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Dean's Research Newsletter, January 2022

Jerry L. Nadler

DEAN'S RESEARCH NEWSLETTER

January 2022

Dear Members of the New York Medical College (NYMC) Community,

I am pleased to share with you the latest issue of the research newsletter that highlights some of the important research underway by School of Medicine (SOM) faculty and students. As we continue to work to further advance faculty and student research in the SOM, I wished to also announce several measures we have undertaken, including the introduction of new resources and positions to support our research mission.

Neil Schluger, M.D., professor of medicine and the Barbara and William Rosenthal Chair of the Department of Medicine, has assumed the additional role of associate dean for clinical and translational research. In this newly created position, Dr. Schluger will provide strategic oversight for NYMC's sponsored clinical and translational research projects with Westchester Medical Center. This effort will raise the SOM's profile within the broader research community by enhancing clinical and translational capability and promoting collaboration with the SOM's affiliate partners.

Dr. Schluger brings extensive research experience to his new role. Before joining NYMC in 2020, Dr. Schluger led the Division of Pulmonary, Allergy and Critical Care Medicine at Columbia University Irving Medical Center, which maintained strong programs in basic, translational and clinical research. He is also the author of more than 170 articles, chapters and books and his work has been published in *The New England Journal of Medicine*, *The Journal of the American Medical Association* and *The Lancet*, among other leading journals.

In addition, Dr. Schluger will partner with Mary Petzke, Ph.D., associate professor of pathology, microbiology and immunology, who will continue in her role as assistant dean of medical student research. The SOM has the distinction of being one of just a few medical schools to have an assistant dean position devoted specifically to supporting medical student research. Since the introduction of this role in 2019, under Dr. Petzke's leadership, student research has seen a significant increase, a trend I expect to continue as we devote further resources to promoting student engagement in research and facilitating the identification of faculty for student mentoring and advising.

We have also worked with Salomon Amar, D.D.S., Ph.D., senior vice president for research affairs, Touro College and University System (TCUS), vice president for research at NYMC and professor of pharmacology and microbiology, as well as the leadership of the School of Health Science and Practice (SHSP), to introduce further support in biostatistics. This includes various packages of statistical software, including SPPS-IBM SPSS Statistics, which is available to all faculty and employees with access to TCworkplace; Stata, which is available as a per user license; and SAS, which can be installed by the NYMC Help Desk. Additional details will be provided soon by the Office of Research Administration. Finally, I have instituted new budget resources to help partner with our clinical and basic sciences departments to assist in student research. We may have additional updates in the coming weeks.

I am confident with these enhancements that more progress lies ahead for the NYMC research community and look forward to seeing the results. Thank you and all the Chairs and faculty for their efforts. Wishing you a happy and healthy new year.

Jerry L. Nadler, M.D., MACP, FAHA, FACE
Dean of the School of Medicine
Professor of Medicine and Pharmacology

Nicholas Ferreri, Ph.D. ’84, Receives $1.6 Million Grant for Study to Combat Hypertension

Nicholas Ferreri, Ph.D. ’84

Nicholas Ferreri, Ph.D. ’84, professor of pharmacology, was awarded a $1,640,000 grant from the National Institutes of Health (NIH)/National Heart, Lung, and Blood Institute (NHLBI) to study the mechanisms that regulate the body’s response to salt intake as it relates to hypertension and other conditions.

“Hypertension is an important risk factor for the development of heart disease, stroke and kidney disease that affects greater than 40 percent of the population in the United States,” says Dr. Ferreri. “Many hypertensive patients, especially African Americans, exhibit sensitivity to salt. Mechanisms that regulate salt and water transport in the kidney are critical to understanding the development of hypertension.”

In past studies, Dr. Ferreri has shown that tumor necrosis factor-alpha (TNF) produced within the kidney is part of a mechanism that regulates renal function and the blood pressure response to increases in dietary salt intake.

“The production of TNF within the kidney is increased by high salt intake and decreased by low salt intake, suggesting that it may be important in salt-dependent forms of hypertension and other conditions in which salt concentrations are altered,” said Dr. Ferreri. “Genetic and molecular approaches are currently being used to determine how TNF released from renal epithelial cells elicits regulatory effects in the kidney and interacts with inflammatory cells that infiltrate the kidney in response to elevated blood pressure.”

The new study will determine the mechanisms that regulate an intratubular TNF system that is activated in renal epithelial cells in response to increases in dietary salt intake and attenuates salt-dependent increases in blood pressure.

NYMC Awarded $1,055,837 Grant from John Templeton Foundation to Study Evolutionary Transition from Single-Celled to Multicellular Organisms

Stuart A. Newman, Ph.D.

NYMC was awarded $1,055,837 from the John Templeton Foundation, as part of its Science of Purpose initiative, for a multi-site study to examine how single-celled organisms evolved into larger, more complex organisms, including humans and animals. The study will be led by Stuart A. Newman, Ph.D., professor of cell biology and anatomy and of medicine, and includes collaboration with experimental, computational and mathematical biologists as well as philosophers of biology.

“Some novel features of complex organisms–the tissue layers of embryos, the segments of our vertebral columns–appear to have resulted from the inherent physical properties of certain kinds of cell clusters. But there is a thus-far unexplained role for cellular agency, the apparent capacity of cells to operate according to their own agendas. Individual cell agency is generally under tight control, ‘domesticated,’ in complex organisms, but it reemerges in cancer, for example. We are hoping to learn how evolution tames cell agency, and how, in some pathologies, cells may reacquire it,” said Dr. Newman.

The project will seek to provide experimental, computational, mathematical and philosophical characterizations of the physical conditions relevant to the transitions from cellular to multicellular agency in the evolution of development. Dr. Newman and his collaborators from the University of Texas at Austin, Western Washington University, Autonomous National University of Mexico, Indian Institute of Science and Centre for Theoretical Sciences in Bangalore will explore and test the idea that the mesoscale (i.e., middle-scale) physical properties of multicellular materials serve to scaffold and align unicellular agents during both development and evolution, across a wide range of taxa, yielding a coordinated and integrated locus of organismal agency. Because cellular populations retain the capacity to reassert their agency in cancer, this work could enable novel medical interventions though an understanding of the mutual mobilization of gene expression and physics.

“I am very pleased that the John Templeton Foundation, with the encouragement of Professor Alan Love, principal investigator of the Science in Purpose initiative, and his advisors, has endorsed the long-standing efforts by me and my colleagues to investigate and potentially reframe the relationship between developmental and evolutionary biology and cancer, and has provided sufficient resources to allow us to conduct these multidisciplinary studies at our geographically far-flung venues,” said Dr. Newman.

Supriya Jain, M.D., Leads Multicenter Study of Myocarditis in Teenagers after COVID-19 Vaccination

Supriya Jain, M.D.

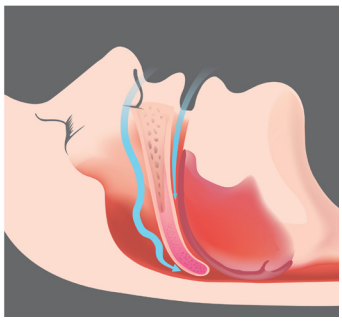
Supriya Jain, M.D., assistant professor of pediatrics and of radiology and clinical education liaison at NYMC, recently led a national multicenter study of myocarditis, an inflammation of the heart muscle, following COVID-19 vaccination in teenagers. In the study, published in *Pediatrics,* cardiac imaging data were collected from hospitals from across the United States to help characterize myocarditis in adolescents after COVID-19 vaccination and understand its impact.

"In June 2021, the Centers for Disease Control and Prevention (CDC) observed a rate of post-vaccine myocarditis that was higher in adolescents and young adults than the expected baseline," said Dr. Jain, a cardiac imaging specialist, who also serves as director of Pediatric Cardiac MRI/Advanced Cardiovascular Imaging at Maria Farreri Children's Hospital, a major clinical affiliate of NYMC. "At that time, only small case series in the pediatric population with rudimentary information about the myocardium had been reported. To improve our understanding into the spectrum and severity of this rare complication, I decided to initiate and undertake this larger study with my colleagues from multiple institutions across the country, which was truly a collaborative effort."

To collect the necessary data for the retrospective study, a request went out to physicians who specialize in cardiovascular imaging to report such cases from their institution. Ultimately, 63 patients from across 16 U.S. hospitals who were under 21 years old and 92 percent male with a diagnosis of myocarditis following COVID-19 vaccination were included and compared using cardiac imaging data to a cohort with multisystem inflammatory syndrome in children (MIS-C).

"Although myocarditis following immunizations against smallpox, influenza and tetanus is well recognized, the experience in children with vaccine-associated myocarditis, other than following COVID-19 vaccination, is limited," said Dr. Jain. "Importantly, myocarditis was not reported following the clinical trials of mRNA COVID-19 vaccines." Read full story on multicenter study on myocarditis.

Sleep Apnea Linked to Lower Stroke Mortality in Research by NYMC Students and Faculty



New research by NYMC students and faculty found obstructive sleep apnea (OSA) to be linked to a decreased risk for mortality and in-hospital complications in stroke patients who undergo thrombectomy. The research, which was recently published as an abstract in the *Journal of Neurological Sciences*, was conducted under the guidance of Fawaz Al-Mufti, M.D., associate professor of neurology, neurosurgery and radiology, as part of the Summer Research and Clinical Neurosurgery Program and supported by a NYMC Medical Student Affairs Summer Fellowship grant during the summer of 2020.

OSA, a common condition characterized by pharyngeal airway collapse causing temporary cessation of breathing during sleep, affects up to 38 percent of the general adult population. Prior studies have found sleep apnea reported in up to 72 percent of stroke and transient ischemic attack patients.

"Previous studies have shown that stroke patients with OSA tend to have poorer outcomes, including higher short-term mortality, diminished long-term functional outcomes and increased risk of recurrent stroke," said Justin Lapow, SOM Class of 2023, who served as lead author of the study and recently presented the findings at the virtual meeting of the XXV World Congress of Neurology (WCN).

Currently, intravenous thrombolytic therapies, such as tissue plasminogen activator (tPA), along with mechanical thrombectomy (MT) are mainstays in the treatment of acute ischemic stroke (AIS).

"To date, no studies have examined the outcomes of OSA patients treated with MT for AIS," said Mr. Lapow. "Our goal was to determine whether the use of MT as a definitive reperfusion therapy could reduce the disparity in outcomes often observed in OSA vs non-OSA AIS patients." Read full story about research on obstructive sleep apnea.

Anesthesiology Department Hosts First Student Research Forum

More than a dozen medical students had the opportunity to present a wide range of research projects encompassing clinical, educational and historical research during the Department of Anesthesiology's first student research forum on September 30.

"We chose to host this event focused solely on the research of our medical students, because of the growth we've already seen in what they were doing and to further encourage their scholarly activity," said Garret Weber, M.D., clinical associate professor of anesthesiology. "Though research is not a medical school requirement, the students who presented at the forum demonstrated a great deal of self-motivation to see their projects to fruition while balancing the rigorous demands of their medical school education. It was an honor to see how successful our students can be, with many of the research projects resulting in peer-reviewed publications and presentations at conference."

The range of projects presented was a testament to the multi-facetedness of the field of anesthesiology, with projects that included gender differences in the language of letters of recommendations written for medical student recommendations; post-operative pain control in spine fusion surgery; and the history of the NYMC Department of Anesthesiology.

"In conducting their research, students really examined the underpinnings of the specialty and also learned about the IRB process, manuscript writing and presenting at meetings," said Dr. Weber. "We also learned some interesting facts, such as that NYMC graduate Thomas Buchanon, M.D., Class of 1897, was actually the first professor of anesthesiology in the country."

"My research project on the history of the NYMC Department of Anesthesiology, which has been submitted to the *Journal of Anesthesia History*, highlights many of the important accomplishments of Dr. Buchanan and the origins of the Department of Anesthesiology at NYMC," said Brigitte Burcescu, SOM Class of 2023. "That project has led me to conduct additional research and I am now working on biographies on former Department chairs, Elizabeth Frost, M.D., and Kathryn McGoldrick, M.D., professor emerita of anesthesiology. As part of that, I had the opportunity to interview both of these pioneer women in the field. It was an invaluable experience to learn about their challenges and successes of being a woman in a field that was at the time male dominant."

Grants Corner

Fawaz Al-Mufti, M.D., assistant professor of neurology, neurosurgery and of radiology, received a $428,278 grant from Cerenovus for "Middle Meningeal Artery Embolization for the Treatment of SuBduRal HemAtomas with TRUFILL® n-BCA" and a $99,341 grant from Cerenovus for "A Prospective, Multi-Center, Single Arm Study to Obtain 'Real World' Clinical Data and Characterize the Acute and Long-Term Performance of the Micrusframe and Galaxy Coils Including the Pulserider Aneurysm Neck Reconstruction Device for the Endovascular Treatment of Intracranial Aneurysms."

Debra Bessen, M.D., professor of pathology, microbiology and immunology, received a $258,248 grant from the National Institutes of Health for "Macrolide Resistance Transfer in Streptococcus Pyognes."

Mitchell Cairo, M.D., professor of pediatrics, pathology, microbiology and immunology, medicine and of cell biology and anatomy, received a $500,026 grant from the U.S. Army for "Novel Combinatorial Targeted Chimeric Antigen Receptor Natural Killer Cell-Based Cellular Immunotherapy with Adjuvant Immunomodulation in Patients with AML"; a $250,000 grant from Alex's Lemonade Stand for "Targeting Tumor-Associated Macrophages in Metastatic Ewing Sarcoma (ES)"; a $183,677 grant from Spectrum Pharmaceuticals for "A Multicenter, Open-Label, Phase 2 Study to Evaluate the Safety and Pharmacokinetics of Eflapegrastim in Pediatric Patients with Solid Tumors or Lymphomas and Treated with Myelosuppressive Chemotherapy"; and a $54,000 grant from Duke University for a "Pilot Study of Safety and Efficacy of Cord tissue Derived Mesenchymal Stem Cells (hCT-MSC) in COVID-19 Related Acute Respiratory Distress Syndrome (ARDS)."

Aalok Singh, M.D., assistant professor of pediatrics, received a $19,303 grant from Rutgers State University for "COVID-19 Network of Networks Expanding Clinical and Translational Approaches to Predict Severe Illness in Children (CONNECT to Predict Sick Children."

Wen-hui Wang, M.D., professor of pharmacology, received a $100,001 grant from the National Institutes of Health for "Role of Kir4.1 in Regulating NCC and ROMK in DCT."

NYMC Researchers Find Inhibition of Glucotoxicity Could Improve Recovery From Spinal Cord Contusion Injury

A new study, recently published in *Neurotrauma Reports*, by several NYMC researchers found that inhibition of glucotoxicity following spinal cord contusion injury both increased locomotor recovery and reduced loss of spinal cord tissue.

In several tissues in the body, including the heart and brain, ischemia activates polyol pathway enzymes—aldose reductase (AR) and sorbitol dehydrogenase (SDH)—that convert glucose to sorbitol and fructose, causing oxidative stress and tissue loss. The NYMC researchers sought to determine whether activation of this pathway, known as glucotoxicity, also contributed to tissue loss after spinal cord contusion injury.

“A hallmark of polyol pathway activity in the peripheral nervous system is axonal swelling and degeneration, as observed in diabetic neuropathy,” said Richard J. Zeman, Ph.D., associate professor of cell biology and anatomy, and lead author on the study. “Therefore, we hypothesized that spinal cord injury might also activate AR, resulting in axonal degeneration and loss.”

“Our studies found that spinal cord injury can lead to increased glucose levels, which causes functional and structural damage via products of glucose metabolism generated from polyol pathways (glucotoxicity),” said Joseph D. Etlinger, Ph.D., professor and chair of the Department of Cell Biology and Anatomy. “Future studies may implicate diabetes in potentiating spinal cord injury.” Read full story on glucotoxicity study.

TCUS Student Research Fellowship Program Supports NYMC Student’s Research on Diabetes

Jerry Nadler, M.D., Mohammad Yasir Khan and Melinee D’Silva, M.S.

With support from a Touro College and University System (TCUS) Student Research Fellowship Program grant, Mohammad Yasir Khan, a Master of Science (M.S.) student in pharmacology, had the opportunity to spend the last few months working on diabetes research in the lab of Jerry L. Nadler, M.D., SOM dean and professor of pharmacology and of medicine.

“I was first exposed to scientific research while still in high school when I had the great opportunity to work under Dana Mordue, Ph.D., associate professor of pathology, microbiology and immunology, in her lab at NYMC,” says Mr. Khan. “From that experience I knew I wanted to go into research. Dr. Nadler’s research really piqued my interest because it was a new opportunity and new area of study I haven’t really focused on. It’s been a great honor to be afforded the opportunity to work in Dr. Nadler’s lab.”

“One of the true joys I have always had is mentoring students and junior faculty to help them become excited about research,” said Dr. Nadler. “It was a pleasure to have Mr. Khan in the lab to work with me and my lab manager Melinee D’Silva, M.S.”

During Mr. Khan’s time there, Dr. Nadler’s lab has been focused on the enzyme 12-lipoxygenage (12-LOX) which catalyzes its substrates to form inflammatory mediators. Dr. Nadler’s research has shown that this enzyme and its metabolites may be a contributor to beta cell loss in the pancreas and subsequently the development of diabetes. “Given the prevalence of diabetes, studying the therapeutic potentials is extremely important,” said Mr. Khan. “The research I conducted with the fellowship grant awarded to me by TCUS focused on the pericyte, which is a type of cell in the pancreas that is responsible for regulating blood flow in and out of the beta cells (that release insulin).”

Previous studies have shown that pericytes decrease substantially in diabetic patients and decrease further as diabetic individuals get older. Mr. Khan explored whether 12-LOX was a responsible factor for the pericyte loss in diabetic patients.

“Through the use of immunofluorescence staining and the laser confocal microscope at NYMC imaging core, we did find some overlap between 12-LOX and pericytes in human pancreatic tissue samples of decedents,” said Mr. Khan. “The data suggests that 12-LOX contributes to both beta cell loss and additionally pericyte loss. The significance of this data provides us with further understanding of the pathology of diabetes.”

“When I was notified that my grant application was chosen, I was ecstatic. This has been such a great experience for my future endeavors in research and was made possible by Dr. Nadler allowing me to work with him and his lab providing the resources to facilitate this research. Dr. Nadler is a great mentor, and I am learning so much from him. I look forward to learning more with his guidance.”

NYMC Professor Esther Sabban Works to Reduce Prevalence and Provide New Treatments for Stress-Triggered Neuropsychiatric Disorders

Esther Sabban, Ph.D., professor of biochemistry and molecular biology, at NYMC, has spent decades researching the mechanisms of stress and stress-related neuropsychiatric disorders with the goal of both reducing their prevalence and providing new avenues of treatment. Most recently, Dr. Sabban's research has focused on the use of neuropeptide Y (NPY), an endogenous peptide produced in the brain, to counter post-traumatic stress disorder (PTSD) associated behavioral and biochemical impairments, as well as sex differences in stress response, with promising results,.

"PTSD is a mental health condition triggered by experiencing or witnessing a terrifying event that can lead to lifelong burden that increases mortality and adverse health outcomes. Yet, no new treatments have reached the market in two decades. Thus, screening potential interventions for PTSD is of high priority," says Dr. Sabban.

In recent preclinical studies, which were funded by two consecutive grants by the U.S. Army, Dr. Sabban and her lab looked at the intranasal delivery of NPY, one of the most prevalent peptides in the body, which is shown to attenuate many of the harmful effects of stress and has far-reaching effects both in the central nervous system and the periphery.

Through the use of a single prolonged stress (SPS) model, Dr. Sabban found that delivering NPY intranasally, which delivers it to a wide range of brain regions involved in mediating the response to stress, slightly before or immediately after the stress, prevented development of many of the behavioral and molecular impairments, including anxiety, impaired social interaction, depressive-like behavior, hyperarousal, increase in plasma glucocorticoids and gene expression of the glucocorticoid receptor in the hippocampus and several other stress-related genes in the brain. Intranasal NPY was also effective in not only preventing but also reversing many of these deficits. Read full story on Dr. Sabban's research.

Department of Pediatrics Hosts Assistant Professor Research Symposium

The 11th Annual Assistant Professor Pediatric Research Symposium, hosted by the Departments of Pediatrics at NYMC and Westchester Medical Center (WMC) as well as Boston Children's Health Physicians (BCHP), was held on November 3. The day began with four assistant professors of pediatrics presenting the best basic, clinical, quality and translational research abstracts virtually in place of the Department's Grand Rounds.

Wen Luo, Ph.D., presented her basic research project on targeting Ewing sarcoma, osteosarcoma and neuroblastoma with anti-MCAM chimeric antigen receptor-modified natural killer cells, while Jessica Hochberg, M.D., presented her clinical research project on the results of a Phase I/II trial of Mitoxantrone in combination with Clofarabine (MITCL) in children with relapsed/ refractory acute leukemia. Dina Daswani, M.D., shared her quality research project on improving the management of febrile young infants in the Maria Fareri Children's Hospital Pediatric Emergency Department; and Yaya Chu, Ph.D., concluded the morning session with her translational research project on the use of combinatorial immunotherapy of N-803 (IL-15 superagonist) and Dinutuximab with ex-vivo expanded natural killer cell to significantly enhance in-vitro cytotoxicity against GD2+ pediatric solid tumors.

"These sessions are so important because they allow us to showcase the cutting-edge research being conducted by members of the Department in addition to the excellent clinical expertise we know our faculty provide every day for the benefit of the patients they care for," said Michael Gewitz, M.D., professor and vice chairman of the Department of Pediatrics. "Ultimately research does benefit clinical practice and this research presented today are the beginnings of that process in many respects and demonstrate how both clinical and quality research impacts the lives of our patients and their families."

Later that day, the program continued with poster presentations by other faculty on a wide range of pediatrics research topics. The day concluded with the announcement that going forward the symposium would be named in honor of Leonard Newman, M.D.' 70, professor and long-time chair of the Department of Pediatrics at WMC and NYMC and former president of BCHP.

Clot-removing procedure appears safe for pregnant stroke patients

Physically removing a blood clot in the brain is a safe and effective treatment for pregnant women having a stroke, a new study by several NYMC faculty, residents and students suggests.

Stroke during pregnancy is rare, but the risk increases during pregnancy and for up to 12 weeks postpartum. The most common type is ischemic stroke, where a clot blocks blood flow in the brain. Mechanical thrombectomy–where a surgeon threads a catheter through an artery to remove a large clot–became a standard treatment in 2015 after a series of landmark studies.

"Unfortunately, pregnant and postpartum patients are systemically excluded from many clinical trials," said Fawaz Al-Mufti, M.D., associate professor of neurology, neurosurgery and of radiology and senior author of the new study, published in the American Heart Association journal *Stroke*. Read full story on study on pregnant stroke patients.

Faculty and Student Publications & Accolades

Wilbert Aronow, M.D., professor of medicine; and **Dipak Chandy, M.D.,** professor of medicine and of neurology, published "Obstructive sleep apnea and cardiovascular disease: a literature review" in the *Archives of Medical Science*.

Ryan Bendl, M.D., clinical assistant professor of surgery; **Milana Flusberg, M.D.,** clinical associate professor of radiology; **Cara Grimes, M.D., M.A.S.,** associate professor of obstetrics and gynecology and of urology; and **Roberto Bergamaschi, M.D., Ph.D.,** professor of surgery, published "In brief" and "Rectal prolapse and pelvic descent" in *Current Problems in Surgery.*

Robert Fekete, M.D., associate professor of neurology, published "Intestinal Decontamination Therapy for Dyskinesia and Motor Fluctuations in Parkinson's Disease" in *Frontiers in Neurology*.

Alan Kadish, M.D., president of TCUS and professor of medicine; and **Jason Jacobson, M.D.,** associate professor of medicine, published "Sleep Patterns and Arrhythmias Should This Keep Us Awake at Night?" in the *Journal of the American College of Cardiology*.

Sean Lynch, M.D. '21; Sivan Shahar, SOM Class of 2022; Lidia Klepacz, M.D., assistant professor of psychiatry and behavioral sciences; **Rhea Dornbush, Ph.D., M.P.H.,** professor of psychiatry and behavioral sciences and of neurology; **Alexander Lerman, M.D.,** assistant professor of psychiatry and behavioral sciences; **Abraham Bartell, M.D., M.B.A.,** clinical associate professor of psychiatry and behavioral sciences; and **Stephen Ferrando, M.D.,** the Har Esh Professor and Chair of Psychiatry and Behavioral Sciences, published "Characteristics of Calls to a COVID-19 Mental Health Hotline in the First Wave of the Pandemic in New York" in *Community Mental Health Journal*. Dr. Lynch, Ms. Shahar, Dr. Klepacz, and Dr. Ferrando also published "Olfactory Hallucinations in the Context of Coronavirus Disease 2019" in the J*ournal of the Academy of Consultation-Liaison Psychiatry*.

Aaqib Malik, M.D., M.P.H., clinical assistant professor of medicine; **Wilbert Aronow, M.D.,** professor of medicine; **Falak Shah, M.D.,** clinical assistant professor of medicine; **Gregg Lanier, M.D.,** associate professor of medicine; **Howard Cooper, M.D.,** clinical professor of medicine; **Diwakar Jain, M.D.,** professor of medicine; **Srihari Naidu, M.D.,** professor of medicine; **William Frishman, M.D.,** professor of medicine and of pharmacology; and **Julio Panza, M.D.,** professor of medicine, published "Sex differences in heart failure hospitalisation risk following acute myocardial infarction" in *Heart.*

Corrado Marini, M.D., professor of surgery, published "Predictors of mortality in patients with rib fractures" in the *European Journal of Trauma and Emergency Surgery*.

Peter Rhee, M.D., professor of surgery, published "Variation in use of damage control laparotomy for trauma by trauma centers in the United States, Canada, and Australasia" in the *World Journal of Emergency Surgery*.

Irim Salik, M.D., clinical associate professor of anesthesiology; and **Anrew Villion, M.D., c**linical assistant professor of anesthesiology, published "Preoperative cardiac POCUS for urgent surgery in a patient with Maroteaux-Lamy syndrome" in the *Journal of Clinical Anesthesia*.

Alla Spivak, D.O., clinical assistant professor of anesthesiology; **Damon Delbello, M.D.,** assistant professor of clinical orthopaedic surgery; and **Jeff Xu, M.D.,** clinical assistant professor of medicine, published "Opioid-sparing technique with the use of thoracolumbar dorsal ramus nerve catheter after adolescent spinal deformity surgery" in the *Journal of Clinical Anesthesia.*

View full list of recent Faculty Publications.