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Dean's Research Newsletter, Summer 2020

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It is my pleasure to share the latest edition of the research newsletter that includes updates on a number of important faculty and student research projects on COVID-19 and other topics from across New York Medical College (NYMC). As we continue to learn more about COVID-19, I am encouraged that this research will provide valuable insight towards the development of treatments and public health strategies to address not just this pandemic, but future pandemics as well. I hope that the work reported here inspires you as much as it does me. I look forward to sharing more updates in future issues.

Supporting research for our faculty and students remains one of the major priorities at NYMC. So I am gratified to see that, despite the difficult times, more than 100 students are participating in research this summer and that many faculty mentors have taken advantage of the incentive program we established, which offers stipends of up to $1,000 for faculty mentors to work with our students. These stipends can then be used in mentors' budgets to support student professional development and activities.

Congratulations to everyone as you continue your research, collaborations and success in securing grants. I look forward to hearing the results. Be safe and well.

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

Recommended Articles

**Clinician Collaboration Key to Proning ARDS Patients**
*Healthcare Purchasing News*
Armeen D. Poor, M.D., clinical assistant professor of medicine

**What Are Resveratrol Supplements—And Do They Have Any Health Benefits?**
*Women’s Health*
Marina K. Holz, Ph.D., dean of the Graduate School of Basic Medical Sciences and professor of cell biology and anatomy
COVID-19 RESEARCH

Research on Rapid Diagnostic Test for COVID-19 Underway at NYMC

Since the COVID-19 pandemic began, researchers around the world have been working to develop a rapid diagnostic approach to test for the highly infectious severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Research is now underway at NYMC to validate a novel rapid diagnostic approach to track the presence of SARS-CoV-2 and diagnose COVID-19 using a colorimetric reverse transcription loop-mediated isothermal amplification (RT-LAMP) that will provide accurate detection of SARS-CoV-2 RNA within 30 minutes.

The study, which is being done in collaboration with Weill Cornell Medicine, is an expansion of an earlier project in which a group at Cornell, including Ebrahim Afshinnekoo, School of Medicine (SOM) Class of 2021, designed and optimized a rapid LAMP assay to detect SARS-CoV-2 infection from nasopharyngeal (NP) swab specimens and oropharyngeal (OP) swab lysates in specimens taken from COVID-19 patients at New York-Presbyterian/Weill Cornell Medical Center. The work has now expanded to validate the method across several different clinical sites, including NYMC, Medical College of Wisconsin, Columbia University and Weill Cornell Medicine, with Mr. Afshinnekoo leading the coordination across all sites. With the assay already proven to be effective on NP and OP swabs, testing on saliva samples is now being done and if successful could lead to easier, more widespread testing.

In addition to Mr. Afshinnekoo, Humayun K. Islam, M.D., Ph.D., interim chair of the Department of Pathology and clinical professor of pathology, will serve as principal investigator of the study, Jerry L. Nadler, M.D., dean of the SOM and professor of medicine and pharmacology, and Lori W. Solomon, M.D. ’99, M.P.H. ’09, chair of the Department of Family and Community Medicine and assistant professor of family and community medicine, will serve as co-investigators and Melinee D'Silva, M.S., laboratory manager in Dean Nadler’s lab, will assist with collection and preparation.

“In once cleared as a clinical diagnostic assay, the LAMP test has potential to be integral to the SARS-CoV-2 testing platform at NYMC, its various clinical sites and the Touro College and University System at large and will establish NYMC as one of the few sites in the U.S. developing a rapid test using saliva,” says Dr. Nadler.

Psychiatry Faculty Publish on Potential New Condition – COVID-19 Psychosis

Several members of the faculty in the Department of Psychiatry and Behavioral Sciences—Stephen J. Ferrando, M.D., The Edith Har-esh, M.D., Professor and Chair; Lidia Klepacz, M.D., assistant professor; Mohammad Tavakkoli, M.D., clinical assistant professor; Rhea L. Dombush, Ph.D., professor; Reena Baharani, M.D., clinical assistant professor; Yvette L. Smolin, M.D., clinical assistant professor; and Abraham S. Bartell, M.D., M.B.A., clinical associate professor—as well as Sean Lynch, SOM Class of 2021, were recently published in Psychosomatics (May 2020) on a potential new condition, COVID-19 psychosis.

“Prior reports from the 2003 SARS CoV-1 epidemic identified a range of psychiatric complications in affected patients with SARS (Severe Acute Respiratory Syndrome), including adjustment-related anxiety, depression, suicidal ideation, as well as organic hallucinosis and organic manic disorder,” says Dr. Ferrando and colleagues. “However, to date, there are few reports describing psychiatric symptoms associated with the COVID-19 pandemic.” Read the full article on potential new psychiatric condition.
New Chair of Medicine Co-Authors Study Finding Hydroxychloroquine Ineffective for Treating COVID-19

Hydroxychloroquine has been widely administered to COVID-19 patients but with little scientific evidence to support its use. Neil Schluger, M.D., who has just joined NYMC as chair of the Department of Medicine and director of medical services at Westchester Medical Center (WMC), has co-authored one of the most robust studies to date into the use of hydroxychloroquine for treating COVID-19 infection. Results, recently published in The New England Journal of Medicine, demonstrate that patients who received the drug did not fare any better than patients who did not receive it.

“These results come at a pivotal time as medical professionals and scientists everywhere are working diligently to find effective treatments for the SARS-CoV-2 virus,” says Dr. Schluger. “As new treatments are tested and administered, we must continue to evaluate their effects in larger scale studies and trials to form a more targeted and effective patient care regimen.”

The study included the first 1,376 patients hospitalized with COVID-19 at a large New York City medical center (excluding patients who were discharged, intubated or died within 24 hours of arriving at the emergency department). Among these patients, 811 received hydroxychloroquine and 565 patients did not. The researchers examined the relationship between hydroxychloroquine use and the development of respiratory failure that led to intubation or death. Overall, 346 patients developed respiratory failure; 180 were intubated and 166 died without intubation.

After using established and sophisticated statistical techniques to account for known differences between patients in the two groups, including age, sex and initial vital signs, Dr. Schluger and the other researchers found that patients who received hydroxychloroquine had the same risk of intubation or death as patients who did not receive the drug.

“Before our study was published, hydroxychloroquine was being widely used to treat patients with COVID-19 infection. The findings supported the National Institutes of Health guidance that hospitalized COVID-19 patients should not be treated routinely with hydroxychloroquine, though that guidance was being widely ignored. Our study has since been confirmed by other groups. We need to urgently search for more effective therapies for this infection.”

Read the full article on Dr. Schluger’s research.

Examining the COVID-19 Health Disparity for Black and Latinx Populations Subject of Student Commentary

With the disproportionate morbidity and mortality of Black and Latinx populations during the COVID-19 pandemic not easily explained given the limited reported data, Dylan Macciola, SOM Class of 2023, and Zafar Karimov, SOM Class of 2023, recently commenced a study to explore two concepts known to play a large role in the delivery of health care—implicit bias and social determinants of health—and examine how they factor into the current health crisis.

“In March, during one of New York Governor Andrew Cuomo’s daily briefings, he highlighted the initial state-reported data that suggested that African American and Latinx populations across the country were disproportionately suffering worse complications of coronavirus infection and he posed the question of why this was occurring. We sought to try to answer this question for ourselves,” say Mr. Macciola and Mr. Karimov. Read the full article on student commentary.
Center for Disaster Medicine Uses Team Research Model to Examine COVID-19 Response

In recent months, as the COVID-19 outbreak has continued to grow, government and public health officials have struggled to address the global health crisis. With still so much unknown about the virus and science scrambling to catch up, officials have looked to data and research from past pandemics and public health emergencies to inform their response to COVID-19. So, what lessons learned from past pandemics have proved beneficial in addressing the COVID-19 pandemic? And what has been learned from this pandemic that can be used to improve emergency preparedness and public health strategy for future pandemics?

The Center for Disaster Medicine (CDM) at NYMC recently set out to gather answers to these questions and more. To accommodate the dozens of medical students who sought to be involved in COVID-19 research, the CDM deployed a team research model with several research teams. Each team, made up of students and a faculty mentor, was tasked with investigating a specific area important to the response to COVID-19 that would ultimately allow motivated students to submit their work for presentation at a national meeting or for publication in a peer-reviewed journal.

“The CDM is such an awesome part of NYMC and I jumped at the opportunity to get involved with research there so that I could contribute to the growing literature and knowledge about COVID-19 in a meaningful way,” says Abigail Marriott, SOM Class of 2023.

“I first got involved with the CDM because I saw great potential in researching COVID-19 and knew there was tremendous merit in unraveling the many mysteries this pandemic brings—especially why the U.S. has fallen behind other similarly developed nations in terms of flattening the curve,” says Lee Hecht, SOM Class of 2023. “The knowledge we’ve accumulated regarding public health endeavors and their effectiveness in combating pandemics over the last century is vast, and so consolidating it into one publication will prove to be a challenge, but I’m excited to see where it takes us!” Read the full article about CDM team research projects.

Faculty Showcase Innovative Way to Achieve Safe Lung Deflation

Draginja R. Cvetkovic, M.D., clinical associate professor of anesthesiology, and Tracey L. Weigel, M.D., clinical professor of surgery, received the “Case Report of the Month” distinction by the journal Anesthesia Analgesia Practice in May for their report on the use of one-lung ventilation to mitigate the risk of infection transmission to health care personnel.

“Airway management is an aerosol-producing high-risk procedure. With the current COVID-19 pandemic, care must be taken to prevent aerosolization of these viral particles,” according to Drs. Cvetkovic and Weigel. “One-lung ventilation (OLV) is a technique widely used to improve surgical exposure during intrathoracic surgical procedures.” While traditionally OLV is accomplished using a double-lumen tube (DLT) or a bronchial blocker (BB) facilitating ventilation to the desired lung, in the case reported on by Drs. Cvetkovic and Weigel, the use of a laparoscopy smoke evacuation system was used to safely deflate the lung without exposing operating room personnel to aerosolization particles.
Department of Obstetrics and Gynecology Turns to Research During Pandemic

As COVID-19 became an abrupt new reality, the Department of Obstetrics and Gynecology turned to research with impressive results. With 14 protocols submitted to the NYMC Institutional Review Board (IRB) to date, four studies are already underway, three papers have been accepted and two already published.

“In the first weeks of the shutdown, we initiated twice weekly Zoom research meetings to encourage and nurture participation in research. These meetings were open to all department faculty, residents and any interested medical students,” says Sean S. Tedjarati, M.D., M.P.H., M.B.A., chair and clinical professor of obstetrics and gynecology. “I am very proud of the hard work and commitment demonstrated by the faculty, our residents and students and the significant results speak for themselves.”

A “Guide for Urogynecologic Patient Care Utilizing Telemedicine During the COVID-19 Pandemic: Review of Existing Evidence,” was co-authored by Cara Grimes, M.D., M.A.S., associate professor of obstetrics and gynecology and urology, in International Urogynecology in April.

In June, Camille A. Clare, M.D., M.P.H. ’11, associate dean of diversity and inclusion and associate professor of obstetrics and gynecology, along with three obstetrics and gynecology residents, Itamar Futterman, M.D., Liel Navi, M.D., and Miriam Toaff, M.D., co-authored a case series on “COVID19 and HELLP: Overlapping Clinical Pictures in Two Gravid Patients” in the American Journal of Perinatology Reports. The case series described two gravid patients who tested positive for COVID-19 and had laboratory findings that mimicked hemolysis, elevated liver enzymes and low platelets syndrome (HELLP). Read the full article on department research.

SOM Students Participate in Research Projects at NYC Health + Hospitals/Metropolitan

Over the course of the last few months, 15 SOM students have been collecting data for three COVID-19 related research projects at NYMC affiliate NYC Health + Hospitals/Metropolitan (MHC).

“During this pandemic, we have seen the toll this disease takes on the health care field. In response, my fellow students and I have devoted many hours to help conduct these research studies in the hope of adding to the growing volume of literature on COVID-19,” says Bertie Zhang, SOM Class of 2021, who coordinated the volunteers for the three projects at MHC. “Though we have been confined at home, we have been able to assist in the data collection process, freeing up the time of attending physicians and residents. The data we collect will assist in the development of treatments and medications that can help humanity overcome this terrible disease. It is truly awe-inspiring to be a part of public health history in the making and to help contribute to scientific discovery, however we can.”

Nora Bergasa, M.D., professor of medicine and chair of Department of Medicine at MHC, is leading a team of students to create a comprehensive database of COVID-19 patients admitted to the hospital for use in an epidemiological study. Getaw Worku Hassen, M.D., Ph.D., professor of emergency medicine, is leading a team of students who are reviewing charts, blood work and imaging studies, as well as conducting follow-up calls to patients for a quality improvement project to assess the disposition of patients who were seen in the medical screening annex and discharged. Samrina Kahlon, M.D., clinical assistant professor of emergency medicine, and her team of students are actively conducting chart review and data analysis as part of a multicenter COVID-19 study assessing potential factors correlating to the severity of the disease. Read the full article on research projects at MHC.
Study Offers Important Insight on How Brain Regulates Sleep and Waking

Chronic or intermittent sleep disorders, including narcolepsy, rapid eye movement (REM) sleep behavior disorder, sleep apnea and insomnia, afflict nearly 50 to 70 million people in the United States. Yet the neural mechanisms controlling both normal sleep and its pathologies remain poorly understood. Inhibitory neurons are found throughout the brain where they generate rhythmical brain activity seen during waking and sleeping states and prevent run-away excitation, which can lead to seizures.

In a recent study, Christopher Leonard, Ph.D., interim chair and professor of physiology, and Masaru Ishibashi, Ph.D., adjunct assistant professor, working in conjunction with Barbara Jones, Ph.D., professor at the Montreal Neurological Sciences and Antoine Adamantides, Ph.D., professor at the University of Bern, used optogenetic methods to identify and then to selectively stimulate a group of inhibitory neurons in the brainstem that were long-known to be intermingled with modulatory cholinergic neurons, but whose function were unknown. Read full article on Dr. Leonard’s study.

Grants Corner

Roberto Camillo M. Bergamaschi, M.D., Ph.D., professor of surgery, has received a $263,813 grant from THD America for “Multi-center, Non-randomized Prospective Observation Study Comparing Ferguson Hemorrhoidectomy and Transanal Hemorrhoidal Deaerialization (THD) for Prolapsed, Nonincarcerated, Reducible Hemorrhoids In Terms of One-Year Recurrence.”

Mitchell S. Cairo, M.D., professor of pediatrics, pathology, microbiology and immunology, medicine and cell biology and anatomy, has received a $1,276,171 grant from Nektar Therapeutics for a “Phase 1, Open-label, Multi-center, Dose-escalation and Dose-expansion Study of NKTR-255 as a Single Agent in Relapsed or Refractory Hematological Malignancies and in Combination with Daratumumab as a Salvage Regimen for Multiple Myeloma.”

Thomas Diflo, M.D., professor of surgery, and Daniel G. Glicklich, M.D., professor of medicine, have received a $180,485 grant from Natera for “The PROspera Kidney Transplant ACTIVE Rejection Assessment Registry.”

Sankaran S. Krishnan, M.D., M.P.H., associate professor of clinical pediatrics, has received a $97,882 grant from AstraZeneca for “The CHRONICLE Study: A Longitudinal Prospective Observational Study of the Characteristics, Treatment Patterns and Health Outcomes of Individuals with Severe Asthma in the United States.”

Dana G. Mordue, Ph.D., associate professor of microbiology and immunology, has received a $442,661 grant from the U.S. Army for “Analysis of the Peripheral Blood Transcriptome to Identity Clinical Correlates of Pathology in Patients with Babesiosis.”

Jerry L. Nadler, M.D., dean of SOM and professor of medicine and pharmacology, has received a $804,755 grant from the NIH for “Role of 12-lipoxygenase and 12-HETE signaling beta-cell dysfunction.” The project is done in collaboration with Ercument Dirice, Ph.D., assistant professor of pharmacology, who was recruited from the Joslin Diabetes Center, Harvard Medical School. The study is a continuation of a long-term collaboration with Raghu Mirmira, M.D., Ph.D., professor of medicine at the University of Chicago, to develop new anti-inflammatory treatments for type 1 and type 2 diabetes.

Lance A. Parton, M.D., professor of pediatrics and associate professor of anesthesiology and obstetrics and gynecology, has received a $38,496 grant from Infant Bacterial Therapeutics AB for a “randomized, double blind, parallel-group, placebo-controlled study to evaluate the efficacy and safety of IBP-9414 in premature infants 500-1500g birth weight in the prevention of necrotizing enterocolitis-The Connection study.”

Raj K. Tiwari, Ph.D., interim chair of Department of Microbiology and Immunology, professor of microbiology and immunology and associate professor of otolaryngology, has received a $195,876 grant from NYC Health + Hospitals/PAGNY for “Genetic Profiling of Melanoma for Immunotherapy.”
**Faculty Publications**

NYMC faculty are notable scholars and researchers who are published in leading journals across a wide range of health science disciplines. This listing represents just a small sample of recent publications.


**Chirag D. Gandhi, M.D., M.S.,** chair and professor of neurosurgery, professor of neurology and radiology, **Ida Azizkhanian, M.D. ’20,** Benjamin Epstein, M.D. ’20, **Abhiniti Mittal, M.D. ’20,** Nam Lee, M.D. ’19, **Justin G. Santarelli, M.D.,** assistant professor of neurosurgery, **Fawaz Al-Mufti, M.D.,** assistant professor of neurology, and **Christian A. Bowers, M.D.,** assistant professor of neurosurgery, published “Frailty and Spontaneous Intracerebral Hemorrhage: Does The Modified Frailty Index Predict Mortality?” in *Clinical Neurology and Neurosurgery*.

**Alan L. Gass, M.D.,** professor of medicine, and **Gregg M. Lanier, M.D.,** associate professor of medicine, published “Mineralocorticoid Receptor Antagonist Use in Heart Failure with Reduced Ejection Fraction and End-Stage Renal Disease Patients on Dialysis A Literature Review,” in *Cardiology in Review*.

**Michael H. Gewitz, M.D.,** vice chair and professor of pediatrics, was a co-investigator on “Multisystem Inflammatory Syndrome in Children in New York State” recently published in *The New England Journal of Medicine*.

**Aaqib H. Malik, M.D., M.P.H.,** clinical assistant professor of medicine, **Michael D. Goldberg, M.D.,** assistant professor of medicine, **Diwakar Jain, M.D.,** professor of medicine, **William H. Frishman, M.D.,** professor of medicine and pharmacology, and **Wilbert S. Aronow, M.D.,** professor of medicine, published “Cardiovascular Outcomes with the Use of Sodium-Glucose Cotransporter-2 Inhibitors in Patients with Type 2 Diabetes and Chronic Kidney Disease an Updated Meta-Analysis of Randomized Controlled Trials” in *Cardiology in Review*.

**Irim Salik, M.D.,** assistant professor of anesthesiology, **Gerald Zaidman, M.D.,** professor of clinical ophthalmology, and **Samuel Barst. M.D.,** clinical associate professor of anesthesiology, published “Peters Anomaly: A 5-year Experience” in *Pediatric Anesthesia*.


**Virendra Tewari, M.D.,** assistant professor of medicine, and **Edward Lebovics. M.D.,** Sarah C. Upham Professor of Gastroenterology and professor of medicine, published “National Landscape of Unplanned 30-Day Readmission Rates for Acute Non-Hemorrhagic Diverticulitis: Insight from National Readmission Database” in *Digestive Diseases & Sciences*.


See full list of recent Faculty Publications.

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