



Icahn  
School of  
Medicine at  
Mount  
Sinai

Graduate School of  
Biomedical Sciences

# Dean's Report

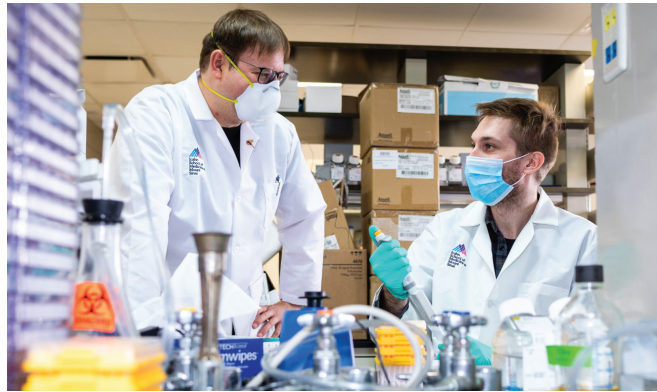
## At 'the Epicenter of the COVID-19 Epicenter' Making Outstanding Contributions to Science and Medicine

It is an extraordinary time for our basic science departments—five are among the Top 10 in National Institutes of Health (NIH) funding, according to the latest data from the Blue Ridge Institute for Medical Research (see back page). This list is led by the Icahn School of Medicine at Mount Sinai's Department of Microbiology—No. 2.

Under the leadership of Peter Palese, PhD, Horace W. Goldsmith Professor and Chair of Microbiology, and Professor of Medicine (Infectious Diseases), Mount Sinai has become one of the world's leading academic centers for the study of viruses and emerging pathogens. Both Dr. Palese and Adolfo Garcia-Sastre, PhD, the Irene and Dr. Arthur M. Fishberg Professor of Medicine (Infectious Diseases), Professor of Microbiology, and Director of the Global Health and the Emerging Pathogens Institute, are members of the National Academy of Sciences. Dr. Palese is also a member of the National Academy of Medicine.

When COVID-19 began to ravage the world's populations and overwhelm seven Mount Sinai Health System hospitals in New York City and the metropolitan area, the Icahn School of Medicine had a profound research and clinical role. "Mount Sinai has been the epicenter of the epicenter," says Dennis S. Charney, MD, Anne and Joel Ehrenkranz Dean, Icahn School of Medicine at Mount Sinai, and President for Academic Affairs, Mount Sinai Health System. "We've been attacking COVID-19 from many different perspectives and we've made a lot of progress in a short amount of time."

Among the major advances was the development of an enzyme-linked immunosorbent assay for COVID-19 antibody detection, which enabled plasmapheresis and a detailed characterization of immune responses in COVID-19 patients. This effort, led by Florian Krammer, PhD, Professor of Microbiology, included a large cohort of postdoctoral fellows, graduate students, and highly dedicated research staff. The Department of Microbiology is among several conducting COVID-19 research on



Postdoctoral fellow Daniel Stadlbauer, PhD, with Florian Krammer, PhD



Biomedical Sciences PhD candidates Mark Roberto, second from right, and Sindhura Gopinath, right, joined third-year medical students Shrivani Pathak, left, and Samuel Paci on a student-led PPE (personal protective equipment) Task Force.

therapeutics, diagnostics, basic mechanistic questions, and vaccines. In addition to Dr. Palese, Dr. García-Sastre, and Dr. Krammer, the faculty include Dusan Bogunovic, PhD; Nicole Bouvier, MD; Matthew Evans, PhD; Ana Fernandez-Sesma, PhD; Jeffrey Johnson, PhD; Benhur Lee, MD; Jean Lim, PhD; Ivan Marazzi, PhD; Thomas Moran, PhD; Brad Rosenberg, MD, PhD; Viviana Simon, MD, PhD; Benjamin tenOever, PhD; and Domenico Tortorella, PhD.

Mount Sinai scientists and trainees working together across many departments and institutes have made, and are continuing to make, outstanding contributions on the COVID-19 front. Among the many examples: more than 50 faculty, staff, postdoctoral fellows, and students within the Precision Immunology Institute spearheaded an effort to rank and review the unprecedented volume of non-peer-reviewed scientific information on COVID-19 published on preprint servers. This work caught the attention of editors

at *Nature Reviews*, which offered a unique collaboration with Mount Sinai to provide weekly commentary on the most promising findings on COVID-19 in their publication. The Institute is led by Miriam Merad, MD, PhD, Mount Sinai Professor of Immunology, and a newly elected National Academy of Sciences member.

In addition to several science-related volunteering efforts, postdocs and graduate students joined medical students to support front-line staff—providing food and prescriptions to peers in isolation due to probable or confirmed COVID-19 infection, for example, and creating personal protective equipment go-bags for clinical residents and fellows redeployed to overburdened hospitals.

The breadth of the many contributions of our Mount Sinai faculty, postdocs, students, and staff not only defines who we are as scientists, but equally significant, who we are as a community.



**Marta Filizola, PhD**

Dean, Graduate School of Biomedical Sciences; Sharon and Frederick Klingenstein/Nathan Kase, MD Professor; and Professor of Pharmacological Sciences, and Neuroscience

This past year has been unlike any others in our lifetime. From a devastating pandemic that has crippled the world, to senseless murders of Black Americans, to protests against racism and brutality, our community of scientists, educators, and trainees has been put to the test, but has swiftly risen to the challenge and entered a new transformative journey head on. I am especially in awe of the courage, resilience, and generosity demonstrated by our trainees in helping the Mount Sinai Health System deliver the best health care during New York's state of emergency due to COVID-19 as they completed courses, wrote dissertations, and defended theses.

I am also deeply appreciative of our amazing training faculty for providing distance learning to our trainees, and for also helping us recruit another accomplished and diverse PhD class in Biomedical Sciences and Neuroscience. The 2020-2021 incoming class of 53 PhD students is the largest Mount Sinai has ever recruited since the launching of its Graduate School 52 years ago. Of these matriculants, 79 percent are female, 15 percent are from racial and ethnic backgrounds underrepresented in science, 30 percent are first-generation college graduates, and 32 percent are foreign nationals. Our Master's programs recruitment efforts are ongoing, as is the implementation of flexible plans to onboard new students and trainees with safety, health, and well-being as top priorities.

In this Report, you can learn more about the past year's programmatic focus and accomplishments, as we continued to challenge our faculty, students, and trainees to reach new educational and scientific milestones.

## An Environment of Professional Behavior

The Icahn School of Medicine at Mount Sinai recently launched an enhanced policy that reflects its longstanding commitment to providing students, postdocs, residents, faculty, staff, and patients with an environment of respect, dignity, inclusion, equity, trust, support, and protection of civil and professional discourse that is free of mistreatment, abuse, or coercion, and without fear of retaliation.

The policy emphasizes that mistreatment and unprofessional behavior directed at students and trainees interferes with the learning environment, adversely impacts well-being and the trainee-mentor relationships, and has the potential to negatively impact patient care and research. It provides mechanisms for reporting unprofessional behavior and guidance for practicing positive, professional behavior that fosters a learning environment of empathy, compassion, and advocacy. Students, trainees, and faculty who have witnessed or experienced mistreatment are encouraged to report it to leadership through a feedback form that can be filed electronically and anonymously, if so desired. All reported incidents are scrutinized and rapidly converted to an action plan that may include feedback, remediation, or disciplinary action. Exemplary behaviors that demonstrate integrity, empathy, compassion, respect, and advocacy may also be reported and will be rewarded.

## Secondary Mentor Program for Postdocs

The Icahn School of Medicine at Mount Sinai's Graduate School of Biomedical Sciences and the Office of Postdoctoral Affairs, led by Director Guy Montgomery, PhD, Associate Professor of Population Health Science and Policy, Oncological Sciences, and Psychiatry, have recently launched the Postdoc Secondary Mentor Project, an effort that seeks to improve and enhance the experiences of postdocs through the assignment of an additional advisor for each postdoc.

Secondary mentors focus on career mentorship and professional development, which can include aiding in the planning of the postdoc's professional trajectory and career goal setting, and also fostering the building of professional networks and obtaining employment beyond the postdoc years. In its most basic form, secondary mentors offer an outside perspective on the training and development of the postdoc in order to ensure the progression and protection of postdoctoral scholars. A database of current faculty members, industry collaborators, and Graduate School alumni willing to serve in this role is available to postdoctoral trainees to facilitate easy matching.

## Committed to An Inclusive Environment Free of Racial Inequalities

The Graduate School of Biomedical Sciences continues to be fully committed to addressing racial inequalities in science. During the past years, we have worked in close partnership with the Icahn School of Medicine at Mount Sinai's Office for Diversity and Inclusion and other entities to change our admission practices; provide unconscious bias training to faculty involved in admissions and mentoring; establish new partnerships with historical black colleges; and develop new pipeline programs; and we have added training sessions to "mentor

# New Opportunities in Data Science Training and Enrichment

Two years after launching the Biomedical Data Science Initiative to bridge research and educational endeavors in computing, artificial intelligence, and advanced big data analytics across various departments and institutes—providing an intellectual home for collaborative data-driven research—we have graduated our first Master in Biomedical Data Science class as we continue to strengthen training and enrichment opportunities in data science and artificial intelligence.

Today, Emma K. T. Benn, DrPH, Associate Professor in the Center for Biostatistics and the Department of Population Health Science and Policy, and the Founding Director of the Center for Scientific Diversity at the Icahn School of Medicine at Mount Sinai, has been appointed Director of Data Science Training and Enrichment, joining the Graduate School of Biomedical Sciences leadership team. Dr. Benn is



Emma K. T. Benn, DrPH

also the former co-Director of the Master of Science in Biostatistics Program. In her new role, Dr. Benn will lead several initiatives, including a comprehensive evaluation of the school's graduate programs to establish program-specific core competencies and graduate school-wide metrics for assessment of the quantitative and computational training of graduate students and trainees, and identifying necessary areas for enrichment. This evaluation will be supplemented with student, trainee, and alumni perspectives regarding the adequacy of their quantitative and computational training.

Dr. Benn also aims to contribute her prior experience and successful track record in increasing diversity and equitable advancement in biostatistics and academic medicine to foster an inclusive, culturally competent, and antiracist culture and training environment that promotes methodologic innovation and ensures the success of all graduate students and trainees.

## Unparalleled Learning Experience for Students In New Master of Health Administration Program

Health care professionals can now gain new tools and advanced competitive knowledge to help improve efficiency, value, and patient outcomes through the 2020 launch of the Master of Health Administration (MHA) degree program at the Graduate School of Biomedical Sciences at the Icahn School of Medicine at Mount Sinai.

The program leverages the academic and health care excellence of both the Icahn School of Medicine and the Mount Sinai Health System to deliver an unparalleled learning experience. Students will explore health care environments, processes, and structures; examine evidence-based frameworks, management, and value creation processes; gain exposure to emerging managerial trends

and innovations; develop core competencies in areas such as technical and substantive knowledge; and apply the tools they learn for more effective and efficient management.

"Being imbedded at Mount Sinai, we are able to offer students a more practical, real-world-focused MHA than one delivered through a university that only has an arm's-length partnership with a medical institution," says Brian Nickerson, PhD, JD, Senior Associate Dean for Master's Programs. "That means we are not only able to provide them with more opportunities for internships and research projects, and to learn from faculty who are teaching the managerial practices they are actually using every day, but they also have access to recruiters who can help open career doors for them."

the mentors." We will continue to develop strategies for making strides toward an inclusive environment that is free of racial inequalities, and we will demonstrate several years from now that we did try, and that we did do better. We are listening to students, postdocs, faculty, and staff from underrepresented groups particularly, and we have joined the new Mount Sinai Health System Task Force on Racism that was charged by leadership. Together, we are committed to make meaningful and lasting changes in a transformative and

sustainable manner. Our strategic priorities include improving the representation of Black students in our graduate programs, building on tangible success in recent years; investing further in recruiting Black postdoctoral fellows to our basic research labs and Black faculty to our basic sciences; and continuing to strive for an environment that is maximally inclusive and comfortable for all as we educate ourselves and others to conquer racism and bias. Significantly, we will collect the data to demonstrate progress. We have asked all to join us on this journey.

**We will demonstrate  
several years from now  
that we did try, and that  
we did do better.**



# 2020 Graduate School of Biomedical Sciences

Fully integrated with a stand-alone, Top 20 medical school—  
The Icahn School of Medicine at Mount Sinai



\* total NIH funding, including contracts and grants (fiscal year 2019)



## Degree-Granting Graduate Programs

**3 PhD Programs:**

- Biomedical Sciences
- Neuroscience
- Clinical Research

**1** of only **50** U.S. institutions to offer an NIH-funded MD/PhD program

**9 Master's Programs:**

- Master of Public Health
- Master of Health Care Administration

### Master of Science in:

- Biomedical Sciences
- Biomedical Data Science
- Biostatistics
- Clinical Research
- Epidemiology
- Genetic Counseling
- Health Care Delivery Leadership

## Top NIH-Funded Basic Science Departments



Blue Ridge Institute for Medical Research data for National Institutes of Health (NIH) funding among U.S. medical schools. Awards received by the Icahn School of Medicine at Mount Sinai during the NIH 2019 fiscal year.

## Number of Graduate Students and Trainees

(2019-2020 academic year)

**263** PhD Candidates

**92** MD/PhD Candidates

**329** Master's Candidates

**584** Postdocs

## 2020-2021 PhD Matriculants

In the Biomedical Sciences and Neuroscience programs

Students

**53**

Median Undergraduate GPA

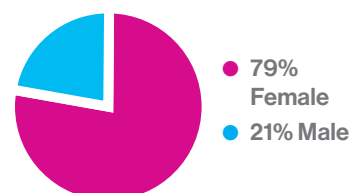
**3.81**

Published Journal Articles and Abstracts

**>240**

Average Hours of Prior Research Experience

**>4,400**



**30%** First-generation college graduates

**15%** From racial and ethnic backgrounds underrepresented in science

## RENOWNED FACULTY

**25** Members of the National Academy of Medicine and/or National Academy of Sciences

**300+**

Research Laboratories

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