

Winter 2021

Division of Gastroenterology & Hepatology Annual Newsletter



**T**he Division of Gastroenterology and Hepatology at the Medical University of South Carolina (MUSC) is a nationally recognized destination for simple to complex gastroenterology and hepatology diseases. The past year has continued to define the division as a progressive center of excellence dedicated to advances in laboratory and clinical science, state-of-the-art clinical care, and the education of future leaders in digestive and liver diseases.

In 2020, MUSC Health's Gastroenterology and GI Surgery was recognized by U.S. News & World Report as high-performing placing it among the top 10% of such programs nationally. Team members work closely to provide expert individualized care to each and every patient at multiple sites throughout the Charleston area including Ashley River Tower, East Cooper, and our newest facility – MUSC Health West Campus.

Our recent expansion at MUSC Health West Ashley provides a convenient location to a wide range of services from over 22 specialties as well as comprehensive imaging, laboratory and pharmacy services. Ample, free parking is also available. Providers are accepting new patients to guide you through your wellness journey.

The division specializes in areas such as advanced endoscopy, inflammatory bowel disease, motility disorders, and a wide variety of liver diseases, including liver transplantation, and our educational program trains 12 fellows per year in these areas. The division's physician-scientists and research faculty continue to expand our understanding of the most challenging digestive diseases afflicting patients today.

This spring marked a seismic shift for digestive and liver disease research at MUSC with the award of more than \$16.5 million in NIH funding to open two new tightly integrated centers. MUSC is now the only institution in the country to house both a Digestive Disease Research Core Center (DDRCC), which supports the research of established scholars, and a Center for Biomedical Research Excellence in Digestive and Liver Disease (CDLD), which mentors early-career investigators to become independent scholars.

The publications, honors, and grant funding received by division faculty this year highlight the quality and ingenuity of work being done in the division to advance cures for liver disease through scientific discoveries, cutting-edge treatments, and liver transplants.



**22**  
ACADEMIC  
FACULTY  
MEMBERS

**24,198**  
FY20  
OUTPATIENT  
OFFICE VISITS

**\$10.1M**  
FY20  
RESEARCH  
FUNDING



Division of Gastroenterology  
& Hepatology  
Department of Medicine

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Digestive Disease Center

Our Providers

On the Cover: *Ki-Hoon Park, Ph.D., Don Rockey, M.D., Nour Hijazi, Yingyu Ren, and Kyu-Ho Lee, M.D., Ph.D.*

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[musc.edu/gastroenterology](http://musc.edu/gastroenterology)

## MESSAGE FROM THE INTERIM DIRECTOR



As I write this letter we are in the midst of unprecedented times, a global pandemic due to COVID-19. Over the past 10 months, I have been inspired daily by my team's ingenuity, creativity, and commitment to excellence in the face of this pandemic, as they continue to find innovative solutions to care for our patients, conduct research, and educate our residents.

During this crisis, the Division of Gastroenterology and Hepatology has continued to flourish over the past year. In fact, in spite of the many challenges COVID-19 has presented in academic medicine, we have continued to provide health care services using best-practices to protect the health of our patients and care teams. Our world-class faculty have made outstanding contributions in research and scholarship, education, and clinical care.

In FY20, the division's aggressive pursuit of external funding was rewarded: 13 new grants were secured and 7 non-competing grants were renewed. The division continues to have a robust clinical presence, and in FY20, 24,198 outpatient visits were made to our GI clinics. In response to the pandemic, our clinical care team rapidly transitioned from in-clinic visits to telehealth visits, with our providers now seeing over 30 patients a day via virtual visits.

Seamless integration of education has been the hallmark of the division's activities, as we mentor and train the next generation of academic leaders in gastroenterology and hepatology. Our competitive fellowship program offering four first-year positions attracted many outstanding applicants this year.

The current times stretch us, but the achievements presented in this report underscore our strength and commitment to meet the challenges of the pandemic in our mission to provide exceptional care for all.

### Brenda Hoffman, M.D.

Professor and Interim Director

Division of Gastroenterology & Hepatology  
Department of Medicine

### Four Convenient Locations:

**Ashley River Tower**  
25 Courtenay Drive  
Charleston, SC 29425

**East Cooper Medical Pavilion**  
1600 Midtown Avenue  
Mount Pleasant, SC 29464

**MUSC Health - Nexton**  
5500 Front Street, Suite 320  
Summerville, SC 29486

**West Ashley Medical Pavilion**  
2060 Sam Rittenberg Boulevard  
Charleston, SC 29407

### Call for Appointments:

MUSC GI & Hepatology Clinics:  
843-792-6982

### Schedule a Virtual Visit:

[muschealth.org/virtual-visits](http://muschealth.org/virtual-visits)



# RESEARCH MILESTONE

## MUSC emerges as a national leader in digestive and liver disease research

This spring marked a seismic shift for digestive and liver disease research at MUSC with the award of more than \$16.5 million in National Institutes of Health funding to open two new tightly integrated centers.

MUSC became the only institution in the country to house both a Digestive Disease Research Core Center (DDRCC), which supports the research of established scholars, and a Center for Biomedical Research Excellence in Digestive and Liver Disease (CDLD), which mentors early-career investigators to become independent scholars.

MUSC is now one of only 17 DDRCCs in the nation. Department of Medicine investigator **Don C. Rockey, M.D.**, a gastroenterologist, serves as the MUSC DDRCC's director. Department of Regenerative Medicine and Cell Biology chair **Stephen A. Duncan, D.Phil.**, a basic scientist specializing in liver disease research, serves as associate director. "The institutions that are home to a DDRCC represent the true leaders in academic gastroenterology and hepatology," said Rockey. "These are great programs, and for us to be in that company is fabulous. Speaking for myself and Steve, we're very proud of this achievement."

To be chosen as a DDRCC by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), an institution must have a strong core of investigators who are recognized as leaders in an area of digestive disease research. DDRCCs are also led by nationally and internationally prominent investigators. The funds from the NIDDK help to support efforts to build the center into a national resource on the topic.

The MUSC DDRCC will provide stable funding to support some 30 basic science and clinician-scientist investigators working in the field of digestive and liver disease. They all work in areas related to the theme of the DDRCC, which covers the area of inflammation, fibrosis



Kyu-Ho Lee, M.D., Ph.D., Stephen Duncan, DPhil, and Don Rockey, M.D.

and organ dysfunction throughout the gastrointestinal tract. The center will also help to attract luminaries and promising mid-career investigators in gastrointestinal disease to MUSC.

"We're excited to be able to recruit people right now who would never consider us without these kinds of resources," said Rockey.

But, according to Rockey, great programs not only recruit successful researchers, they help create them. Only by developing a pipeline to produce the next generation of researchers can a program achieve sustained excellence.

And it is the goal of the CDLD to create such a pipeline.

"The CDLD really aims to take very new, inexperienced investigators and give them the tools, the research resources, as well as the environment that will allow them to transition to be superstar independent researchers who focus on digestive disease," said Duncan, who in addition to his role with the DDRCC also serves as director of the CDLD. Rockey serves as associate director.

Made possible by a grant from the National Institute of General Medical Sciences, the CDLD provides junior investigators with a robust grant and offers them the mentorship and other resources they need to obtain independent grant funding. Once they do, they will transition to the DDRCC, opening a slot for another junior investigator.

*Adapted from original article by Kimberly McGhee.*

## CLINICAL TRIAL NEWS

Researchers in the Division of Gastroenterology and Hepatology are leading an international clinical trial that will address an unanswered question that has lingered for decades about the optimal management of acute pancreatitis and pancreas divisum.

A debate has split the world's pancreatologists into two camps: For patients with acute recurrent pancreatitis and pancreas divisum, an anatomic variant linked to pancreatitis, is endoscopic retrograde cholangiopancreatography (ERCP) with minor papilla sphincterotomy the best treatment?

MUSC Health physicians are leading an international, multicenter clinical trial that will help determine whether the procedure benefits these patients, says **Gregory Coté, M.D.**, MUSC Health gastroenterologist, professor of medicine and the trial's co-principal investigator.

"The implications for this study are profound," he says. "If this study proves that ERCP with sphincterotomy reduces the risk of acute pancreatitis, it will increase enthusiasm for offering ERCP and encourage physicians to diagnose pancreas divisum earlier in the disease course."

Approximately 20 centers in the United States, Canada and Europe are participating in the randomized, sham-controlled trial, funded by the National Institutes of Health. To date, 46 participants have been enrolled out of a planned 234.

Pancreas divisum occurs during embryonic development when the two main pancreatic ducts in the embryonic pancreas fail to completely merge into one duct that drains at the major papilla and into the small intestine. As a result, in about 10 percent of the population, pancreatic juice drains into the small intestine predominantly through the minor (or lesser) papilla.

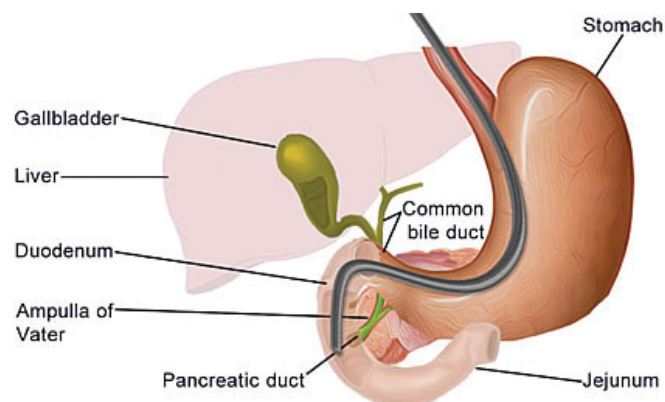


Illustration depicting an ERCP procedure.

For decades, the standard treatment for patients with pancreatitis and pancreas divisum has been ERCP with sphincterotomy. And that's when the "medical divisum" begins.

"We don't know if it works," Coté says. "The working assumption is that obstruction can cause pancreatitis. But there's never been a high-quality trial to prove whether this procedure actually helps patients with pancreatitis."

One camp thinks ERCP with sphincterotomy helps. The opposing camp is adamant that it is unhelpful, citing lack of evidence and the risk involved in ERCP with sphincterotomy. Further complicating matters is that no other interventions exist, and acute pancreatitis is fickle, says Coté.

"I don't know of any blinded interventional studies in pancreatitis, so this will be a paradigm shift in clinical research in pancreatology. It will be illuminating regardless of results," he says.

The trial, called SHARP (Sphincterotomy for Acute Recurrent Pancreatitis), is one of three NIH-funded clinical trials in the field of interventional endoscopy led by MUSC investigators.

"The SHARP trial is another feather in MUSC's cap and recognizes MUSC's leadership in ERCP and interventional endoscopy broadly," he says.

Additional federally-funded studies include a longitudinal cohort study of patients with sphincter of Oddi disorders, and a pilot, sham-controlled study of ERCP with interventions for patients with painful chronic pancreatitis.



Gregory Coté, M.D.

# STENT VS. INDOMETHACIN FOR PREVENTING POST-ERCP PANCREATITIS: THE SVI TRIAL

MUSC investigators are leading a large-scale clinical trial to determine the most effective way to prevent post-ERCP pancreatitis.



Peter Cotton, M.D., and B. Joseph Elmunzer, M.D.

For more than 40 years, endoscopic retrograde cholangiopancreatography (ERCP) has been the standard treatment for patients with problems of the bile and pancreatic ducts.

The procedure, however, carries risk – namely pancreatitis – in up to 15 percent of patients.

A team of MUSC physicians is leading a large-scale clinical trial to determine the most effective way of preventing this complication after ERCP.

Funded by the National Institutes of Health, the randomized double-blind study is in its 6th year and includes 14 sites with a goal of expanding to 20 sites, says **B. Joseph Elmunzer, M.D.**, an MUSC interventional endoscopist and principal investigator on the trial. More than 1,350 participants have been enrolled nationwide.

“In a nutshell, we’re comparing two different ways of preventing the most serious complication after ERCP procedure, which is pancreatitis,” says Elmunzer, who is also the Peter Cotton Endowed Chair in Endoscopic Innovation.

Specifically, Elmunzer and his team are comparing the use of rectal indomethacin, an anti-inflammatory,

as a solo treatment on an experimental group of patients, and indomethacin combined with a stent inserted into the pancreas, which has been the standard treatment.

“The plastic stent allows the pancreas to drain more efficiently, reducing the likelihood of too much pressure building up in the pancreas, which is believed to be a culprit in pancreatitis,” says Elmunzer.

Recent studies, however, indicate that indomethacin may confer most of the protection against pancreatitis, raising the question whether patients also need a stent, Elmunzer says.

Stent placement carries some disadvantages. Stents are expensive and stent placement is a delicate procedure that requires special expertise.

About 15% of patients at high risk for this complication, or one in six, will develop post-ERCP pancreatitis.

Being young, female, and having a condition known as SOD, or sphincter of Oddi dysfunction, which causes severe abdominal pain, are high-risk characteristics, he says. “These are the patients in whom we would normally consider placing a prophylactic stent,” he says. “That’s the very group in which we need

to determine whether a stent is really needed if they are given the medication.”

Between 500,000 and 600,000 ERCPs are performed annually in the United States, and most people who develop post-ERCP pancreatitis will have a complete recovery. Serious complications can occur, however.

Reducing the risk is a major priority, he says. “This trial is really a monumental national effort, and for the first time we are trying to figure out meaningful ways of preventing pancreatitis, conserving resources and maximizing the patient experience.”

Elmunzer says he’s proud that MUSC has been chosen to lead the trial, one of three NIH-funded interventional endoscopy trials conducted by MUSC.

“Traditionally, federal funding for interventional endoscopy research has been relatively limited, and it’s uncommon to get funding of this magnitude in the advanced endoscopy space,” he says. “The fact that MUSC has received three similar grant awards from NIH is a testament to MUSC’s leadership and expertise in this field. Hopefully, this will answer important questions that will have major implications for generations of patients in the future.”



# LIVER TRANSPLANT PROGRAM AT MUSC

Over the past 25 years, MUSC Health has helped more than 1,500 patients receive the lifesaving liver transplant they need. As the only liver transplant program in South Carolina, MUSC Health also treats high-risk patients with complications from chronic liver disease.

Our liver transplant specialists carefully guide patients through the transplant process to lead a full, healthy life. Our team consists of specialists from many disciplines, including surgeons, hepatologists, nurses, psychiatrists, social workers, and behavioral health experts. Each team member has received special training to work with liver transplant patients, and our physicians are board-certified in transplant medicine. This team works together seamlessly to provide thorough, personalized care for each patient.



Derek DuBay, M.D., (right), professor of surgery and director of the Division of Transplant Surgery at MUSC Health.

In 2020 we opened up satellite clinics in multiple locations throughout South Carolina including Bluffton, Florence, and Greenville.

For more information, or to speak with a Transplant Coordinator, please contact MUSC Health at 800-277-8687.

## DIGESTIVE DISEASE CENTER

The division's nationally recognized Digestive Disease Center brings together a multidisciplinary team of gastroenterologists, surgeons, hepatologists, and radiologists to provide the highest level of comprehensive care for patients with a wide variety of digestive diseases and disorders.

Physicians in the division offer patient care services at three hepatology clinics, two liver transplant clinics, an esophageal/motility clinic, a full-time nutrition service, and a pancreatic/biliary disease clinic, in addition to teaching clinics at both the Ralph H. Johnson VA Medical Center and MUSC. In addition to specific clinics, procedures performed include advanced general endoscopic procedures, endoscopic ultrasound, ERCP, esophageal manometry/24-hour pH monitoring, and a Remicade infusion clinic. The division is nationally and internationally regarded for its expertise in advanced endoscopy. More than 20,000 procedures are performed annually at our multidisciplinary medical procedures unit, located in Ashley River Tower.

### GI Procedure Volume Highlights for FY20:

VOLUME	PROCEDURE
12,912	Endoscopic Procedures
4,528	Colonoscopies
4,235	EGD
1,162	EUS
1,130	ERCP
801	EMR
549	Manometries
345	PEGs
332	Flex Sig
208	24-Hr Ph
146	Wireless Endoscopy
127	Enteroscopy
93	Esophagoscopy

# GASTROENTEROLOGY & HEPATOLOGY PROVIDERS

## Gastroenterology Faculty



**Amit Agrawal, M.D.**  
Associate Professor  
Special Interests: Esophageal Motility Disorders



**Andrew Brock, M.D.**  
Associate Professor  
Special Interests: General endoscopy; deep enteroscopy; obscure GI bleeding



**Gregory A. Cote, M.D., MS**  
Professor  
Special Interests: Idiopathic acute recurrent pancreatitis; sphincter of Oddi disorders; chronic pancreatitis



**Peter Cotton, M.D., FRCP**  
Professor  
Special Interests: Pancreatic and biliary diseases



**Puja S. Elias, M.D.**  
Associate Professor and Associate Fellowship Program Director  
Special Interests: Barrett's esophagus; esophageal diseases; therapeutic endoscopy



**B. Joseph Elmunzer, M.D.**  
Professor, Peter B. Cotton Chair for Endoscopic Innovation  
Special Interests: Therapeutic endoscopy; clinical trials improving the safety of ERCP



**Erin Forster, M.D., MPH**  
Assistant Professor  
Special Interests: Advanced endoscopy; inflammatory bowel disease



**Caitlin H. Green, M.D.**  
Assistant Professor  
Special Interests: General GI with a focus on nutritional issues related to gastrointestinal illnesses including celiac disease, gastroparesis, and short bowel syndrome



**Brenda J. Hoffman, M.D.**  
Professor and Interim Director, Division of Gastroenterology & Hepatology, ICCE Chief, Digestive Disease, Endocrine & Metabolism  
Special Interests: Therapeutic endoscopy; gastrointestinal malignancy; wireless capsule endoscopy

## Gastroenterology Faculty



**Serhan Karvar, M.D.**  
Assistant Professor  
Special Interests: IBD; Crohn's disease; Ulcerative colitis



**Robert A. Moran, M.D.**  
Assistant Professor  
Special Interests: Advanced endoscopic and therapeutic endoscopic procedures



**K. Mark Payne, M.D.**  
Professor  
Special Interests: Endoscopy; endoscopic retrograde; cholangiopancreatography; gastroenterology



**Don Rockey, M.D.**  
Professor and Director, DDRCC  
Special Interests: Cirrhosis complications; gastrointestinal bleeding

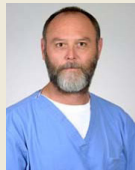


**Joseph Thomas, M.D.**  
Assistant Professor  
Special Interests: Management of all GI liver diseases; complications of cirrhosis; liver transplantation

## Gastroenterology APPs



**Vicki Allen, MS, PA-C**  
Physician Assistant, General GI, IBD/IBS



**Gregory F. Buck, PA-C**  
Physician Assistant, Digestive Disease/Hepatology



**Tallon Harding, MS, PA-C**  
Physician Assistant, IBD/General GI



**Savannah Kemp, MSN**  
Nurse Practitioner

## Hepatology Transplant Faculty & APPs



**David Koch, M.D., MSCR**  
Professor  
Special Interests: Portal hypertension; cardiovascular complications of cirrhosis; liver transplantation



**Heather Simpson, M.D.**  
Associate Professor  
Special Interests: Management of all GI liver diseases; complications of cirrhosis; liver transplantation



**Thomas Werth, M.D.**  
Associate Professor  
Special Interests: Gastrointestinal cancers; liver cancer



**Ira R. Willner, M.D.**  
Professor & Liver Transplant Medical Director, Fellowship Program Director  
Special Interests: Liver disease; treatment of portal hypertension; viral hepatitis



**Kara Cole, MSN**  
Nurse Practitioner

## Research Faculty



**Songling Liu, M.D.**  
Assistant Professor  
Special Interests: Hepatic fibrogenesis, liver cirrhosis, and portal hypertension



**Jill Newman MS**  
Instructor  
Special Interests: Nutrition, Hypertension, Neonatology/Pediatrics, Health-related Quality of Life, Sleep Medicine



**Zengdun Shi, M.D.**  
Assistant Professor  
Special Interests: Molecular mechanisms in liver fibrosis and molecular targets for liver fibrosis therapy



**Wing-Kin Syn, Ph.D., MBBS**  
Professor  
Special Interests: Liver fibrosis; NAFLD; quality improvement services



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Charleston, SC 29425-5500

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## THE MUSC DEPARTMENT OF MEDICINE

Founded in 1824 in Charleston, The Medical University of South Carolina is the oldest medical school in the South. Today, MUSC continues the tradition of excellence in education, research, and patient care. MUSC educates and trains more than 3,000 students and residents, and has nearly 14,000 employees, including approximately 1,500 faculty members.

As the largest Department in the MUSC College of Medicine, the Department of Medicine provides essential leadership to numerous programs across the university, MUSC Health, and South Carolina. Our Department—made up of 10 divisions engaged in care at two hospital systems and multiple ambulatory practices—is guided by our vision to provide superior patient care, to educate the next generation of physicians, and to perform seminal discovery research.

Changing What's Possible