UCLA Health

Beyond the Scope

A REPORT OF THE VATCHE AND TAMAR MANOUKIAN DIVISION OF DIGESTIVE DISEASES

Goodman-Luskin Microbiome Center Launched at UCLA

WINTER 2023

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Going ***Beyond*** *the Scope*

As we learn more about the ways in which the trillions of microbes in our gut communicate with our digestive system and brain to impact human health, we have clearly entered a new and exciting research frontier. When these interactions becomes disrupted, quality of life can suffer, and there could be the potential for chronic diseases. Now, thanks to a remarkable $20 million gift from my friends Andrea and Donald Goodman and Renee and Meyer Luskin, our renowned scientists at UCLA and the Vatche and Tamar Manoukian Division of Digestive Diseases are well positioned to lead the way in this promising area of scientific inquiry. I have had the honor of working closely with Meyer Luskin for years on behalf of the whole university, and he enthusiastically introduced the work of our faculty to the Goodman family. Thanks to the incredible generosity of these two families, microbiome research will be a priority at UCLA for years to come.

Based in our division, the UCLA Goodman-Luskin Microbiome Center will facilitate multidisciplinary collaborations among experts across the campus on the role of the human microbiome in health and disease. By funding senior faculty, drawing talented new researchers into the field, and building a strong infrastructure for these studies through the development of core facilities, the center will work to identify the relationship between the microbiome and a range of conditions including inflammatory bowel diseases; obesity and eating disorders; neurodevelopmental and neurodegenerative diseases such as autism, Alzheimer's, and Parkinson's disease; irritable bowel syndrome; liver disease; and substance use and psychiatric disorders.

(From left) Donald and Andrea Goodman and Renee and Meyer Luskin

This issue of *Beyond the Scope* includes the perspectives of the members of our division faculty who will spearhead this effort, along with an update on our continually expanding team of GI dietitians and a profile of the exciting research program of a new senior member of our faculty, Dr. Rajat Singh. We are fortunate to have some of the pioneers in the field of brain-gut-microbiome research at UCLA. Dr. Emeran A. Mayer, the center's founding director, is a world-renowned gastroenterologist and neuroscientist who was among the first to document the close bidirectional nature of brain-gut interactions and how they impact health. Dr. Elaine Y. Hsiao, the center's director, has conducted seminal laboratory studies showing how microbes in the gut influence behaviors in conditions such as Parkinson's disease and autism. With Dr. Arpana "Annie" Gupta and Dr. Jonathan P. Jacobs, two other division faculty who are making great strides in microbiome research, they will guide collaborations among numerous labs and brain-gut investigators engaged in the center's seven focus areas.

The gift from the Goodmans and Luskins will fund the center, but it also establishes a fellowship, an early-career research fund to support promising scientists, an endowed chair in brain-gut-microbiome research, and an annual symposium on the brain-gut-microbiome interface and its role in human health. Through this visionary gift, we will build on our existing strengths and advance UCLA's collaborations with other microbiome research centers across the world. We are incredibly grateful to the Goodman and Luskin families for choosing our division and UCLA, and we are thrilled to take this pivotal step with all of you on this remarkable scientific journey!

Founding Director Sees Major Rewards Coming From New Scientific Frontier

Emeran A. Mayer, MD

For founding director Emeran A. Mayer, MD, the establishment of the Goodman-Luskin Microbiome Center at UCLA represents a culminating event in a career characterized by pioneering research into the gut-brain connection and its role in gastrointestinal, immune, metabolic, neurological, and psychiatric disorders.

The new center, based in the UCLA Vatche and Tamar Manoukian Division of Digestive Diseases, will bring together researchers from across the UCLA campus in interdisciplinary efforts to study how the trillions of microorganisms that inhabit the human gut are implicated in wide-ranging health-related conditions — and how those findings can be translated into new strategies for prevention, treatment, and health promotion.

Early in Dr. Mayer's career, which started at UCLA in 1985, his research challenged the conventional belief that pain was a smooth muscle disease resulting from spasms in the gut. When Dr. Mayer began to present evidence of the brain's involvement, he was met with considerable skepticism. "Today, in the lay media, it seems like everyone is characterized as a brain-gut expert," Dr. Mayer says, smiling. "But it took 30 years to get to that point."

Dr. Mayer admits he was an early skeptic when the first evidence emerged suggesting a powerful role for the microbiome in shaping health as part of the gut-brain axis. Then he conducted a series of studies, including pilot research with Dr. Kirsten Tillisch, a member of the division's faculty, showing that beneficial bacteria ingested in food could affect human brain function. Those dramatic results led Dr. Mayer to shift his focus, and he has been a leader in the gut-microbiome field ever since. Several years ago, Dr. Mayer spearheaded an effort to bring UCLA microbiome researchers together informally to share findings and forge collaborations. "To see those efforts come to fruition with this center is very exciting," he says.

Enthusiasm around microbiome research continues to rise, with substantial funding opportunities in virtually every area of medicine. Although microbes are located throughout the body, it's the gut microbiota that have attracted the most interest. "There is now a general consensus that many seemingly unrelated chronic diseases have a similar pathway — what's often referred to as a 'leaky gut' arising from the diet and its influence on the microbial ecosystem and the immune system," Dr. Mayer says. "Obviously, science will have to confirm and fill in the details of the story, and it's going to be very challenging. Unlike traditional microbiology, where you want to identify one pathogen, or traditional pharmacology, where you want to identify one receptor subtype and target it, this is not just one microbe; it's how these ecosystems interact. That will require a whole new science targeting some of our biggest and most complex health problems."

The Goodman-Luskin Microbiome Center at UCLA, drawing from the wide-ranging expertise on the UCLA campus and guided by external and internal advisory boards consisting of leaders in the microbiome research field at UCLA and elsewhere, is now embarking on such an effort. "The human gastrointestinal microbiome represents one of the densest collections of microbes found in nature," says Jeff F. Miller, PhD, director of the California NanoSystems Institute at UCLA and a member of the new center's Board of Associate Directors. "With an estimated 40 trillion bacterial cells, hundreds of species, and thousands of different strains, its complexity is both staggering and dynamic, changing with age, diet, lifestyle, and medical interventions like antibiotic therapy. We're now beginning to transition from descriptive studies to investigations that reveal mechanisms of action, and this in turn is leading to a surge in translational research focused on developing entirely new kinds of clinical interventions."

Microbiome Center Leaders Foresee Success in Collaboration

Elaine Y. Hsiao, PhD
Director, Goodman-Luskin Microbiome Center

Multidisciplinary groups of basic, clinical and translational researchers cross campus will fuel advances

When she was a UCLA undergraduate majoring in microbiology, immunology, and molecular genetics nearly 20 years ago, Elaine Y. Hsiao, PhD, wasn't familiar with the term "microbiome," which hadn't yet exploded into the public consciousness as one of the most promising frontiers of biomedical science. But Dr. Hsiao, today the director of the Goodman-Luskin Microbiome Center at UCLA, found herself drawn to disease-causing microorganisms through her courses in bacterial pathogenesis and virology, becoming fascinated with microbes as "the best, and tiniest, molecular biologists in the world."

By the time she was a doctoral student studying neurobiology at Caltech, the microbiome was just being sequenced, and Dr. Hsiao continued to be drawn to the remarkable developments in the nascent field. She followed her passions into microbiome-gut-brain research, and soon was part of a group contributing some of the field's most exciting work. In 2013, when Dr. Hsiao was a research fellow, she published a study with Caltech colleagues and mentors reporting that autism-like behavior was produced in the offspring of mice treated with a viral mimic during pregnancy — and that these offspring, which were found to have altered gut bacteria, showed reduced autism-like behaviors when treated with a health-promoting bacterium. Since joining the UCLA faculty in 2015, Dr. Hsiao has continued to probe the trillions of microbes in the body to determine how they influence the brain and behavior.

As director of the Goodman-Luskin Microbiome Center at UCLA, Dr. Hsiao sees her role as serving the UCLA research community in ways that help to advance impactful discoveries in the microbiome field. "The new center will bring together diverse scientists and clinicians across UCLA's various schools, institutes, and departments, who all share an interest in microbiome research and who each bring unique expertise, perspectives,

Elaine Y. Hsiao, PhD

and collegial spirit," Dr. Hsiao explains, adding that core facilities for microbiome research, as well as a pilot and feasibility grant program, will contribute further to fostering innovative and collaborate research among center members.

Given the substantial breadth and depth of scientific expertise at UCLA, Dr. Hsiao is excited about the potential for significant strides that can come from a coordinated effort to tap into the enormous potential of microbiome research to advance human health. "The sheer complexity of studying cross-organ and cross-organism interactions is a challenge for the field at large," she says. "Bringing together fantastic people across multiple disciplines will help to advance new concepts, technology, biological inquiries, and clinical studies to tackle big questions in the field.

"Microbes inhabit every exposed body surface and serve as a literal interface between us and the environment. As such, the microbiome is critically shaped by environmental exposures, such as diet and medication, and can also modify how environmental exposures are conveyed to the body. I'm excited about the opportunity to uncover new mechanistic understanding of how we and our microbial symbionts can work together to promote health and thwart disease."

Arpana Gupta, PhD
Co-Director, Goodman-Luskin Microbiome Center

'Whole-person' approach will spur novel interventions to benefit patients

Arpana Gupta, PhD

Although not a body organ in the literal sense, gut microbiota communicate with other organs in ways that have profound impacts on human health, says Arpana Gupta, PhD, co-director of the Goodman-Luskin Microbiome Center at UCLA. Those interactions, Dr. Gupta notes, are modulated by both endogenous and exogenous factors — including biological factors such as immune responses, genetics and hormones as well as environmental influences such as diet, medications, adversity and stress.

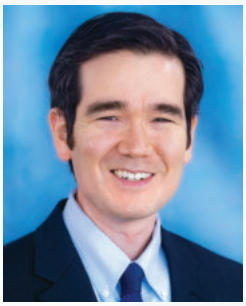
"Gut microbiota can influence the brain, heart, liver, GI tract, and fat tissue, which can be associated with chronic conditions such as obesity and diabetes, mental health disorders, and neurological conditions such as autism and Alzheimer's disease," Dr. Gupta explains. "Because we are studying all of these disorders linked to the gut microbiota within our center's various programs, as we learn more about the microbiome's role, we will uncover new therapeutic targets."

Using gut microbiota as a target for treatment across a variety of diseases and conditions opens the door for therapies with significant advantages over current approaches — whether it's that they are easier to implement, more efficient, or have fewer side effects, Dr. Gupta notes. "It's looking at disease treatment through a multipronged, whole-person approach," she says.

Microbiome-targeted treatments such as diet modifications or the taking of probiotics or prebiotics could potentially be recommended as either stand-alone strategies or as adjuvant therapies to enhance standard treatments. "Most conditions are heterogeneous, which means they don't benefit from a one-size-fits-all approach to therapy," Dr. Gupta explains. "The work of this center can help to revolutionize how we view the practice of medicine. Traditionally, you go to your healthcare provider and get a generic treatment or prescription, but microbiota-directed therapies can bring medicine to the patient. By making medicine more accessible in a way that empowers individuals to take greater control over their health."

Jonathan P. Jacobs, MD, PhD
Co-Director, Goodman-Luskin Microbiome Center

Core services, training and mentoring help to jump-start research



Jonathan P. Jacobs, MD, PhD

As it's become clear that gut bacteria play a critical role in human health, researchers are entering a new, critical phase, says Jonathan P. Jacobs, MD, PhD, co-director of the Goodman-Luskin Microbiome Center at UCLA. "It's a very exciting time in the microbiome field, where technological advances have allowed us to rapidly advance from initial insights about the importance of the microbiome to the detailed understanding that is required to develop new treatments," Dr. Jacobs says.

One of the keys to further developing the field is to increase access to state-of-the-art research tools and expertise. "Many scientists are interested in jumping into the field, and we need to turn this enthusiasm into high-impact science by ensuring that they don't have to reinvent the wheel just to get started, but instead can focus their efforts on developing new insights," Dr. Jacobs says.

To do that, the new center has established a series of core services, based on the expertise of individual members, that will be available to all UCLA researchers. Six technical cores cover the workflows required at each step of microbiome studies: clinical studies coordination and database management, biorepository, microbiome sequencing, bioinformatics, neuroimaging, and gnotobiotics. A seventh core provides administrative support.

The core services are among several ways in which the center is helping to bring junior faculty into the fold. "This is lowering the barrier to entry by providing infrastructure that allows new researchers to quickly develop their projects," Dr. Jacobs says. "In addition, the center's programs are organized so that junior investigators can plug into them to develop collaborative relationships, identify mentors, and gain publicity for their research. We are also developing pilot and feasibility study funding opportunities that will help trainees. All of these efforts will help to jump-start ground-breaking microbiome research at UCLA."

Microbiome Programs

Goodman-Luskin Microbiome Center conducts research that will translate into improving patient care and quality of life

Cardiovascular Disease and Lipid Metabolism

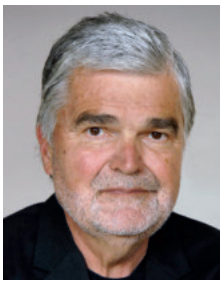
Aldons J. "Jake" Lusis, PhD

Both mouse models and clinical epidemiological studies have revealed associations of gut microbes and microbe-derived metabolites with cardiovascular diseases, including diabetes, atherosclerosis, stroke and heart failure. The goal of this program is to investigate the mechanisms underlying these associations and, based on this information, to develop new diagnostic and therapeutic approaches.

Center for Neurovisceral Sciences and Women's Health (SCORE)

Emeran A. Mayer, MD; Lin Chang, MD

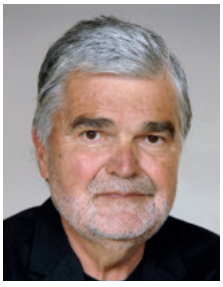
This program, funded by a National Institutes of Health SCORE (Specialized Center of Research Excellence) grant, will explore the role of the gut microbiome in the modulation of brain-gut-microbiome (BGM) interactions and the role of female sex hormones in these interactions.



C. Oppenheimer Center for Neurobiology of Stress and Resilience (CNSR)

Emeran A. Mayer, MD

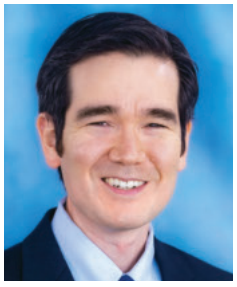
The center is an interdisciplinary, translational center funded by the National Institutes of Health, and by philanthropic support. CNSR has both a research and clinical component. The center aims to bring the brain back into medicine by demonstrating its crucial role in health and wellness, identifying brain signatures associated with vulnerability or resilience to chronic disease, elucidating the role of the gut microbiome, immune system and genomic factors in chronic brain-gut disorders and uncovering differences in the male and female brain in mind-brain-body interactions.



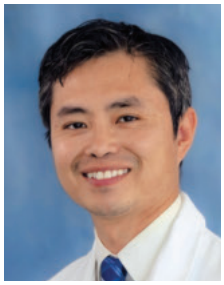
Inflammatory Bowel Diseases

Jonathan P. Jacobs, MD, PhD; Jenny Sauk, MD

A wide-range of human and preclinical studies are taking place to identify gut microbes and their metabolites that drive the development and progression of IBD and characterize their interactions with the intestinal immune system. Specific areas of focus include understanding microbial changes that precede the onset of IBD, investigating dietary effects on the IBD-associated microbiome and intestinal inflammation, and defining brain-gut-microbiome pathways in IBD that mediate the link between stress and disease flares.



Liver Disease



Tien S. Dong, MD, PhD

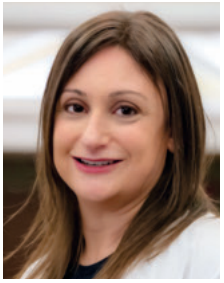
After the gastrointestinal tract, the liver is the first organ to process bacteria-related metabolites, bile acids and hormones arising from the gut. The goal of this program is to understand microbial changes that are associated with early onset of liver disease, investigate the utility of the gut microbiome and its metabolites as biomarkers of disease progression and prognosis and examine how alterations in the gut microbiome can affect the development of liver disease. Ultimately, this work will guide the development of novel preventative or therapeutic interventions for liver diseases, which currently have few treatment options.

Mental Illness and Pain

Bridget L. Callaghan, PhD; Bruce Naliboff, PhD

The brain-gut-microbiome (BGM) system has been identified as a pathway that could affect mental health and chronic overlapping pain conditions (COPC). This program will investigate the mechanisms underlying these effects and investigate how the BGM system is affected by environments that increase risk for mental illness and COPC. It will also explore the utility of the BGM system as a prognostic and diagnostic indicator of mental illness and COPC.

Neurodevelopmental and Neurodegenerative



Elaine Y. Hsiao, PhD; Elizabeth J. Videlock, MD, PhD

Alterations in the composition and function of the gut microbiome are reported in autism spectrum disorder, schizophrenia, neurocognitive impairment, Parkinson's disease, Alzheimer's disease, and many other neurodevelopmental and neurodegenerative disorders. This program examines the microbiome as an important modifier of risk for these diseases, which are becoming increasingly common, and explores the possibility of developing new therapies aimed at molecular targets in order to treat symptoms of neurological disease.

Obesity, Metabolic Disorders and Eating Behavior

Arpana Gupta, PhD

The development of obesity is an intricate and multifaceted pathway that involves psychosocial environmental influences and behavior, altered neural connectivity, hormone signaling and microbiome perturbations. Using a systems-biology approach, this program will identify key nodes and drivers of obesity as well as biomarkers and potential targets for individualized treatments.

Substance Use Disorder

Jennifer A. Fulcher MD, PhD

Addiction science research has largely focused on the direct effects of drugs on the brain, but evidence is accumulating that brain-gut-microbiome interactions play a role in many devastating substance use disorders, including alcohol use disorder, opioid use disorder and stimulant use disorder. This program will explore the possibilities of supporting or modifying the biome to treat addiction, and of using it as a prognostic tool to identify patients at high risk for dependence and relapse.

Microbiome Cores

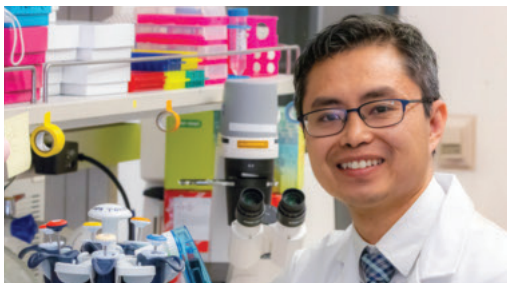
Supporting the groundbreaking work underway at the Goodman-Luskin Microbiome Center

Emeran A. Mayer, MD; Lin Chang, MD

This core offers center members frequent opportunities to exchange ideas with leaders in fields that are pertinent to basic, translational and clinical microbiome research. It will monitor, stimulate, evaluate and report on research projects and educational programs in light of the overall goals of the center and will provide assistance with grant and manuscript submissions, fund management and graphic design.

Tien S. Dong, MD, PhD

This core currently houses a catalogue of biosamples of various PIs associated with the center. It provides research support for long-term storage of biobanked samples, including a searchable database and aliquoting.

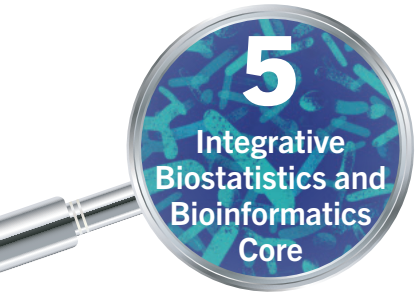


Lin Chang, MD; Bruce Naliboff, PhD

This core is supported by the extensive background and expertise of the directors and staff in clinical and translational research and project management, including grant and manuscript writing, project setup, participant screening, recruitment strategies, psychometrics, study questionnaires and database management.

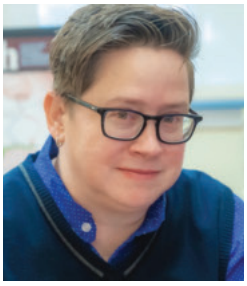
Elaine Y. Hsiao, PhD

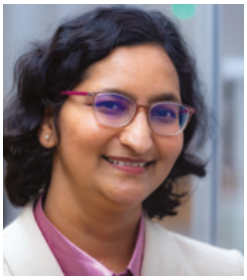
This core will provide services for the generation of germ-free and gnotobiotic mice and assistance with study design, sample collection, routine gnotobiotic husbandry, contamination monitoring, microbiota transplantations and other core assays and experiments for microbiome research.

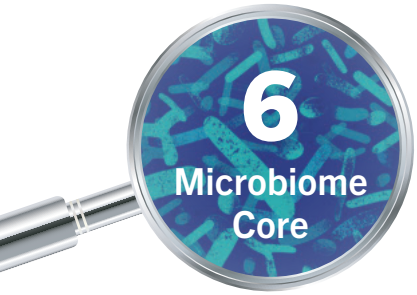


Jennifer S. Labus, PhD; Swapna Joshi, PhD

Combining state-of-the-art statistics with bioinformatic knowledge bases, this core provides services to support researchers and clinicians interested in integrating clinical and biological data (e.g. microbiota, metabolites, metagenomics, transcriptomics, epigenetics, multimodal neuroimaging data obtained from human and animal studies).







Jonathan P. Jacobs, MD, PhD

This core offers a range of services for studying the microbiome in human and animal model studies. These include study design, sample collection, sequencing-based assays such as 16S rRNA gene sequencing or shotgun metagenomics and data interpretation.

Arpana Gupta, PhD

This core provides a wide range of services to support researchers and clinicians interested in multimodal neuroimaging data obtained from human studies related to existing data sets, ongoing studies, new studies and grant development, to name a few.

By Ramping up Autophagy, Intermittent Fasting Could Reduce Obesity and Other Aging-Related Conditions

Could a simple dietary strategy that doesn't reduce daily caloric intake but confines consumption to two meals a day help to reduce not only obesity risk, but also diabetes, fatty liver and neurodegenerative diseases?

Research from the laboratory of Rajat Singh, MD, MBBS, who joined the UCLA Vatche and Tamar Manoukian Division of Digestive Diseases faculty last August, suggests that it could.

Dr. Singh's focus is on autophagy, a cellular recycling program that degrades unwanted cytoplasmic contents in acidic organelles, known as lysosomes. "With aging, this cellular quality-control mechanism fails, which can lead to conditions such as age-related obesity, diabetes, and neurodegenerative disorders," Dr. Singh explains.

The foundation for most of the metabolic-centered research by Dr. Singh's current lab was laid by a discovery Dr. Singh made when he was a postdoctoral fellow in the mid-2000s at Albert Einstein College of Medicine in New York City. In a highly cited paper published in *Nature* in 2009, he and his colleagues demonstrated a role for autophagy in the mobilization and degradation of intracellular lipid stores via a process they termed lipophagy. "The idea that autophagy takes care of lipids in a cell means that if it's tamped down due to sickness or aging, cells will accumulate these fat droplets," Dr. Singh notes. After Dr. Singh's group reported on this process in liver cells, more than 3,400 subsequent articles showed lipophagy occurring in wide-ranging cell types.

Building on these findings, Dr. Singh and his colleagues have focused on understanding how autophagy controls energy, glucose, and lipid metabolism in a time-, diet-, and age-dependent manner, as well as examining the consequences of the aging-associated reduction of autophagy on the development of metabolic syndrome — and whether restoring autophagy can prevent this process. One of the projects in his lab looks at mechanisms of autophagic recognition of lipids. "Fatty liver disease, which is so prevalent in the U.S. and worldwide, involves an accumulation of lipids," Dr. Singh explains. "We're interested in how autophagy identifies these droplets and degrades them to block the onset of fatty liver."

Based on the finding that autophagy is induced during starvation as well as stress, Dr. Singh's group has, over the past decade, developed a feeding intervention in mice aiming to determine whether intermittent fasting could stimulate autophagy and reduce aging-associated metabolic

Rajat Singh, MD, MBBS

diseases. “In the field of nutritional regulation of body weight, it’s known that people who reduce calories are going to live longer and healthier lives, but that requires cutting back on a significant number of calories, and it’s typically not sustainable,” Dr. Singh says. “Because of that, many labs have looked for strategies to ‘trick’ the system.”

Dr. Singh’s lab found in experiments with aged and obese mice that the same daily caloric consumption confined to two meals a day — in humans, breakfast and dinner — produces benefits that include improved glucose tolerance, lower lipid levels, and increased muscle mass. Further experiments found that autophagy is a key to the success of the intermittent fasting strategy. “You’re fine-tuning the circadian clock so that the patterns of hormone oscillation change, which we have found is critical to the weight loss,” Dr. Singh explains. “Introducing two periods of fasting each day stimulates more autophagy, which results in better cellular quality control.”

Having shown the success of the two-meals-a-day model in the lab, Dr. Singh now plans to initiate a clinical trial in humans, focusing on its impact on obesity, diabetes, and liver fat. “One of the strengths of this dietary intervention is that compliance is high,” he says. “You don’t feel hungry because you’re not cutting daily calories.”

Dr. Singh’s lab has pursued other directions that provide additional support and explanations for the success of the feeding intervention. In 2018, Dr. Singh’s group reported its discovery that autophagy controls the circadian clock by degrading the core clock protein, Cryptochrome-1.

Dr. Singh and his colleagues have also examined neuronal regulation of peripheral processes. They have found, for example, that specific neurons in the brain — which are activated by the autophagy that occurs during fasting — send signals that we are hungry, whereas others are activated to communicate satiety.

“Finding ways to ramp up the process of autophagy as we get older could go a long way toward slowing or preventing many age-related processes, from metabolic syndrome to neurodegeneration,” Dr. Singh notes. “It’s exciting to be at UCLA, with the breadth of scientific expertise and the prospect of collaborating in multidisciplinary ways with renowned experts.”

New clinical faculty members

The Vatche and Tamar Manoukian Division of Digestive Diseases at UCLA is a national leader in gastrointestinal care and research with nearly 100 faculty clinicians and scientists in and across UCLA Health locations throughout the greater Los Angeles area. Below are the most recent clinical additions to our team.

Ashwinee S. Condon, MD | Health Sciences Clinical Instructor of Medicine

Dr. Condon completed her undergraduate training in biology with a minor in chemistry at Drexel University in Philadelphia. She stayed on to attend medical school at Drexel University College of Medicine, where she received a scholarship for her research focusing on Women's Health. She completed her internal medicine residency at University Hospitals Case Western Medical Center, where she was the recipient of multiple housestaff awards, before finishing her general gastroenterology fellowship at UCLA. She then went on to complete an additional year of specialized training in advanced endoscopy at UCLA.

Dr. Condon's clinical interests include therapeutic endoscopy, management of pancreaticobiliary disease, and endoscopic management of Barrett's esophagus. Additionally, she is interested in improving gender equity in gastroenterology and founded the GI Females Together (GIFT) program at UCLA, which aims to promote professional development and career advancement for women in GI. Her research interests include endoscopic management of esophageal disorders such as Barrett's esophagus and achalasia, as well as risk stratification of patients with pancreatitis. Dr. Condon also has an interest in trainee education and is committed to improving procedural training in gastroenterology among GI fellows.

Dr. Condon is board certified in internal medicine and gastroenterology. She is an active member of the American Society of Gastrointestinal Endoscopy, American College of Gastroenterology and American Gastroenterological Association.

Sentia Iriana, MD | Health Sciences Clinical Instructor of Medicine

Dr. Iriana earned her undergraduate degree in biology at the University of California, Irvine. She received her medical degree from Chicago Medical School and went on to complete her internal medicine residency at Cedars-Sinai Medical Center. She pursued an advanced hepatology fellowship at Beth Israel Deaconess Medical Center and a gastroenterology fellowship at University of Utah. Dr. Iriana completed additional training in transplant hepatology at Keck School of Medicine of USC.

Dr. Iriana has joined the faculty of the Vatche and Tamar Manoukian Division of Digestive Diseases at UCLA, where she will be caring for patients with a spectrum of liver diseases, including cirrhosis. She has a special interest in alcohol-associated liver disease and addiction medicine. Dr. Iriana is board certified in internal medicine, gastroenterology and transplant hepatology.

Chanthel Kokoy-Mondragon, MD | Health Sciences Clinical Instructor of Medicine

Dr. Kokoy-Mondragon earned her undergraduate degree in human biology at the University of California, San Diego. She earned her medical degree from Drexel's College of Medicine and completed her internal medicine residency at New York Presbyterian Columbia Medical Center, where she developed an interest in gastroenterology. She returned home to Los Angeles to complete her gastroenterology and hepatology fellowship at the University of Southern California.

Dr. Kokoy-Mondragon has broad clinical interests, including colorectal cancer screening, gastroesophageal reflux disease, esophageal and gastric disorders, functional bowel disorders, obesity and inflammatory bowel disease. She is board certified in internal medicine and gastroenterology and is a member of the American College of Gastroenterology and the American Gastroenterological Association.

Megan Oser, PhD | Director, Behavioral Medicine in Digestive Health
Health Sciences Assistant Clinical Professor of Medicine

Dr. Oser is a licensed clinical psychologist specializing in behavioral medicine, digital health and gastroenterology/hepatology. Dr. Oser earned her PhD in clinical psychology from the University of Nevada, Reno. She completed a health services research fellowship at the VA Palo Alto Health Care System and Stanford University School of Medicine.

Prior to joining UCLA, Dr. Oser held leadership positions at Brigham and Women's Hospital, Harvard Medical School, and in digital health technology companies, where she led the clinical and scientific strategy. Dr. Oser was director of the CBT and Behavioral Medicine Program in the Department of Psychiatry at Brigham and Women's Hospital, where she advanced cognitive behavioral therapy (CBT) clinical services and research. Her work focused on transdiagnostic CBTs for co-occurring medical and behavioral health conditions. She developed and tested novel CBTs including mindfulness-based treatments and e-health/mobile applications, integrating this work across several specialty care departments (GI/hepatology, cardiology, transplant, neurology and infectious disease). Dr. Oser directed the CBT curriculum for the Harvard Longwood Psychiatry Residency Training Program and provided clinical training to dozens of trainees, Harvard Medical School students and clinical professionals. She treated patients with co-occurring behavioral health conditions, including patients with IBS, IBD and liver disease. These treatments included acceptance and commitment therapy (ACT), mindfulness-based behavioral therapy, dialectical behavior therapy, behavioral activation and exposure and response prevention.

Within the digital health industry, Dr. Oser was the director of research for a digital health company providing cognitive behavioral programs delivered via mobile app. She led the company's efforts to demonstrate clinical effectiveness and economic impact in commercially relevant settings. Prior to joining UCLA, Dr. Oser was VP of Clinical Innovation at a GI-focused digital therapeutics start-up.

Dr. Oser has published 25 peer-reviewed articles, authored several book chapters, delivered national and international presentations and invited trainings and served as a reviewer for numerous scientific journals. She previously served on the editorial board of the *Journal of Contextual Behavioral Science*.

Samik Shah, MD | Health Sciences Clinical Instructor of Medicine

Dr. Shah graduated with a degree in biology from The College of New Jersey, which he attended as part of the combined seven-year BS/MD program. He continued on to Rutgers New Jersey Medical School, where he earned his medical degree and developed an early interest in gastroenterology. He completed his residency in internal medicine at Thomas Jefferson University Hospital and his fellowship in gastroenterology and hepatology at Temple University Hospital, both in Philadelphia.

Dr. Shah has broad clinical interests in gastroenterology, including colorectal cancer screening, gastroesophageal reflux disease, Barrett's esophagus, peptic ulcer disease, motility disorders, disorders of the gut-brain axis, gastrointestinal bleeding, endoscopy, colonoscopy and more. His research interests include esophageal motility and Barrett's esophagus.

Akshay Shetty, MD | Health Sciences Assistant Clinical Professor of Medicine and Surgery

Dr. Shetty received his BS in biomedical engineering from Georgia Institute of Technology. He completed medical school at Medical College of Georgia at Augusta State University and completed his residency in internal medicine at Emory University. This was followed by a fellowship in gastroenterology at Medical University of South Carolina, and he then came to University of California, Los Angeles for his transplant hepatology fellowship. He is board certified in internal medicine, gastroenterology and transplant hepatology.

Dr. Shetty specializes in general and transplant hepatology with a special interest in alcohol-related liver disease and metabolic syndrome associated liver disease. His philosophy as a physician is to practice patient-centered medicine in a caring and supportive environment. As a hepatology specialist, he is committed to providing high-quality, cost-effective health care to help patients with all types of liver disease achieve the best possible quality of life.

Jasleen Singh, MD | Health Sciences Clinical Instructor of Medicine and Surgery

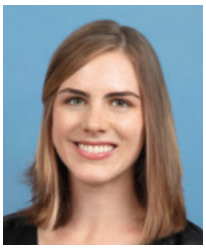
Dr. Singh specializes in general and transplant hepatology and treats patients across the spectrum of liver disease, from benign liver conditions to complications of cirrhosis and liver transplant evaluation. She also provides post-transplant care. Dr. Singh has a particular interest in alcohol-related liver disease and hepatocellular carcinoma.

Dr. Singh graduated from Washington University in St. Louis, after which she dedicated one year to City Year, which is an AmeriCorps program focused on tutoring and mentoring high school students in schools with low graduation rates. She graduated from The Ohio State University College of Medicine and completed her internal medicine residency and gastroenterology fellowship at Loyola University Medical Center. She finished her training in transplant hepatology at the University of Southern California. Dr. Singh has been involved in clinical research in alcohol-related liver disease and hepatocellular carcinoma. She is board certified in internal medicine, gastroenterology and transplant hepatology.

Growth of GI Nutrition Program Allows Subspecialization

Kate Evans, MS, RDN
Eating Disorders

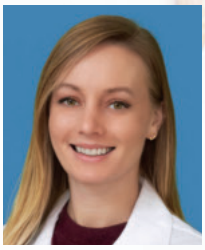
Nancee Jaffe, MS, RDN
Motility and Neurological Conditions



Natalie Manitius, MPH, RDN
Functional GI Disorders

Kelly McNulty, MS, RDN
Inflammatory Bowel Disease, Celiac Disease

Janelle Smith, MS, RDN, CEDRD
Eating Disorders, Celiac Disease



Shelby Yaceczko, MS, RDN-AP, CNSC, CSSD
Pancreatic and Accessory Organ Disorders and Cancers

The GI Nutrition Program within the Vatche and Tamar Manoukian Division of Digestive Diseases, which began in 2012 with the hiring of a single GI dietitian, continues to expand at an exponentially increasing pace in response to the ever-growing demand for the services of experts trained in the dietary aspects of managing patients with GI conditions. With the recent addition of two new members, the team now includes six GI dietitians.

While all of the program's dietitians are equipped to treat general GI disorders, the program's growth has introduced the notion of subspecialization within the team. "Just as there are gastroenterologists who subspecialize in specific GI conditions, GI dietitians who subspecialize in a particular disorder can offer nuanced nutrition advice beyond that of a generalist," explains Nancee Jaffe, MS, RDN, the program's lead dietitian. "That provides an extra level of care as part of a comprehensive team approach that helps both the patient and their doctor."

The program's newest member is Shelby Yaceczko, MS, RDN-AP, CNSC, CSSD, one of the few advanced-practice dietitians in California. Yaceczko specializes in disorders of the pancreas, including pancreatic cancer, as well as diagnoses and surgeries involving the liver, gallbladder, bile duct, esophagus, and small bowel. A nutrition support specialist, Yaceczko is helping to build a program called Nutrition for Safer Surgeries, focused on applying national standards to reduce mortality and morbidity for GI cancer surgical interventions. Kate Evans, MS, RDN, who started two weeks before Yaceczko, has expertise in working with patients with eating disorders, as well as managing general GI conditions.

The GI Nutrition Program team members now work a hybrid schedule in which their time is split between the office and home, which gives patients the option of either in-person or video visits. "The video visit option is very popular with our patients," Jaffe says, "and it allows our GI dietitians to see more patients in a day as we seek to meet the growing demand for our team's services."

UCLA David Geffen School of Medicine

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UCLA Gastroenterology and GI Surgery placed #3 in the nation for the 2022-23 annual *U.S.News & World Report* rankings. *U.S.News & World Report* also recognized our hospitals in the top #5 in the nation.

BEST HOSPITALS U.S.News & WORLD REPORT GASTROENTEROLOGY & GI SURGERY 2022-23

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Live, virtual and in-person
11th Annual UCLA-Mellinkoff Gastroenterology and Hepatology Symposium

March 17-18, 2023
UCLA Meyer and Renee Luskin Conference Center on the UCLA Campus

Information/registration
cme.ucla.edu/courses/mellinkoff2023

This program is designed to offer healthcare professionals novel and integrative approaches to treat common GI disorders that can easily be implemented into practice and have significant impact on patient outcomes. In addition, an endoscopy forum with video and live cases will show case complex cases and new technology. Interactive, lively case-based presentations and debates by experts in their field will engage attendees and enhance this learning experience.

Accreditation

The Office of Continuing Medical Education, David Geffen School of Medicine at UCLA is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The Office of Continuing Medical Education, David Geffen School of Medicine at UCLA designates this live activity for a maximum of ***15 AMA PRA Category 1 Credits***™. Physicians should claim only the credit commensurate with the extent of their participation in this activity. Successful completion of this CME activity, which includes participation in the evaluation component, enables the participant to earn up to **15 Medical Knowledge MOC** points in the American Board of Internal Medicine's (ABIM) Maintenance of Certification (MOC) program. It is the CME activity provider's responsibility to submit participant completion information to ACCME for the purpose of granting ABIM MOC credit.

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