

Summer 2019

Dean's Research Newsletter, Summer 2019

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Recommended Citation

Nadler, J. L. (2019). Dean's Research Newsletter, Summer 2019. Retrieved from https://touro scholar.touro.edu/nymc_som_research_newsletter/10

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Welcome students, faculty, staff, colleagues and fellow researchers. Research is one of the major missions of the School of Medicine (SOM). As [dean of the School of Medicine](#), I am pleased that we have some very exciting on-going research advances at NYMC and with our affiliated hospital partners. My newsletters will provide a sample of these activities and up to date information related to research. I'm excited to announce a new initiative in which I will be partnering with Salomon Amar, D.D.S., Ph.D., vice president for research, and Marina K. Holz, Ph.D., dean, Graduate School of Basic Medical Sciences, to develop a new research incentive plan for our faculty. Stay tuned as we will update you soon! I hope you will find the news of awards and accolades as useful and motivating as I do. Kudos to everyone as you continue your success with research, collaborations and grants. I look forward to hearing from you as I present these newsletters on behalf of [NYMC SOM](#). I encourage you to

continue to follow helpful updates from Dr. Amar and the [Office of Research Administration \(ORA\)](#).

Great things are happening here!

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



Recommended article in the current issue of *Advancing Care in the Hudson Valley*, a publication of *Westchester Medical Center*.

Click below to read:

[Advancing Care in the Hudson Valley](#)

Mitchell S. Cairo, M.D., professor of pediatrics, Division of Pediatric Hematology, Oncology and Stem Cell Transplantation, professor of medicine, pathology, microbiology and immunology, cell biology and anatomy, **"Building Better Cells."**



AFFILIATE HOSPITALS RESEARCH ACTIVITY

METROPOLITAN RESIDENT RESEARCH DAY



The Annual Resident Research Day of New York Medical College at NYC Health + Hospitals/Metropolitan was held on April 4, 2019. All clinical departments participated and presented highlights of the investigative work that NYMC medical and dental residents perform under faculty mentorship in the hospital's clinics, inpatient units, emergency and operating rooms. The judges included **John Pellicone, M.D.**, associate dean for medical education, NYMC, chief medical officer Metropolitan Hospital, and **Jerry Nadler, M.D., M.A.C.P., F.A.H.A., F.A.C.E.**, dean of the School of Medicine. Dr. Nadler presented the awards to the following residents:

First Place: **Jared Theriot, M.D.**, PGY2 resident in the NYMC surgery program (center) *"The Benefits of a Muscle-Sparing Below Knee Amputation in the Elderly Population"*

Second Place: **Carissa Dumancas, M.D.**, PGY3 resident, NYMC internal medicine program (left) *"Clinical Utility of an Observation Unit in the Outcome of Cocaine-Induced Chest Pain"*

Third Place: **Rene Eapen, M.D.**, PGY3 resident in the NYMC internal medicine program (right) *"Medical Optimization Team (MOT), A Patient Care Improvement Project - Model of Care"*

ON-GOING RESEARCH AT NYC + HOSPITALS/METROPOLITAN



Joseph Morales, D.D.S., chair of the Department of Dental Medicine, NYMC SOM, is the primary investigator in collaboration with **Zvi Loewy, Ph.D.**, adjunct professor microbiology and immunology, of the study, "Oral Microbiome: Relationship of Stomatitis of Denture Wearers and Chronic Obstructive Pulmonary Disease." Clinical portions begin soon.



SOM WELCOMES NEW FACULTY MEMBER

Ercument Dirice, Ph.D., assistant professor of pharmacology, was recently recruited from the prestigious Joslin Diabetes Research Center at Harvard University. His exciting research is focused on new ways to halt Type I diabetes and even allow new regeneration of insulin producing cells. This research could help people with Type I diabetes all over the world. Dr. Dirice recently published two groundbreaking studies in high-impact journals:

- [Human duct cells contribute to \$\beta\$ cell compensation in insulin resistance.](#)
- [Boosting to Amplify Signal with Isobaric Labeling \(BASIL\) Strategy for Comprehensive Quantitative Phosphoproteomic Characterization of Small Populations of Cells.](#)



"It is very exciting to observe that inducing beta cell replication in a timely manner resulted in a reshaped immune profile which specifically protects beta cells being targeted," said Dr. Dirice.

RESEARCH SPOTLIGHT



NYMC RESEARCHERS AIM TO TRANSFORM TREATMENT OF BABESIOSIS

New York Medical College (NYMC) researchers have made great strides in the fight against the tick-borne illnesses. The latest is a groundbreaking study, *Could the Drug Tafenoquine Revolutionize Treatment of Babesia Microti Infection* by **Dana G. Mordue, Ph.D.**, associate professor of microbiology and immunology, and **Gary P. Wormser, M.D.**, professor of medicine, microbiology and immunology, and pharmacology, and vice chair of medicine for research and development, published in *The Journal of Infectious Diseases*. The pair discovered that the drug Tafenoquine, which recently gained FDA approval to treat some species of Plasmodium, the parasite that causes Malaria, may also be extremely successful for the treatment of Babesiosis.

[Read the full article on the treatment of Babesiosis.](#)



RESEARCH INFORMATION UPDATES/NIH LINKS

SEE WEEKLY NIH ANNOUNCEMENTS:

[Learn more about weekly NIH funding opportunities here](#)

TRAINING EARLY STAGE PHYSICIANS & SURGEONS:

[Read about NIH grants here](#)

NATIONAL INSTITUTE ON AGING

[Lipid Signaling in Healthspan and Longevity Regulation \(R01 Clinical Trial Not Allowed\)](#)
(RFA-AG-20-039)

GRANTS AND DEPARTMENT RESEARCH

GRANTS CORNER

Mitchell Cairo, M.D., professor of pediatrics, pathology, microbiology and immunology, medicine and cell biology and anatomy, Department of Pediatrics, (PI) has been awarded a \$320,000 grant sponsored by Miltenyi Biotec, Inc., for, “A Pilot Study in the Treatment of Refractory Adenovirus (ADV) Infections with Related Donor ADV Specific Cytotoxins T-Cells in Children, Adolescents and Young Adult Recipients.”

Michael Goligorsky, M.D., Ph.D., professor of medicine, pharmacology, physiology and Dong Sun, M.D., Ph.D., professor of physiology, co-PIs, were awarded a prestigious NIH grant (July 2019) for, *“Glycocalyx repair in sepsis using liposomal carriers of preassembled glycocalyx.”* This study consists of evaluating the efficacy of the recently invented by the PIs liposomal nanocarriers of preassembled glycocalyx in curtailing the cardiovascular and renal complications of sepsis.

Marina K. Holz, Ph.D., dean of the Graduate School of Basic Medical Sciences and a prominent breast cancer researcher, was awarded a prestigious NIH Outstanding Investigator grant for \$2,050,000 to further her study of the Estrogen-mTOR Relationship. In many cancers, mTOR (a molecule present in all cells whose function is to regulate how cells grow) is turned on more than it should be, causing abnormal cell growth and forming tumors. This project will study how this happens and what we can do to interfere with the estrogen-mTOR relationship to stop tumor cells from growing.

Sudhir Jain, Ph.D., assistant professor of pathology, Department of Pathology, PI, was awarded a prestigious NIH grant for \$1.6M, over the course of four years, to support the project, *“Hypertension and Inflammation: novel insights from human AT1Receptor variants.”*

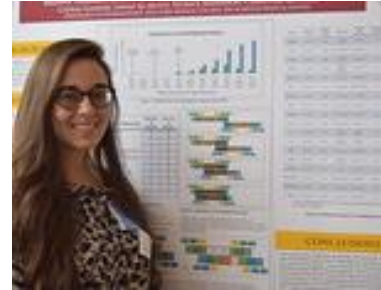
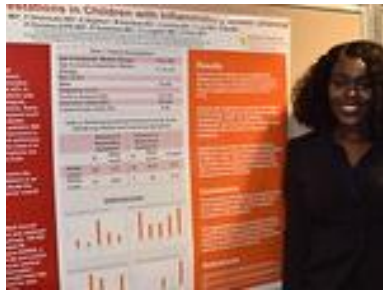
John Phillips, M.D., professor of urology, Department of Urology, and Dazhong Xu, Ph.D., assistant professor of pathology, Department of Pathology, (co-PIs) were bestowed with the Empire Clinical Research Investigator Program Award (ECRIP), in the amount of \$574,000, over the course of two years, from the NY State Department of Health to support the project, *“Nanoparticle Therapy Center: Multidisciplinary Approach to Develop Therapies for Organ Preservation in Bladder Cancer Using Nano-Carrier Delivered Chemotherapy.”* Bladder cancer is the fifth most common malignancy in New Yorkers and the most expensive cancer to treat in Medicare beneficiaries. Their lab has begun work in collaboration with Johns Hopkins and New York University to test the efficacy and pharmacokinetics of nanoparticle delivered drug therapy.

Julian Stewart, M.D., Ph.D., professor of pediatrics, Department of Physiology and Medicine, and senior pediatric cardiologist, continues his on-going success as PI, with a \$610,000 grant awarded this June, from the Department of Health and Human Services National Institutes of Health, National Heart, Lung and Blood Institute. This grant will support the project, *“Cardiovascular baroreflex deficits impair neurovascular coupling and cognition in Postural Tachycardia Syndrome.”*

Gary Wormser, M.D., professor of medicine, microbiology and immunology, pharmacology, and vice chair of medicine for research and development, in collaboration with Dana Mordue, Ph.D., associate professor of microbiology and immunology, (co-PIs) were awarded a prestigious NIH grant of \$451,000 for the project, *“Tafenoquine as a Potential Revolutionary Treatment of Babesiosis.”*

ANNUAL STUDENT RESEARCH EVENT

There has been exciting research conducted by our students and this was highlighted at the **23rd Annual Medical Student Research Forum (MSRF)**. There were 60 presenters this year --- a record number. The MSRF showcases SOM student research, much of which is later published in peer-reviewed publications or presented at national or international conferences. [View more photos here.](#)



STUDENTS PUBLISH IN MEDICAL JOURNALS



It's an impressive feat for anyone to get published in an academic medical journal, even more so to be published as a student --- yet, these impressive New York Medical College (NYMC) students recently achieved just that.

In October of 2018, **Brian Tung** (left) School of Medicine (SOM) Class of 2022, authored "Krüppel-like factor 9 and histone deacetylase inhibitors synergistically induce cell death in glioblastoma stem-like cells," which was published in the peer-reviewed medical journal, BMC Cancer. **Adam M. Karp** (right) SOM Class of 2019, in collaboration with Mill Etienne M.D. '02, M.P.H., associate dean for student affairs and clinical assistant professor of neurology, and NYMC alum Nathan Carberry, M.D. '17, co-authored, "Healing through Self-Expression: The Role of Art Therapy in Medicine," which was published in the Journal of Health and Human Experience. [Read the full article on the student publications.](#)

STUDENT RESEARCH LINK TO OUR WEBSITE

[Read more about NYMC SOM student research here.](#)

THE M.D. RESEARCH CONCENTRATION TRACK

Facilitating research for our medical students is one of our top priorities. This summer, I have partnered with **Mary Petzke, Ph.D.**, assistant dean for medical student research and, assistant professor of microbiology and immunology, to increase the number of stipends to support medical student research. Next year, we plan to further increase the stipends and include stipends to support the mentors.

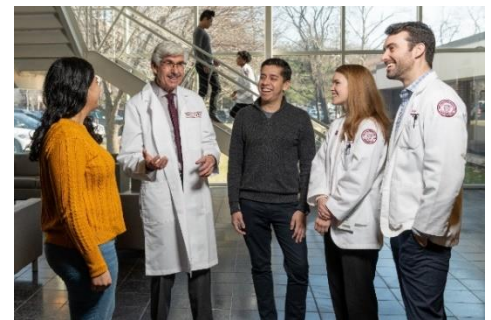


The **M.D. Research Concentration**, is one of the five tracks available as options to SOM students under the Areas of Concentration program. The Areas of Concentration were established four years ago, and students in the Class of 2019 were the first to complete the program; 29 students graduated with Distinction in Research. The M.D. Research Concentration is not a requirement for all students, but it encapsulates NYMC's renewed focus on promoting SOM student engagement in scientific inquiry.

The overarching objective of the M.D. Research Concentration is to prepare students to be leaders in the field of biomedical research. This area of concentration offers students a unique opportunity to participate in the process of data acquisition and evaluation that drives the evolution of medical knowledge and provides the foundation for the development of new diagnostic and therapeutic modalities. Students will develop the skills to critically evaluate the primary literature, develop and test a hypothesis, interpret results, and effectively communicate scientific data.

There are five required elements to the M.D. Research Concentration:

- 1) Foundation course
- 2) Student-organized seminar series
- 3) Faculty-mentored independent research project
- 4) Presentation of results at the Medical Student Research Forum
- 5) Generation of a peer-reviewed scholarly product (published manuscript or abstract)



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