UCLA Health System

PATRONS CIRCLE

Division of Digestive Diseases

David Geffen School of Medicine at UCLA

Fall 2012 Newsletter

A Pioneer in Our Midst

It would be hard to find a bigger supporter of UCLA than Mary Ellen Davis. For Mrs. Davis, a pioneering journalist who served as the first female editor of the campus newspaper *The Daily Bruin*, UCLA opened doors to new worlds – none of which would have likely been available to her if an older woman hadn't seen her potential and pushed her to apply. A steadfast and generous supporter of the Division of Digestive Diseases since 2001, Mrs. Davis has never forgotten what that opportunity meant to her and has devoted much of her adult life to finding ways to open doors for similarly talented but financially disadvantaged young people.

Mary Ellen "M.E." Davis

Born Mary Ellen O'Connor and known as M.E., Mrs. Davis spent her early childhood in Indianapolis. Her father worked as a border patrolman in Mexico and was rarely home; her mother died when M.E. was eight. In 1936, she moved to Glendale, CA, to live with her Aunt Rose. During her high-school years, M.E. worked as a nanny, caring for the daughter of an early Disney employee – Harry Reeves, one of the writers of *Cinderella*.

Although she was extremely bright, Mrs. Davis had no plans to go to college – a destination that was still relatively uncommon for girls in the years immediately following World War II. But a determined older woman named Jessie Faite had other ideas. Mrs. Faite had gotten to know M.E., when the girl worked at a car dealership owned by Mrs. Faite's sons. Mrs. Faite took a liking to M.E. – and saw her potential.

"At one point, she asked me what I was going to do with my life, and I said I didn't

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Obesity and the Brain

For as long as she's known she wanted to go into medicine, Lynn Shapiro Connolly, M.D., has been interested in tackling the issue of obesity.

In the United States and most of the rest of the developed world, few issues pose as great of a public health concern. Two-thirds of Americans are either overweight or obese. "Just about every disease process we study has a link to obesity," Dr. Connolly says. "As physicians and scientists, we need to focus on determining factors that cause it, how we can better treat it, and how we can best prevent it."

Dr. Connolly, who is completing a clinical research fellowship in UCLA's Division of Digestive Diseases and joins the Division's faculty in August, has spent the last four years splitting her time between seeing patients and taking part in studies aiming to unravel the complex brain signals that play a role in obesity.

In a recently completed pilot study, her group found differences in the resting state of the brain (brain networks that are activated when people are awake but not engaged in a mental task) between healthy lean and healthy obese women. In a second study, Dr. Connolly and her colleagues gave both categories of women either a sugar beverage or an artificially sweetened beverage and then showed them images of appetizing food items. They found that although the brain responses to the two drinks were generally the same, the obese women

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From the Division Chief

UCLA Division of
Digestive Diseases
David Geffen School of
Medicine at UCLA
Gary Gitnick, M.D.

I am particularly excited to present this fall issue of the Patrons Circle newsletter to you. It is a reflection not only of the continued excellence of the Division's research, clinical, and training programs, but also of the role the Division's women physician-scientists have played in achieving this level of distinction.

Women and men can often react differently or disproportionately to the illnesses they are experiencing. For example, Dr. Lin Chang's research on irritable bowel syndrome (IBS) – featured in one of our recent newsletters and also briefly covered in this issue – continues to support findings that women are more predisposed to developing IBS than men. Increasing evidence suggests that, with this disorder, sex and gender differences exist in the symptoms, pathophysiology, and response to certain treatments.

As with Dr. Chang, women physician-scientists in the Division bring perspectives, experiences, and insights that enrich medical research and broaden the understanding of digestive disorders, truly affecting healthcare costs, delivery, and value.

With these thoughts in mind, I take great pride in introducing you to more of the Division's talented healthcare leaders, some of whom have been featured at length in previous issues: Dr. Chang, Dr. Jennifer Choi, Dr. Lynn Connolly, Dr. Terri Getzug, Dr. Wendy Ho, Dr. Catia Sternini, Dr. Yvette Taché, and Dr. Kirsten Tillisch. I know you will share our enthusiasm in having this caliber of talent within the Division.

I am also pleased to introduce a new member of our team: widely acclaimed liver specialist Dr. Bruce Runyon. More and more cases of liver disease demand intensified research and new therapies. Named Director of Hepatology at UCLA Medical Center, Santa Monica, Dr. Runyon embraces the opportunity to collaborate with his colleagues, referring physicians, hospitalists, and the liver transplant team to advance this work.

These individuals all continue to break new ground and set higher standards in their respective fields. In this vein, the Division is honored to have the philanthropic partnership of yet another forerunner: Mrs. Mary Ellen "M.E." Davis. Like you, she understands the value of a good education and the positive impact it can have far beyond one's immediate circle. As a UCLA alumna, Class of 1954, she is truly a pioneer in our midst, and I am happy to have the opportunity to share her story with you.

As always, thank you for your support! ■

World-Renowned Liver Specialist Joins UCLA Medical Center, Santa Monica

Hepatologist Bruce Runyon, M.D., recently joined the UCLA Division of Digestive Diseases, bringing his world-renowned expertise in liver disease to this burgeoning medical arena. As the number of patients with liver disease continues to rise in the United States, there is an increased need for research and specialized treatment.

Dr. Runyon, named Director of Hepatology at UCLA Medical Center, Santa Monica, is looking forward to establishing a strong program that works cohesively not only within the Division, but also with referring physicians, hospitalists, and the liver transplant team.

Dr. Runyon was on the faculty of the University of Southern California at its 86-bed Liver Unit for eight years, including four years as Chief. He spent a decade in transplantation and wrote all three iterations of the U.S. national practice guideline on ascites (excess fluid in the space between the tissues lining the abdomen and abdominal organs – the peritoneal cavity – that usually is caused by severe liver damage).

Dr. Runyon has been an author of multiple liver topics for UpToDate since 1996 and the editor for Complications of Cirrhosis since 2006. UpToDate is an online and DVD-based source of information for physicians; it has become the foremost source of current information. In 2010, Dr. Runyon's authored topics were "hit" 537,937 times.

Regarding hepatologists in Southern California, Dr. Runyon said that most emphasize liver transplantation. He brings "a general hepatology focus of a senior nature" to UCLA.

"It is critical to provide liver patients with the highest quality of care," he said. "UCLA has outstanding gastroenterologists and hepatologists with their own expertise. With my experience in liver disease and liver failure, I can help diagnose patients with obscure

Bruce Runyon, M.D.

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Understanding a Poorly Understood Disease

Jennifer Choi, M.D., remembers the first time she delved into the problem of inflammatory bowel disease (IBD), as a student at Chicago Medical School.

Approximately 1.4-million people in the United States are affected by IBD, a group of chronic diseases of the colon and small intestine generally falling into the categories of ulcerative colitis and Crohn's disease. The illnesses tend to be diagnosed in childhood or young adulthood and are characterized by periods of remission followed by flare-ups of symptoms that can include abdominal pain and cramping, diarrhea, rectal bleeding, vomiting, and weight loss. IBD can have a major impact on quality of life and careers; the available drugs have significant side effects and are ineffective in approximately 20 percent of patients.

"I found it fascinating that these diseases were so poorly understood and yet have profound effects on people's lives," Dr. Choi says. "It was an opportunity to make a difference not only through scientific discoveries, but also in the long-term care of patients and their families." Early on in her internship and residency training at Cedars-Sinai Health System, Dr. Choi decided to focus her career on IBD. She also knew she wanted to be at a major academic medical center, because "I want to make a difference in the field and practice of IBD."

Dr. Choi is doing so as Associate Director of the new UCLA Center for Inflammatory Bowel Diseases. Since being recruited to the Division of Digestive Diseases in 2010, she has worked with Daniel Hommes, M.D., Ph.D., to design an entirely new approach to chronic-disease management. The focus is on value-based healthcare as defined by what matters most to patients, with an emphasis on disease control, quality of life, and productivity in work or school. Each patient has a measurable "Value Quotient" (VQ), and by analyzing factors influencing each score, the Center's professional staff members have devised a plan to improve it each year. The Center is also emphasizing education and giving patients an active role in their home monitoring and care.

"It's been very exciting to be able to participate in building a program that I truly believe in from the ground up," Dr. Choi says. "We're questioning the old ways of caring for IBD patients, seeing what works, and exploring new concepts." Through research, Drs. Choi and Hommes hope to demonstrate that their value-based approach can produce better outcomes for patients, while reducing healthcare costs, thus making the Center a national model for the care of IBD and related chronic diseases.

In addition to meeting the need for a new approach to IBD treatment, Dr. Choi is filling an important niche as an IBD physician. "There are very few female gastroenterologists who specialize in IBD in adults," she says. Women with IBD face unique challenges – including potential concerns around sex, pregnancy, and childbirth. "I educate, counsel, and relate to female patients," Dr. Choi says. "I want them to feel they can be open and not ashamed, isolated, or uncomfortable discussing the daily realities of their disease." ■

Jennifer Choi, M.D.

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Lynn Shapiro Connelly, M.D.

I love the process of research. But I also love being able to mentor students and trainees, and I find the clinical aspects of my work, particularly interactions with patients, very fulfilling. I honestly love to go to work every day.

in the study showed greater activity in the brain's pleasure centers in response to the appealing food images, particularly after consuming the sugary drink.

"In the obese subjects, the hedonic brain response appears to be driven more by recalling memories of food experiences in response to visual cues than by lingual (related to the tongue) and gut-derived signaling; sucrose ingestion perpetuates the craving for more sweets in response to a visual cue," Dr. Connolly explains. "Our evidence from both of these studies suggests that in at least a subset of women, obesity may be a result of food addiction."

Dr. Connolly notes that much of the focus in obesity research has been on peripheral factors such as insulin control and hormones, but relatively few studies have looked at the role of brain signals, including the possibility that obesity may be partly an addiction problem. "So far, the drugs for obesity have targeted peripheral mechanisms," Dr. Connolly says. "If we can better understand what the central mechanisms are, we might be able to develop new treatment approaches that prevent the triggers."

As the daughter of a gastroenterologist, Dr. Connolly grew up wanting to be a physician. In medical school at New York University and during her residency training at Stanford University, she found herself attracted to her father's specialty. "I was interested in colon-cancer prevention and treating functional gastrointestinal disorders, inflammatory bowel disease, and other conditions," she says.

After completing her residency in Internal Medicine at Stanford, Dr. Connolly was drawn to UCLA's Gastroenterology fellowship program in part by the opportunity to enroll in the Specialty Training and Advanced Research (STAR) program, which trains physician-scientists. (Dr. Connolly will complete the program with a master's degree in clinical research.) As a gastroenterologist, Dr. Connolly didn't expect to be able to pursue her interest in obesity, but upon arriving at UCLA, she learned from Emeran Mayer, M.D., Director of the UCLA Center for Neurovisceral Sciences and Women's Health, that he was interested in expanding its research to include functional magnetic resonance imaging studies of obesity. Dr. Connolly jumped at the opportunity to participate.

As a member of the faculty, Dr. Connolly will focus on seeing general gastroenterology patients and teaching Gastroenterology fellows, residents, and medical students as a clinician-educator at UCLA Medical Center, Santa Monica. Although she will not be involved in hands-on research, she expects her training to serve her well, both in her mentoring role and in interactions with researchers, making her a better clinician.

"I love the process of research – coming up with a hypothesis, designing a study to prove the hypothesis, analyzing the results, and trying to put it together as a story," Dr. Connolly says. "But I also love being able to mentor students and trainees, and I find the clinical aspects of my work, particularly interactions with patients, very fulfilling. I honestly love to go to work every day." ■

World-renowned Liver Specialist, continued from page 2 ▶

problems and help direct optimal treatment for all forms of liver disease. I will be able to provide another level of consultation that will be especially beneficial for the patients who are not in need of transplantation or are not candidates for transplantation due to advanced age or other issues."

Dr. Runyon's clinical background is equally matched with his research experience. Over his long career, he has collected 20,000 microtubes of ascitic fluid and serum from patients with and without liver disease.

"I've used this bank for the last 31 years," notes Dr. Runyon, who will be bringing the bank with him to UCLA. "I started in 1981 and have used this fluid to do a number of studies, including on biomarkers that help with diagnosis. The next study will be of another biomarker that is elevated in patients with bacterial infection." Biomarkers help with differential diagnoses, allowing patients to be diagnosed more quickly.

"My bank offers the potential for the development and validation of new biomarkers," says Dr. Runyon, who also will play a significant role in the Division's fellowship program, where he plans to help enhance training in all aspects of the liver. ■

A Rare Genetic Disorder that's Treatable

Two physicians were particularly influential in the career path taken by Terri Getzug, M.D., Associate Clinical Professor in the Division of Digestive Diseases and Director of UCLA's Familial Mediterranean Fever (FMF) Program, the only such diagnostic and treatment clinic in the United States.

The first was Dr. Getzug's father, Sheldon J. Getzug, M.D., a gastroenterologist still practicing in Los Angeles. "My initial exposure to medicine was through him, and he has been a fantastic role model," she says.

After completing medical school at the University of Southern California and beginning her residency training at UCLA, Dr. Getzug still hadn't decided to become a gastroenterologist. But during her training, she began working in the FMF clinic under the mentorship of its co-founder, the late Arthur D. Schwabe, M.D., former Chief of the Division. "I was so impressed and moved by what was being done there," Dr. Getzug recalls. "Kids were coming in who had problems with growth retardation and were missing many days of school, and just by listening to the history, the doctors at the clinic would make a diagnosis, treat them, and the patients would get better."

Already drawn to Gastroenterology because of her interest in nutrition and psychology, Dr. Getzug decided to follow in her father's footsteps – and her mentor's. She continued to work at the clinic during her fellowship at UCLA, and 10 years after joining the faculty in 1991, she became its director.

FMF is a rare genetic disorder that is treatable but, when not properly diagnosed, can lead to serious complications, including irreversible damage to the kidneys. Although it can affect people of any ethnicity, it is most common among people of Middle Eastern descent (particularly those of Armenian heritage), as well as in Sephardic and Ashkenazi Jews, Turks, and some Arabs. The disease is characterized by sporadic bouts of severe fever, pain, and inflammation of the lining surfaces of the body. "Patients can't do anything except stay in bed for three days, then it goes away, and they have no symptoms until the next episode," Dr. Getzug explains.

Because of the potential for complications, diagnosis is critical, and once it is made, colchicine, a drug used to treat gout, effectively blocks the attacks from occurring in more than 90 percent of FMF patients. But because FMF is rare in the United States, a diagnosis – which is based on the patient's clinical history – is often elusive. The UCLA Program, however, serves as a national and international resource for definitive diagnoses, with Dr. Getzug and her colleagues regularly responding to calls and emails from physicians, as well as seeing patients.

The FMF Program constitutes only part of Dr. Getzug's practice; she also manages the full spectrum of digestive disorders, with a particular interest in the gastrointestinal complications of scleroderma – a connective-tissue rheumatologic disorder.

Dr. Getzug works as a clinician-educator, as well, teaching in Ronald Reagan UCLA Medical Center and in her clinics. Educating medical students, residents, and fellows about FMF is particularly rewarding. "They're so excited to learn about this condition and the way it's diagnosed by taking a careful history, that they walk away never forgetting it," she says. "The patients have nowhere to turn, and it's very gratifying to know that without a lot of technology, we can figure out what's wrong with them and help them get better." ■

Terri Getzug. M.D.

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Lin Chang, M.D.

Lin Chang, M.D., is Professor of Medicine in the Division of Digestive Diseases and Department of Medicine at the David Geffen School of Medicine at UCLA. She is Co-Director of the UCLA Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress and Director of the Intestinal Disorders Clinical Center. Dr. Chang's clinical expertise is in functional gastrointestinal disorders, which include irritable bowel syndrome (IBS), chronic constipation, and functional dyspepsia (impaired digestion).

Dr. Chang's research is focused on the pathophysiology of IBS related to stress, sex differences, and neuroendocrine alterations, as well as its treatment. A funded National Institutes of Health investigator, she is studying the central and peripheral mechanisms underlying IBS. She is the recipient of the Janssen Award in Gastroenterology for Basic or Clinical Research and the American Gastroenterological Association (AGA) Distinguished Clinician Award. Moreover, Dr. Chang is the incoming president of the American Neurogastroenterology and Motility Society and also is a member of the Rome Foundation Board of Directors.

A fellow of the AGA and the American College of Gastroenterology, Dr. Chang has multiple publications in peer-reviewed journals and textbooks and has given numerous lectures at national and local meetings. ■

M.E. Davis, continued from page 1

know," Mrs. Davis recalls. "She said, 'Why don't you go to school?' I told her I was out of school – I had graduated high school. She said, 'No, I mean real school.' So she nagged me and wouldn't let me say no. I finally applied."

Mrs. Davis not only applied, but also tested with the highest verbal score and second-highest math score among the applicants, and suddenly she was drawing notice. UCLA's dean of students took an interest in her success as a student. When Mrs. Davis told him she didn't see how she could attend UCLA unless she was able to park her car on campus, he gave her a parking pass with unlimited access. With the extra time saved, Mrs. Davis was able to dedicate herself to her studies and become a reporter for – and eventually editor of – *The Daily Bruin*.

After graduating from UCLA with a degree in political science in 1954, Mrs. Davis went to the UCLA School of Law, where she also found herself in a pioneering position as a woman. Each day, one of her professors would greet the students by saying, "Hello, gentlemen." Once, the professor arrived to find that the only student in attendance was Mrs. Davis. "He almost turned around and left," she recalls. "Then he said, 'I don't know what to call you.' I said, 'Call me M.E.' " Ultimately, Mrs. Davis decided against a career in law, opting for journalism, which satisfied her love of writing and being closely attuned to civic activities. The trailblazing that she began at UCLA continued in Tacoma, WA, where she became the first female editor of the *Tacoma Star*.

By the time she graduated from UCLA, Mrs. Davis had acquired a strong independent streak, including a vow never to be married. That conviction changed when she met Frederick Weyerhaeuser Davis, heir to the Weyerhaeuser Timber Company based in the state of Washington. M.E. had gone with Mrs. Faite to a Tacoma lumber mill owned by the company, hoping for a tour. There were no tours that day, but the two women refused to take no for an answer. Finally, Mr. Davis, who was working at the mill as a manager, begrudgingly came out to show them around. His mood instantly changed when he saw M.E. It wasn't long before they were married.

The Edwin W. and Catherine M. Davis Foundation, named after Mr. Davis's parents, was established on December 20, 1956, and Mrs. Davis would play an active role in its decisions. The foundation's goals are to address social problems and increase opportunities available to disadvantaged people, particularly in education, social welfare, mental health, the arts, and the environment. Among Mrs. Davis's favorite organizations to support is Hawaii's National Tropical Botanical Garden, on which she serves as a trustee. Many of the organizations funded by the foundation are closer to home – at Mrs. Davis's beloved alma mater, where she continued to be actively involved long after graduating. Included among the numerous recipients of the foundation's generosity are the Division of Digestive Diseases, UCLA School of Nursing (Mrs. Davis's mother had worked in Indianapolis as a head nurse), and UCLA's Department of Psychiatry and Biobehavioral Sciences, where the foundation endowed the Joseph Campbell Chair in Child Psychiatry.

Wherever possible, Mrs. Davis has sought to direct the foundation's funding toward disadvantaged children. While serving on The UCLA Foundation, she learned from Gary Gitnick, M.D., Chief of the Division of Digestive Diseases, about the Fulfillment Fund. An organization founded by Dr. Gitnick, it provides first-generation, low-income students with the support necessary to graduate from high school and go on to college. The Fulfillment Fund would become one of Mrs. Davis's favorite targets of giving, as would the Division.

More than 60 years later, Mrs. Davis hasn't forgotten how the determined prodding of a woman who believed in her changed her life. Through the Edwin W. and Catherine M. Davis Foundation, Mrs. Davis continues to provide a similar boost to others through financial support – and to assist the University that set her on the path to success. ■

Making a Gastrointestinal Difference in Patients' Lives

For Wendy Ho, M.D., M.P.H., being a clinician-educator in UCLA's Division of Digestive Diseases provides the best of both worlds – the opportunity to develop long-term relationships with her patients, assisting them in getting healthier, and the chance to teach medical students, residents, and fellows about gastrointestinal (GI) symptoms and disease processes. They, too, can make a difference in patients' lives.

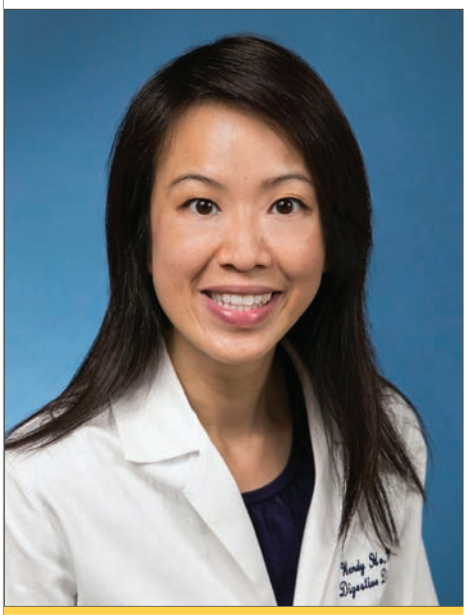
Dr. Ho is a general gastroenterologist who sees patients with all types of digestive disorders. "It's very fulfilling to be able to improve patients' lives, while at the same time getting to know them as individuals. In some instances, I have cared for whole families. When you understand the social circumstances of the individual patient, it enables you to better care for his or her medical needs," Dr. Ho says. "In an illness such as irritable bowel syndrome, symptoms are often affected by what's going on in the patient's life, and getting to know patients on a more personal level is extremely insightful and can be helpful in their treatment."

Such relationships are what drew Dr. Ho to medicine. As an undergraduate at Harvard University, she was interested in the biomedical sciences and enjoyed laboratory research; however, she knew she would prefer the combination of daily interactions with patients and delving into the workings of the human body that comes with being a physician. Dr. Ho earned her medical degree from the Albert Einstein College of Medicine and then completed her Internal Medicine residency and Gastroenterology fellowship at Massachusetts General Hospital (teaching hospital of Harvard Medical School) before coming to UCLA in 2008.

During her fellowship training, Dr. Ho earned a Master's of Public Health degree at Harvard, which helped to equip her with the investigative tools needed to study clinical questions. As a fellow, Dr. Ho conducted research on the barriers to colon-cancer screening. "Although colorectal cancer is the third most common cancer and the second leading cause of cancer deaths in the United States, colon-cancer screening rates are low, and only about 60 percent of the U.S. population is up to date with colorectal screening guidelines. We need to understand the barriers that exist, since screening, such as with a colonoscopy, can prevent deaths."

As a clinician-educator, Dr. Ho heads a team of medical students, residents, and fellows who see patients under her tutelage in Ronald Reagan UCLA Medical Center and in her outpatient clinic. "It's important to provide the GI fellows with an extensive depth of knowledge in Gastroenterology, so that they will be able to take care of complex GI issues," she says. "As for the medical students and residents, even though most of them ultimately will go into other specialties, they will care for patients who have GI problems and therefore must have the tools to understand digestive disorders and to know when it is necessary to refer to gastroenterologists."

Dr. Ho finds it particularly gratifying to be able to inspire the women under her supervision. "It was always important for me to have female role models – to see women thriving in all aspects of medicine," she says. Similarly, she notes, "It's been such a pleasure to help guide our trainees and, in particular, to get to know and watch our female trainees thrive." ■



Wendy Ho, M.D., M.P.H.

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Catia Sternini, M.D.

The "Brain and the Gut" and Taste Receptors

As a medical student at the University of Bologna in Italy, Catia Sternini, M.D., discovered that she had a passion for basic science during her research rotation in the Department of Internal Medicine.

"I loved the fact that there is always something new to discover," she says. "There is so much that we do not know, and what we learn from textbooks is not enough to give the very best care to our patients. We need basic-science and clinical research to advance our understanding of diseases to be able to better diagnose, treat, and cure them."

As a member of UCLA's Division of Digestive Diseases faculty, Dr. Sternini has contributed to advancing the understanding of factors that control gut function in both healthy conditions and disease. Her group has focused on two particular issues.

The first is on the μ opioid receptor – the main cellular target of morphine and other drugs that are used for pain control. "These drugs are important for treating patients with chronic pain," Dr. Sternini says, "but they can be a double-edged sword."

The problem, Dr. Sternini notes, is that people who use analgesic drugs for chronic pain tend to develop a tolerance to them, and therefore they need to take more of the drug for the same effect. This problem often leads to severe gastrointestinal (GI) complications, such as abdominal cramps and constipation, which can be so debilitating that patients have to stop using pain-relieving drugs.

"We're trying to understand what differentiates the effects of these drugs in the brain and the gut," Dr. Sternini explains. "Such knowledge could lead to developing new drugs that have the same pain-controlling effect without negatively affecting the gut."

Dr. Sternini's team was the first to demonstrate that opiates differ in their ability to move the receptors from the cell surface to the inside of the cell, a process referred to as receptor internalization, which is important to control cell function.

When activated receptors are inside the cell, they cannot respond to drugs. Drugs that induce more tolerance, like morphine, do not cause internalization, whereas those drugs less prone to causing tolerance do; this situation likely influences tolerance and alteration of GI motility. Furthermore, Dr. Sternini's group has shown that activation of peripheral μ opioid receptors exerts a protective effect on acute intestinal inflammation and intestinal ischemia, suggesting that these receptors might be new targets for developing novel drugs for the treatment of inflammatory conditions like inflammatory bowel disease.

A second, more recent focus for Dr. Sternini's group is on the role of taste receptors in regulating GI function and eating behaviors. Recently, receptors for sweet and bitter tastes have been found to be expressed elsewhere than the mouth, supporting a broader role that goes far beyond taste.

In collaboration with other researchers at UCLA, Dr. Sternini and her lab have produced evidence that bitter taste receptors in the gut play a critical role in detecting and setting off a protective response to foreign substances as they enter the body.

She states that "the gut is a complex and amazing organ, capable of sensing myriad substances coming into contact with the lumen [inside space of a tubular structure, such as the intestine] and initiating an appropriate response of digestion of the good substances and elimination of the bad ones." Intriguingly, her research also suggests that taste receptors in the colon might play a role in controlling the chronic inflammatory response that can develop in obesity.

Dr. Sternini came to UCLA from Italy to work as a visiting scientist at the CURE Digestive Diseases Research Center. She joined the faculty in 1985, and she has received several prestigious awards for her work.

"Being able to constantly ask new questions and make new discoveries keeps you alive," she says. "We're putting together a complex puzzle that will lead to a better understanding of how the gut works, which in turn will lead to new treatments that will help cure diseases." ■

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Stress and Complex Brain-Gut Interactions

A growing body of evidence indicates that stress, particularly early in life, can alter the so-called "brain-gut axis" – the closely connected central nervous system and gastrointestinal (GI) tract – and predispose individuals to chronic GI disorders such as irritable bowel syndrome and inflammatory bowel disease. Over the course of three decades on the UCLA Division of Digestive Diseases faculty, Yvette Taché, Ph.D., has emerged as a leading expert in unraveling the complex brain-gut interactions that occur when stress leads to gut dysfunction.

Through collaborations with the Division's clinicians, Dr. Taché, Professor and Co-Director of the Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress, hopes to translate this understanding into new drugs that could make a difference in the lives of patients with stress-sensitive GI disorders.

The human stress response involves a network of brain regions that interact as they receive information from inside or outside the body. When this network is activated by stress, it triggers two important bodily processes: 1) an increase in the circulating hormones – particularly cortisol – involved in regulating the body's stress response and 2) the autonomic nervous system, which regulates involuntary bodily functions such as blood pressure, heart rate, and bowel function. Both of these processes directly or indirectly affect gut function.

Dr. Taché's group was the first to show that injection of corticotropin-releasing factor (CRF) into the brain or the systemic circulation can alter gut function and trigger visceral pain similar to the effect of an acute stress response. Conversely, exposure to stress when CRF activity was blocked no longer triggered gut dysfunction.

These significant findings paved the way for a slew of research projects looking further into CRF, with an eye toward treating stress-related digestive disorders. Dr. Taché notes, "We have seen encouraging outcomes of treatments influencing the brain-gut axis stress response, such as a broad range of evidence-based mind-body interventions and clinical trials showing the effectiveness of antidepressants."

Dr. Taché's interest in the mechanisms by which stress contributes to gut dysfunction is rooted in her training. After graduating from the University Claude Bernard in her native Lyon, France, she earned a scholarship to pursue a Ph.D. degree at the University of Montreal. There, she worked in an internationally renowned neuro-endocrinology laboratory under the mentorship of Hans Selye, M.D., who coined the term "stress" and conducted pioneering research showing its consequences on the body, including the stomach.

After earning her degree, Dr. Taché spent two years of postdoctoral studies at the Salk Institute Peptide Biology Laboratories under the mentorship of Wylie W. Vale, Ph.D., the first to identify CRF, and Jean E. F. Rivier, Ph.D., who developed a way to block CRF activity.

As a young researcher presenting her work at a national meeting in the 1980s, Dr. Taché was struck by the paucity of women in the profession. Today, she says, although Gastroenterology remains a male-dominated field, women have begun to assume key leadership positions and be recognized for their contributions. Such success includes Dr. Taché, who has published more than 350 articles and edited several books, along with receiving numerous awards.

"Scientifically, my interest is constantly piqued by the desire to unravel new mechanisms that call upon creativity," she says. "And to be able to work with motivated and talented postdoctoral fellows who go on to develop their own research programs is very gratifying." ■

Yvette Tache', Ph.D.

Although Gastroenterology remains a male-dominated field, women have begun to assume key leadership positions and be recognized for their contributions.

Kirsten Tillisch, M.D.

Kirsten Tillisch, M.D., is Associate Professor at the Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress in the UCLA Division of Digestive Diseases. She completed her undergraduate work at the Otis Institute of Parsons School of Design, earning a Bachelor of Fine Arts degree with Honors.

Dr. Tillisch obtained her medical degree from the David Geffen School of Medicine at UCLA, where she completed her training in Internal Medicine and Gastroenterology, graduating in 2003. Her year-long clinical and research fellowship at UCLA's Center for Neurovisceral Sciences and Women's Health was under the mentorship of Lin Chang, M.D. Dr. Tillisch then continued at the Center as a faculty member, completing a National Institutes of Health (NIH)-mentored Career Development award in gut-brain interactions with Emeran Mayer, M.D.

Currently, she is a primary investigator on an NIH-sponsored R01 award to study neural biomarkers in irritable bowel syndrome (IBS) and the effects of meditation on the brain and gastrointestinal (GI) symptoms. Dr. Tillisch's research interests include brain-gut interactions, the effects of complementary and alternative medicine on functional GI disorders, and the pharmacological treatment of IBS.

Her recent projects focus on defining resting-state brain dysfunction in IBS patients, evaluating the role of gut microbiota (microscopic living organisms) modulation on emotional processing in the brain, and assessing neurokinin-1 receptor antagonists' effects on the gut and brain in IBS. Her clinical interests are functional bowel disorders such as IBS, functional dyspepsia, and cyclic vomiting syndrome, as well as inflammatory disorders of the GI tract, including microscopic colitis, mast cell disease, and eosinophilic gastroenteritis.

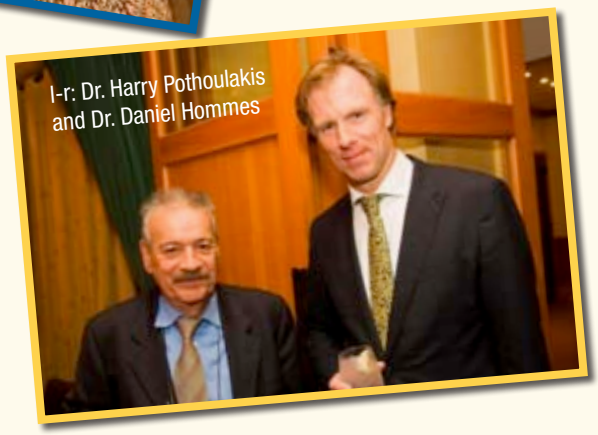
Dr. Tillisch has undergone training in medical hypnotherapy and in raising awareness and inspiring change in the areas of well-being, preserving cultures, and empowering children in mind, body, and spirit through UCLA's Urban Zen Integrative Therapy Program. ■

Division of Digestive Diseases Donor Luncheon

Rabindra Watson, M.D., spoke at a recent luncheon sponsored by the UCLA Division of Digestive Diseases, where he is a clinical instructor and researcher. Dr. Watson's lecture was titled "The New Frontier of Obesity Medicine." Attendees had an opportunity to learn more about exciting developments in his work on innovative endoscopic treatments for weight loss.

I-r: Dr. Martijn van Oijen and Dr. Chris Hamerski

I-r: Dr. Rabindra Watson and Nahzi Nikki



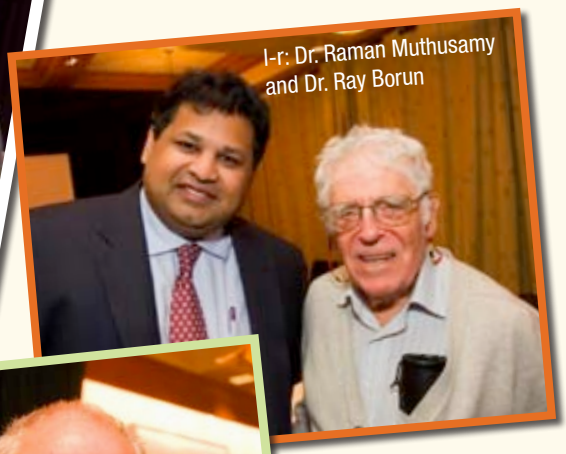
I-r: Dr. Harry Pothoulakis and Dr. Daniel Hommes


Dr. Eric Esrailian


l-r: Carol Green and Dr. Harry Green


Dr. Rabindra Watson


l-r: "M.E." Davis, John Davis, Cherna Gitnick


l-r: Dr. Raman Muthusamy and Dr. Ray Borun


l-r: Hugh Cassar and Roberta Haft


Bud Knapp


l-r: Linda Hope and Nancy Malone


l-r: Jaclyn Rosenberg, Sandy Krause, and Paula Kent Meehan

Highlighting *Women* in Science

Laura Anselmi, Ph.D. ▼

Laura Anselmi, Ph.D., earned her Ph.D. degree in Pharmacology at the University of Pavia, Italy, where she previously had completed her Doctor of Pharmacy degree. After doing her internship in Physiology and Pharmacology and conducting doctoral research there, she came to the UCLA Division of Digestive Diseases as Postgraduate Researcher. In 2005, she was recognized with the Young Investigator Award from the American Motility Society meeting and in 2008 placed third in the trainees' basic-research section, Department of Medicine Research Day at UCLA. She has been an invited presenter at three scientific gatherings and has published more than 40 papers and abstracts. Dr. Anselmi's most recent work concerns intestinal injury induced by mesenteric ischemia/reperfusion in mice and experimental colitis in rats.

Kyriaki Bakirtzi, Ph.D. ▼

At the Boston University School of Medicine, **Kyriaki Bakirtzi, Ph.D.**, focused on the study of diabetes and diabetes-related molecules in the mammalian central nervous system, while completing her Ph.D. degree. To date, she has attended five conferences, the most recent being on Glucose Transporter Biology. She has published two journal articles, one of which reviewed the effect of nitric oxide on the permeability of nasal epithelial cells from healthy and asthmatic donors.

Stavroula Baritaki, Ph.D. ▼

Stavroula Baritaki, Ph.D. is Assistant Researcher in UCLA's Division of Digestive Diseases. While completing her Ph.D. degree in Molecular Biology and Biomedicine at the Institute of Molecular Biology and Biotechnology in Greece, she served as Research Fellow there. She then was Visiting Research Fellow in UCLA's Department of Microbiology, Immunology, and Molecular Genetics before returning to Greece and coming back once more to UCLA as Postdoctoral Fellow and currently Visiting Assistant Researcher in the Division of Surgical Oncology. Affiliated with five American and European scientific societies, Dr. Baritaki also is a reviewer for six journals, and her work has been supported by four grants. At present, she teaches the immunobiology of cancer at UCLA, and her research and abstracts, which have been published in scores of journals and at numerous seminars, focus on prostate and breast cancers and melanoma and the process of metastasis.

Sylvie Bradesi, Ph.D. ▼

Sylvie Bradesi, Ph.D., is Adjunct Assistant Professor in UCLA's Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress. At François Rabelais University in France, she earned her Master of Sciences degree in Animal Physiology, her Master + 1 diploma in Human Pathophysiology at Claude Bernard University, and her Ph.D. degree in Biological Sciences at Paul Sabatier University. Her research topic is on the development of animal models for functional bowel disorders and stress-related chronic pain conditions and the understanding of the physiopathology of visceral hyperalgesia (increased sensitivity to pain). Dr. Bradesi serves as a tutor in Gastrointestinal, Endocrine, and Reproductive Medicine. She is a reviewer for and member of numerous professional associations, has received a dozen grants, and has co-authored more than 40 abstracts and nearly 20 papers. She is a 2007 recipient of the International Foundation for Gastrointestinal Disorders Junior Investigator-Basic Science Award.

Sara Collins, Ph.D., M.Sc. ▼

Sara Collins, Ph.D., M.Sc., earned her degrees at University College Cork, Ireland, studying an adeno-associated virus for cancer gene therapy, as well as Biotechnology, Biochemical Engineering and Immunology, and Genetic Engineering, among other subjects. After serving as Research Student at Cork Cancer Research Centre, she came to the UCLA Division of Digestive Diseases as Postdoctoral Researcher. Dr. Collins is pursuing cancer gene therapy strategies, assessing the efficacy of non-pathogenic bacteria-mediated tumor-specific gene delivery, using positron emission tomography and computed tomography scans. Her training includes advanced imaging technologies, laboratory animal science, and virology techniques, and she was honored with an Oncology Scholars Travel Award by Cancer Research Ireland, allowing her to present her work at an international conference.

Marine Camus Duboc, M.D., M.Sc. ▼

Marine Camus Duboc, M.D., M.Sc., was awarded her M.D. degree at the University of Paris 7 and Master's degree in Surgical Sciences with honors at the University of Paris 12. Her technical skills include animal handling, use of endoscopes, standard histologic analysis, and hemostasis tests. Dr. Duboc is a representative of the Paris Hepatology and Gastroenterology Fellowship and is a member of the French National Society of Gastroenterology. Topics of her publications, reviews, and posters include the helpfulness of the combination of acetic acid, high-resolution endoscopy, and Fujinon intelligent chromo-endoscopy in the detection of Barrett's epithelium and Barrett's associated neoplasias and a live porcine model of bleeding ulcer. She also conducts in- and outpatient diagnostic and therapeutic endoscopy and abdominal ultrasound.

Céline Duraffourd, Ph.D. ▼

While specializing in Physiology, Biochemistry, and Cellular Biology at the Institut National de la Santé et de la Recherche Médicale (INSERM) in France and receiving her Ph.D. degree,

Céline Duraffourd, Ph.D., studied intestinal gluconeogenesis (glucose from non-carbohydrate molecules) in satiety effects on high-protein diets. She also perfected her skills with testing and caring for rats and mice and working with cellular cultures, histology and cytometry, and chemical synthesis and in the area of virology. Among Dr. Duraffourd's publications is research on the role of the hypothalamic melanocortin system in the adaptation of food intake to food quality changes in mice.

Katrin Hacke, Ph.D. ▼

Katrin Hacke, Ph.D., Postgraduate Researcher in UCLA's Division of Digestive Diseases and previously in the Department of Pathology and Laboratory Medicine, was awarded her doctorate degree in Pharmacy at the Ruprecht-Karls-University, Germany. A member of the American Society of Gene and Cell Therapy, she recently was honored with its Annual Meeting Travel Award for her work on "highly efficient hematopoietic reconstitution by in vivo chemoselection of hypoxanthine-guanine phosphoribosyl transferase (HPRT)-deficient bone marrow with 6-thioguanine." Dr. Hacke has received two grants and has co-authored 15 abstracts and eight papers, one examining the effects of high and low linear energy transfer radiation on genetic damage in ataxia telangiectasia mutated-deficient mice.

Diane Harris, Ph.D., M.P.H., C.H.E.S. ▼

Diane Harris, Ph.D., M.P.H., C.H.E.S., earned her Ph.D. in Animal Science/Animal Nutrition Concentration at Cornell University. She was a National Institutes of Health Postdoctoral Fellow in Nutrition and Obesity in the UCLA Center for Human Nutrition, where she also served as Co-Director of the UCLA-National Cancer Institute Clinical Nutrition Research Unit Gene-Nutrient Interaction Core Laboratories. Dr. Harris is Co-Director of the UCLA-National Center for Complementary and Alternative Medicine Animal Model Core in the Center for Excellence in Pancreatic Diseases and Associate Researcher.

Jill May Hoffman, Ph.D. ▼

At the University of Vermont, **Jill May Hoffman, Ph.D.**, did her dissertation on "Propulsive motility in the colon: neural mechanisms of disruption in colitis and improvement with 5-HT4 receptor agonists" in the Neuroscience Graduate Program. Previously, she was Research Study Coordinator in the Developmental Biology and Pathology Center at Children's Hospital Boston/Harvard Medical School. Dr. Hoffman's invited talks are centered on colonic mucosa and motility, and her publications and presentations cover such topics as increased neuronal excitability in the inflamed colon.

Lisa A. Kilpatrick, Ph.D. ▼

With a Ph.D. degree in Biological Sciences from the University of California, Irvine, **Lisa A. Kilpatrick, Ph.D.**, is Assistant Researcher in the Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress at UCLA. She investigates the genetics and neurobiological phenotyping in irritable bowel syndrome (IBS) and the impact of mindfulness meditation on neural network activity. Dr. Kilpatrick also has worked on acoustic startle responses in IBS, interstitial cystitis/painful bladder syndrome, fibromyalgia, and the sex-specific genetic architecture of IBS. In 2011, her abstract was selected for the Neurogastroenterology and Motility Distinguished Abstracts plenary session at Digestive Diseases Week (Chicago).

Muriel Larauche, Ph.D. ▼

Upon receiving her Ph.D. degree in Cellular, Molecular, and Integrated Physiopathology in the Faculty of Sciences at Paul Sabatier University, Toulouse, France, **Muriel Larauche, Ph.D.**, was appointed Postdoctoral Fellow in the Center for Neurovisceral Sciences and Women's Health at UCLA. Currently, she is Assistant Researcher in the Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress at UCLA. Her most recent studies in rats are on 1) stress-related modulation of inflammation in experimental models of bowel disease and post-infectious irritable bowel syndrome and 2) sex differences in visceral sensitivity induced by repeated psychological stress.

Ka Man Law, Ph.D. ▼

Ka Man Law, Ph.D., earned her M.Phil. degree in Zoology at the University of Hong Kong, where she then completed her Ph.D. degree in Pharmacology and Pharmacy. In that department, her role as Research Assistant enabled her to work with animal models and glucose and insulin tolerance tests. Her most recent publication and presentation both described how mice lacking lipocalin-2 are protected from developing age- and obesity-induced insulin resistance.

Fiona O'Mahony, Ph.D. ▼

Fiona O'Mahony, Ph.D., pursued her Ph.D. degree in Molecular Medicine at the Royal College of Surgeons in Ireland. She came to UCLA after being Principal Investigator in the Department of Endocrinology at the University of California, Irvine. Her project explored how the "estrogen receptor blocks cholesterol biosynthesis in mouse liver cells exclusively via membrane-bound receptors," which received an outstanding research award from the Endocrine Society. Among her honors are the Marie Curie Fellowship Award (2009), and she has been invited to lecture in the United States and Ireland.

Iina Tuominen, Ph.D. ▼

Iina Tuominen, Ph.D., was awarded her Ph.D. degree at the Faculty of Medicine, University of Helsinki, Finland, with her thesis on the molecular features of colorectal cancer predisposition and progression. Prior to coming to UCLA, she was pursuing molecular cancer research as part of the Tumor Genomics Research Group at the University of Helsinki. She is co-author of more than a dozen publications appearing in leading scientific journals.

Lixin Wang, M.D., Ph.D. ▼

At the Medical School, Beijing University, **Lixin Wang, M.D., Ph.D.**, earned her degrees and pursued training in its Department of Anatomy and also was honored as Best Teacher. At present, she is Associate Researcher in the CURE: Digestive Diseases Research Center at UCLA. Her focus is on neuron distribution in mouse and rat brains and the functional implications, as well as acute stress-related alterations of gastric and colonic motor function. To date, Dr. Wang has co-authored two chapters, eight reviews, and scores of papers. ■

UCLA Health System
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405 Hilgard Avenue
100 Medical Plaza, Suite 265
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Gary Gitnick, MD
Chief, Division of Digestive Diseases

Eric Esrailian, MD, MPH
Vice Chief,
Division of Digestive Diseases

Laurel Zeno
Senior Director of Development

Dan Gordon
Writer/Editor

Ginny King Supple
Contributing Editor

Michelle Moeck
Graphics/Production

Reed Hutchinson
Photography