINGH, Prashant</td>
<td>10, 12, 13, 14</td>
</tr>
<tr>
<td>SPELIOTES, Elizabeth</td>
<td>9, 10, 11</td>
</tr>
<tr>
<td>STIDHAM, Ryan</td>
<td>9</td>
</tr>
<tr>
<td>SU, Grace</td>
<td>9</td>
</tr>
<tr>
<td>TAPPER, Elliot</td>
<td>1, 5, 6, 9, 10, 14</td>
</tr>
<tr>
<td>TSENG-ROGENSKI, Stephanie</td>
<td>12</td>
</tr>
<tr>
<td>TURGEON, Kim</td>
<td>14</td>
</tr>
<tr>
<td>WALJEE, Akbar</td>
<td>11, 12, 14</td>
</tr>
<tr>
<td>WILEY, John</td>
<td>14</td>
</tr>
<tr>
<td>ZHOU, Shi-Yi</td>
<td>10, 11, 13</td>
</tr>
</tbody>
</table>

### Fellows

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>BERINSTEIN, Jeffrey</td>
<td>7, 8, 12, 14</td>
</tr>
<tr>
<td>BERRY, Sameer</td>
<td>14</td>
</tr>
<tr>
<td>BHALLA, Sean</td>
<td>10</td>
</tr>
<tr>
<td>HARDING-THEOBALD, Emily</td>
<td>11</td>
</tr>
<tr>
<td>LOUISSAINT, Jeremy</td>
<td>10, 14</td>
</tr>
<tr>
<td>MARAJ, Bharat</td>
<td>11</td>
</tr>
<tr>
<td>NOURELDIN, Mohamed</td>
<td>12</td>
</tr>
<tr>
<td>PLATT, Kevin</td>
<td>10</td>
</tr>
<tr>
<td>SHENOI, Abhishek</td>
<td>10</td>
</tr>
<tr>
<td>STEINER, Calen</td>
<td>14</td>
</tr>
</tbody>
</table>

Spring 2021  The GI Digest  21