

Beyond the Scope

A REPORT OF THE UCLA DIVISION OF DIGESTIVE DISEASES

COVER STORY PAGE 2

**UCLA Microbiome Center
Investigates How Bacteria
Affect Human Health**

LETTER FROM THE CHIEFS

**UCLA Gastroenterology and
GI Surgery Ranked No. 4 in Nation
by *U.S. News & World Report***

FROM THE DIVISION CHIEFS



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Going **Beyond** the Scope

The annual *U.S. News & World Report* "Best Hospitals" rankings are out, providing confirmation of what we already know to be the outstanding work that occurs here in the UCLA Division of Digestive Diseases.

Now in its 26th year, the widely cited *U.S. News* rankings recognize hospitals that excel in treating patients who need an especially high level of care. For 2015-16, the UCLA Division of Digestive Diseases is listed as No. 4 in the nation and, once again, Best in the West. This is the highest rank we have received since the survey began in 1991, and makes our division one of the highest-ranked among all clinical departments and divisions at UCLA. Overall, Ronald Reagan UCLA Medical Center ranks No. 3 in the nation and Best in the West.

Some of the outstanding faculty and programs that make our division so highly rated are on display in this issue of *Beyond the Scope*. On page 2 you can read about the work of the UCLA Microbiome Center in our cover story. This ambitious effort represents a ramping up of our research in one of the most exciting areas of biomedical science – better understanding and capitalizing on what we can learn about how the approximately 100 trillion microbes in the human body impact health and disease. The campus-wide initiative is marshaling the expertise of a wide variety of researchers at UCLA, and no unit is more active in this undertaking than our division – fitting, given that bacteria in the gut are known to be particularly important. Dr. Emeran A. Mayer, a world-renowned expert in brain-gut interactions and their implications, is co-leading the center with Dr. Jonathan Braun, chair of the UCLA Department of Pathology and Laboratory Medicine and another widely regarded expert in the microbiome arena.

Two other exciting and groundbreaking programs are also featured. On page 1, we highlight the exciting outcome of our Center for Systems Biomedicine. Led by Dr. Dimitrios Iliopoulos, the center has developed a novel approach to drug discovery, and the identification of a potential new drug for ulcerative colitis within just two years shows the remarkable potential of this approach. We also feature the outstanding work of our interventional endoscopy group (page 8), led by Dr. V. Raman Muthusamy, which is rapidly expanding the indications for endoscopy, bringing many advantages to the diagnosis and treatment of GI conditions.

We continue to bring top young researchers onto our faculty, and three of them are profiled in this issue: Drs. Jonathan Jacobs (page 4), Arpana Gupta (page 5), and Folasade May (page 6). We also introduce our excellent new clinical faculty members (page 7) – Drs. Gina Choi, Marc Kaneshiro and Stephen Kim. And finally, you can read about two major education programs being held in March as part of what we refer to as UCLA GI Week – the 4th Annual UCLA-Mellinkoff Gastroenterology and Hepatology Symposium (page 10) and the 2016 CURE Annual Research Meeting and Poster Session (page 12). These back-to-back programs help us fulfill our mission of educating the gastroenterology clinicians and researchers of today and tomorrow, a central part of our role as leaders in improving care, relieving suffering and enhancing the quality of life for patients around the world.

Novel System Biology Approach Leads to Rapid Development of New IBD Drug



*Dimitrios Iliopoulos,
PhD, MBA*

*Director, Center for
Systems Biomedicine*

Associate Professor of Medicine

Applying a novel systems-oriented approach designed to expedite drug discovery, a UCLA Division of Digestive Diseases team headed by Dr. Dimitrios Iliopoulos, associate professor and director of the Center for Systems Biomedicine, has developed a new drug that suppresses the progression of ulcerative colitis in mice. The potential new therapy – which took only two years to come to fruition – targets a small, non-coding RNA molecule, microRNA-214, that is present in high levels in

ulcerative colitis patients. Dr. Iliopoulos and his colleagues published their findings in the October 1 issue of the journal *Gastroenterology*.

The systems biology approach taken by Dr. Iliopoulos's team brings together disparate specialties using the latest automated technologies – including high-tech robotics – along with sophisticated computer algorithms to extract data from large numbers of patient tissue samples, with the goal of better understanding how diseases originate and developing therapies based on that knowledge. The approach significantly shortened the preclinical part of the drug discovery process, Dr. Iliopoulos notes, from what is typically about five to six years to just two years.

"This is an unbiased approach that can be applied to any human disease," Dr. Iliopoulos says. "Traditionally, researchers have pursued a hypothesis based on current knowledge – a single gene or pathway that is believed to be important – and then conducted studies to determine whether it is true. With this approach, we use high-tech

methods to analyze patient samples and let the data tell us the key players involved in the pathogenesis." Dr. Iliopoulos explains that by starting with patient samples and then testing the findings in animal models, researchers are able to find drug targets more quickly than they would if they started with cellular systems in the laboratory.

For the *Gastroenterology* study, Dr. Iliopoulos and division associates, used the systems approach to conduct molecular analyses on 401 samples of colon tissue taken from biopsies of patients with ulcerative colitis, Crohn's disease, irritable bowel syndrome, sporadic colorectal cancer and colitis-associated colon cancer, comparing them with colon tissue from healthy patients. They found microRNA-214 to be an important player in ulcerative colitis in two ways.

"First, it has very high specificity – we found that microRNA-214 is expressed in patients with colitis but not in those with Crohn's or other inflammatory conditions," Dr. Iliopoulos says. He explains that this is particularly important because there are few markers that can differentiate between the two types of inflammatory bowel diseases, though they call for different treatment approaches.

Moreover, Dr. Iliopoulos adds, "When these patients are experiencing symptoms, the microRNA-214 is present in high levels. When they feel good, and are responding to the therapy, the levels are very low. This makes microRNA-214 useful as a biomarker to predict which patients will respond best to treatment."

Dr. Iliopoulos's group is now conducting toxicity testing on the new compound, and expects to submit an Investigational New Drug Application to the U.S. Food and Drug Administration next year, aiming to bring the drug to patients in Phase I clinical trials by 2017.

UCLA Microbiome Center Investigates How Bacteria Affect Human Health



Emeran A. Mayer, MD, PhD

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Jonathan Braun, MD, PhD

*Co-Director, UCLA Microbiome Center
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Amid substantial excitement among researchers over what many view as a new frontier for biomedical science, a campus-wide initiative brings together UCLA investigators from wide-ranging areas of expertise to learn how bacteria and other microbes affect human health, and to use that information to explore new therapeutic strategies.

Approximately 100 trillion microbes reside within the human body, and thanks to the power of modern research and computational tools it has become apparent in recent years that the collection of microorganisms that populate the intestine, skin, lungs, urinary tract, and many other body sites exerts considerable influence on our health. "This is like a hidden organ, larger than any other in the body in terms of cell numbers," says Dr. Emeran A. Mayer, a professor in the Division of Digestive Diseases who co-directs the center along with Dr. Jonathan Braun, chair of the Department of Pathology and Laboratory Medicine. "We're seeing the ability to transplant entire phenotypes from one mouse to another, suggesting that something very profound is going on with what these microbes produce that can affect the host in complex ways – even changing entire behavior patterns. We're still just scratching at

the surface, but the field is moving extremely fast."

Evidence now suggests that heart disease and cancer, diabetes and metabolic disease, obesity and nutrition issues, inflammatory bowel disease (IBD), autoimmune disorders, allergies, and neurologic disorders all may be associated in some way with microbes gone awry. At UCLA, developments in the nascent field of study are already suggesting a role for the microbiota well beyond what anyone might have imagined a decade ago. UCLA is one of a small number of major medical centers that have begun performing fecal microbial transplants – introducing processed stool from healthy donors into the gastrointestinal tracts of patients with recurrent *Clostridium difficile*, an infection often acquired in hospitals that kills an estimated 14,000 people in the U.S. each year.

A randomized controlled trial published in the *New England Journal of Medicine* found the therapy to be substantially more effective than vancomycin, the standard treatment.

With that prominent exception, much of the progress in the emerging field is at the research level – but it is exciting nonetheless. For example, a UCLA group headed by Dr. Jake Lusis, professor of microbiology, immunology and molecular genetics and vice chair of human genetics, found that a molecule, trimethylamine N-oxide, is derived entirely through the interaction of gut microbiota and dietary products that include choline and carnitine – major components of egg yolk and red meat, respectively – and is a risk factor for heart disease on par with high cholesterol, hypertension, and tobacco use. Dr. Braun's lab has made key discoveries showing the link between genes and the microbiome when it comes to IBD; his group is now conducting studies to determine which molecules are most important in driving IBD and targeting those products for treatment.

Also especially intriguing is work by UCLA researchers in both human and animal studies showing communication between gut microbes and the brain, not only during growth and development, but also in adulthood. In 2013, Dr. Mayer, working with Dr. Kirsten Tillisch, associate professor in the Division of Digestive Diseases, published one of the first studies indicating that changing the bacteria environment of the gut can affect human brain function. They found that healthy women who regularly consumed probiotics in the form of yogurt showed positive altered brain function both while in a resting state and in response to an emotion-recognition task.

Also in 2013, Dr. Elaine Hsiao, then at Caltech and now an assistant professor in UCLA's Department of Integrative Biology and Physiology and the Division of Digestive Diseases, published a study with her Caltech colleagues and mentors, the late Dr. Paul Patterson and Dr. Sarkis Mazmanian, in which they found that autism-like behavior was produced in the offspring of mice treated with a viral mimic during pregnancy. These offspring, which were found to have altered gut bacteria, showed reduced autism-like behaviors when treated with a health-promoting bacterium. Inspired by this work, Dr. Hsiao has continued to examine molecular mechanisms underlying how the gut microbiota interacts with the nervous system. In a study published this year, her laboratory discovered that particular bacteria from human-gut microbiota stimulate host biosynthesis of the hormone and neurotransmitter serotonin.

“Both the human studies and the mouse studies showing that when you change microbes you can alter behavior from other phenotypes in the brain are extremely interesting,” says Dr. Hsiao, whose UCLA lab is continuing to investigate molecular mechanisms linking gut bacteria to brain behavior. “The detailed signaling mechanisms that are filling this blank space between the gut and the brain are largely unknown, and we think that uncovering these mechanisms will be important not only for learning about basic biology, but also for finding therapeutic targets.”

Leaders of the UCLA Microbiome Center believe that by bringing together researchers from all over campus who are interested in the microbiome, encouraging collaborations, and building an

infrastructure to support the work, UCLA can become a leader in the burgeoning field. Among the goals of the center will be to foster interdisciplinary interactions through activities such as seminars, lectures and other exchanges. The center has also moved toward establishing core services in areas such as bioinformatics and 16S rRNA sequencing.

While the center is a campus-wide effort that includes many disciplines, much of the work is in digestive disease-related areas, from IBD and functional bowel disorders to obesity. “One of the really appealing things about studying intestinal bacteria is that we feel they are going to be modifiable,” says Dr. Jonathan Jacobs, an active member of the new center who recently joined the Division of Digestive Diseases faculty after collaborating with Dr. Braun on studies unraveling the impact of the intestinal microbiota on IBD susceptibility – work Dr. Jacobs is continuing through a translational lab he has established within the division (see page 4). “We believe bacteria represent something that is more easily manipulated than people's genes, and potentially would have fewer side effects than strategies focusing on suppressing the immune system or modifying immune activity.”

Dr. Mayer suspects that as methods for studying microbiota continue to advance, revolutionary discoveries are inevitable. “There was a lot of excitement that the Human Genome Project was going to change medicine fundamentally, and it turned out to be just the beginning of a long process,” he says. “But learning about these microbes goes way beyond the human genome. This has the potential to completely transform our understanding of human disease.”

Dr. Jonathan Jacobs Builds Translational Lab to Explore Gut Microbiome and IBD Risk



*Jonathan P. Jacobs, MD, PhD
Clinical Instructor
of Medicine*

A growing body of scientific evidence indicates that the bacteria residing in the gut play a critical role in human health – and that individual differences in our intestinal microbiomes may explain susceptibility to certain diseases. Jonathan P. Jacobs, MD, PhD, a new member of the UCLA Division of Digestive Diseases faculty, is homing in on the factors that lead to these differences, and specifically how certain intestinal bacteria profiles promote inflammatory bowel disease (IBD).

Dr. Jacobs believes that genetic differences, when combined with environmental factors such as diet, may allow disease-promoting communities of microbes to develop in some individuals. “The genetics of the immune system is likely of particular importance because of the ability of immune cells to target some bacteria or promote others,” Dr. Jacobs explains. “My goal is to further develop the science behind this, which could potentially lead to better treatments.”

Toward that end, Dr. Jacobs is establishing a translational laboratory investigating the interaction of the mucosal immune system and the intestinal microbiome in IBD. The research is an extension of work he pursued over the last five years in the laboratory of Dr. Jonathan Braun as a UCLA GI fellow in STAR (Specialty Training and Advanced Research), a program of the David Geffen School of Medicine at UCLA that trains physician-scientists. During his time as a fellow,

Dr. Jacobs studied the gut microbiome of IBD patients and mice genetically engineered to lack or overexpress certain genes associated with IBD that affect the immune system. “The idea is that these genes influence the microbiome, and that the changes they cause in the microbiome promote IBD,” Dr. Jacobs explains.

In animal models of IBD, Dr. Jacobs notes, researchers have found that it’s possible to make a healthy mouse susceptible to IBD by transferring intestinal microbiota from a genetically susceptible mouse. In humans, research has established that IBD patients have a microbiome that is distinct from that of healthy controls. Dr. Jacobs has been working on identifying pre-disease microbial states in IBD-susceptible individuals. A translational study completed by his group found that healthy people in families with IBD could be classified by their intestinal microbial and metabolomics profiles into “enterotypes” and “metabotypes.” Dr. Jacobs and colleagues found that some healthy individuals in these families share microbial and metabolomics features with those who have the disease, potentially placing them at higher risk for the future development of IBD. The hope is that this research will help to better define a microbial IBD susceptibility state.

Such findings have the potential to identify attractive treatment targets for IBD patients. “Intestinal bacteria are more easily manipulated than people’s genes,” Dr. Jacobs explains. “Rather than targeting the inflammation that occurs once these patients have IBD, we could treat patients or even prevent IBD by targeting the bacteria that drive disease.”

Dr. Arpana Gupta Studies How Environmental Factors Shape Brain-Gut Interactions in Obesity



Arpana Gupta, PhD
Adjunct Assistant Professor
of Medicine
Gail and Gerald
Oppenheimer Family
Center for Neurobiology
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Department of Medicine

As researchers continue to learn about what makes certain individuals more susceptible to obesity, a considerable body of evidence points to the importance of interactions between the brain and gut. Arpana “Annie” Gupta, PhD, who recently joined the UCLA Division of Digestive Diseases faculty after three years as a postdoctoral fellow in the Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress (CNS), is investigating the role of environmental factors in shaping these brain-gut interactions in the context of obesity and other GI disorders.

In particular, Dr. Gupta is interested in how brain-gut communication is affected by early adversity – including physical, emotional, sexual, and general trauma – and by psychological stress in adulthood, along with protective factors such as resilience and exercise. She studies how these vulnerability and protective characteristics affect the bidirectional interactions between the brain and immune factors as well as gut microbiota-related metabolites, contributing to the underlying pathophysiology of obesity.

Earlier this year, Dr. Gupta published a study underscoring the strong connection between brain physiology and obesity. She and her colleagues showed that, based solely on white-matter brain connectivities, they could separate brains of overweight individuals from those of lean individuals with 97 percent accuracy. Now they are following up with research looking at which regions are most important in differentiating the obese/overweight and lean brains. They are finding that many of the key differences reside within the brain’s dopamine-heavy reward regions that tend to be

active in people with food addiction. “Cognitive abilities can be compromised in the brains of people with obesity, which may contribute to the low success rates for most obesity treatments,” Dr. Gupta says. “These early findings have the potential to revolutionize our understanding of the complex changes that occur before people become obese. If we can learn more about what has gone wrong with these reward regions, we might be able to use brain measurements in future drug development aimed at targeting abnormal ingestive behavior and specifically for food addiction behaviors in obese and overweight individuals. These therapies could help augment already existing interventions.”

Dr. Gupta’s interest in the influence of adverse environmental factors on health outcomes stems from her experience growing up in Zambia, where she saw violence, racial and economic injustice, and substantial health disparity. Dr. Gupta came to the United States in 1994 for her undergraduate education, ultimately earning a PhD in psychology from the University of Tennessee, Knoxville, before completing a clinical internship at Massachusetts General Hospital/Harvard Medical Center. After arriving at UCLA for her postdoctoral training in 2012, she was drawn to CNS, joining the center’s neuroimaging and psychophysiological cores.

Ultimately, Dr. Gupta hopes to develop a comprehensive model that would provide a powerful and sensitive biomarker for use in identifying individuals whose disadvantaged backgrounds put them at increased risk for obesity and other stress- and pain-based disorders. “We are using cutting-edge analytic techniques and taking holistic and innovative approaches that look not only at the brain and the influence of the external environment, but also at peripheral markers in the gut, such as inflammation, genetics, microbiota and metabolites, to better understand obesity.” Dr. Gupta says, “This is what makes the work very translational, which is both fascinating and exciting for the field of obesity.”

Dr. Folasade May Seeks to Increase Colorectal Cancer Screenings to Eliminate Disparities



*Folasade May, MD,
PhD, MPhil
Assistant Professor
of Medicine*

From a young age, Folasade May, MD, PhD, MPhil, spent considerable time in Central America and various parts of Africa, where she was exposed to health disparities that set her on her career course. "I was struck by the fact that where you happen to be born determines your life expectancy and your health," Dr. May says, "so I decided to go into public health and medicine to find a way to help people who are less fortunate."

After studying epidemiology in the U.K. and participating in global-health programs in Costa Rica, Nigeria, South Africa, Uganda, Malawi and Tanzania, Dr. May began studying medicine in the United States – and realized that profound disparities also exist at home. "In sections of Los Angeles, the health situation is almost as bad as it is in parts of East Africa," she says. "But we are in a position where we can change that."

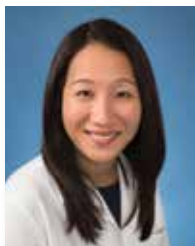
Dr. May, who joined the UCLA Division of Digestive Diseases faculty this year after completing her gastroenterology fellowship in the division (during which she also earned a PhD from the UCLA Fielding School of Public Health), is focused on ethnic, racial, and socioeconomic disparities in colorectal cancer (CRC) screening and outcomes. The U.S. Centers for Disease Control and Prevention estimates that 40 percent of adults ages 50-75 haven't received recommended CRC screening, with certain groups less likely to be screened than others. African Americans, for example, have the highest CRC rates of any ethnic group in the country, but significantly lower screening rates than whites.

The reasons people don't get screened, and the factors contributing to the screening disparities, are complex. Dr. May notes that patient-related factors range from a lack of knowledge about screening's importance to poor access to care, financial burdens, and indirect costs such as the need to take time off of work or find care for dependents. But provider factors also play a role. Dr. May has found evidence that African Americans are more likely than other groups to report that they haven't been screened because their physician never brought it up. Finally, system-related factors can be important – many minority patients in Los Angeles get their care at places where colonoscopy is not offered, for example.

Among her research projects, Dr. May is continuing work she began at the West Los Angeles VA Medical Center during her training. Her group was the first to find that even within the VA system – where everyone has the same access to care – African Americans received CRC screening at a lower rates than non-African Americans. The study attracted the attention of the VA's Under Secretary of Health, who challenged Dr. May's group to develop interventions to address the problem. "Our goal is to find strategies that improve the screening rate overall, but that particularly help the groups that need it most," says Dr. May, who is also teaching medical students as a faculty member of the UCLA Center for World Health.

"I enjoy taking care of patients, but what really makes me happy is to work at a systems level to improve the health of populations that are often forgotten," she adds. "By doing that, I can contribute to the world in a unique and important way."

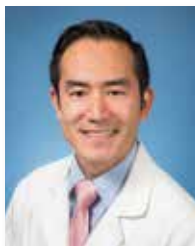
UCLA Division of Digestive Diseases Welcomes New Faculty Members



Gina Choi, MD | Assistant Clinical Professor of Medicine and Surgery

Dr. Choi specializes in general and transplant hepatology. She focuses on treating patients with complications of cirrhosis and manages their evaluation and care before and after liver transplant. She is well versed in the newest approaches to non-interferon based therapies for hepatitis C. Her research interests include hepatitis B and hepatocellular carcinoma. She is part of a multidisciplinary team employing the latest treatments for hepatocellular carcinoma.

Dr. Choi graduated from Stanford University and subsequently spent one year in Korea as a Fulbright Scholar. She is fluent in Korean. She earned her medical degree at the University of California, San Francisco (UCSF) and completed her internal medicine residency at New York University (NYU). This was followed by a gastroenterology fellowship at UCLA. Dr. Choi then pursued an additional year of advanced training in transplant hepatology at the University of Pennsylvania.

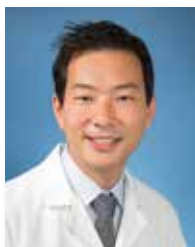


Marc Kaneshiro, MD | Clinical Instructor of Medicine

Dr. Kaneshiro received both his undergraduate Bachelor of Science degree in biology and medical degree at the University of Hawaii. He completed his Internal Medicine residency at the combined Cedars-Sinai Medical Center/West Los Angeles Veterans Affairs training program and also served an additional year as Chief Medical Resident. He completed his gastroenterology training at the UCLA Digestive Diseases Fellowship Program.

Dr. Kaneshiro has clinical interests in esophageal disorders, gastroesophageal reflux disease (GERD), gastrointestinal motility disorders, inflammatory bowel disease, celiac disease, gastrointestinal bleeding and colon cancer screening.

He is a member of the American Gastroenterological Association, American College of Gastroenterology, Society for Surgery of the Alimentary Tract and Crohn's and Colitis Foundation of America.



Stephen Kim, MD | Clinical Instructor of Medicine

Dr. Kim's clinical focus involves the application of advanced endoscopic procedures in the diagnosis, treatment and palliation of various gastrointestinal disorders. He is proficient in diagnostic and therapeutic endoscopic ultrasound (EUS), ERCP, endoluminal stenting, deep enteroscopy, ablation of dysplastic Barrett's esophagus, and endoscopic mucosal resection (EMR) of large colon polyps. His research and clinical interests lie in the endoscopic management of pancreatic diseases and gastric dysplasia.

Dr. Kim received his undergraduate education from Harvard University and earned his medical degree at Tufts University School of Medicine. He completed his residency in Internal Medicine at the University of Pennsylvania after which he spent an extra year as Chief Medical Resident. He then moved to UCLA for his Gastroenterology fellowship and faculty career development in advanced endoscopy. He is board-certified in Gastroenterology and Internal Medicine and is an active member of the American Society of Gastrointestinal Endoscopy, American College of Gastroenterology and American Gastroenterological Association. Dr. Kim is also fluent in Korean.

As Indications Expand, UCLA Interventional Endoscopy Service Grows Rapidly

The field of interventional endoscopy has grown dramatically in recent years, with endoscopy becoming the procedure of choice for diagnosing and treating a wide variety of gastrointestinal conditions that were once the domain of surgery. That expansion is reflected in the growth of the interventional endoscopy service within the UCLA Division of Digestive Diseases.

In 2011, the UCLA interventional endoscopy team consisted of a single physician doing advanced endoscopy procedures. Four years later, the team includes four faculty members performing services at three UCLA hospitals, along with three advanced fellows, two research analysts, and contributions from numerous general GI fellows, residents, and medical students. A large and robust training program brings in advanced international fellows for research and clinical work. During the four-year period of expansion, the volume of interventional endoscopy procedures at UCLA has increased from approximately 1,100 procedures a year to nearly 3,000.

"We have experienced enormous growth," says Dr. V. Raman Muthusamy, who has built the team since being recruited to serve as director of interventional and general endoscopy in 2011. Dr. Muthusamy adds that the expansion shows no signs of slowing – in the next year, he expects the number of annual services to reach 4,000 with the recent availability of more procedure rooms and recruitment of new faculty.

Endoscopic techniques offer advantages over surgery that include fewer complications, faster recovery times, the

ability to combine and tailor diagnostic and therapeutic procedures to patients' needs, and the fact that the interventions can be reversible. Dr. Muthusamy notes that the UCLA team covers a wide range of services involving the diagnosis and treatment of gastric, esophageal, colonic, and pancreaticobiliary disorders. And, while the most commonly performed procedures include endoscopic ultrasound (EUS), endoscopic retrograde cholangiopancreatography (ERCP), and endoscopic resection techniques for removing cancerous and precancerous lesions, the UCLA interventional endoscopy team is moving into a number of new areas.

Dr. Rabindra R. Watson is studying a variety of endoscopic treatments for obesity and its related diseases such as diabetes. As the obesity epidemic continues to grow, there is an increasing need for widely available, safe, reversible and minimally-invasive treatments. These techniques are currently being used for patients who gain weight after bariatric surgery. More than 2 million people in the United States have undergone bariatric weight-loss surgery, most commonly in the form of gastric bypass procedures, but many patients begin to regain weight after a period of time, in part because their surgically created gastric pouch starts to stretch, allowing for increased consumption. Dr. Watson's approach is to reduce the volume of the gastric pouch through re-sewing the pouch to counter the stretching that can occur after the surgery. In addition, this fall, Dr. Watson will use exciting new endoscopic devices and techniques to provide an alternative to surgery for stomach-volume reduction.

Beginning this winter, Dr. Alireza Sedarat, another member of the team, will be offering peroral endoscopic myotomy (POEM) as an alternative to surgery for esophageal motility disorders, including achalasia. Dr. Sedarat and other team members will also soon begin performing endoscopic submucosal dissection (ESD), which allows for the resection of larger lesions than current endoscopic mucosal resection (EMR) techniques. The larger specimen obtained can provide a better understanding of the margins and architecture of the lesion than if the specimen were taken in multiple small pieces.

Dr. Stephen Kim, the newest member of the team, is focused on translational research to advance the diagnosis and treatment of pancreatic cysts, which are being increasingly identified as more patients undergo radiologic testing. Dr. Kim is developing a cyst fluid bank and working with surgeons and pathologists to identify molecular markers that will better classify the cysts to help determine which ones should be operated on as opposed to simply being monitored. Dr. Kim is also developing an endoscopic detection and treatment program for patients with precancerous gastric lesions, particularly targeting Asian communities in Southern California.

One of Dr. Muthusamy's special interests is in endoscopic eradication techniques for treating Barrett's esophagus patients to prevent the development of cancer, or for treating early esophageal cancers to avoid the need for surgery. He helped pioneer a technique using radiofrequency ablation to burn off the dysplasia in Barrett's esophagus patients. Dr. Muthusamy has also been involved in advancing EUS-guided tissue acquisition – using the imaging technique to see a large portion of the abdomen and parts of the chest, and in identifying lesions arising from, or adjacent to, the GI tract. Using small needles advanced through the echoendoscope used to perform EUS, tissue can be extracted from these lesions to confirm the presence or absence of malignancy.

The group is also actively involved in research to further advance the field of interventional endoscopy. UCLA is

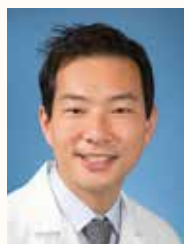
one of only four institutions in the U.S. participating in a multicenter trial of a new sponge that is ingested and used to determine the presence of Barrett's esophagus. If shown to be effective, the technique could become a less-invasive alternative to endoscopy to screen for this condition. The UCLA team is also part of a multicenter trial comparing photodynamic therapy and chemotherapy with chemotherapy alone in the treatment of bile duct cancers for patients who aren't candidates for surgery or transplantation. Most recently, the UCLA interventional endoscopy group has established an animal laboratory to perform early-stage, pre-clinical research on new endoscopic techniques. In total, the interventional group has produced nearly two-dozen peer-reviewed publications in the last two years.

Dr. Muthusamy notes that the field continues to advance rapidly, driven by improvements in detection techniques as well as in therapeutic approaches. "We have microscopes that can make real-time tissue diagnoses of lesions so that we don't have to take a biopsy – we can immediately make the diagnosis and develop the treatment plan then and there, sparing the patients from having to go through additional procedures and eliminating the anxiety that comes with waiting," he says.

"We are now doing things endoscopically in ways that are almost like the surgeons have classically done, from POEM and ESD procedures to resecting small cancers and moving toward endoscopy as a primary weight-loss treatment," he adds. "As we improve our techniques, we will be able to resect more and more lesions that would have previously been referred to surgery, including larger lesions. In the past, our major concern was the development of a perforation, and certainly it's still our goal to avoid that, but we have increasingly better tools to manage perforations by closing them endoscopically as they occur, which gives us greater confidence to tackle cases we would have steered clear of in the past. Considering all of these developments, it's a very exciting time for our field."



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The 4th Annual UCLA-Mellinkoff Gastroenterology and Hepatology Symposium was designed to offer healthcare professionals practical approaches to treatment challenges that can be readily integrated into their daily practice. Faculty will present, through formal lectures, Q & A and illustrative cases, new and emerging diagnostic techniques and therapeutics in caring for those with gastrointestinal diseases.

Registration and Course Information

For course brochure and registration, go to www.cme.ucla.edu/courses, click on 4th Annual UCLA-Mellinkoff Gastroenterology and Hepatology Symposium.

Overnight Accommodations

A limited block of rooms, at a special rate of \$279 (deluxe) or \$319 (studio suite) + tax, has been reserved at the Beverly Hilton. This special room block expires February 18, 2016. Please call (310) 274-7777 and ask for the "UCLA Division of Digestive Diseases" block. Or make a reservation online at: <https://resweb.passkey.com/go/uclamellinkoff2016>

For more information about the hotel, visit www.beverlyhilton.com



Agenda

Friday, March 11

7:00 am Registration and Breakfast

7:50 am Welcoming Remarks
Gary Gitnick, MD, UCLA

7:55 am Course Overview
*V. Raman Muthusamy, MD, UCLA and
Bennett E. Roth, MD, UCLA*

New and Advanced Endoscopic Techniques
Moderator: Jeffrey R. Lewis, MD, UCLA

8:00 am Endoscopic Therapy of Foregut Disorders
Including POEM, Zenker's, Strictures and GERD
Alireza Sedarat, MD, UCLA

8:30 am New Options for Endoscopic Management
of GI Bleeding Including Doppler, Spray,
Bear Claws and Clips
Dennis M. Jensen, MD, UCLA

9:00 am Hemorrhoidal Banding – Simple Office
Procedure
Gordon V Ohning, MD, PhD, UCLA

9:15 am Videos, Cases and Q & A
Panel

10:00 am Break

Foregut Issues

Moderator: Rimma Shaposhnikov, MD, UCLA

10:20 am Dysphagia and Surgery – Causes and Cures
Jeffrey L. Conklin, MD, UCLA

10:40 am Screening and Surveillance of Pre-malignant
Disorders of the Upper GI Tract
Sachin Wani, MD, University of Colorado

11:00 am Eosinophilic Esophagitis – What's New?
What's Right?
Kevin Ghassemi, MD, UCLA

11:20 am Safety of PPIs – Fact and Fiction
Thomas Kovacs, MD, UCLA

11:40 am Cases and Q & A
Panel

12:15 pm Lunch

Endoscopy Session

Moderator: Bennett E. Roth, MD, UCLA

1:15 pm CRE and Endoscopy in 2016: Problem
Resolved?
V. Raman Muthusamy, MD, UCLA

1:35 pm *Panel includes Stephen Kim, MD, UCLA
V. Raman Muthusamy, MD, UCLA, Alireza
Sedarat, MD, UCLA, Sachin Wani, MD,
University of Colorado and Rabindra R.
Watson, MD*

1:45 pm Endoscopy Video Forum: Challenging
Endoscopic Cases
Panel

3:00 pm Break

Liver Diseases

Moderator: Mohamed El Kabany, MD, UCLA

3:20 pm Hepatitis C – Vanishing Disease?
Sammy Saab, MD, MPH, UCLA

3:40 pm Treating Hepatitis B
Steven-Huy Han, MD, UCLA

4:00 pm Liver Transplantation in 2016
Ronald W. Busuttil, MD, PhD, UCLA

4:20 pm Endoscopic Evaluation & Management of PSC
Francisco Durazo, MD, UCLA

4:40 pm Cases and Q & A
Panel

5:30 pm Adjourn

Saturday, March 12

7:00 am Breakfast

7:55 am Welcoming Remarks
Eric Esrailian, MD, MPH, UCLA

Pancreaticobiliary Session

Moderator: V. Raman Muthusamy, MD, UCLA

8:00 am Biliary Strictures
Sachin Wani, MD, University of Colorado

8:25 am Common Mistakes in the Management of
Acute Pancreatitis and Inflammatory Fluid
Collections
Stephen Kim, MD, UCLA

8:50 am The Endoscopist's Role in the Diagnosis and
Treatment of Pancreatic Cancer
*Jeffrey H. Lee, MD, MPH, The University of
Texas MD Anderson Cancer Center*

9:15 am Pancreatic Cancer in 2016: A Surgeon's
Perspective
Timothy R. Donahue, MD, UCLA

9:40 am Cases and Q & A
Panel

10:10 am Break

Inflammatory Bowel Diseases — Session 1

Moderator: Christina Ha, MD, UCLA

10:30 am Case-based Discussion on Complicated
Crohn's Disease

- Alternative Therapies in IBD - Role in the
IBD Armamentarium

- Clinical vs Monitored Biologic Use in IBD
- Strictures in IBD – Options for Evaluation
and Management

- Role of Surgery in IBD – Are We Waiting
Too Long?

- Post-operative Endoscopic Surveillance

*Panel Includes Daniel Hommes, MD, PhD,
UCLA, Gary Lichtenstein, MD, University of
Pennsylvania, Thomas Ullman, MD, Mount
Sinai Hospital, New York*

12:15 pm Lunch

Inflammatory Bowel Diseases — Session 2

Moderator: Christina Ha, MD, UCLA

1:15 pm Case-based Discussion on Complicated
Ulcerative Colitis

- Opportunistic infections in IBD

- Management of Anti-TNF Non-responders
with Severe Ulcerative Colitis

- Dysplasia Surveillance in Ulcerative Colitis

*Panel Includes Daniel Hommes, MD, PhD,
UCLA, Gary Lichtenstein, MD, University of
Pennsylvania, Thomas Ullman, MD, Mount
Sinai Hospital, New York*

3:15 pm Adjourn – Didactic

Sunday, March 13

7:00 am Registration and Breakfast

7:55 am Welcoming Remarks
Bennett E. Roth, MD, UCLA

Functional Bowel Disease

Moderator: Kirsten Tillisch, MD, UCLA

8:00 am Evaluation & Management of Chronic Diarrhea
Lynn Shapiro Connolly, MD, MSCR, UCLA

8:20 am IBS – New Therapies – Is There Hope
Down the Road?
Lin Chang, MD, UCLA

8:40 am Cyclic Vomiting Syndrome – The Right
Diagnosis and the Right Approach to
Treatment
Emeran A. Mayer, MD, PhD, UCLA

9:00 am State of the Art Lecture: Understanding
and Management of Patients with
Chronic Abdominal Pain and Narcotic
Bowel Syndrome
*Douglas A. Drossman, MD, University
of North Carolina School of Medicine*

9:45 am Cases and Q & A
Panel

10:15 am Break

Metabolic Disorders 2016

Moderator: Simon W. Beaven, MD, PhD, UCLA

10:30 am NAFLD
Simon W. Beaven, MD, PhD, UCLA

10:50 am Choosing the Right Bariatric Procedure
for Your Patient
Erik W. Dutton, MD, UCLA

11:10 am Role of Endoscopy in Obesity and
Metabolic Syndrome
Rabindra R. Watson, MD, UCLA

11:30 am Cases and Q & A
Panel

12:00 pm Adjourn

*Saturday, March 12, 3:30 – 5:30 pm Complimentary Hands-on Session — Physicians Only

The hands-on session will provide a valuable learning opportunity, though no CME credit will be issued for this portion of the program. The hands-on session is complimentary. Please indicate on your registration form if you will be

participating. **Faculty Include:** *Kevin Ghassemi, MD, Stephen Kim, MD, V. Raman Muthusamy, MD, Jeffrey H. Lee, MD, MPH, Bennett E. Roth, MD, Alireza Sedarat, MD, Sachin Wani, MD, Rabindra R. Watson, MD.*



2016 CURE Annual Research Meeting and Poster Session

March 10, 2016

Northwest Campus Auditorium, Covell Commons

UCLA Sunset Village, UCLA Campus

Non-CME Program

Invited John H. Walsh Memorial Lecturer



Gianrico Farugia, MD

Vice President Mayo Clinic
CEO Mayo Clinic in Florida
Professor of Medicine and Physiology
and Biomedical Engineering, Mayo Clinic

Course Director



Enrique Rozengurt, DVM, PhD

Distinguished Professor of Medicine
Hirshberg Memorial Chair in Pancreatic
Cancer Research
Director, CURE: Digestive Diseases Research Center
David Geffen School of Medicine at UCLA



Agenda

- 7:30 am Breakfast and Registration
- 8:10 am Welcoming Remarks and Conference Overview**
- 8:15 am Brain-gut Interactions and Obesity
Emeran A. Mayer, MD, PhD, UCLA
- 8:45 am Diet, Obesity and GI Hormones
Joseph Pisegna, MD, UCLA
- 9:15 am Mechanisms Linking Metabolism to Inflammation
Peter Tontonoz, MD, PhD, UCLA
- 9:45 am Break**
- 10:00 am High-fat Diet and Pancreatic Cancer Promotion
Guido Eibl, MD, UCLA
- 10:30 am Gut Microbiome
Jonathan Braun, MD, PhD, UCLA
- 11:00 am Break**
- 11:10 am State of CURE
Enrique Rozengurt, DVM, PhD, UCLA
- 11:20 am **John H. Walsh Memorial Lecturer**
Macrophages – The Missing Link in Diabetic Gastroparesis
Gianrico Farugia, MD, Mayo Clinic
- 12:30 pm Lunch**
- 2:00 pm Poster Session
Even Numbered Posters
- 3:15 pm Poster Session
Odd Numbered Posters
- 4:30 pm Adjourn**

UCLA Course Faculty David Geffen School of Medicine at UCLA



Jonathan Braun, MD, PhD

Co-Director, UCLA Microbiome Center Chair, Pathology and Laboratory Medicine Professor, Pathology and Laboratory Medicine and Molecular and Medical Pharmacology



Guido Eibl, MD

Professor, Department of Surgery



Joseph Pisegna, MD

Chief, Division of Gastroenterology, Hepatology and Parenteral Nutrition VA Greater Los Angeles Healthcare System Professor of Medicine, Department of Medicine Molecular, Cellular and Integrative Physiology Program



Emeran A. Mayer, MD, PhD

Co-Director, UCLA Microbiome Center Director, UCLA Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress Co-Director, CURE: Digestive Diseases Research Center Professor of Medicine, Physiology and Psychiatry



Peter Tontonoz, MD, PhD

Professor of Pathology and Laboratory Medicine Investigator, Howard Hughes Medical Institute Dean's Scholar, UCLA

CURE Annual Research Meeting Information

Meeting Location

UCLA Sunset Village on the Campus of UCLA Northwest Campus Auditorium in Covell Commons 330 DeNeve Drive, Los Angeles, CA 90024

Overnight Accommodations

CURE attendees have access to the room block for the Mellinkoff Symposium. See page 10 for details.

Conference Parking

Complimentary parking will be provided in Lot PSV. There will be an attendant at the gate to provide parking permits.

Registration Fee

\$100 – Non-UCLA Physicians

Complimentary – UCLA Physicians, Fellows and Residents

Fee includes registration, breakfast, breaks and lunch. This is a non-CME program.

Registration Form and Symposium Inquiries

Contact Jacqueline Ismen at jismen@mednet.ucla.edu or call **(310) 312-9284**.

Payment

We accept checks only for registration. Please make payable to **Regents of the University of California**

Refunds

Cancellations must be received in writing by **Friday, February 26, 2016** and will be subject to a \$50 processing fee. No refunds will be granted after that date. If, for any reason, the course must be cancelled, discontinued, or rescheduled by CURE, a full refund will be provided.



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UCLA Gastroenterology and GI Surgery ranked No. 4 in the nation by *U.S. News & World Report* in its annual survey.



**UCLA DIVISION OF
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Go to gastro.ucla.edu to learn more about the UCLA Division of Digestive Diseases.