ONE DEPARTMENT, ONE MISSION

Icahn School of Medicine at Mount Sinai

Department of Medicine

ONE

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vision

one novel, flexible,
proactive department

Department of Medicine
Letter from the Chair

To say that the past year was complex is an understatement. Recently, the Icahn School of Medicine at Mount Sinai merged with the Beth Israel Medical Center, Beth Israel Brooklyn, St. Luke's and Roosevelt Hospitals, and New York Eye and Ear Infirmary to become one academic medical center. Today, this newly unified Department of Medicine is an integral and vital part of the expanded Mount Sinai Health System.

The Department of Medicine is now one of the largest, multidimensional academic training grounds in the country, encompassing 12 divisions across seven campuses. We have more than 2,000 physicians, 400 residents, 300 fellows and 1,000 employees in our department and a budget of nearly $350 million. But don't be intimidated by our enormous size or big numbers; rather, be inspired by the possibilities that such a dynamic and evolving department can create.

Although it has been challenging, this merger has given us an opportunity to create one novel, flexible, and proactive department dedicated to excellence in all disciplines. We are in a unique position of being able to fulfill our tripartite mission of providing excellent care; driving change in health care delivery through scientific innovation; and training tomorrow's physicians to provide that care. And we should now reexamine all of our assumptions about how patient care is provided; how we train future physicians; and how we turn the phrase "bench-to-bedside" into a reality rather than just a clever marketing expression.

From my perspective as Chair of the Department of Medicine in this new Mount Sinai Health System, I can see that we are at the beginning of an exciting time period in academic medicine that will result in exponential and transformational changes. Now more than ever–by virtue of our combined strengths –we can affect significant change and make real progress in the delivery of health care in our local communities, throughout the city, across the country, and around the world.

As one department with one mission, our unified future is filled with great potential and promise. As you read through this report, take a moment to appreciate our recent accomplishments and to imagine innovations in research and patient care coming in the near future. I believe that the astonishing results of our merger will be much more than the sum of our parts. I am most privileged to be at the helm of this reinvigorated Department of Medicine as we make medical history together.

Barbara Murphy, MB, BAO, BCh, FRCPI
Murray M. Rosenberg Professor of Medicine
Chair, Samuel Bronfman Department of Medicine
Dean, Clinical Integration and Population Management

Our Missions

The Department of Medicine Programmatic Missions

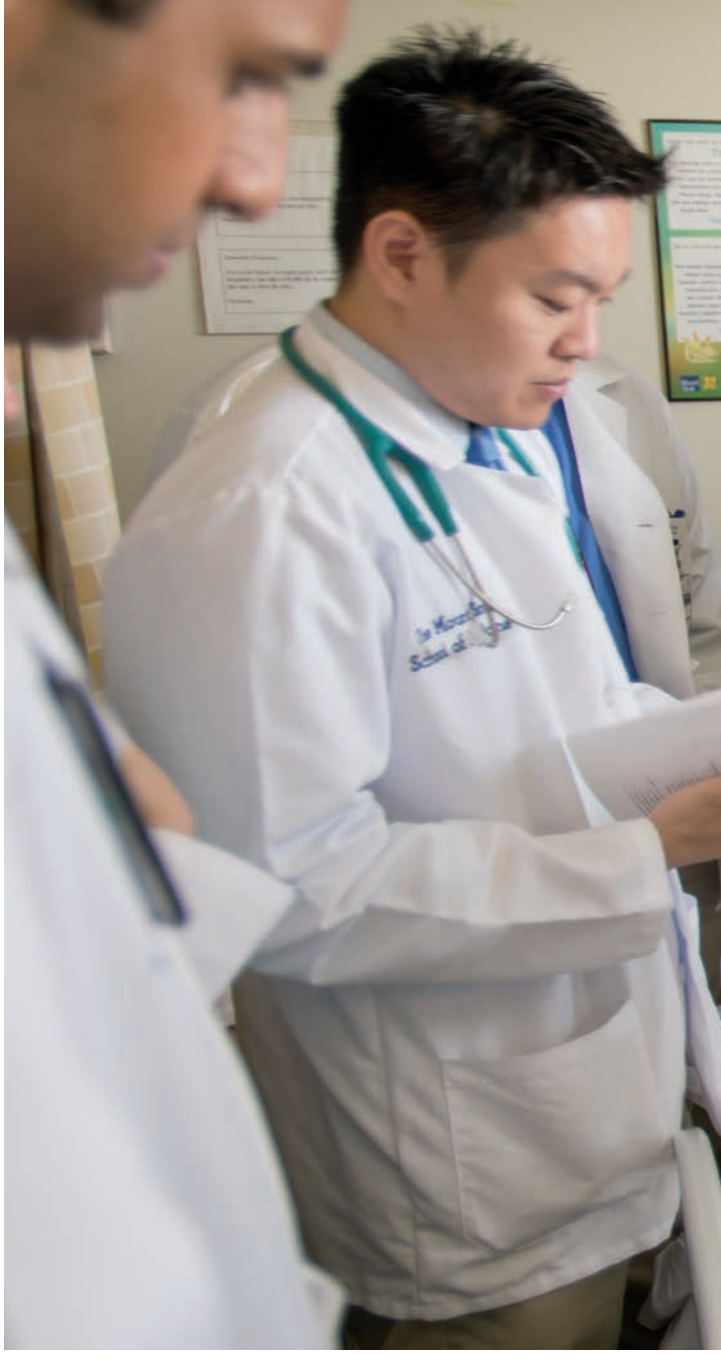
The Department of Medicine (DOM) is committed to excellence, innovation and leadership in patient care, the education of our physicians and scientists, research, and anticipating the changing needs of our community – all within a supportive environment that fosters creativity and personal development. We work every day to drive changes in health care delivery and to integrate scientific innovation into that delivery. We want to lead, not follow, regardless of whether we are educating our trainees, developing new therapies or new apps, creating better systems for patient care, or mentoring our faculty. In each discipline and area, the Department of Medicine is committed to providing support for those willing to be agents of innovation and change.

ON THE CAMPUSES

Now more than ever, Mount Sinai is the future of medical education and the creation of the Mount Sinai Health System had a huge impact on our academic mission. We were presented with enormous challenges: to unify, standardize and elevate the educational goals of each member institution while preserving their individual identities and cultures. Our training programs on each campus now meet the interests of every type of doctor, from those who want to focus on purely clinical, community-based medicine to a mix of research and clinical work at a tertiary-referral academic medical center.

Under the leadership of the Vice Chair for Education, David C. Thomas, MD, MHPE, we are providing the highest level and most rigorous training of physicians from undergraduate course work, through residency and fellowship, to continuing medical education for the seasoned physician. For example, the highly competitive residency program at The Mount Sinai Hospital, under the direction of Salvatore Cilmi, MD, was recently ranked 15th of the best internal residency programs in the country by a group of peer physicians for *U.S. News & World Report*.

Now responsible for more than 400 residents across several campuses, we train more than any other academic institution in the country. However, it is important to note that our residency programs would likely never be combined. The size alone of a unified residency program would be too unwieldy and would depersonalize the training experience. Most importantly, the Department of Medicine is dedicated to embracing each residency program's identity and focus, whether the emphasis is on providing primary care to underserved communities, doing cutting-edge translational research or delving into sub-specialty care.



Finally, the Department of Medicine plans to harness the considerable resources of our larger institution, especially in the use of technology. The hope is to soon provide a way for physicians throughout the world to learn from our vast pool of specialists, generalists and researchers as part of a robust continuing medical education curriculum. Imagine a doctor in rural Vietnam being able to access the latest information and treatments that are used as standard treatments by Mount Sinai physicians for patients suffering from a host of complex diseases.

harnessing our diverse
and considerable resources
to advance medicine

multidimensional

IN THE LABS

In the Department of Medicine, our goal is to provide the best, most nurturing environment for our fellows and junior faculty researchers and even our most seasoned investigators. There is a long tradition of conducting cutting-edge basic, clinical, and translational research and there is much pride in providing excellent training, professional development, and support of the research faculty. Mount Sinai has active research programs taking place across all 12 of our divisions as well as within the institutional research institutes. There are nearly 300 researchers working in approximately 50 labs in the Department of Medicine. Our faculty is responsible for approximately $75 million in NIH grants and we host multiple training grants.

Juan Wisnivesky, MD, DrPh, Irene and Dr. Arthur M. Fishberg Professor of Medicine, Vice Chair of Research for the department, is building upon this tradition of excellence in discovery as we incorporate researchers from Mount Sinai Beth Israel, Mount Sinai Roosevelt and Mount Sinai St. Luke's into our expanded health system. We are establishing system-wide collaborations, integrating the clinical trials office, using populations and health system data to conduct patient-centered research, and evaluating the impact of clinical innovations implemented across the system. With access to a larger population of patients for clinical trials and an increased number of studies that are being conducted, our researchers now have greater opportunities to turn their lab-based discoveries into clinical realities.

This new and dynamic environment also provides excellent opportunities for our junior research faculty and ensures mentoring and faculty development related to research. Our Department of Medicine is fully committed to the professional development and support of our junior research faculty as we help them transition to independent investigators. We provide career counseling, a structured mentoring plan, access to biostatistical support, and assistance in preparing and submitting grant proposals. We are proud of our strong track record of mentoring junior faculty who successfully obtain K awards and other training grants.

Our clinical trials office supports investigators conducting industry sponsored and federally funded clinical trials. The office oversees more than 100 clinical studies at any one time and provides support for the entire process from budget negotiation, regulatory compliance, to implementation and reporting.

FACULTY AFFAIRS

The Department of Medicine would not be what it is without its faculty. Without a doubt, they are our greatest asset and our success depends on the development and maintenance of a climate of respect, civility and cooperation. However, professionalism is not something that can be imposed from the top down; it is something that must be nurtured and modeled. By sustaining a work environment that is inclusionary, we believe that our Department of Medicine will be all the greater.

Recently, Yousaf Ali, MD, has reinvigorated the position of Vice Chair for Faculty Affairs by focusing on improving communication, building mentoring programs and increasing the transparency within the department. One particular challenge was how to make the faculty at each of our campuses feel equally valued. It is critical that our faculty throughout the Mount Sinai Health System feel supported and appreciated. To achieve that goal, we have made it a priority to improve transparency and access to departmental leaders. We have introduced several initiatives, including regular meetings with the vice chairs, a "Meet and Greet" for new faculty, and other informal opportunities to meet with both department and division leaders. We plan to launch a robust new Intranet website in an effort to stay more connected and provide a way for interdivisional and intradepartmental collaboration and feedback.

In addition, we have spearheaded the creation of a Mentorship Committee, because in the Department of Medicine we measure our own success by that of our faculty. Our junior faculty are assigned mentor panels composed of an existing senior faculty and at least one other person to help guide them through their academic careers. We do not want our junior faculty to feel like they've been thrown into the deep end of the pool without any support. Building up a practice or developing a robust research portfolio that is likely to attract grants is not an automatic skill that every physician or physician-scientist has.

From time to time, other issues may appear and even reappear within the life of a faculty member. We will do our best to address all issues that affect faculty such as salary and gender equity, promotion and tenure, faculty retention, mid-rank/mid-life transition and senior faculty transition. We have also established a committee to address concerns of all underrepresented minority faculty and hope to promote a more diverse faculty body.

TECHNOLOGY ENGAGEMENT

Technology can be scary and overwhelming. However, when combined with caring physicians and dedicated researchers, it becomes a tool to enhance care for patients, and a way to bring clinical trials and innovations to our expanded patient population. Our aim is to integrate informatics and bioinformatics – the collection, classification, storage, and analysis of biochemical and biological information using computers–into our daily lives. Informatics should support the educational, clinical, research, quality and operational missions of the Department of Medicine. To properly emphasize and focus on the importance of informatics, we created a new position: Chief Technology Engagement and Innovation Officer. Ashish Atreja, MD, MPH, who is double-boarded in Gastroenterology and Informatics, is leading the charge to create a well-defined organizational presence of informatics within the DOM that aligns with central IT and other institutes or departments.

Technology is meant to foster a community that thrives on shared learning and improvement, leaving no division or personnel behind. Our new system will continuously and reliably capture, curate and deliver the best available data to guide and improve decision-making for everyone. Engagement with system-wide initiatives through a central DOM governance model will create efficiencies and provide real-time data. Informatics should also focus on all needs and perspectives of the vital members of the learning care team. Whether a clinician, researcher, educator or quality officer, data-driven informatics should enable us all to increase our efficiency, innovation, collaboration, productivity, and training and guidance in order to provide the best treatment to our patients. This is an exciting time for technology and its

mission

patient-centered care & healthier communities

practical and significant implications for physicians and scientists. Ultimately, the Department of Medicine is taking the informatics lead as we improve patient care and support clinical and translational research across the entire Mount Sinai Health System for years to come.

QUALITY

Consistent with the Department of Medicine's mission is quality and safety. A performance improvement program is being led by our new Vice Chair for Quality, Beth Raucher, MD, who is committed to an objective, systematic, and fair process for monitoring quality, safety and appropriateness of services in order to achieve excellence in patient care throughout the health system. As we move away from a fee-for-service model towards one driven by preventive medicine and population management, quality improvement stands at the nexus.

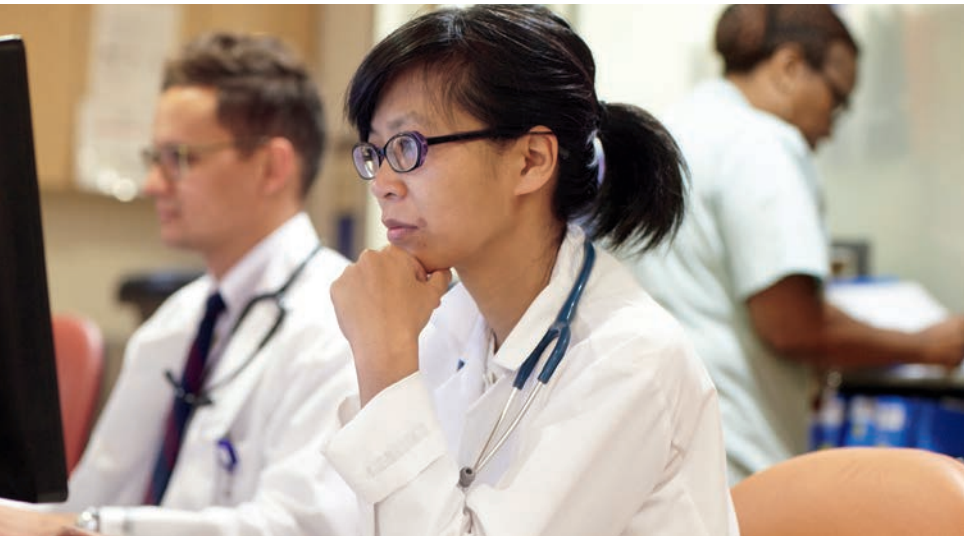
The recent integration of the seven academic and community hospitals provides a great opportunity for DOM faculty and residents to collaborate and share best practices that will result in better patient outcomes. The Inpatient Sepsis Program is an example of our multidisciplinary approach. The program is a patient-centric, data-driven solution to enhance early identification and management of patients with suspected sepsis. It implements real-time tracking, notification, and protocol driven treatment within the Epic electronic health record (EHR). These efforts to date have been associated with a 40% sepsis mortality rate reduction and a 29% overall mortality rate reduction. Sepsis mortality at Mount Sinai has decreased from 36% in 2011 to 15% today as a result of the sepsis program. And now this success is being translated across the health system.

Our quality goals mirror those set forth by the health system's Quality Leadership Council and will include: an expansion of the program of early recognition and management of patients with sepsis, establishment of a culture of excellence and safety by mitigating harm resulting in decreased unexpected mortality, creation of a patient-centered care program resulting in improved satisfaction with our physicians, residents and the services we provide, and the practice of compassionate evidenced-based medicine resulting in fewer readmissions and a healthier community.

Several innovative performance improvement and clinical efficiency projects are nearing completion or are well underway including appropriate diagnosis and management of patients with pulmonary embolism, diabetics with ketoacidosis, and the

reduction of readmissions in high-risk patients with congestive heart failure. Future initiatives will include collaborative improvement projects at all of the hospitals to reduce unnecessary lab testing, encourage patients to complete advanced directives, and to use antibiotics appropriately.

The surest method to reduce harm, improve outcomes, and provide patient-centered care is to integrate quality and performance improvement thinking into the curriculum for fellows, residents and students. Experts say that it takes 17 years to "change the culture," but our patients need us to be the best we possibly can be today. To that end the department offers a quality and performance improvement course to our medical students. Our residents at The Mount Sinai Hospital can elect to participate in a three-year Quality Leadership Tract that provides an enhanced quality curriculum, an opportunity to sit in on senior level administrative meetings, discuss policy issues and review administrative data to determine areas where improvement is needed. The residents and their mentors work collaboratively on capstone projects utilizing hospital data that improve clinical practice and have an immediate impact on care. Our goal is to roll out similar programs across the health system in the coming years.



ADMINISTRATION AND CLINICAL INTEGRATION

Finally, one of the largest changes that the Department of Medicine is undertaking as a result of the merger is the creation of clinical, patient-centered institutes that provide multidisciplinary, interdepartmental care. We began with the Institute for Advanced Medicine, led by Michael Mullen, MD, which includes six facilities located throughout Manhattan that care for patients and their families living with HIV/AIDS. The IAM weaves together primary care, infectious disease, cardiology, dermatology, ob-gyn, along with social work and psychiatry in a patient-centric practice. This model is now being extended throughout the department with the creation of the Diabetes Institute, the Digestive Diseases Institute, the Respiratory Institute (in partnership with National Jewish Health of Denver, Colorado) and the Institute for Liver Medicine. In addition, all 250 of our system primary care physicians are united in the Primary Care Institute, led by Roy Cohen, MD. It provides comprehensive and innovative patient care and will, ultimately, be able to accommodate same-day appointments for patient throughout New York City using one electronic health record by all providers and one phone number for easy, instant access.

The challenges of integrating administration, operations, and finances across the seven campuses falls to our new Vice Chair for Administration and Clinical Integration, Brian David, and his financial and administrative team. They are looking top to bottom at ways to improve physician productivity, patient satisfaction and to align administrative services to provide the best support where needed throughout the system.

One area where we have made tremendous progress is in the Department of Medicine Faculty Practice at The Mount Sinai Hospital. Under the leadership of Aida Vega, MD, the FPA has launched improvement initiatives that deal with difficult issues such as access and moving through the visit, as well as increasing medical assistant involvement in care coordination. Team building with staff uniforms, Stepping Into Spring wellness program, and retreats have boosted morale and created a feeling of camaraderie among the staff.

Prior to taking over the FPA Medicine practice, Dr. Vega ran Mount Sinai's Primary Care practice and turned it into a model for all DOM practices. She is now taking many of the successful initiatives from Primary Care and rolling them out throughout the FPA. Dr. Vega is also tapping into the technological innovations that are available for physicians by introducing iPads for high-volume providers to increase their efficiency and to improve the experience for both patients and doctors.

Our Divisions

The 12 divisions of the Department of Medicine have enthusiastically and thoroughly embraced the challenges and opportunities of the merger. Amalgamating divisions across our campuses – each with their different histories, traditions and cultures – can be quite difficult, but the possibility of creating new and exciting programs across a health system has eased that transition. Through major government awards and grants, groundbreaking new program development, forward-looking educational and patient-care initiatives, or cutting-edge research, the Department of Medicine continues to strive for excellence and innovation. What follows are brief highlights of the achievements of our esteemed colleagues.

Facts and Figures

Mount Sinai Health System:
Barbara Murphy, MB, BAO, BCh, FRCPI, Chair, Samuel Bronfman Department of Medicine

Murray M. Rosenberg Professor of Medicine

Dean, Clinical Integration and Population Management

Mount Sinai Beth Israel:
Ira Jacobson, MD, Chair, Department of Medicine, Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Hassan Khouli, MD, Interim Chair, Department of Medicine, Associate Professor of Medicine

- More than **2,000 physicians**
- More than **1,000 employees**
- More than **400 residents**
- More than **300 fellows**
- More than **450,000 annual outpatient visits**
- Nearly **50,000 discharges/year**
- Nearly **$350 million annual budget**

The Division of Cardiology

The Department of Medicine at the Icahn School of Medicine at Mount Sinai has long been the home of the premier Division of Cardiology. Based at The Mount Sinai Hospital, it ranks as one of the top 10 in the country for its leading cardiology services by *U.S. News & World Report*. In fact 2015 marks cardiology's 100th anniversary at The Mount Sinai Hospital. Now within the newly named Mount Sinai Health System, cardiovascular services has a staff of nearly 200 cardiologists, 74 cardiology fellows in training, 107 nurse practitioners, and 1,037 nurses, caring for more than 100,000 patients' hearts annually – doubling Mount Sinai's patient care, research, and medical education capabilities

Although cardiac care in the Mount Sinai Health System has expanded, the mission remains the same: to improve the heart health of patients locally and globally, with dedication to the prevention, management, and eradication of cardiovascular diseases. The division continues to pursue excellence in patient care, offering innovative prevention and treatments, pioneering research and clinical trials, and training future leading cardiologists by its world-leading experts.

Facts and Figures

Mount Sinai Health System:
Valentin Fuster, MD, PhD, Professor of Medicine, the Richard Gorlin, MD/Heart Research Foundation Professor, and Director of Mount Sinai Heart, the Zena and Michael A. Wiener Cardiovascular Institute, and the Marie-Josée and Henry R. Kravis Center for Cardiovascular Health at Icahn School of Medicine at Mount Sinai, and Physician-in-Chief of The Mount Sinai Hospital and Editor-in-Chief of *Journal of the American College of Cardiology* (JACC).

Mount Sinai Beth Israel:
Blase A. Carabello, MD, Chief, Medical Director of the Heart Valve Center at The Mount Sinai Hospital, and a member of the Senior Faculty of the Departments of Medicine and Cardiovascular Surgery at Icahn School of Medicine at Mount Sinai.

Mount Sinai Beth Israel Brooklyn:
Barry Huppert, MD, Chief

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Jagat Narula, MD, PhD, Chief, Director of Cardiovascular Imaging, Mount Sinai Health System, Professor of Medicine, Radiology and Associate Dean for Global Affairs, Icahn School of Medicine at Mount Sinai

Faculty: 166
Fellows: 74

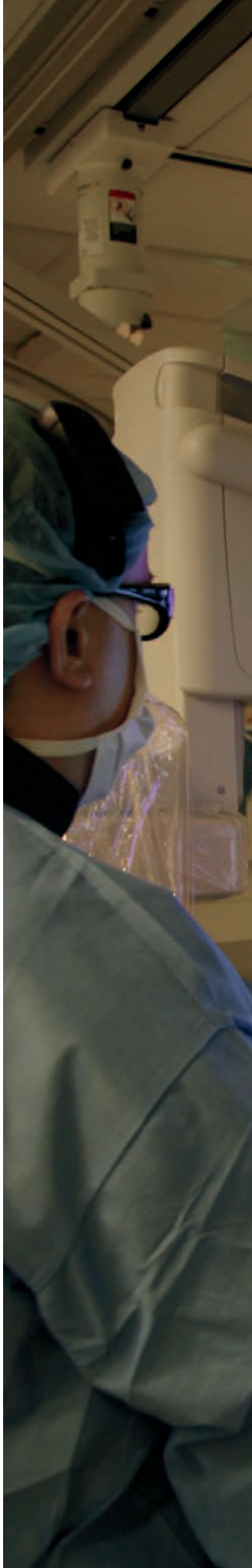
THE HEART OF THE MATTER

Samin Sharma, MD, Zena and Michael A. Wiener Professor of Medicine, Director of Clinical and Interventional Cardiology for the Mount Sinai Health System has led the Cardiac Catheterization Laboratory at The Mount Sinai Hospital, newly named the "Dr. Samin K. Sharma Family Foundation Cardiac Catheterization Laboratory," to new heights and patient safety levels. For almost two decades, the Cardiac Cath Lab team has received the highest "two star" patient safety rating by the New York State Department of Health. It is one of the busiest and best interventional cardiology practices in the country, while also performing a high volume of some of the most complex, toughest coronary and valvular patient procedure cases.

Cardiology at Mount Sinai Beth Israel and Mount Sinai Beth Israel Brooklyn has been making progress on various clinical fronts. The Echocardiography Laboratory at Mount Sinai Beth Israel became IACEL reaccredited, along with its Nuclear Cardiology Lab, which was also reaccredited by the IAC. In addition, the Cardiac Catheterization Laboratory at Mount Sinai Beth Israel is being reinvigorated with the renovation and upgrading of its three Cath Lab procedure rooms.

In 2013, Mount Sinai St. Luke's opened the Al-Sabah Arrhythmia Institute. Comprised of a state-of-the-art $20 million electrophysiology facility, it offers advanced arrhythmia care. The institute's mission is to provide outstanding arrhythmia care, offer physician and patient education, and train tomorrow's specialists, while conducting ongoing research and developing improved methods for diagnosis and treatment. It has also enabled Mount Sinai Beth Israel, Mount Sinai St. Luke's and Mount Sinai Roosevelt to consolidate all arrhythmia services' physical plants into one facility, designed to accommodate growing patient demand, shorter waiting periods for elective procedures, and allow for unrestricted research and training opportunities. The institute features a clinical outpatient center, three electrophysiology laboratories for performing catheter-based procedures, device implantations, diagnostic studies, and a research laboratory for conducting both clinical and basic research. In addition, there is an education center for training advanced fellows, practicing electrophysiologists, and other medical professionals.

In February 2014, Vivek Reddy, MD, The Leona M. Helmsley Charitable Trust Professor of Medicine in Cardiac Electrophysiology, Director of Arrhythmia Services at the Mount Sinai Health System implanted the first leadless pacemaker at The Mount Sinai Hospital. This new small, wireless self-contained



prevention

caring for more than
100,000 patients' hearts
per year locally and globally

pacemaker appears safe and feasible for use in patients, according to research published in the journal *Circulation* by Dr. Reddy and his team. The new cutting-edge pacemaker has no leads and is placed directly inside the heart without the need for surgery. This new device is inserted inside the heart chamber using a catheter via the femoral vein and is affixed to the heart in the right ventricle – the same place a standard lead would be located. At only six millimeters in diameter and about 42 millimeters long, the wireless device is smaller than a triple-A battery.

The Cardiac Care Unit at Mount Sinai St. Luke's has established an advanced therapeutic hypothermia program for managing survivors of cardiac arrest, under the direction of Eyal Herzog, MD, Director of the Cardiac Care Unit at Mount Sinai St. Luke's. The CCU team has applied this complex therapy for more than 150 patients with excellent rates of survival and recovery of neurological function.

Hypertension, the leading risk factor for cardiovascular disease, is now fueling the number one killer of people in both developed and developing countries. High blood pressure is now on the rise in even sub-Saharan Africa, including in Western Kenya, where heart disease is the leading cause of death among individuals over age 30.

Dr. Valentin Fuster with Rajesh Vedanthan, MD, MPH, Assistant Professor of Cardiology at Mount Sinai, are leading a team of researchers, in partnership with the government of Kenya and Academic Model Providing Access to Health Care (AMPATH), to improve patient access and the delivery of health care to Kenyans with hypertension. The Kenya Project is exploring innovative, community-based solution strategies to tackle the hypertension problem, including using nurses and community health care workers on the frontline of patient care and armed with mobile smartphone and tablet technology as recording tools.

Interventional cardiologist Jacqueline E. Tamis-Holland, MD, of Mount Sinai St. Luke's and Mount Sinai Roosevelt is currently working on a quality improvement project examining the impact of an App-based program that facilitates immediate transmission of electrocardiograms (ECGs) to cardiologists via an iPhone to improve the timeliness of communication among the Emergency Department, cardiology fellows, and attending staff. Baseline data is being collected and with the results of this pilot program, the hope is to expand the use of this app to 911 based ambulances to facilitate transmissions of ECGs between the EMS agencies and percutaneous coronary interventional capable hospitals.

PIONEERING CARDIAC RESEARCH

The Cardiovascular Research Center at the Icahn School of Medicine at Mount Sinai, led by Director Roger J.Hajjar, MD, The Arthur and Janet C. Ross

Professor of Medicine has reported promising long-term benefits of its single dose gene therapy AAV1/SERCA2a for advanced heart failure patients. Long-term follow-up results of the CUPID 1 clinical trial found that a one-time, high-dose injection of the AAV1/SERCA2a gene therapy resulted in the successful delivery of the SERCA2a gene up to 31 months in the cardiac tissue of heart failure patients. And this significantly lowered clinical event rates three years later for the gene therapy patients compared to those patients receiving placebo. Plus, patients experienced no negative side effects.

Heart disease is the leading cause of morbidity and mortality for people with Type 2 diabetes, accounting for two-thirds of deaths among people with diabetes. An international team of researchers led by Dr. Valentin Fuster found in the first long-term study of its kind that individuals who have diabetes and advanced coronary artery disease (CAD) live longer and are less likely to suffer a non-fatal heart attack when treated with coronary artery bypass graft surgery (CABG) instead of angioplasty.

This international, clinical research trial known as the FREEDOM trial (Future REvascularization Evaluation in patients with Diabetes mellitus: Optimal management of Multivessel disease), is supported by the National Heart, Lung, and Blood Institute (NHLBI). It is the first long-term trial designed to determine whether coronary artery bypass surgery (CABG) or percutaneous coronary intervention (PCI) with drug-eluting stents (DES), would be the superior approach to treating coronary artery disease in patients with diabetes mellitus.

The data concluded that after five years patients who had PCI with DES were more likely to have a cardiovascular event than those who underwent CABG. The results from this long-awaited research were published in the *New England Journal of Medicine* and presented at the American Heart Association Scientific Sessions 2012. For the next five years the FREEDOM trial will continue to study patients with diabetes and CAD.

Also in 2014, Principal Investigator Dr. Fuster and a multidisciplinary research team including Mount Sinai's Drs. Roger Hajjar, Zahi Fayad, Eric Schadt, Sameer Bansilal, Rajesh Vedanthan, and others were awarded by the American Heart Association (AHA) a nearly $4 million grant to promote cardiovascular health in high-risk New York City children. The research project will focus on heart healthy interventions for children ages 3-5 enrolled in Harlem New York City preschools. The pilot project will also include their parents or caregivers. The research team's mission is to reduce each child's future risk of obesity, heart attack, stroke, and Type 2 diabetes.

The AHA recognized Dr. Fuster's pilot study findings testing the preschool health intervention project in Bogota, Colombia as one of the top 10 research advances of 2013. If the New York City program launching in Fall 2015 proves to be successful over the next several years, researchers hope their interventions will be translated and scaled to many other communities and populations with similar, high rates of heart disease across New York City and the United States.

INNOVATIVE HEART PROGRAMS

Dr. Jacqueline Tamis-Holland founded and expanded Women's Heart NY, a comprehensive women's heart program spanning across Mount Sinai St. Luke's, Mount Sinai Roosevelt and Mount Sinai Beth Israel campuses. This multi-site comprehensive heart program is designed specifically for women who are at risk for, or have a history of heart disease and offers a wide range of diagnostic treatment services for heart disease, coronary artery disease, valvular heart disease, arrhythmias and congestive heart failure. The multidisciplinary team includes cardiologists, nutritionists, smoking cessation counselors and exercise physiologists providing an individualized approach to care with support services to help patients achieve lifestyle modifications that can reduce their risk of cardiovascular disease.

Mount Sinai St. Luke's and Mount Sinai Roosevelt have developed and grown a nationally leading hypertrophic cardiomyopathy program led by

leading expert Mark Sherrid, MD, Director of the HCM Program. HCM is a complex cardiac disease marked by thickening of the heart muscle that occurs without clinical cause. The disease affects individuals differently, with different degrees of muscular wall thickening and a variety of symptoms. Patients may experience shortness of breath, exercise intolerance, chest pressure or pain, fainting, or no symptoms at all. In unusual cases, HCM can cause sudden cardiac death. Under the direction of Dr. Sherrid, the program has had favorable patient outcomes allowing the HCM program to grow to follow more than 1,056 patients, gaining more than 80 new HCM patients each year, and screening more than 60 family members for the inherited disease. Dr. Sherrid is pursing the identification of novel risk factors for hypertrophic cardiomyopathy with grant support from the National Institutes of Health for a five-year study evaluating cardiac magnetic resonance imaging (MRI), genotype, and biomarkers as predictors for risk of sudden death and heart failure. If novel risk factors for sudden death are found, identified patients could be offered implanted cardiac defibrillators (ICDs).

Cardiovascular disease (CVD) is a growing problem in New York City's Latino population. To address this issue, Mount Sinai St. Luke's and Mount Sinai Roosevelt launched Su Corazón, its new Latino Heart Program. This initiative is led by Dayana Eslava, MD, a cardiologist with special training in cardiovascular prevention who speaks both English and Spanish fluently. In addition to her medical expertise, she has a strong understanding of the city's different Hispanic cultures. The Su Corazón program seeks to accomplish several goals, including raising awareness among Latinos about heart disease risk factors, promote a healthy diet and an active lifestyle, encourage Hispanics to take a more active role in their health care treatment, and offer comprehensive cardiovascular care services to the city's Latino residents. In addition, Dr. Eslava gives talks and provides health screenings at various venues in the Latino community to raise awareness.

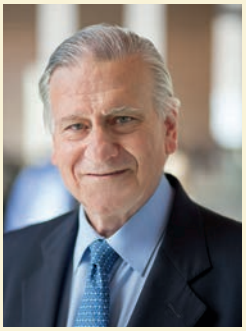
Mount Sinai St. Luke's and Mount Sinai Roosevelt have developed a highly active program in cardiac HIV management led by Merle Myerson, MD. The specialized HIV Clinics at Mount Sinai St. Luke's and Mount Sinai Roosevelt provide unique co-located, comprehensive medical and support patient care for HIV patients including medical, cardiology, mental health, and social work services to optimize treatment of patients living with HIV and heart disease risk factors.

In late 2014, The Mount Sinai Hospital opened its new 20,700-square-foot, state-of-the-art Lauder Family Cardiovascular Ambulatory Center with the generous support of Ronald S. Lauder and his family, dedicated in honor of Dr. Fuster. It is led by Medical Director Joseph Sweeny, MD and Nursing Director Haydee Garcia, NP.

Landmark Study: New Polypill for Heart Disease

Cardiovascular disease (CVD) has steadily increased in prevalence to become the number one cause of death worldwide. It is estimated that half of the overall reduction in CVD mortality observed over the past 20 years in western countries could be attributed to appropriate use of CV medications for secondary prevention. However, according to researchers, the lack of adherence to prescribed treatment may be impeding adequate secondary prevention contributing to the CVD pandemic.

A cost-effective polypill, with a fixed-dose combination of a blood thinner, a cholesterol-lowering drug, and an angiotensin-converting enzyme inhibitor to stabilize vessel walls and blood pressure may be the vital remedy heart attack survivors need to improve their medication adherence, control their risk factors, and to prevent future cardiac events.


Dr. Fuster

This polypill, named Trinomia, is the creation of Valentin Fuster, MD, PhD, in partnership with both private and public industry, including CNIC in Spain and Ferrer Laboratories. The safe and extensively clinically tested polypill combines aspirin, ramipril, and simvastatin.

The more affordable polypill could be the solution for all cardiovascular disease patients, especially those in lower- and middle-income developing countries who can experience barriers to medical care. Dr. Fuster is leading the FOCUS Project, which aims to establish recommendations for better use of the polypill in patients with ischemic heart disease as a secondary prevention medication in both developing and developed countries.

Dr. Fuster presented the FOCUS Project's latest research at the European Society of Cardiology's ESC Congress 2014 showing in a large study that the novel polypill increases patient adherence to treatment following a myocardial infarction (MI) or heart attack proving its potential to prevent more patients from having a second heart attack.

"Patients were more likely to take their medication to prevent a heart attack when it was given as a polypill, rather than as three separate pills," says Dr. Fuster. "We found 66 percent of patients in the polypill group took their drugs compared to just 56 percent of patients in the group assigned to three drugs."

"Our results suggest that the polypill has the potential to prevent more patients having a second heart attack," says Dr. Fuster. "A randomized trial is under development to test whether the improved adherence with the polypill found in FOCUS results in fewer post MI patients having another MI."

Trinomia's total cost is significantly lower than the cost of purchasing the three generic drugs separately. The polypill is already approved in 22 countries across South America and Europe and is currently under discussion with the FDA.

Division of Clinical Immunology

Mount Sinai is a leader in the nation in the research of immune deficiency diseases and the design of innovative treatments. Patients come to Mount Sinai's Division of Clinical Immunology from across the country for the diagnosis, treatment and therapies of these immune disorders. For this, the division provides: consultations, skin and allergy tests, pulmonary function procedures, examination of antibodies and cell functions, and genetic analysis.

Following the merger, the division is now poised to become the largest provider of allergy and immunological care in New York City. The division works closely with the Pediatric Division of Allergy and Immunology and with investigators in the Immunology Institute, in addition to the physicians throughout the health system. A growing alliance will be established with the new Mount Sinai-National Jewish Respiratory Institute, as subjects with severe asthma and respiratory diseases are commonly treated by doctors in both disciplines. This will improve patient care, amplifying the numbers of subjects suitable for clinical trials, and serve as a new arena for training fellows and other physicians/scientists. As the Mount Sinai Health System engages additional physicians practicing in allergy immunology and allied disciplines working at other sites, the specific expertise of each site can be explored and reinforced.

At Mount Sinai, the Immunology Institute, led by Sergio Lira, MD, PhD, provides an institutional mechanism to enhance research collaborations, education and clinical translation in immune-mediated diseases throughout multiple disciplines and departments, particularly in the areas of allergy, inflammation and transplantation. Advances in immunoregulation and immunocompetence will have an enormous impact on the treatment of immune disorders in the twenty-first century. And the Division of Clinical Immunology will be able to leverage opportunities afforded by the merger to grow and develop and to make it a destination location for both clinical care of allergies and research in immunotherapy throughout the Mount Sinai Health System.

Facts and Figures

Mount Sinai Health System:
Charlotte Cunningham-Rundles, MD, PhD, Interim Chief, David S. Gottesman Professor of Medicine

Mount Sinai Beth Israel:
James Rubin, MD, Chief, Associate Clinical Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Ira Finegold, MD, Chief, Professor of Medicine

Faculty: 54
Total Research: $3,383,620
Fellows: 7- 9

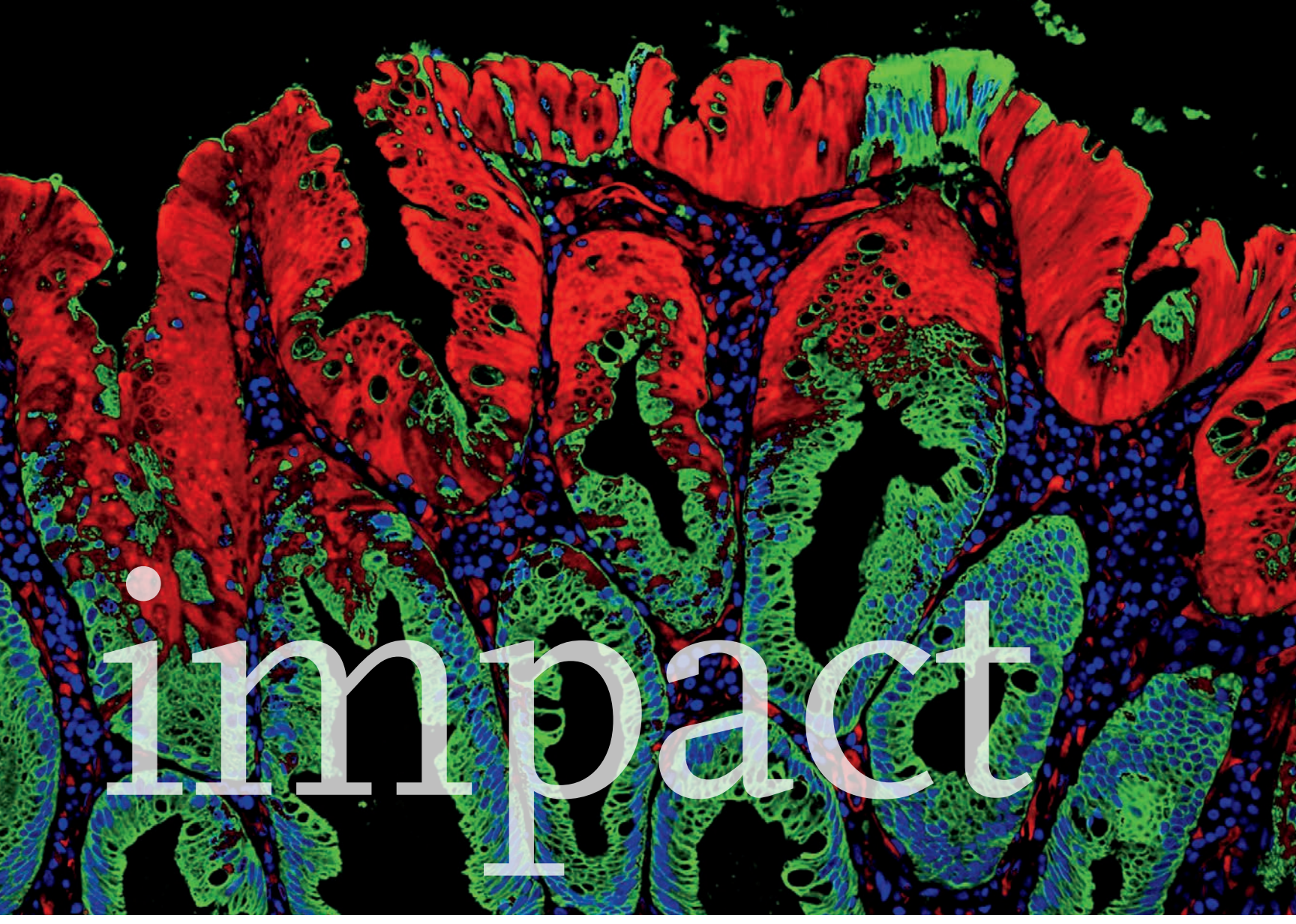
PATIENT CARE

Patient care is of paramount importance in clinical immunology and the primary goal of the division is to provide the most appropriate and effective treatment strategies for patients with allergic and immunologic diseases. The division operates a full-time infusion facility staffed by physicians, nurses and nurse practitioners in the new Hess Center, and provides a number of intravenous therapies for both children and adults.

A major clinical commitment has been to use state-of-the-art methods of investigating allergic and immunologic diseases and to couple the diagnostic results with new methods of treatment. One of the hallmark programs at Mount Sinai is the study and treatment of immune deficiency diseases. This program, directed by Dr. Charlotte Cunningham-Rundles, is now a 950-patient service, uniquely spanning both medicine and pediatric services. There is a continued stream of new referrals from all over New York City and the tri-state region as well as a substantial number of patients who are referred from other states and countries. Based on this background, Mount Sinai is the New York State designated referral center for infants born in Manhattan, Staten Island or Brooklyn with severe T-cell defects when screened as newborns.These infants need immediate attention so that the correct referral patterns can be formulated.

More frequently, the division's physicians evaluate and treat patients with asthma and allergies, including: rhinitis, sinusitis or dermatitis, physical allergies and hypersensitivities to foods and drugs, immune deficiencies, frequent infections and inflammatory diseases of other types. This division sees more than 10,000 patients in various clinical settings for allergy/immunology care.

Of course, the sooner an allergic disease is diagnosed and treated, the better for patient outcomes. So in 2013, in order to more effectively and quickly treat these allergic diseases, Beth Corn, MD, Associate Professor of Medicine, started a Rush immunotherapy protocol which other physicians quickly adopted. The new program provides faster relief from allergic symptoms. The Rush protocol is in high demand for the treatment of allergic rhinitis and has a waiting list. Currently, Mount Sinai is the only institution offering this modality of treatment, but the goal is to roll it out across the campuses within the health system in the coming years.



impact

RESEARCH

Allergic, inflammatory and immune deficiency diseases all stem from dysfunction of the immune system. For this reason, basic, translational and clinical researchers at Mount Sinai aim to understand the complex interplay of molecules, cells, tissues, and organs that mobilize to overcome invaders, as well as growth and differentiation of B and T cells, mechanisms of allergy, mucosal immunity, intestinal inflammation, and control of antibody production.

The division has been particularly active in clinical trials, investigating the use of immuno-modulating agents as a new therapy for patients. These trials have included the use of new intravenous immunoglobulin preparations, hyper-immune immunoglobulins, monoclonal antibody therapies, and immune modulators and cytokines, such as gamma interferon and Interleukin 2.

And while there have been amazing advances in the understanding of these diseases, the defects that lead to the most common immune defects of B cells are still largely uncharted territory. For this reason, a NIH-sponsored project with four sub projects, entitled "Molecular and Cellular Defects in B Cell Development," under the direction of Dr. Cunningham-Rundles, concentrates on diseases in which antibody production is impaired.

One disease that has been extensively studied here is common variable immunodeficiency (CVID). While the incidence of this immune defect is not established, it is estimated that it is likely to be found in 1:25,000 persons. In this disorder, the main characteristic is hypogammaglobulinemia. Because the B cells do not function normally, commonly used vaccinations do not lead to the production of any protective antibody. Scientists at Mount Sinai are exploring new genes and pathways to better understand this loss of antibody function.

While primary immune defects are believed to occur equally in all populations, races and ethnic groups, it is very concerning that the actual diagnosis of primary immune defects in patients varies considerably from one hospital to another, and from one state to the next. For this reason, measures have

Expression of pERK (red) in a serrated adenoma. Epithelial cells are labeled in green and cell nuclei in blue. (Gerard Bongers/Lira Lab)

The Mount Sinai Therapeutic Infusion Center

For many years, the Division of Clinical Immunology provided both immunoglobulin and biologic infusions to patients with immune defects or immune mediated disease. This facility was originally started with generous funding from The Breath of Life Foundation. Expanding on this, in 2013 the Division of Clinical Immunology opened a large and modern infusion suite where intravenous immunoglobulin and other intravenous or parenteral therapies are provided using a new multidisciplinary therapeutic clinical environment tailored to meet the needs of each patient in a pleasant setting.

At this Therapeutic Infusion Center, experienced teams of physicians, skilled nurses, pharmacists, and patient-care coordinators provide cutting-edge biologic therapies for patients with a wide range of medical conditions, including Crohn's disease, gout and most immunological disorders. This non-cancer infusion center provides a multitude of therapies including: Abatacept (Orencia), Antibiotics, Belatacept (Nulojix), Belimumab (Benlysta), Berinert, C1 Esterase Inhibitor (Berinert, Cinryze), Cytoxan, Dihydroergotamine (DHE), Infliximab (Remicade), Intravenous Immune Globulin, Iron, Natalizumab (Tysabri), Pegloticase Krystexxa), Tocilizumab (Actemra), Solumedrol, and Zoledronic Acid Injection (Reclast).

The Infusion Center is located in the new Leon and Norma Hess Center for Science and Medicine. The building, which opened in 2013, provides nearly half a million square feet of cutting-edge clinical and research space for both scientists and patients. Located on the fourth floor, the Infusion Center is a spacious and comfortable setting in which patients receive their non-cancer infusions. Each patient has access to a private room, reclining chairs, Wi-Fi, flat screen TVs, and complimentary lunch, snacks and beverages.

been investigated to enhance recognition and diagnosis of patients with primary immune defects in large hospital and clinic populations. Drs. Cunningham-Rundles and Shradha Agarwal have developed an NIH-funded grant "Targeting Primary Immune Deficiency" to survey the electronic medical record of large patient groups, to identify persons with likely immune defects, to determine more about why this is so, and to find out what measures can be taken to improve diagnosis.

There are other main areas of research in the Division of Clinical Immunology, both unique to Mount Sinai. The first of these concerns an inherited disease called Hereditary Angioedema (HAE), which is a blood disorder that causes episodic attacks of swelling. Airway edema can be life-threatening and has led to mortality when untreated. HAE is primarily caused by abnormally low concentration of some complex blood proteins (C1 esterase inhibitors), which help the flow of body fluids in and out of cells. The division developed one of the largest patient populations of HAE in the United States, wrote recommendations for the treatment of heredity angioedema and investigated two different methodologies for measuring C1-inh fuction. Dr. Paula Busse performed a pivotal trial for FDA approval of purified C1 esterase inhibitor for treatment of HAE and testified at the FDA for approval of this drug in the United States. Dr. Busse has been funded by DYAX Corporation and ViroPharma for work in this rare disease.

Another very important area of research in Clinical Immunology concerns studies of severe asthma. Dr. Busse is leading a funded study entitled "Airway Cellular and Cytokine Profiles in Older Patients with Asthma." Dr. Busse has devised several models to study asthma in aging subjects. From data so far, it appears that older asthmatics have a distinct inflammatory phenotype that is important for the treatment of these subjects. Dr. Busse also participated in a consortium project, "Inner-city Asthma Consortium Protocol ICAC-23: T-Cell Epitope Characterization in Cockroach Allergy." This study is an integral part of the inner-city asthma consortium – one of the largest research cohorts investigating asthma in inner-city populations. Mount Sinai was one of four sites and enrolled approximately 50% of the subjects included in the study.

TEACHING AND EDUCATION

The division has a long established fellowship in Allergy and Immunology that is one of the most popular in the US. About half of all residents in the US and Canada who are applying for an AI fellowship apply to the Mount Sinai program, currently directed by Dr. Cunningham-Rundles and the co-directors, Drs. Shradha Agarwal and Julie Wang. This is a two to three year fellowship and there are between seven to nine fellows at any given time in training. Because of its location in a large teaching hospital and its geographic location in New York City, the Division of Clinical Immunology is fortunate to have an abundance of excellent clinical material both in allergic and immunologic disorders. It is also able to provide and host special programs. A recent program, "Advances in Pediatric Food Allergy," provided the practicing clinician, both generalist and allergists, with updates on the diagnosis and management of food allergies.

The Division of Allergy at Mount Sinai St. Luke's and Mount Sinai Roosevelt,led by Ira Finegold, MD, staffs the Allergic Clinic. He is currently Chairman of the Publications Committee of the American College of Allergy, Asthma and Immunology (ACAAI) and is Vice President of the ACAAI Foundation. In addition, he has taught an allergy elective for housestaff.

The Hilda & J. Lester Gabrilove
Division of Endocrinology, Diabetes and Bone Disease

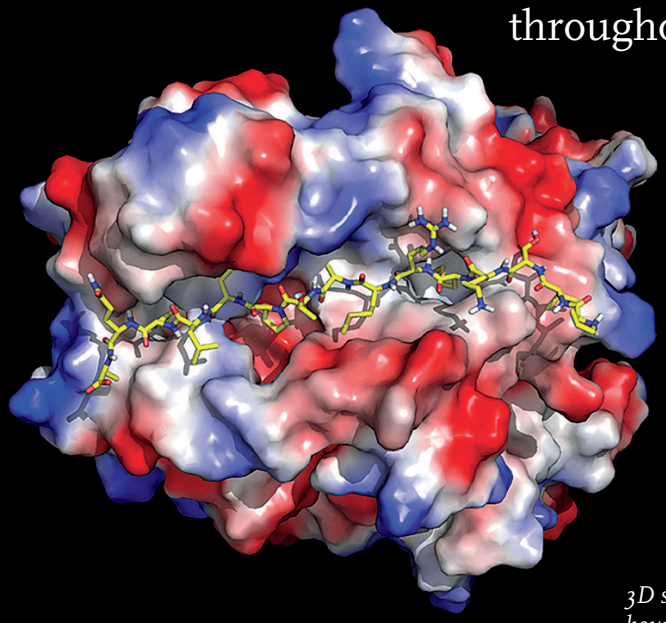
The Division of Endocrinology, Diabetes and Bone Disease is providing care for patients with endocrine diseases – including, but not exclusive to diabetes – throughout the city by unifying protocols, programs, and treatments in the newly created Mount Sinai Health System.

The Clinical Diabetes Institute (CDI), under the direction of Ronald Tamler, MD, MBA, PhD, CDE, will be responsible for diabetes care within the Mount Sinai Health System. The vision is to deliver comprehensive, world-class, multidisciplinary, integrated diabetes care for the population served by the Mount Sinai Health System across the New York metropolitan area. The institute will advance quality improvement in the care of patients with diabetes anywhere in the health system and will build a broad coalition across specialties within the community to help address the obesity epidemic and prevent diabetes. The institute builds on the already well-established, patient-centered care provided by both the diabetes centers at Beth Israel and at Mount Sinai. The institute will also be able to provide education to patients and providers and conduct clinical research in collaboration with the Diabetes, Obesity and Metabolism Institute (DOMI).

The merger has created the opportunity to conduct population health management on a scale that befits a metropolis, throughout all boroughs. This will occur through centralization of specialist care in four Manhattan flagship practices and two practices affiliated with Mount Sinai Queens and Mount Sinai Beth Israel Brooklyn. Moreover, physician extenders embedded in dozens of Centers of Excellence will help non-specialists across the New York metropolitan area see patients with diabetes and prevent readmissions. Finally, the institute, through education and robust quality metrics, will assist non-specialist providers who take care of the vast majority of patients with diabetes.

excel

advancing quality in the care of patients with diabetes throughout the health system



3D structural model of peptide bound to HLA molecule (Tomer Lab)

A unified electronic medical record will facilitate roll-out of quality initiatives and universal order sets throughout the health system, eliminating duplication of effort and spreading excellence. Considerable savings are anticipated from unifying the diabetes formulary across hospitals. A concrete example where the merger presents an opportunity to swiftly boost diabetes care is the installation of a non-mydriatic retina camera in the Diabetes Medicaid Clinic. The digitized pictures can then be sent to New York Eye and Ear Infirmary where they can be analyzed by retina specialists. This will ensure a massive jump in compliance with diabetes quality metrics and improved patient care, with direct impacts on pay-for-performance rewards.

Facts and Figures

Mount Sinai Health System:
Yaron Tomer, MD, Chief, Lillian and Henry M. Stratton Professor of Molecular Medicine

Mount Sinai Beth Israel:
Emilia P. Liao, MD, Interim Chief, Assistant Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Jeanine Albu, MD, Chief, Associate Professor of Medicine

Faculty: 78
Total Research: $8,439,095
Fellows: 14

Another example of how the Diabetes Institute model will facilitate patient care is the new 13,000-square-foot practice space on the 3rd floor of 5 East 98th Street, where diabetes will be co-located with endocrinology and services from podiatry, vascular surgery and weight-loss surgery, as well as a clinical diabetes research suite. There will be a space for education, nutrition counseling, calorimetry, autonomic nervous testing, psychological counseling and vascular studies.

ENDOCRINE EMPOWERMENT

The future of the Endocrine Division involves technology, research, novel gene therapies and disaster readiness. A Diabetes Smartphone application is about to be licensed with Daggerwing Health. With this new app, patients and doctors will have better access to information and it will also enable patients to manage and monitor their disease at their fingertips, thus narrowing the gap between patient and physician.

David Lam, MD, head of the Diabetic Ketoacidosis (DKA) project has developed a standardized protocol in the treatment of DKA involving care providers at every level, such as nurses and physicians. The protocol has educational modules for care providers to introduce the protocol. In addition, it utilizes an electronic order set that guides providers in the treatment process for DKA. The standardized process is intended to prevent common treatment errors and complications from treatment such as hypokalemia and hypoglycemia.

At Mount Sinai St. Luke's, The New York Obesity Research Center, led by Richard Weil, MEd, CDE, is the only federally funded obesity research center. The Weight Loss Program is led by a team of experts, including a behavior therapist, registered dietitian, and exercise physiologist. A team of bariatric physicians, including endocrinologists who specialize in weight loss, are available for hormonal and metabolic testing for weight management. The mission is to reduce the incidence of obesity and related diseases through leadership in basic obesity research, clinical research, epidemiology and public health, patient care, and public education.

THE MEANS TO AN ENDOCRINE

Gaucher Disease is a genetic disorder that has an incidence of up to one in 850 live births in the Ashkenazi Jewish population. Mount Sinai and The Yale School of Medicine have generated a mouse model that recapitulates all features of Gaucher Disease, including severe osteoporosis. This will identify the molecular mechanisms underlying the osteoporosis by using a combination of genetically modified mice and pharmacologic tools to understand and investigate the skeletal phenotype of the molecular basis of the bone defect in Gaucher

disease. These studies should form the basis of new therapies for this crippling disease.

The Division of Endocrinology has expanded the Metabolism Institute, renaming it the Diabetes, Obesity, and Metabolism Institute (DOMI). Andrew Stewart, MD, Irene and Dr. Arthur M. Fishberg Professor of Medicine, is leading the institute along with six senior investigators with expertise in diabetes, islet cell biology, and islet autoimmunity. This last year has shown several major discoveries by DOMI investigators including: the discovery of a small molecule that can trigger beta cell growth, the discovery that binge drinking can lead to many metabolic derangements including insulin resistance, the discovery that epigenetic changes in our genome can trigger Type 1 diabetes, and many others.

The Endocrine Division is excited to be part of a multicenter study for people with diabetes. The PERL study is an NIDDK sponsored study to prevent nephropathy progression in patients with Type 1 diabetes. This study is designed to confirm earlier preliminary data from Joslin and Steno Clinics that showed that the use of a certain medication available for over 50 years to treat gout can help slow the progression of kidney disease in people with diabetes. Patients enrolled have Type 1 diabetes, preexisting early kidney disease and will be followed for over three years. The division is excited be part of this groundbreaking study.

Yaron Tomer, MD, the Division Chief, is leading studies to identify the causes of autoimmune thyroid diseases. His studies are dissecting the environmental-genetic interactions leading to thyroid autoimmunity. Studies include mapping genes that predispose to autoimmune thyroid disease, and analyzing the role of viruses and how they modify genes (called epigenetic interactions) to trigger autoimmune thyroiditis.

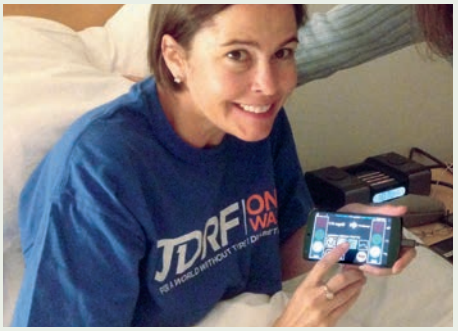
ENDOCRINE INITIATIVES

With increasing prevalence of thyroid cancer in our general population, new Ultrasound Guided Thyroid Fine Needle Aspirations (FNA) sessions were designated to better serve patients requiring FNA for diagnosis of thyroid cancer versus benign nodules. Previously, FNA sessions were scheduled in amidst of seeing other general endocrine patients. However, the newly designated sessions offer a better service and a smoother process for patients coming in for FNA. It also helps the fellows to develop procedural skills in a better, more controlled setting as fellows, preceptors, and nurses are aware of which patients are scheduled for FNA. With this enhanced learning approach, endocrine fellows look forward to further their FNA skills and the division has more than doubled the number of procedures performed in the clinic. Plus, the patients are finding this new process to be smoother and better organized.

The Endocrine Division hosted a one-day CME accredited symposium: "Diabetes Update for the Practicing Clinician" with over 260 attendees. The faculty members who presented at the symposium showcased how strong diabetes care and diabetes research is at the Mount Sinai Health System.

The Artificial Pancreas Program

An artificial pancreas system is one of the most promising breakthroughs in Type 1 diabetes treatments in decades. As the first-ever comprehensive artificial pancreas clinical trial in New York State, Mount Sinai is collaborating with the University of Virginia School of Medicine (UVA) on this potentially historic project. Many patients with Type 1 diabetes already wear insulin pumps to deliver insulin as well as glucose sensors to receive feedback on blood sugar levels every five minutes. However, the burden of self-care is immense for the people with Type 1 diabetes who struggle to maintain normal glucose levels. Patients must still perform frequent finger sticks and pay very careful attention to food intake, exercise and factors like alcohol intake and the impact of stress or illness on blood sugars. The challenge of the risk of complications from diabetes due to high glucose levels needs to be balanced with the acute risks of hypoglycemia. This new system, operated on an android smart phone, integrates data from a glucose sensor, which "reads" the patient's glucose levels, and determines the appropriate insulin amount which the insulin pump provides in a proactive fashion. In other words, the programmed smart phone acts as an "artificial pancreas."



This system has shown promising data in earlier studies leading to less hyperglycemia and reduced frequency of hypoglycemia compared to standard medical management. The Mount Sinai/UVA artificial pancreas project is an exceptionally well-equipped clinical research study, funded by the Juvenile Diabetes Research Foundation, and will help to forward research in this area. The goal is FDA approval of such a system for widespread use for people with diabetes. This project has support from many areas within the institution. The core team members (Carol Levy, MD, CDE, David Lam, MD, Camilla Levister NP, CDE, and Antoinette Bonaccorso, MD) have had collaborative support from Rensselaer Polytechnic Institute for the study engineer, and students from Mount Sinai have the opportunity to provide research assistance. Experts in information technology are involved and there is strong support from pediatric endocrinology. Both Dr. Tomer and Dr. Stewart are actively involved in all areas of this project as well.

Dr. Levy had the opportunity to speak at the JDRF One Expo on September 16th and spoke to excited patients and their families. The diabetes clinical research team in the endocrine division is excited to move this groundbreaking research forward.

The Dr. Henry D. Janowitz Division of Gastroenterology

To be at and stay at the forefront of gastroenterology requires a multidisciplinary, patient-centered approach. The nature of the patient's concerns and symptoms comes first, closely followed by the tracking and monitoring of treatment outcomes, ideally across diverse cultural backgrounds, socioeconomic strata, and geographic regions. Then, it often becomes necessary to integrate specialists. Gastroenterology, pathology, radiology, genetics/genomics, and medical informatics must coordinate as one excellent care team.

To achieve all these goals, the Division of Gastroenterology is in the process of creating digestive disease centers of excellence that will eventually include: the new IBD Center, the Swallowing Center, the Anorectal Disorder Center, the High Risk GI Cancer Center, the Advanced Endoscopy and Pancreatic-Biliary Center, the Neuroendocrine Tumor Center, the Center for Advanced Polypectomy, and the Comprehensive GI Center. Each center, with its distinct quality and performance metrics, is supported by a common technology platform for medical record keeping, scheduling, and metrics dashboards, as well as endoscopy – a common resource needed across gastroenterology.

When Mount Sinai, Beth Israel and St. Luke's and Roosevelt merged, even greater opportunities arose to strengthen and expand the way care was delivered, particularly by combining specific and similar interests, resources and facilities – in other words "like with like." Shared specialties across the Mount Sinai Health System include IBD, geriatric gastroenterology, motility, advanced endoscopy, and nutrition. This exciting new capacity holds the promise of balancing demand with the delivery of the highest quality GI services with the most prominent leaders in the field reaching across the entire system.

Facts and Figures

Mount Sinai Health System:
Bruce Sands, MD, MS, Chief, Dr. Burrill B. Crohn Professor of Medicine

Mount Sinai Beth Israel:
David Carr-Locke, MD, Chief, Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Donald Kotler, MD, Chief, Professor of Medicine

Faculty: 108
Total Research: $1,675,761
Fellows: 27

THE SCOPE OF THINGS

Using new techniques and technology, developing new drugs and creating better screening methods is the future of GI medicine. New therapeutic endoscopic techniques have enhanced the ability to image and diagnose, which is already having a significant impact on patient care throughout the health system. Just this year, for example, Mount Sinai Beth Israel received a $300,000 donation from the Winston Foundation to purchase a new ultra-wide angle endoscope system to study polyp detection and early gastric cancer. The health system's cutting-edge advanced therapeutic endoscopy service is capable of treating many conditions, such as achalasia, gastroparesis, early gastric cancer, esophageal tumors, biliary strictures and advanced colon polyps, previously amenable only to surgery.

The Pancreatic-Biliary and Advanced Endoscopy Center will encompass the superior and specialized care provided throughout the system. At Mount Sinai Beth Israel, a 24/7 Hepatic/Pancreaticobiliary Service (GI and Surgery) was launched for the immediate management of patients with acute liver, pancreatic or biliary conditions. The service can easily contact the on-call GI Fellow or the Advanced Endoscopy Fellow. This initiative will be expanded throughout the Mount Sinai Health System to all campuses.

With a new lab opened at Mount Sinai headed by Gina Sam, MD, motility is another area where the division can build upon strengths across the four campuses. At Mount Sinai St. Luke's and

Mount Sinai Roosevelt, under the direction of Il Joon Paik, MD, there is already an active program in anorectal motility disorders, including biofeedback. The motility initiative promises to expand capacity to manage patients with motility disorders as well as those with Irritable Bowel Syndrome (IBS). Upgrading equipment and the expansion of capabilities to encompass anorectal motility studies and biofeedback therapy of constipation and anal incontinence is included in this initiative. Biofeedback for the treatment of constipation and incontinence is a noninvasive and nonpharmacologic technique that holds great promise and is practiced widely at Mount Sinai. The enhanced motility program provides assistance for patients with esophageal diseases and swallowing disorders, and assists both ENT and bariatric surgeons. Dr. Paik and his team have also been educating colleagues at Mount Sinai Beth Israel and Mount Sinai St. Luke's and Mount Sinai Roosevelt in an effort to broaden the base of patients with motility disorders. They have been training additional staff in order to increase the capacity for managing patients.

MEDICINE IN MOTION

New technology, new drugs, therapies and screenings are also the wave of the future in GI. The novel agent, vedolizumab, was approved this spring for the treatment of Crohn's disease and ulcerative colitis. Landmark papers in the *New England Journal of Medicine* and *Gastroenterology* written by Drs. Sands and Colombel, along with others from the division, were published this year as part of the GEMINI I, II and III studies to demonstrate the drug's efficacy and safety.

A major advance in noninvasive stool-based testing for colon cancer screening analyzes abnormal DNA in stool. Steven Itzkowitz, MD, was a lead investigator on this research that was recently published in the *New England Journal of Medicine*. The test, which received FDA approval, is better at detecting colon cancers as well as clinically significant precancerous polyps than any of the currently used stool-based tests available now. Dr. Itzkowitz is also heading the New York City Colon Cancer Control Coalition, a consortium of NYC investigators that has increased colon cancer screening rates, while eliminating previously existing racial disparities.

Small intestinal neuroendocrine tumors are the most common tumor in the small bowel. To treat patients with these tumors, physicians need to accurately stage (i.e., evaluate the extent of) the disease. Michelle Kim, MD, and Richard Warner, MD, along with Dr. Itzkowitz of Mount Sinai published a paper in the *Journal of Clinical Oncology* that revised the staging classifications for small neuroendocrine tumors that improved the outcome prediction. This study hypothesized that a revised Tumor-Node-Metastasis classification could help differentiate patients and their outcomes. Using a national cancer registry, they evaluated this staging classification in 6,792 patients with small bowel neuroendocrine tumors. They found issues with the

current classification: overlaps between different staging groups, as well as a differential effect of lymph node involvement. Based on these findings, they proposed a refined staging system that allows for better discrimination of prognosis.

At Mount Sinai, Aimee Lucas, MD, has conducted ground-breaking research into the prevalence of BRCA mutations in patients with pancreatic cancer and is incorporating those findings into her practice of early identification of individuals at high risk. In a recently published study of patients undergoing pancreatic cancer screening, she found that nearly 20% had previously undiagnosed BRCA1 and BRCA2 mutations. Identification of these BRCA mutations allowed patients to manage their breast and ovarian cancer risks. It also changed their pancreatic cancer risk levels and allowed for appropriate pancreatic cancer screening with identification of precancerous lesions. Dr. Lucas is focused on developing screening regimens to detect early pancreatic cancer and precancerous lesions in high-risk patients with family history of pancreatic cancer or genetic cancer syndromes.

GOOD FELLOWSHIPS

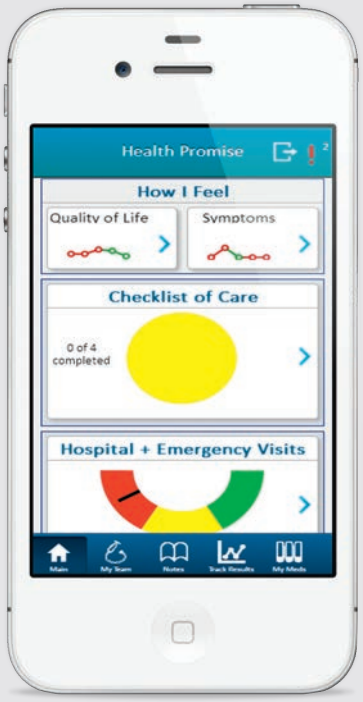
Last year, the divisions filled eight fellowship slots with applications from more than 1,000 candidates. Fellows came both from the in-house institutions and from prestigious programs throughout the United States. Additionally, two advanced endoscopy fellowships and one IBD fellowship were filled from more than 100 applicants and the fellows have performed beyond expectations. Ryan Ungaro, MD, a first-year fellow and former Chief Resident at Mount Sinai, already has one publication in press on his meta-analysis of antibiotic use and its impact on the development of IBD. Jonathan Mazurek, MD, a fellow at Beth Israel, was awarded a visiting fellowship grant by the Crohn's and Colitis Foundation of America and gave an oral presentation at Digestive Diseases Week about his work on the use of a bio-burden detection system to dramatically improve endoscope cleanliness.

The division remains committed to providing quality CME courses including the annual IBD Consultant's Course, which had more than 200 attendees. Additionally, a new GI & Liver Comprehensive Review course was given in conjunction with the Division of Liver Diseases for more than 150 physicians. At Beth Israel, the first didactic/live demonstration course in the use of a needle-based probe for endomicroscopy was given to a small group of visiting physicians, as well as a course in fine needle aspiration techniques during endoscopic ultrasound.

Finally, the Icahn School of Medicine is the only medical school in the New York City area with a GI/Liver Training Grant from the National Institutes of Health. This grant affords GI fellows the opportunity to perform intensive training in either basic or clinic investigation with an aim towards embarking upon a career in academic gastroenterology.

The Susan and Leonard Feinstein IBD Clinical Center

The new Susan and Leonard Feinstein IBD Clinical Center opened its doors in November 2014 and is a facility like no other in the United States. All aspects of patient care, research and education are brought together in one unique center. Pediatric and adult GI physicians are co-located with surgeons, nutritionists, psychologists, social workers and other allied health professionals to provide seamless and comprehensive care. The latest clinical trials are conducted in the center and patients have ready access to them. Residents and fellows interested in IBD – particularly those in the IBD Advanced Fellowship – are integrated into the practice so they are exposed to the widest variety of patients.



Key recruitments into the Division of Gastroenterology have been made surrounding the creation of this unique center:

- Jean-Frédéric Colombel, MD, an internationally renowned GI researcher and clinician who has more than 600 publications in the field of IBD, many of them considered landmarks in the field.
- James Marion, MD, a longtime private practitioner joined our full-time faculty and brings his clinical expertise and national reputation to the center.
- Judy Cho, MD, the world's foremost IBD geneticist, recently led a team of researchers that confirmed 92 genome regions and identified 71 new regions associated with the risk of IBD.
- Marla Dubinsky, MD, the nation's leading pediatric IBD specialist who recently came to Mount Sinai as Chief of the Division of Pediatric Gastroenterology.
- Ashish Atreja, MD, MPH, Chief Technology Engagement and Innovation Officer for the Department of Medicine, is a medical informatics expert who, in conjunction with the Mount Sinai App Lab, created an NIH-funded app called HealthPromise that helps IBD patients and their doctors manage symptoms by using a cloud-based system that integrates seamlessly with Epic.
- Jeremiah Faith, PhD, and Jose Clemente, PhD, translational researchers studying interactions between diet, the microbiota and human health, with an emphasis on IBD.

These new faculty are also working in conjunction with the Icahn Institute for Genomics and Multiscale Biology, the Immunology Institute, and the Pathology Department to provide for a multifaceted approach to identifying genetic risk factors for IBD, and to the development of new drugs. A novel industry/academic partnership with Janssen Biotech is allowing for the investigation of disease triggers as well as the establishment of diagnostics to facilitate precision medicine and predictive biomarkers and to identify new treatment targets.

Division of General Internal Medicine

Although primary care and general internal medicine are often considered synonymous terms, The Mount Sinai Division of General Internal Medicine (DGIM) encompasses much more than outstanding clinical care. Continuous quality improvement efforts, innovative care models, dynamic educational programs and health services research characterize the division.

The merger has resulted in not only the creation of a large primary care network centered at Mount Sinai St. Luke's and the creation of the a new Division of General Internal Medicine at Mount Sinai Beth Israel. These divisions, in collaboration with the Primary Care Institute, will allow Mount Beth Israel's and Mount Sinai St. Luke's primary care sites to collaborate with the health system partners to improve patient outcomes and reduce unnecessary utilization through the development of standardized population health management protocols and clinical quality measures.

A personal and interdisciplinary approach involving colleagues and services in nursing, social work, medical and surgical subspecialties, psychiatry and rehabilitation is often used to diagnose, treat, manage, and heal the whole patient. Mount Sinai DGIM is able to make referrals and coordinate care with a vast array of outstanding specialty services, and collaborate with them to create new models of care.

In addition to the outstanding primary care provided by highly experienced faculty and providers at the three sites, another major achievement over the last two years has been the large role DGIM leadership and faculty have taken in championing population health initiatives within the system. Population health management is an important step in the evolution of health care delivery. DGIM is using information technology and data systems to tailor entire clinical programs that better manage chronic illnesses and preventative care efforts, thereby improving patients' overall health and decreasing health care costs. The ability to collaborate cross-institutionally, as well as cross-departmentally in The Mount Sinai Health System, has been especially productive in these efforts as pre-merger care coordination models have been complementary to existing models.

Facts and Figures

Mount Sinai Health System:
Theresa Soriano, MD, MPH, Interim Chief, Associate Professor of Medicine

Mount Sinai Beth Israel:
John A. Andrilli, MD, Chief, Assistant Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Gary Burke, MD, Chief, Vice Chair and Assistant Professor of Medicine

Faculty: 519
Total Research: $4,073,191
Fellows: 2

GOING THE EXTRA MILE FOR QUALITY

The Mount Sinai Visiting Doctors Program (MSVD) and Chelsea-Village House Call Program (CVHCP), led by Drs. Linda DeCherrie and Cameron Hernandez, is a nationally recognized model for providing high-quality, patient-centered primary and palliative care to homebound patients, offering emotional support and social services to families and caregivers and providing education and experience in home care to medical trainees. Last year, more than 6,500 home visits were conducted for more than 1,300 patients throughout Manhattan. Drs. DeCherrie and Hernandez serve on several American Academy of American Home Care Medicine (AAHCM) national committees and Dr. Theresa Soriano was also inducted to the AAHCM Board of Directors in 2014.

MSVD/CVHCP has been engaged in several innovative population health activities for its vulnerable patient population for several years. The program boasts outstanding annual influenza and pneumococcal vaccination rates, surpassing community-based and nursing home populations. Another major patient-care initiative launched in January 2012 was the co-management program. In this program, MSVD's top 5% of patients who are most at risk for frequent use of the ER and hospital are co-managed by a nurse practitioner and social worker with the primary doctor. This grant-funded model allows for more frequent visits as necessary, and for a more timely response to urgent clinical phone calls, as well as improved connections to social work intervention. Since its inception, the co-management program has reduced the annual hospitalization rate from 2.26 to 1.26 admissions per year for these patients.

Most recently, MSVD/CVHCP, in collaboration with the Department of Geriatrics, was awarded a Center for Medicare and Medicaid Innovation (CMMI) Round 2 Award of $9.6 million to launch a home-based acute and transitional care program based on the Hospital at Home model.

The New York State Department of Health awarded Mount Sinai a Hospital Medical Home Grant of $5.2 million enabling Mount Sinai to launch two new patient-care initiatives and to continue to provide case management services for the highest

risk Medicaid patients in the system. At the Mount Sinai Internal Medicine Associates (IMA), diabetes control has improved due to the Patient Care Medical Home (PCMH) Diabetes pilot, which targets patients with under-controlled diabetes by using panel management principles and an enhanced team, including certified diabetes educators and dietitians. Under the direction of Drs. Laurie Edelman and Georgia Kulina "PCMH Diabetes" collaborates with the Cardiovascular Alliance, the Division of Endocrinology, and is piloting the use of community-based care coaches from the East Harlem's City Health Works! to help patients manage themselves outside of the clinical setting. This collaborative program was just accredited by the ADA for diabetes self-management education.

IMA's Depression Care Program is another innovative model integrating physician-led behavioral health social work care management for IMA patients with depression and/or anxiety. The pilot, pioneered by Drs. Lauren Peccoralo and Susan Truong, has been successful in increasing depression screening for the whole IMA patient population. Patients in the program have also shown improvement in depression symptoms.

Mount Sinai St. Luke's is also developing new and innovative Disease Management Programs across the spectrum of care. The Mount Sinai St. Luke's DGIM has a strong relationship with its Division of Endocrinology's Jeanine Albu, MD, at both the programmatic and research levels, including an NIH/CDC grant on Diabetes Prevention. John Greely, MD, has been working with the Mount Sinai Respiratory Institute to develop disease management programs in COPD and asthma that include EMR templates, care management protocols, and standardized diagnostic and treatment programs. Similar disease management programs are in development for chronic renal disease and the frail elderly.

With a New York State Department of Health $6 million grant, Mount Sinai Beth Israel is able to fund its own Hospital-Medical Home Demonstration Project that supports a care transformation of its ambulatory care sites to enhance resident training. The DGIM's participation in Beth Israel's program has enhanced the transitions of care from inpatient/ED to ambulatory, medication reconciliation, patient access via physician extenders (NPs), and LGBT culturally competent care. In addition, the project has helped GMA achieve NQCA Level III PCMH status.

QUANTIFYING QUALITY

Another expression of Mount Sinai's commitment to population health is the Healthfirst Quality Improvement Program led by Drs. Roy Cohen and Naabia Casely-Hayford at Mount Sinai St. Luke's, John Andrilli and Desiree Chow at Mount Sinai Beth Israel, and Eva Waite, Aparna Sarin, and Jonathan Arend at Mount Sinai. Mount Sinai St. Luke's and Mount Sinai Roosevelt scored first amongst over 30 practices on Medicare performance in 2012, third in Medicaid performance, most improved overall, and first in patient satisfaction. The experience has helped prepare the division for future Quality Pay for Performance programs through other payers, including the Mount Sinai ACO program and commercial insurance carriers.

Led by Ed Young, MD, Mount Sinai St. Luke's and Mount Sinai Roosevelt has developed a population health reporting tool that provides daily updates to the primary care practices and in-patient services on hospital admissions, hospital and ED discharges, readmissions, near miss readmissions, plus overviews regarding practice panel size, admission and readmission rates. This tool has helped form the basis of the larger system's population health reporting.

CURRICULUM FOCUSING ON COMMUNITY AND ACADEMIC LEADERSHIP

The Primary Care Residency Track at Mount Sinai received a grant from the NYS Department of Health Ambulatory Care Training Program "Doctors Across New York" for $433,342 to fund primary care residents training in underserved areas of New York in community health centers. Residents can now practice and get training in primary care at three East Harlem sites for longitudinal primary care experiences. Residents in the five-year-old primary care track also receive a diverse curriculum in medical education that consists of an advanced teaching seminar, a teaching small group session and practice sessions, a curriculum development course, and a precepting course with four practice sessions. They also experience opportunities to engage in and present advocacy and quality improvement projects. Recent resident projects have received internal quality and advocacy grants to complete their projects. More importantly, their efforts are often successful and result in enduring changes in the care and services provided at the IMA.

The Ambulatory Training Program for the Mount Sinai St. Luke's and Mount Sinai Roosevelt's Departments of Medicine, led by Drs. Tamara Goldberg, Claudia Levine, and Michael Wiener, has developed a resident-driven QI curriculum related to Population Management in the residents' clinic that was formally presented at a 2014 SGIM national meeting. The program is focused both on improving care in the clinics and preparing housestaff for a new model of care that will become a central part of their professional life.

Preventing Readmission, Engaging Patients

The Preventing Admissions Care Team (PACT) Clinic, led by Drs. Ania Wajnberg and Ramiro Jervis, is a multidisciplinary high-intensity care model for medically and psychosocially complex patients with multiple chronic conditions and/or frequent inpatient or ED admissions. Since its initial restructuring and expansion in 2012, PACT Clinic has achieved sustained reductions in ER and hospital admissions by up to 43%, and the demand for the clinic continues to grow. This year Mount Sinai Beth Israel and Mount Sinai St. Luke's and Mount Sinai Roosevelt will begin implementing a Preventing Admissions Care Team (PACT) Clinic to target their patients. The program integrates close psychosocial support via integrated social work and patient navigators. The PACT Clinic and its outcomes were selected as an Innovative Model of Care and presented at the Society of General Internal Medicine (SGIM) annual meeting in 2014.

Over the last three years, Mount Sinai St. Luke's and Mount Sinai Roosevelt have developed a grant-funded Medical Home Initiative (MHI) to clinically transform ambulatory office care across 25 Primary Care Practices. MHI is focused on reducing hospital and ED utilization through the use of nurse care managers situated within the primary care practices. MHI has been instituted within its Department of Medicine Faculty Practices, and its residency program training sites at the three Ryan Community Health Centers associated with St. Luke's and Roosevelt. Building on the MHI successes and utilizing funds from the NYS DOH Hospital Medical Home Demonstration Grant, they developed a companion Transitions in Care Program Learning Collaborative to improve continuity of care, reduce hospitalizations, including readmissions, and improve quality outcomes for patients in residents' clinics. Through the initiative, Mount Sinai St. Luke's and Roosevelt Medical Home Initiative & Transitions in Care Program, hospital readmission rates have been reduced by greater than 50% in the primary care practices and residents' clinics.

The Division of Hematology and Medical Oncology

The Division of Hematology and Medical Oncology has experienced tremendous growth over the past several years, while also staying true to its dual mission of delivering the best, most compassionate care to patients and pursuing excellence in research and training. In order to be at the forefront of medicine, it is vital to incorporate research into clinical care to help the greatest number of people by doing the research that will ultimately improve outcomes for all.

The division, as an integral component of the Tisch Cancer Institute at Mount Sinai, builds on a long history of excellence in hematology and hematological malignancies, as well as solid tumor oncology. Together with the physicians of the Continuum Cancer Centers, the division is working hard to build on its commitment to cancer patients throughout New York City.

THE FUTURE OF CANCER CARE

In 2012, clinicians at The Mount Sinai Hospital in the division who treat cancer and hematology patients, moved into a new state-of-the-art facility – the Ruttenberg Treatment Center, in the newly constructed Leon and Norma Hess Center for Science and Medicine. The new center consists of 50,000 square feet, including 54 infusion suites and 48 exam rooms, as well as expanded laboratory testing and an on-site pharmacy and research pharmacy. Patient visits have increased dramatically over the past three years and the Ruttenberg Treatment Center continues to add new multidisciplinary clinical programs on an ongoing basis. Recently developed programs include: a Metastasis Center for patients with advanced cancer, an Oncocardiology program, and numerous support programs, such as pet therapy and massage therapy. There has been a 40% growth over the past two years in patient visits to the Ruttenberg Treatment Center.

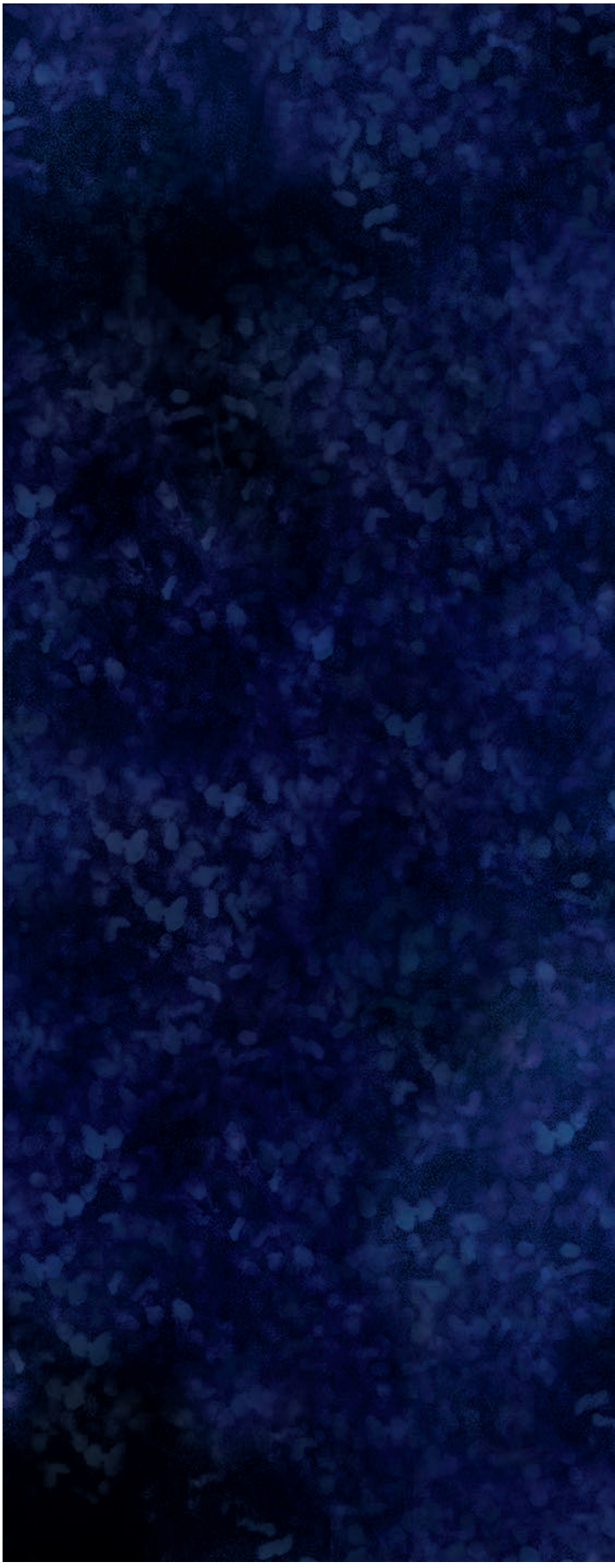
Facts and Figures

Mount Sinai Health System:
William Oh, MD, Chief, Ezra M. Greenspan, MD, Professor in Clinical Cancer Care Therapeutics

Mount Sinai Beth Israel:
Peter Kozuch, MD, Site Director, Associate Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Seth Cohen, MD, Site Director, Instructor of Medicine

Faculty: 122
Total Research: $18,347,000
Fellows: 22



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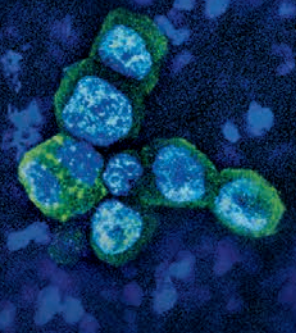
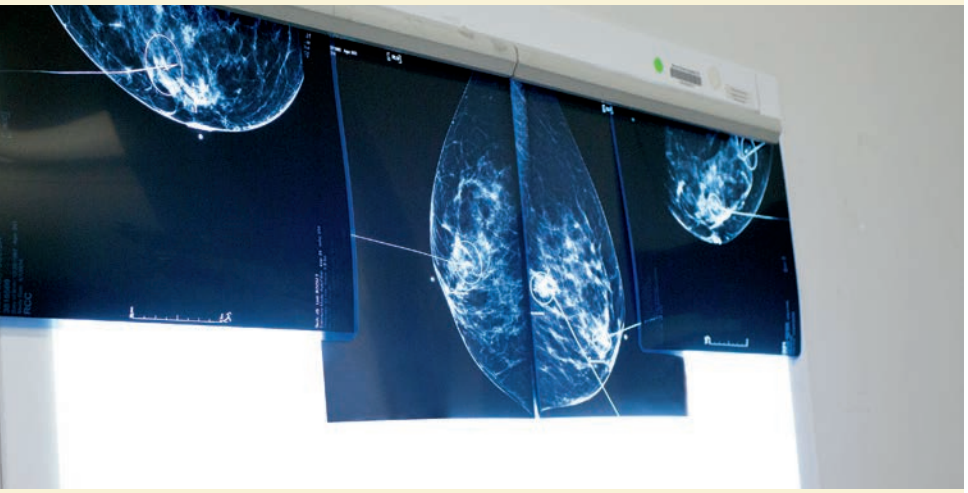


Imaging of GFP positive HNSCC DTCs in freshly isolated lungs using laser scanning confocal microscopy. (Julio Aguirre-Ghiso, PhD)

Breakthroughs in Breast Cancer

The Breast Medical Oncology Program recently recruited Charles Shapiro, MD, from Ohio State University, where he previously led the Breast Medical Oncology Group. Dr. Shapiro will work with Ramon Parsons, MD, Chair of Oncological Sciences, along with an outstanding group of investigators in the division across multiple campuses to grow a robust portfolio of clinical trials including new agents and new approaches to breast cancer survivorship.

Breast cancer is a significant area of strength in the new Mount Sinai Health System. Altogether, the major cancer sites at Mount Sinai Beth Israel (including PACC and BI West), Mount Sinai Roosevelt and the Dubin Breast Center at The Mount Sinai Hospital treat over 1,500 new breast cancer patients per year. This significant volume of patients will translate into a significant impact on clinical and translational research. Investigators, such as Paula Klein at Mount Sinai Beth Israel West, have extensive experience as clinical trialists and have accrued patients to key Cooperative Group, industry and investigator-initiated trials. At Mount Sinai Roosevelt Hospital, Anu Goel, MD, has been leading the medical oncology program in breast cancer.



At the Dubin Breast Center, Dr. Shapiro joins Amy Tiersten, MD, who was also recently recruited from NYU Cancer Center, where she was an active and experienced clinical investigator. Yoko Irie, MD, is a physician-scientist who practices in the Dubin Center, but also has a laboratory investigating basic mechanisms of breast cancer progression. Recently, she was awarded a breast cancer research award from AACR, a prestigious honor that reflected confidence in her research approach. She is also co-leading an effort with Champions Oncology to create PDX mouse models for triple-negative breast cancer.

Basic research in the division is also focused on breast cancer, such as novel work by Doris Germain, MD, which uncovered a new therapeutic approach to breast cancer treatment which she coined "proteocrine therapy." This work is currently being finalized in a clinical trial and has demonstrated promising early results.

The opening of the Hess Center also led to the creation of new research laboratories and the recruitment of world-class cancer translational scientists into the Division of Hematology and Medical Oncology, including Drs. Nina Bhardwaj, Sacha Gnjatic, and Joshua Brody – who have joined outstanding basic cancer immunologists, such as Drs. Miriam Merad, Mount Sinai Professor in Cancer Immunology and Sergio Lira, The Leona M. and Harry B. Helmsley Charitable Trust Professor of Immunology. This juxtaposition of clinicians, translational scientists and basic scientists allows the fastest and most effective application of research to patient breakthroughs – true "bench-to-bedside" advances.

With the merger, exceptional clinical care from across the Mount Sinai Health System has been made available to patients across Manhattan. At Mount Sinai Beth Israel, outstanding clinicians and investigators in the multidisciplinary cancer program at the PACC campus joined medical oncologists in the Cancer Program at MSBI West to deliver distinctive cutting-edge care to patients in lower Manhattan. In addition, the clinical oncologists and hematologists at Mount Sinai Roosevelt and St. Luke's have been providing excellent care to patients on the West Side of Manhattan now as part of the Mount Sinai Health System.

FROM CURIOSITY TO CUTTING EDGE

The division is home to a number of world-class clinical research programs, including renowned hematologic malignancy programs such as the Multiple Myeloma Program, under the direction of Sundar Jagannath, MD, and the Myeloproliferative Disease Program, under the direction of Ronald Hoffman, MD. The Myelodsyplastic Syndrome Program is led by Lewis Silverman, MD, and recently the Bone Marrow Transplant Program recruited James Ferrara, MD, to lead the translational research program in BMT.

The division also has strong multidisciplinary clinical and research programs in many solid tumors. Marshall Posner, MD, leads the Head and Neck Medical Oncology program and will work closely with outstanding clinicians in Head and Neck Oncology at Mount Sinai Beth Israel, including Bruce Culliney, MD. An outstanding clinical and research program in GI cancers at Mount Sinai Beth Israel led by Peter Kozuch, MD, will work with clinicians at Ruttenberg. Strong programs in melanoma, prostate cancer, lung cancer, and other solid tumors are growing momentum in oncology research locally and nationally.

Matthew Galsky, MD, leads a Genitourinary Cancer Program in Medical Oncology that includes innovative clinical trials that have been recognized nationally. Dr. Galsky, a recipient of the Prostate

Cancer Foundation Young Investigator Award, has initiated a trial of metformin in prostate cancer that garnered attention for at least two reasons: First, the trial was designed through a crowd-sourcing approach that incorporated input from clinicians, nurses, patient advocates and others. This improved the trial and the experience was published recently in the Journal of the National Cancer Institute. Second, the trial itself administers the drug remotely after a single visit to the Mount Sinai campus. This is based on data that Dr. Galsky acquired that most trials in cancer fail, at least partly because of distance to the site where the trial is being conducted.

The Division of Hematology and Medical Oncology has continued to expand and enhance its robust clinical research program through increased clinical trial accruals and investment in the Cancer Clinical Trials Office of the Tisch Cancer Institute. With the recent merger, the CCTO will be merged across the health system and facilitate accrual to cutting-edge studies for all patients at Mount Sinai. Benjamin Levy, MD, will be working closely with Dr. Posner to integrate CTO operations across the system.

Basic scientists within the division remain active in understanding the mechanisms of cancer initiation and progression. Julio Aguirre-Ghiso, MD, has been elucidating the nature of cancer dormancy, which could lead to new therapeutic approaches. Drs. Doris Germain and Yoko Irie are studying the drivers of breast cancer.

TAKING THE INITIATIVE

Luis M. Isola, MD, has been named to a new position as Director of Cancer Clinical Programs for the Mount Sinai Health System. Dr. Isola will build upon his considerable achievements in hematology and bone marrow transplantation to provide strategic oversight for the clinical programs in cancer across the health system. Drawing on his experience as Director of the Mount Sinai Cancer Network, Dr. Isola will lead efforts to integrate program growth and build centers of excellence for delivering value-based oncologic care throughout the health system. In a new era of transitioning from episodic care to assuming risk for population health maintenance, Dr. Isola will be charged with providing stewardship for the operational efficiency and financial integrity of the Cancer Clinical Programs.

The robust fellowship program continues to train and mentor future academic leaders in hematology and medical oncology. The Mount Sinai program is currently under the direction of Adriana Malone, MD, with Matthew Galsky, MD, recently appointed the Associate Fellowship Director. In addition, excellent training traditions at Mount Sinai Beth Israel and Mount Sinai St. Luke's and Mount Sinai Roosevelt will continue under Peter Kozuch's, MD, guidance. Janice Gabrilove, MD, has recently been appointed as Associate Director for Education for the Tisch Cancer Institute and in this role will coordinate opportunities for education within the division across the health system.

The Division of Hematology and Medical Oncology started sharing educational opportunities, having merged Hematology/Oncology Grand Rounds in September 2014. The outstanding series is broadcast via video conference to multiple sites, including Mount Sinai Beth Israel and Mount Sinai St. Luke's and Mount Sinai Roosevelt. In addition, quarterly heath system-wide divisional faculty meetings have been initiated, as well as monthly on-site faculty meetings.

Division of Hospital Medicine

Facts and Figures

Mount Sinai Health System:
Andrew Dunn, MD, Chief, Professor of Medicine

Mount Sinai Beth Israel:
Dahlia Rizk, DO, Chief, Assistant Professor of Medicine

Mount Sinai St. Luke's:
Rajan Gurunathan, MD, Chief, Assistant Professor of Medicine

Mount Sinai Roosevelt:
Ravi Gupta, MD, Chief, Assistant Professor of Medicine

Faculty: 90
Total Research: $89,058

The Division of Hospital Medicine is on a path to becoming a national leader in the quality of care through the development of innovative clinical programs and initiatives, and in the development of future inpatient physicians. High priorities in the division are: improving in the areas of care transitions, acute care patient flow, readmissions reduction, efficient care utilization and resource management, quality measures related to patient satisfaction and patient safety, and infection control, as well as resident education.

The merger with Mount Sinai Beth Israel and Mount Sinai St. Luke's and Mount Sinai Roosevelt has greatly strengthened the division and moved it closer to these goals. These new Mount Sinai institutions joined this mission by reorganizing their programs as Divisions of Hospital Medicine rather than as sections of General Medicine. This enabled the standardization of best practices across the sites, including on-boarding orientation, faculty development, and interdisciplinary rounds. The merger with Mount Sinai has also allowed for the identification and sharing of current best practices across the campuses, and fostered collaboration on many levels, from the structure of key programs to further service line development. Having access to faculty and resources at the main campus has promoted a vibrant discourse on core issues related

to inpatient care, and there is an excitement about opportunities for continued faculty development and potential research collaboration down the road.

THE INPATIENT EXPERIENCE

Patient satisfaction at Mount Sinai has increased from 73% to 76%, which is a substantial improvement in the HCAHPS score. This was accomplished through several initiatives including implementing bedside interdisciplinary rounds on one unit and having a hospitalist perform daily "Leadership Rounds" on 1 unit, independent of their clinical responsibilities. These leadership rounds are innovative and focus on enhancing the patient experience of care and improving patient satisfaction cores for that ward. A High-Value Care Committee, led by Harry Cho, MD, consists of a hospitalist group focused on decreasing waste and unnecessary costs throughout Medicine. This group is currently addressing management of cellulitis, pulmonary embolisms, and telemetry usage, and has also developed an award-winning education conference (OCCAM) focused on training housestaff on identifying wasteful practices. Additionally, a Unit Medical Director model has been developed to partner hospitalists with nurse managers to oversee and become accountable for performance on their unit.

Mount Sinai continues to lead in surgical areas and the peri-operative care of surgical patients. This includes expansion of the requirement for a structured Pre-operative Medical Assessment (POMA) for all high-risk patients going for surgery as well as expansion of our surgical co-management program. The division's pre-operative service requires a structured comprehensive medical evaluation and has been expanded from admitted patients to encompass all high-risk patients who are going to be admitted for surgery.

There will be continued growth of existing service lines in terms of both teaching and non-teaching care, further development of co-management and consultation services, new services in Observation Care, and expanded participation in areas related to quality, safety, and education.

The division looks to further develop partnerships with nursing, social work, case management, and hospital quality to advance inpatient care and promote a culture of safety and efficient utilization management.

BESIDE MATTERS

The Mobile Interdisciplinary Care Rounds (MICRO) grant has funded a $90,000 quasi-randomized trial to determine whether bedside interdisciplinary rounds improves patient outcomes

and length of stay compared to traditional conference room rounds. This model aims to transform teamwork in the hospital with bedside interdisciplinary rounds. The interim results of this model were presented at a national meeting in 2014.

A Cardinal Health Foundation $35,000 grant funded Safe Transitions Anticoagulation Report (STAR) initiative to improve the safety of patients discharged on warfarin. And a grant-funded trial for Standardized Patients to Improve Hospitalist Communication Skills examined whether standardized patients and a structured encounter can improve hospitalist attending knowledge and communication skills.

Vascular Surgery Hospitalists Co-Management Service

The care of hospitalized patients by hospitalists has improved our health care system by decreasing costs, providing outstanding medical care, and coordinating transitions of care. As a consequence of the development of this specialty, hospitalists have naturally evolved to become co-managers of surgical patients, particularly because these patients have multiple severe co-morbidities, poor functional status and high peri-operative cardiac risks. Through the innovative efforts of hospital leadership, the Division of Hospital Medicine and Department of Surgery at Mount Sinai developed the Vascular Surgery-Hospitalist Co-Management Program.

The program is designed to improve patient care and clinical outcomes such as: mortality, length of stay, readmission rate, pain scores, and patient satisfaction, ensuring better continuity of care and a good handoff to the primary care physicians, and providing surgeons with a single point of contact for medical decisions. The program started in January 2013 and expanded to the Surgical Oncology service in August 2014. Hospitalists actively participate in the medical care of the vascular surgery co-management patients.The hospitalists are:

- Rounding on all ASA 3-4 patients 7 days a week and communicating any recommendations to the vascular surgery team;
- Performing the pre-operative medical evaluation and actively participating in the patient's post-operative medical care;
- Addressing all medical issues, including management of chronic diseases (e.g. diabetes mellitus, coronary disease, chronic kidney disease, chronic pulmonary disease, etc.), and acute medical conditions (e.g. acute kidney injury, acute respiratory failure, acute coronary syndrome, sepsis, and delirium, etc.);
- Participating actively in the daily multidisciplinary rounds with the Vascular Surgery Housestaff.

The program has been highly successful with improved communication between medical staff, nurses and surgeons and improved patient outcomes. Mortality has been decreased from 1.7% to 0.4%, corresponding to a decrease in the risk-adjusted mortality ratio from 0.89 to 0.24. In addition, the readmission rate has been decreased (23.1% to 20.5%) and length of stay is also reduced (from a risk adjusted ratio of 0.88 to 0.79). The program has also improved nurses' perceptions on the quality of care of patients.

TOMORROW'S TOP HOSPITALISTS

The Mount Sinai Division of Hospital Medicine is looking to grow and recruit physicians and physician extenders who are interested in hospital medicine as a career and expect to contribute to improving and innovating inpatient systems of care that are patient-centered, evidence-based, and outcome-oriented. Training tomorrow's inpatient hospitalist physicians is a top priority. Just this past year, Mount Sinai's Dr. Harry Cho was named one of the nation's top hospitalists by ACP Hospitalist.

The development of the "Health Care Leadership Track" within the Internal Medicine Residency Program is a unique and highly innovative track. Each year, six interns are accepted into the track, which takes place during the PGY2-3 years. Residents are given a series of didactics and practical exercises and experiences to give them additional skills in quality improvement, business of medicine, teamwork, and leadership and this has been highly successful.

Teaching Mortality Reviews is a new curriculum for PGY-2 and PGY-3 internal medicine residents on systems issues surrounding patient mortality. This involves a one-time small group learning experience, followed by the resident being paired with a hospitalist for a mentored review of a case, and opportunity to present at the division's Morbidity & Mortality Review Committee.

Patient Safety and Transitions Curriculum is geared for third year. All third year medical students receive interactive seminars on patient safety and transitions. Additionally, they visit a patient they discharged from the hospital and have a debrief session about their experience.

For the fourth year medical student (MS4), a Quality Improvement and Patient Safety Elective (QIPS) is offered. This is a two-week elective focusing on teaching advanced concepts in quality improvement and patient safety via small group discussion and a mentored improvement project. Topics range from process mapping, identifying waste, root cause analysis, to medical error reporting and disclosure. And the High Value Care Curriculum is a novel curriculum for housestaff on providing value and eliminating unnecessary cost and waste.

Recently, the Mount Sinai Division of Hospitalists has increased its presence at national meetings. Through the use of a uniform Mount Sinai Health System template, over 30 posters with the Mount Sinai brand were shown at the Society for Hospital Medicine (SHM) national meeting in 2014, as well as a pre-course and three workshops. DHM also presented at the 9th annual Mid-Atlantic Hospital Medicine Symposium: Mastering the Care of the Hospitalized Patient that had approximately 150 attendees from across the country. By presenting at such national meetings, and by leading an issue of *Hospital Medicine Clinics,* including 10 chapters on core topics impacting hospitalists, the division has become a major national presence in Hospital Medicine.

Division of Infectious Diseases

The creation of the Institute for Advanced Medicine (IAM) throughout the Mount Sinai Health System was a top priority for the Division of Infectious Diseases. Under the direction of Michael Mullen, MD, the Institute for Advanced Medicine has combined six HIV primary care centers coordinated to treat and care for more than 10,000 persons infected with HIV throughout the New York metropolitan area. The IAM unites the Mount Sinai Health System's outstanding physicians and staff from multiple disciplines into one integrated program that provides accessible, affordable, and expert primary and specialty care to HIV patients as well as their friends and families. Specialty services include mental health, case management, social services, and coordinated clinical care in areas such as cardiology, dermatology, and nephrology. This large and coordinated mission will enable the IAM to serve as a leader in treatment, prevention and education in addition to providing researchers with tremendous opportunities for drug discovery, and will offer patients unique access to clinical trials.

Facts and Figures

Mount Sinai Health System:
Judith A. Aberg, MD, Chief, Dr. George Baehr Professor of Clinical Medicine

Mount Sinai Beth Israel:
Donna Mildvan, MD, Chief, Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Robert S. Klein, MD, Chief, Professor of Medicine

Faculty: 89
Total Research: $7,622,794
Fellows: 14

INFECTIOUS DISEASE CONSULTATIONS AND PREVENTION

In addition to the robust clinical services to those with HIV infection, the faculty in the division provide infectious disease consultation on both in-patient and out-patient service areas, offering expert guidance on travel medicine, hepatitis infections, antimicrobial resistance and diagnosis/treatment for bacterial, fungal, mycobacterial, parasitic and viral infections.

One of the greatest accomplishments for the latter part of 2014 has been the partnership of Infectious Diseases and the Infection Control Program with The Mount Sinai Hospital to assist with the development of the newly created Bio-Containment Unit – one of 35 such centers in the United States to provide state-of-the-art care to patients with Ebola. Tremendous efforts were taken to assure health care worker training and safety to the outstanding comprehensive critical care teams.

The ultimate goal of the pathogen surveillance program is to prevent infectious complications throughout the Mount Sinai Health System. As an example, central line-associated blood stream infections (CLABSI) due to drug-resistant pathogens such as methicillin-resistant Staphylococcus aureus (MRSA) and carbapenem-resistant Enterobacteriaceae (CRE) are causes of significant morbidity and mortality worldwide with higher rates in the greater New York area. Clostridium difficile infection is also of major concern and occurs here with an incidence four times higher than the national benchmark for reasons that have yet to be explained. These deadly infections are associated with increased lengths of stay and increased hospital readmissions, and are closely monitored by regulatory agencies.

Hospital-acquired infections (HAIs) pose a ubiquitous, insidious, and potentially fatal threat to patients across the country. The Centers for Disease Control estimate HAIs account for roughly 1.7 million serious infections every year in the United States and cause or contribute to

99,000 deaths annually, with a greater burden in immunocompromised hosts. The Infection Control and Prevention Program is being led by Dr. Brian Koll at Mount Sinai Beth Israel.

At Mount Sinai St. Luke's and Mount Sinai Roosevelt there is a prospective observational study to examine the occurrence of community-associated infections due to ESBL-producing *E. coli* at centers in the United States. The study showed that a substantial portion of community-onset, ESBL-producing *E. coli* infections now occur among patients without discernible health care-associated risk factors. This epidemiologic shift has implications for the empiric management of community-associated infection when involvement of *E. coli* is suspected.

Mount Sinai Beth Israel's Antimicrobial Stewardship Program (ASP) has experienced major activity and growth. Positive blood culture reviews have been conducted by the ASP director and second year fellows. Implementation of this review is to assure adequate antibiotic coverage for patients, while awaiting definitive sensitivities and has resulted in decreased proportion of patients at risk because of inadequate antimicrobial coverage. Another ASP initiative on antibiotic usage in patients treated for urinary tract infections demonstrated a statistically significant reduction in the duration of inpatient and total length of antibiotic therapy among patients with accepted ASP recommendations compared to patients with rejected or no recommendations.

BASIC SCIENCES

The novel avian influenza A (H7N9) virus has infected hundreds of people in China, killing approximately a third. In collaboration with the Department of Microbiology, Dr. Nicole Bouvier's lab has assessed the impact of the virus' mutation on antiviral sensitivity and viral replication, pathogenicity, and transmissibility. Their data indicated that an H7N9 isolate encoding mutation is highly resistant to oseltamivir and peramivir and partially resistant to zanamivir. Furthermore, H7N9 reassortants with and without the resistance mutation demonstrate comparable viral replication in primary human respiratory cells, virulence in mice, and transmissibility in guinea pigs. Thus, in stark contrast to oseltamivir-resistant seasonal influenza A (H3N2) viruses, the H7N9 virus replication and pathogenicity in these models are not substantially altered by the acquisition of high-level oseltamivir resistance.

Excitingly, there is a patent application by Dr. Arevik Mosoian on the isolation and identification of novel prothymosin alpha variants with potent anti-HIV activity. Prothymosin alpha variants are potent inducers of innate inhibitors of viral replication like type I and type III interferon and could be used as a therapeutic against interferon sensitive viruses like HCV, HBV, influenza, and cancers like melanoma and leukemia.

Dr. Aberg's group has also focused on the role of inflammation in chronic HIV infection. A number of age-related comorbidities such as heart disease and cancer occur earlier in HIV-infected patients than in individuals without HIV infection. This "accelerated aging" appears to be largely related to chronic inflammation, chronic immune activation, and immunosenescence (aging of the immune system) in HIV infection, sometimes referred to as "inflamm-aging." However, not all individuals with HIV experience this "inflamm-aging," leading to the hypothesis that genetic factors may play a role in disease pathogenesis or specific pathogen-host interactions that interplay with drug metabolism genes. Similar phenomena have been observed in other chronic viral infections and in organ and stem cell transplant recipients.

Building on the foundation of the IAM, the Clinical Translational Research Center (CTRC) was created and developed under the direction of Mount Sinai's Dr. Aberg, and will greatly expand the division's clinical, translational and basic science programs and help move ID science forward in the hope of discovering new treatments and strategies to eliminate or control human pathogens. Each of the IAM centers throughout New York City serve as clinical research sites located either within or nearby the clinical care site. The main coordinating center is located at The Mount Sinai Center for Advanced Medicine. The CTRC is a dedicated research unit with research staff including regulatory support, state-of-the-art examination rooms, and offices for which the trainees can learn good clinical practice (GCP) for conducting clinical research. The CTRC is devoted to the conduct of studies in persons with infectious diseases, including complications and co-morbidities associated with their underlying disease process.

In partnership with ID scientists, the division is able to offer patients access to participation in a myriad of clinical and translational studies through the CTRC. All patients are offered participation in the central biobank repository as well as more specialized repositories such as our Neuro-AIDS Biobank. Mount Sinai is home to the largest interdisciplinary neuro-AIDS research cohort in New York City, through the longitudinal observational studies of the Manhattan HIV Brain Bank and CNS Antiretroviral Therapy Effects Research New York sub-site.

IN EDUCATION

The Division of Infectious Diseases has received several million dollars in grants funds to provide education and clinical care including the Mount Sinai Clinical Education Initiative (CEI)

Infectious Diseases and Genome Sequencing

The application of whole-genome sequencing to the diagnosis and management of infectious disease is in its infancy, with only a small number of institutions currently applying this powerful technology to assist physicians in infection control, microbiological diagnostics, epidemiological analysis, and antibiotic-resistance profiling. As the costs and turnaround time for genome sequencing decrease, these high-throughput next-generation methods will become increasingly accessible to clinicians and health care facilities. The Mount Sinai Infection Control Group, led by Dr. Fran Wallach in collaboration Dr. Andrew Kasarskis, Vice Chair, Department of Genetics and Genomic Sciences and their team of scientists, have already successfully applied genome sequencing to track outbreaks and suspected transmissions of MRSA, VRE and Burkholderia cepacia providing insight into the origin and progression of these infections, and are moving to apply these same techniques to viruses, including HIV. Genomic sequencing has been shown to confirm lower person-to-person transmission rate of pathogens than was presumed by routine infection-control based definition.

An example of successful collaboration occurred when there was a concern for a higher than usual number of cases of Stenotrophomonas maltophila bacteremia in transplant patients in 2013. Whole genome sequencing revealed only 90% relativity and phylogenetic comparisons to disparate reference strains, thus dispelling outbreak concerns. Whole genome sequencing is able to provide a level of discrimination not attainable with standard typing methods. The technique was able to confirm MRSA transmission in the setting of deceased-donor liver transplantation by demonstrating 100% clonal identity between the donor and recipient isolates. Having obtained IRB and Clinical Microbiology lab approval, the group is prospectively banking key clinical isolates. In addition to obtaining intermittent "snapshots" made to understand the background microbiologic diversity, these pathogens will be useful in delineating transmission networks within The Mount Sinai Hospital and potentially throughout the Health System.

and AIDS Education and Training Center (AETC) Programs. Under the leadership of clinical expert Antonio Urbina, MD, the division provides clinical education on these topics across New York City and New York State. Through the CEI, it provides both in person conferences and trainings, as well as podcasts, webinars, and educational videos. Educational videos developed recently include Care of the HIV Transgender Patient, Non-Occupational Post-Exposure Prophylaxis, and HIV Screening in Emergency Departments, HIV-2, Occupational Post-Exposure Prophylaxis, and Rapid HIV Screening in the Dental Practice. The CEI Program also operates a 24-hour hotline for medical providers to receive information on PEP guidelines.

Mount Sinai, Mount Sinai St. Luke's and Mount Sinai Roosevelt and Mount Sinai Beth Israel have Infectious Disease fellowship training programs at each site. The Infectious Disease Fellowship Program is committed to providing a diverse clinical training experience, comprehensive educational curriculum, and opportunities in clinical, translational and basic science research. The fellows have rotations at The Mount Sinai Hospital in general infectious disease consults, transplant infectious disease consults, and inpatient HIV as well as a rotation at Elmhurst Hospital in infectious disease consults. Each rotation offers unique training experiences.

Infectious disease fellows are also trained in outpatient care with their weekly continuity clinic, where they act as primary care physicians for HIV positive patients and see outpatient infectious disease consults. During their second year, the fellows rotate through the Elmhurst ID clinic to further their training in outpatient management. They also rotate with world renowned hepatologist, Douglas Dieterich, MD, in the viral hepatitis clinic, participating in the latest treatments for viral hepatitis.

In addition to their clinical experience and training, the fellowship program provides infectious disease fellows with a rich array of opportunities in clinical, translational and basic science research. Researchers meet with the fellows for round table lunches to promote awareness of the research projects and to connect fellows with potential mentors.

Program directors from each of the hospitals within the health system are integrating the fellows' conferences to optimize the learning from all our clinical sites. The monthly journal club has been integrated with videoconferencing allowing fellows and faculty from each training site to present papers and join in the discussion. They also use videoconferencing to host joint lectures between the fellowship programs and to allow faculty from off-campus sites to participate in the weekly case conferences. In the future, they will be scheduling combined case conferences to present an increased breadth of exposure to the clinical cases and challenges seen within the health care system.

The Division of Liver Diseases

Mount Sinai's Department of Medicine is unique in its commitment to patients with liver disease. With the creation of a separate division in 1965, the Mount Sinai Division of Liver Diseases is a leading center in the United States for the study, detection, and treatment of major liver diseases, including liver cancer, hepatic fibrosis, viral hepatitis (HCV and HBV), immune and drug-induced liver diseases and fatty liver disease. It is renowned for its ability to translate discoveries into novel diagnostics and treatments. The division also coordinates seamlessly with the Division of Gastroenterology and other divisions. Its tradition of exceptional clinical care, coupled with groundbreaking translational and basic research, positions it among the very elite liver programs in the world.

The merger has created many opportunities for the Division of Liver Diseases to work with the gastroenterology divisions at Mount Sinai Beth Israel and Mount Sinai St. Luke's and Mount Sinai Roosevelt (which include liver disease at these sites) to integrate and expand outstanding patient care, establish best practices for novel treatments, expand enrollment in clinical trials, and increase training opportunities in liver diseases across the Mount Sinai Health System. In particular, the merger has accelerated the expansion of the division's community-based screening for viral hepatitis and linkage to care across the health system, and broadened clinical research opportunities in all types of acute and chronic liver diseases.

Facts and Figures

Mount Sinai Health System:
Scott Friedman, MD, Chief, Irene and Dr. Arthur M. Fishberg Professor of Medicine and Dean for Therapeutic Discovery

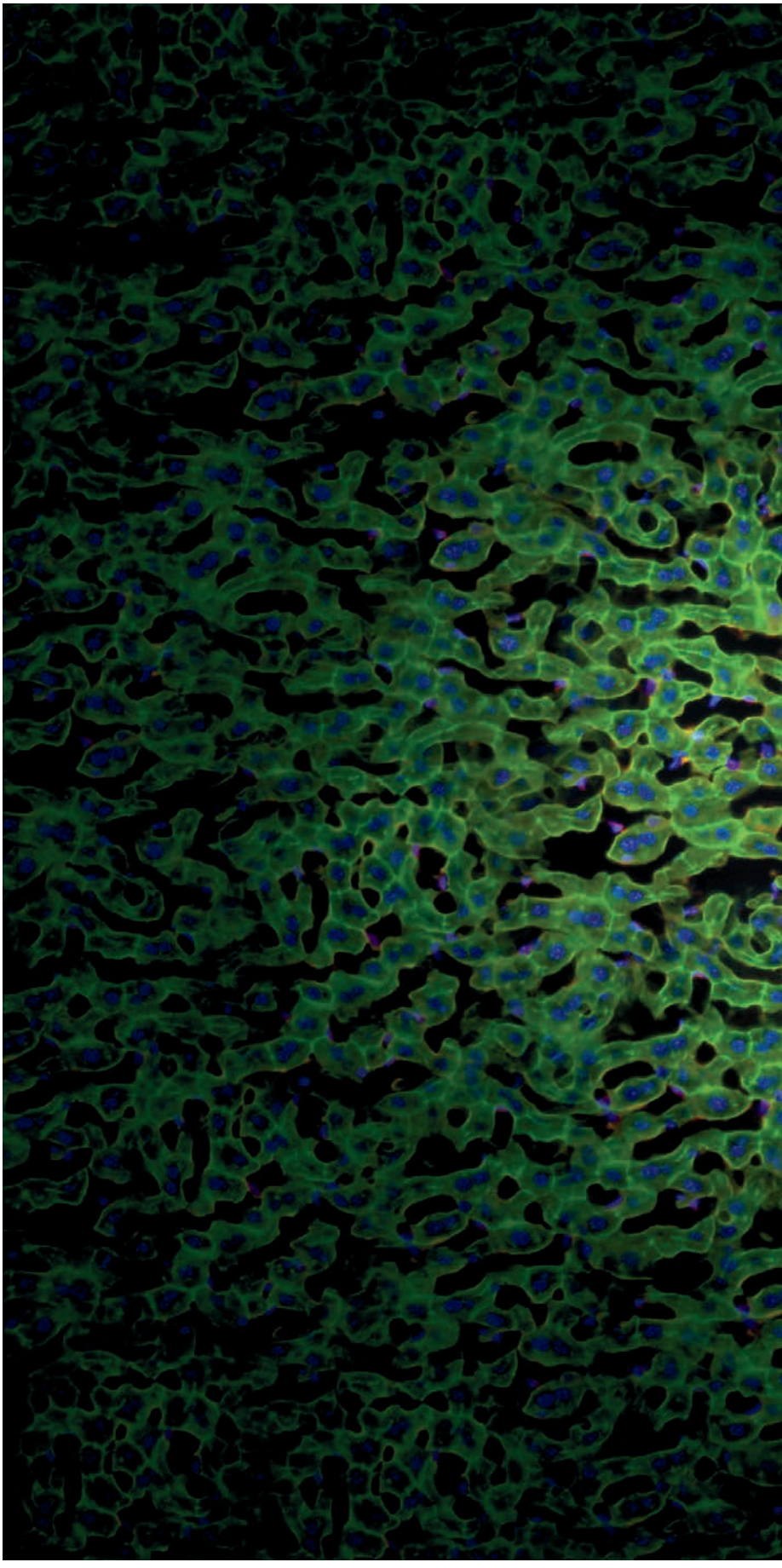
Mount Sinai Beth Israel:
David Carr-Locke, MD, Chief, Professor of Medicine

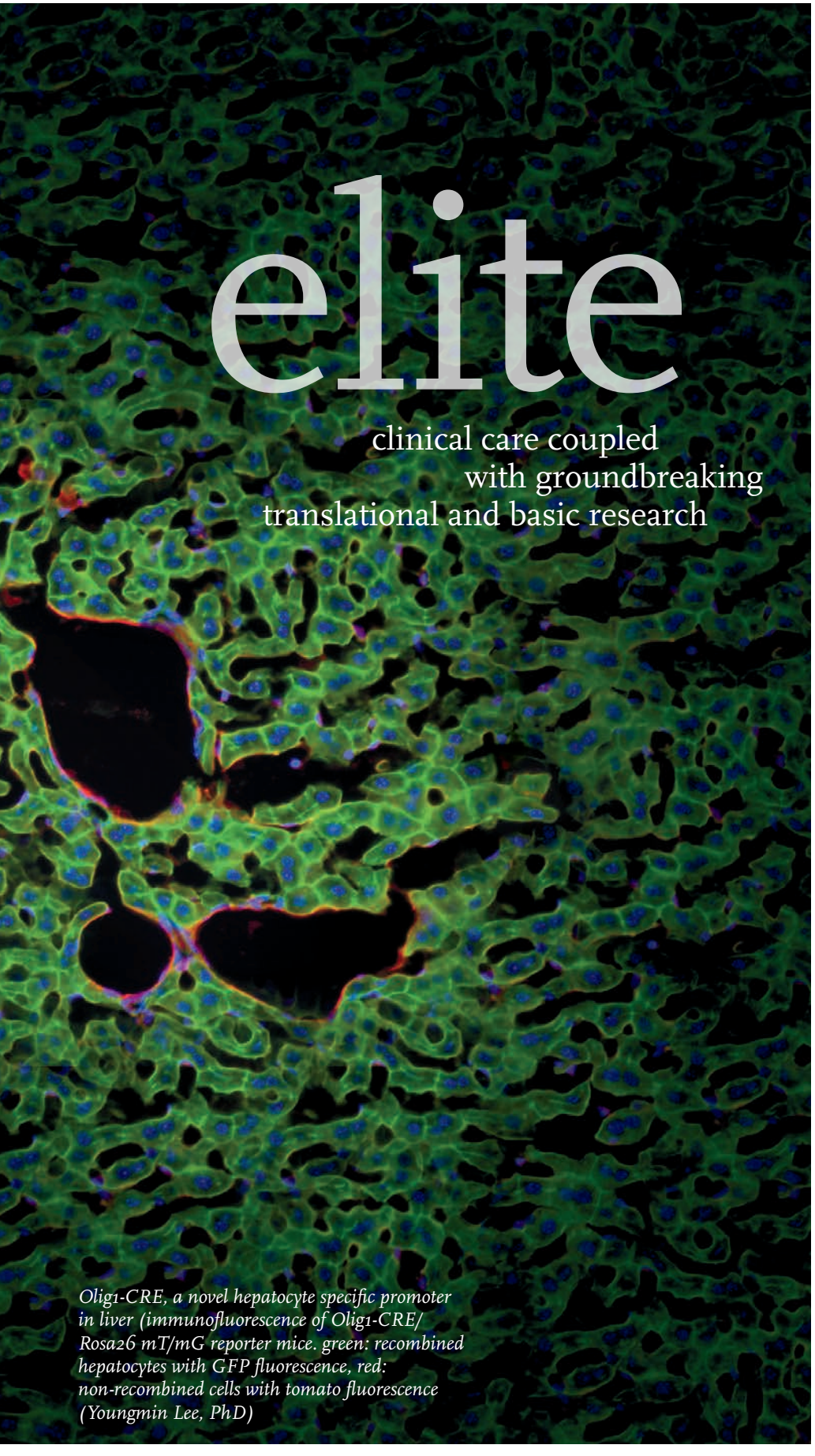
Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Donald Kotler, MD, Chief, Professor of Medicine

Faculty: 28

Total Research: $6,114,200

Fellows: full-year transplant hepatology fellows & 3-5 rotating GI fellows





Olig1-CRE, a novel hepatocyte specific promoter in liver (immunofluorescence of Olig1-CRE/ Rosa26 mT/mG reporter mice. green: recombined hepatocytes with GFP fluorescence, red: non-recombined cells with tomato fluorescence (Youngmin Lee, PhD)

DELIVERING CARE

Mount Sinai St. Luke's and Mount Sinai Roosevelt's capacity to evaluate and treat patients with chronic Hepatitis C infection has grown considerably over the past three years. These programs have successfully collaborated with a community-based group, Coalition on Positive Health Empowerment (COPE). Hepatitis C infection has been the major research focus with funded studies, including those related to screening and linkage to care, as well as clinical trials of anti-viral agents. They provide access to care to an inner city population that has suffered from health disparities. They also have initiated collaborations with Mount Sinai investigators, including Drs. Andrea Branch, Ponni Perumalswami and Douglas Dieterich. Through that linkage, COPE has provided testing and education to more than 2,000 New York City residents. The program has identified more than 150 Hepatitis C seropositive patients and has begun a program to link them to the Liver Clinic for evaluation and medical treatment.

With its close proximity to New York City's Chinatown, the physicians of Mount Sinai Beth Israel confront daily the prevalence of viral hepatitis and lack of disease awareness, which is high in various Asian American ethnic groups. Furthermore, unlike for HBV, the prevalence of HCV infection among Asian Americans is not as well defined. Given it's unique location, the hepatology group at Mount Sinai Beth Israel has become one of only three sites in the US to initiate this screening process in conjunction with the Asian Health Foundation.

To accelerate the pace of clinical research through big data acquisition, real-time analysis and reporting of treatment outcomes for viral hepatitis and other liver diseases, the division is working with the Mount Sinai IT team to advance mining of the data warehouse. They are also creating user-friendly guides and apps to break down traditional silos, allowing primary care providers and patients to access and apply information about liver disease treatments. The HepCure App is a novel tool for HCV patients and providers to improve viral hepatitis care and includes telehealth in partnership with General Internal Medicine and Jeffrey Weiss, PhD.

DELIVERING DISCOVERIES

New Mount Sinai collaborations with the former Continuum institutions have led to co-authored submissions of joint abstracts to the American Association for the Study of Liver Diseases annual meeting. The collaborations have expanded the reach and power of important clinical studies. For example, there is now health system-wide enrollment in a Drug Induced Liver Injury (DILI) network sponsored by the Division of Liver Diseases, which was awarded a five-year $950,000 UO1 consortium grant in 2013 as part of an NIH-sponsored Drug Induced Liver Injury Network (DILIN). To expand these interations, the Mount Sinai's Institutional Review Board (IRB) has facilitated cross-institution collaborations by streamlining the approval process.

At Mount Sinai Beth Israel, the newest drug regimens for Hepatitis C are being implemented in real world clinical practice. These new HCV treatments were highly efficacious in randomized trials, many of which were conducted at Mount Sinai, and are now transforming the outlook for patients with this serious infection. A strong partnership exists to optimize the treatment of HCV with new regimens between the hepatology group at Mount Sinai Beth Israel – comprised of Drs. Albert Min, Lynn Wang and Jahnavi Naik – in conjunction with the Mount Sinai group led by Drs. Douglas Dieterich and Andrea Branch. Ongoing joint efforts are quantifying the impact of these new treatments and assessing their clinical and economic effectiveness in improving the health and outlook of patients, while preventing the devastating impact of advanced liver disease by curing HCV in over 90% of patients.

These important clinical activities are complemented by a range of groundbreaking new translational studies that are pushing the frontiers of the specialty, including studies in collaboration with pharmaceutical and biotechnology companies that identify new mechanisms of hepatic injury and fibrosis, new markers of viral hepatitis and drug induced liver disease, and new treatments for fatty liver disease and cancer. In one such effort, investigators in the Mount Sinai Liver Cancer Program, led by Drs. Hoshida, Llovet and Friedman, have defined new molecular subclasses of hepatocellular carcinoma and identified novel gene signatures that predict prognosis and reframe the approach to personalized cancer therapy. This work addresses a critical unmet need in hepatocellular carcinoma, which has the fastest rising cancer incidence in the world, and is the second leading cause of cancer mortality worldwide.

TAKING THE INITIATIVE

Education programs within the division are among the finest and most extensive of any liver program in the world. Mount Sinai has the largest advanced hepatology training fellowship in the United States, and was the first ACGME certified training program in the Northeast, having first been accredited in 2007. The division expanded the CAM liver practice to two sessions per week and better integrated the nursing staff into the practice to meet the increased demand for Hepatitis C treatment in the local community. The division has provided outstanding research training for generations of Mount Sinai housestaff, enhancing their skills and strengthening their credentials for acceptance into top GI fellowship programs.

In addition to its advanced hepatology training fellowship, the division offers a unique array of educational opportunities, including weekly clinical and research conferences, specialized patient management meetings for liver cancer, daily pathology review, as well as visiting faculty programs that have attracted specialists from countries around the world. Additionally, the division hosts three postgraduate GME programs each year, attracting speakers and attendees from throughout the US and abroad, and enhancing the visibility of its programs and faculty.

Fatty Liver Disease

Nonalcoholic fatty liver disease (NAFLD) is the most common cause of chronic liver disease in the United States today and the next big liver disease to be tackled after the recent advances in HCV therapy. Its increased importance has paralleled the obesity epidemic, and it is therefore high on the radar screen at the newly formed Institute for Liver Medicine under the leadership of Douglas Dieterich, MD.

Nonalcoholic fatty liver disease is a term that encompasses all forms of liver disease in patients without significant alcohol consumption, including simple steatosis, steatohepatitis and cirrhosis. Nonalcoholic fatty liver (NAFL) refers to evidence of macrovesicular hepatic steatosis without signs of hepatocellular injury such as hepatocyte ballooning or fibrosis. The term nonalcoholic steatohepatitis (NASH) denotes the presence of hepatic inflammation and hepatocyte injury (seen as ballooning) with or without the presence of fibrosis. There is a significant morbidity and mortality with uncontrolled steatohepatitis, which can progress to fibrosis, cirrhosis, and hepatocellular carcinoma.

The latest statistics from the New York State Department of Health (NYS DOH) show that 59% of NYC residents are obese. If approximately 5.9 million people in New York City are obese, then 4.3 million of them have NAFLD and 1.2 million have the more serious form of NASH. Fatty liver disease is the most common amongst Hispanics and least common in African-Americans, with Caucasians harboring intermediate risk. As the obesity epidemic continues, there are models predicting that by 2030 there will be 65 million more obese adults and an additional 6-8.5 million cases of diabetes. The prevalence of this disease has been estimated at roughly one-third of the Western population, thought to be largely due to diet and sedentary lifestyle.

With this data in mind, it is projected that NAFLD will be the leading cause of liver transplantation by 2020. Thus, a better understanding of the fateful step from NAFLD to NASH, and exploring new and effective therapeutic opportunities, will be critical.

Several treatments have been studied including vitamin E, insulin sensitizing agents, and ursodeoxycholic acid; however, the only treatment shown to improve the histologic changes of NAFLD is weight loss. Given the proven benefit of weight loss, there may be reason to screen at risk populations. Treating NAFLD is a perfect example of how Mount Sinai institutes are teaming up to tackle serious problems, which requires collaboration from the primary care team to diagnose, the diabetes group and the obesity program to treat and the Liver Institute to manage the disease. Teaming up this way, the division is meeting the threat of fatty liver disease head on.

Division of Nephrology

When disasters strike, most people think of securing shelter, food and water. But for those on dialysis, the prospect of days or weeks without access to medical services can be life threatening. The solution is a comprehensive outreach plan that is made possible by the combined resources of the three nephrology programs that are the Department of Medicine's Division of Nephrology in the Mount Sinai Health System.

When Superstorm Sandy came ashore in 2012, the team of nephrology physicians and nurses at Mount Sinai Beth Israel responded to the disaster to help the End Stage Renal Disease (ESRD) population of lower Manhattan by providing triage and dialysis services to dozens of patients unable to reach a functioning outpatient facility. The care provided to these vulnerable patients was unprecedented in this region and chronicled in a report to the *New England Journal of Medicine*.

Two years later, the newly integrated Division of Nephrology is creating a registry of chronic kidney disease (CKD) and ESRD patients to be used in times of emergency to coordinate and provide ongoing patient care. The division has initiated a hemodialysis patient education and ESRD-specific awareness campaign. At Mount Sinai Beth Israel, Drs. Nikolas Harbord and Naoka Murakami demonstrated that when patients with ESRD had specific instructions and disaster preparedness information, they were more prepared in the event of an unforeseen interruption of regular dialysis services. The proposed project that will be rolled out to all health system patients would attempt to increase patient awareness beyond disaster preparedness with a focus on the patient's role in disease management, decreasing the number of missed hemodialysis sessions, and improving quality measures.

Facts and Figures

Mount Sinai Health System:
John Cijiang He, MD, PhD, Chief, Irene and Dr. Arthur M. Fishberg Professor of Medicine

Mount Sinai Beth Israel:
Nikolas Harbord, MD, Interim Chief, Assistant Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Ira Meisels, MD, Chief, Associate Professor of Medicine

Faculty: 73
Total Research: $10,052,026
Fellows: 24

Within the integrated health system, there are now nine outpatient dialysis units with a capacity of more than 1,000 patients. The health system now covers more territory and expands into all areas of Manhattan, from Clinton to West Harlem, making dialysis more accessible to all its patients.

NEPHROLOGY NEWS

Part of that growth comes with the opening of the Mount Sinai Kidney Center's state-of-the-art dialysis facility on East 117th Street. This new center offers a bigger, more comfortable space with a total of 36 stations and will eventually offer peritoneal dialysis clinic support. This new facility positions Mount Sinai for continued growth in East Harlem with an enhanced ability to identify and treat more patients. Within its new walls, almost 300 dialysis patients are being treated via a modern multidisciplinary approach that integrates care with patient coordinators and physicians from other disciplines such as endocrinology, cardiology and infectious disease.

Already one of the largest providers of home peritoneal dialysis, the division plans to expand its therapy offerings to include home hemodialysis. This brand new clinical space is adjacent to the current peritoneal dialysis clinic in the lower level of the Annenberg building at Mount Sinai. Patients who dialyze at home have lower rates of hospitalization, better outcomes, and ultimately, a better quality of life.

In the population management area, the divisional proposal for embedding care coordinators was selected by the Mount Sinai Accountable Care Organization (ACO) for pilot funding to determine whether co-localized care coordination would reduce the frequency of emergency department visits and hospitalizations in this group of chronically ill patients with multiple complex comorbid conditions. This effort is in collaboration with the ACO work group and recent data published in peer-reviewed literature has suggested this model of fuller-integrated care in the dialysis unit is extremely effective.

RENAL RESEARCH

Researchers at Mount Sinai's Division of Nephrology are leading the way in both translational and basic science discoveries in transplant nephrology and kidney fibrosis. Barbara Murphy, MD, recently co-authored a landmark paper published by the *Journal of Clinical Investigation*. Dr. Murphy and her lab found that Shroom3 is a new marker for kidney outcomes in patients with chronic allograft nephropathy. They have identified a new molecular mechanism by which Shroom3 contributes to kidney fibrosis.

Research led by Division Chief John Cijiang He, MD, PhD, Professor of Medicine, and Avi Ma'ayan, PhD, Associate Professor of Pharmacology and Systems Therapeutics, identified a protein kinase that plays a significant role in kidney fibrosis, a condition that results in kidney failure. This work showed how the HIPK2 gene could be targeted for anti-fibrosis therapy and could ultimately help treat or even cure chronic kidney disease.

Peter S. Heeger, MD, Irene and Dr. Arthur M. Fishberg Professor of Medicine, and Director of Transplant Research leads the NIH-funded Clinical Trials in Organ Transplantation consortium, conducting trials to assess the utility of noninvasive biomarkers to predict outcomes in transplant recipients. Recently published work from his lab has delineated a new link between innate and adaptive immunity by demonstrating that alternative pathway complement components influence the strength of all T-cell immune responses, including those directed at allogeneic tissues.

Erwin P. Böttinger, MD, is Irene and Dr. Arthur M. Fishberg Professor of Medicine and Director of the Charles Bronfman Institute for Personalized Medicine. His team created the BioMe Biobank Platform with the goal of enrolling Mount Sinai patients into a clinical care cohort that links genetic and biomarker data with clinical data in the patient's electronic health record. Currently, enrollment has surpassed 40,000 patients from

excellence

discovering new markers for kidney outcomes

the diverse communities served by Mount Sinai. Dr. Bottinger has also published a landmark paper in *JCI* demonstrating how glomerular cells crosstalk to each other to cause glomerular disease.

TOP TRAINEES

The Nephrology Fellowship at Mount Sinai remains one of the largest in the country and is led by Michael Ross, MD, who serves on the American Society of Nephrology Program Directors Executive Committee and is an NIH-funded investigator. The ability to provide outstanding support for research training was further bolstered by the recent five-year renewal of the division's NIH-funded T32 training grant.

In addition to receiving outstanding clinical training, fellows are advancing nephrology through their research and involvement with national committees. Two fellows were recently awarded fellowship grant awards from the American Society of Nephrology and a third received a research grant from Questcor to support her research. In addition, Mayra Rodriguez, MD, was elected to serve as Fellow Representative to the American Society of Nephrology Program Directors Executive Committee. Only six US nephrology fellows have ever received this honor and two of them have been from Mount Sinai.

Nephrology fellows continue to build on a tradition of excellence with publications in major journals and presentations to national societies. The *American Journal of Kidney Diseases* published a meta-analysis done by Rabi Yacoub, MD (PGY5) that examined acute kidney injury and death associated with Renin Angiotensin System Blockade in Cardiothoracic Surgery. Dr. Yacoub was also invited to give a talk based on his research at the 2014 American Society of Nephrology Kidney Week meeting entitled "RAAS Blockade - Does it Cause or Worsen AKI."

At Mount Sinai Beth Israel a new curriculum and teaching platform has been implemented to improve the training of nephrology fellows with regard to ambulatory/outpatient hemodialysis. The curriculum focuses on changes and updates in the delivery, documentation, pharmacotherapy, guidelines, quality measures, and payment for outpatient hemodialysis. The curriculum was developed by Dr. Harbord, and is implemented by the faculty on HD rounds.

This year, the division launched a new CME course entitled, Advances in Peritoneal Dialysis, with Dr. Jaime Uribarri as the course director. The first conference was held on September 12, 2014, with almost 100 attendees. Internationally renowned speakers were invited to discuss the latest in updated surgical techniques, medical devices, strategies to prevent infection, as well as the financial aspects of running a peritoneal dialysis program. A hands-on workshop was also provided. There was very positive feedback from the attendees.

Autosomal Dominant Polycystic Kidney Disease

Autosomal dominant polycystic kidney disease (ADPKD) is the most common genetic cause of kidney failure. There are no therapies for ADPKD proven to delay progression to end-stage kidney failure, which occurs in half of those affected, at a mean age of 54 years. At present, the only treatment options are dialysis or kidney transplantation.

The new Program for Polycystic Kidney Disease (PKD) at Mount Sinai Beth Israel aspires to be the hub for education, disease management, and research for the New York metropolitan area PKD population. With an estimated 20,000 individuals in the area affected by this genetic disease, there is a significant and sustainable opportunity to deliver specialized PKD care and to advance research.

The mission of the PKD Program is to provide expert clinical management for patients, to develop and lead educational programs and outreach for both PKD patients and the general public, and to conduct clinical research focused on therapeutic intervention, and eventually cure. By coordinating these activities within the PKD Program, Mount Sinai will be able to deliver a seamless patient experience. The Program is headed by Irina Barash, MD, an Assistant Professor of Medicine (Nephrology) and a recent recruit to the Mount Sinai Health System.

Currently, Dr. Barash and her team are bringing two investigational drug trials to the center from pharmaceutical sponsors Otsuka and Kadmon. Academic collaborations include translational research with The Rockefeller University and a joint PKD research initiative with investigators from Yale University in support of a therapeutic multicenter clinical trial. Dr. Barash also plans to establish a PKD biorepository to study novel biomarkers of disease progression. As part of its community outreach, the center participated in the TriState PKD Walk on October 25, 2014. Dr. Barash and her team also hosted and organized a Mount Sinai PKD Patient Education symposium on December 6, 2014.

The Catherine & Henry J. Gaisman Division of Pulmonary, Critical Care and Sleep Medicine

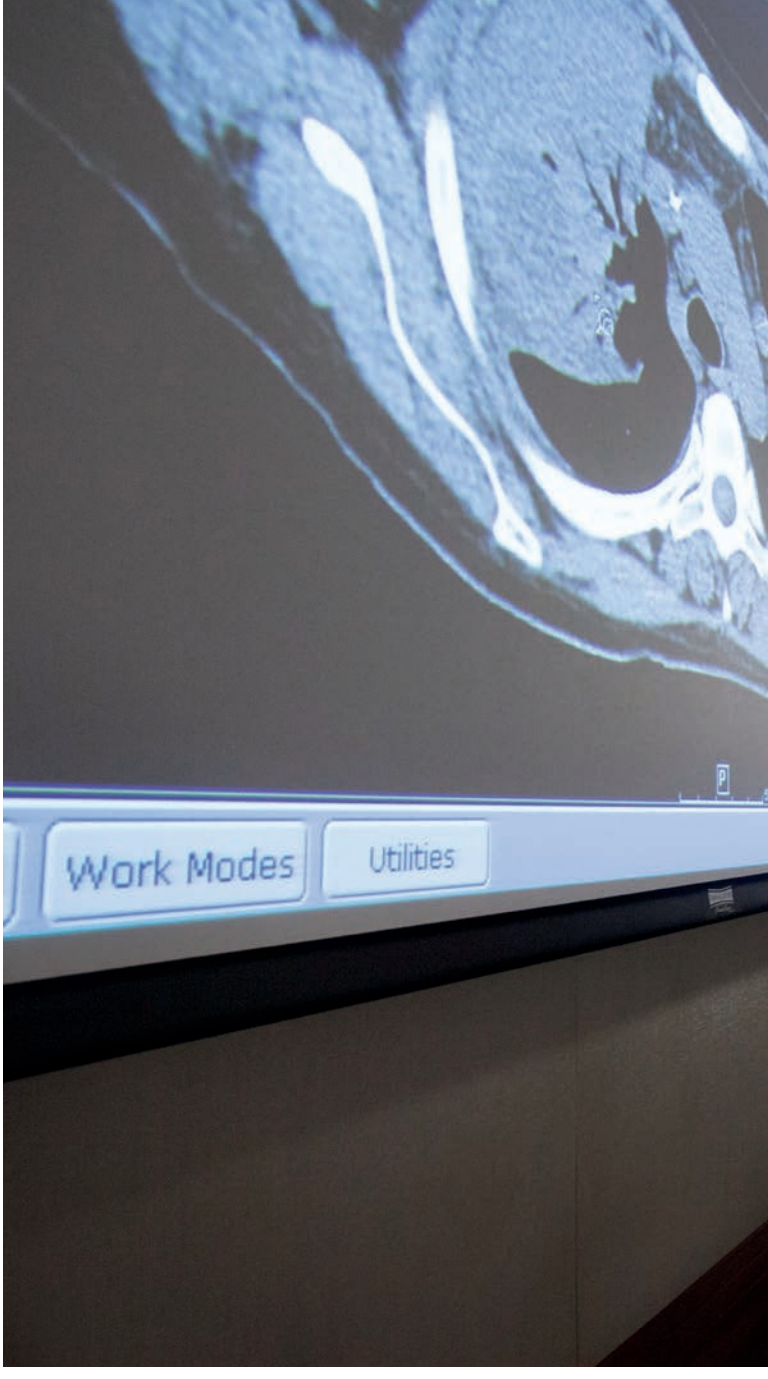
The Division of Pulmonary, Critical Care and Sleep Medicine provides state-of-the-art consultation, diagnostic testing and clinical and multidisciplinary care to patients with simple and complex respiratory and respiratory-related diseases. The combined strengths of the divisions at Mount Sinai Beth Israel, Mount Sinai, Mount Sinai Roosevelt and Mount Sinai St. Luke's have created a unique opportunity to significantly impact the training and translational research done throughout the system.

To further build on the unique experience afforded by the merger, Mount Sinai recently formed a partnership with the National Jewish Health Respiratory Institute in Denver, Colorado. With this alliance, Mount Sinai combines its strengths in genomics, informatics, and knowledge in specific diseases, such as sarcoidosis and lung cancer with the strengths at National Jewish in asthma, COPD, interstitial lung disease, and mycobacterial disease. National Jewish is also world-renowned for delivering a patient-centered experience. The goal is to bring that experience to New York City patients and to develop a differentiated and distinguished institute that will feature robust and innovative educational and research programs. This management structure will enable both to effectively and efficiently fulfill this mission and vision and will include and serve all health system sites. To foster the collaborative relationships required for the success of the Mount Sinai-National Jewish Respiratory Institute, working groups at each of the hospitals have been developed to create integrated programs in respiratory disease specialties.

HELPING PATIENTS BREATHE EASIER

The new interventional bronchoscopy suite at Mount Sinai is fully equipped with innovative diagnostic equipment (endobronchial ultrasound, electromagnetic navigation), therapeutic equipment (cryotherapy, cautery, argon plasma coagulation), and general anesthesia equipment. This suite, shared with the Pediatric Airways Program, has increased adult bronchoscopy volume by 30% in 2014 compared to 2013. While recruitment is underway for an international leader to direct interventional pulmonary programs for the health system, the bronchoscopy suite at Mount Sinai will be a cornerstone for this effort.

At Mount Sinai, Chronic Obstructive Pulmonary Disease (COPD) readmissions have decreased to 6%, which is lower than other hospitals in New York. This reduction is due to the implementation of the COPD readmissions program that was developed by Sidney Braman, MD, in collaboration with Claudia Colgan, Vice President for Care Coordination for Mount Sinai Care and Vice President for Post-Acute Services, and the PACT initiative. At Mount Sinai St. Luke's and Mount Sinai Roosevelt the Mah Jongg League donated $500,000 to support a named research laboratory for COPD, and the James P. Mara Center awarded $500,000 yearly for two years to support clinical, research, and educational programs in COPD with special emphasis on alpha-1 antitrypsin deficiency. In addition, the sarcoidosis research program at The Mount Sinai Hospital received $400,000 from Leslie Maltz in memory of Dr. Alvin Tierstein, former division chief.



The Mount Sinai Sleep Medicine program has grown substantially by partnering with The Mount Sinai Hospital and with the recruitment of Adam Hernandez, MD. They have formed a multidisciplinary team comprised of ENT, Neurology, and Pediatrics. Sleep medicine physician, Alfredo Astua, MD, joined the faculty of Pulmonary, Critical Care and Sleep Medicine at Beth Israel in December

collaboration

partnering with National Jewish Health to bring integrated care to patients with lung diseases

Facts and Figures

Mount Sinai Health System:
Charles A. Powell, MD, Chief, Janice and Coleman Rabin Professorship in Pulmonary Medicine

Mount Sinai Beth Israel:
Patricia Walker, MD, Interim Chief, Assistant Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Edward Eden, MD, Chief, Associate Professor of Medicine

Faculty: 55
Total Research: $2,291,619
Fellows: 35

2012. To mark this occasion, Mount Sinai Beth Israel and United Sleep Diagnostics, Inc. officially launched the opening of their state-of-the-art Sleep Lab at 199 Third Avenue in New York City.

FROM CRITICAL TO CUTTING EDGE

The Charles Powell Thoracic Oncology Lab received a new NIH RO1 Research Project Grant and this project will collaboratively examine early lung cancer genomic signatures to distinguish indolent from aggressive tumors. This grant includes co-investigators from the Genomics Institute, the Departments of Pathology and Population Health Science and Policy and collaborators from Columbia and Vanderbilt universities. The goal of this project is to develop and validate molecular biosignatures of invasive and non-invasive lung cancers.

At Mount Sinai Beth Israel, research is being conducted to improve the safety and success of emergency airway management in the critically ill. Research introduced support the use of simulation training, use of checklists, and full incorporation of videolaryngoscopy. They performed a prospective, randomized, controlled trial of emergency airway management in a critically ill population – one of only a few such trial designs on this topic in literature. Mount Sinai Beth Israel's Deborah Ascheim, MD, has spearheaded a grant from the Patient-Centered Outcomes Research Institute (PCORI) New York City Clinical Data Research Network (NYC-CDRN). The goal is to improve the nation's capacity to conduct comparative effectiveness research efficiently. The focus of the committee's work is developing infrastructure with the capacity to support clinical trials and contribute to the cystic fibrosis working group. This work is fostering collaboration across multiple organizations and academic medical centers in New York City to facilitate expansion of data sharing and patient-centered clinical research across the city and nation.

The Cystic Fibrosis Foundation Therapeutics, Inc.

As the Mount Sinai Health System faculty integrate, and all affiliations with other medical schools transfer to the Icahn School of Medicine at Mount Sinai, the goal is to take advantage of vast opportunities across many specialties including basic science and translational research. For example, physicians at Mount Sinai Beth Israel provide care in an innovative, healing setting where people with cystic fibrosis (CF) can benefit from comprehensive state-of-the-art CF care that is attentive to their physical, emotional, and spiritual needs. Since September 2013, all CF patients have been admitted to the Morton Hyman unit. The team, with expertise and commitment to the art and science of CF care, was uniquely qualified to establish this new model of inpatient care for CF patients. A $200,000 yearly grant was received from CF Care to support this initiative at the Cystic Fibrosis Center's Exercise and Wellness Program. And the Cystic Fibrosis Foundation Therapeutics, Inc. (CFFT) was awarded $77,000/year towards the support of the CF Center's designation as a Therapeutic Development Center.

The CF Center is also involved in conducting multicenter clinical trials and other national and international research studies, while the staff both mentors student research projects and develops and implements its own research agendas. The Cystic Fibrosis Center has continued to meet and exceed national benchmarks for the conduct of therapeutically important CF Clinical trials. With support from the TDN Clinical Research Award, The CF Center has launched several investigator-initiated, IRB-approved studies including a qualitative study to assess depression in CF patients post-lung transplantation, and a pilot study to determine the palliative care needs of its CF patients, which provided preliminary data to form the basis of a larger, two-year, CFFT-funded Palliative Care study.

The center established a dynamic research and QI collaboration between the core CF multidisciplinary team and the palliative care team. The aim of this CFFT-funded project is to evaluate the feasibility of a novel service delivery model for adults with CF that will address emerging needs for palliative interventions throughout the disease trajectory. This model uses repeated Web-based screening, triage for early interventions, quality improvement programming to enhance treatments provided by CF professionals and appropriate early referral to a specialist palliative care team. Additionally, the plan is to conduct a prospective cohort trial to evaluate this service delivery model as a means to improve symptom distress and overall quality of life, enhance advanced care planning and goals setting, and reduce parent/spouse/caregiver distress.

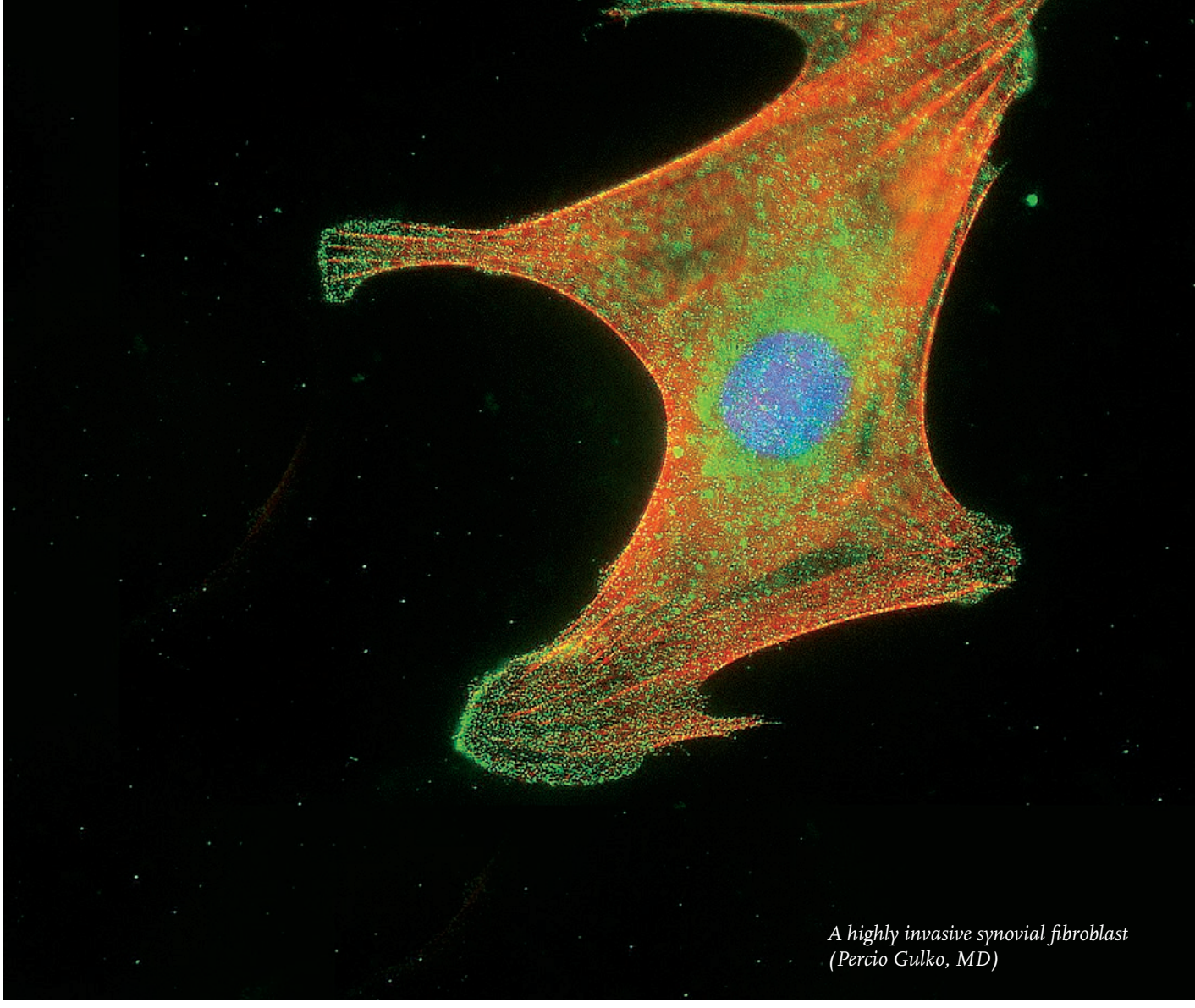
SIMULATIONS AND SYMPOSIUMS

Training of fellows is not just designed to improve their clinical acumen, but to also focus them on the importance of quality improvement and patient safety throughout the health system. At Mount Sinai St. Luke's and Mount Sinai Roosevelt, The Center for Advanced Medical Simulation (CAMS), under the direction of Hassan Khouli, MD, provides simulation-based education to advance institution-wide patient safety and quality improvement initiatives at St. Luke's and Roosevelt Hospitals. CAMS has three training labs with attached control rooms, two debriefing/conference rooms, and several high fidelity manikins and task trainers. The center has an established one-year simulation fellowship (non-accredited). Faculty from the Critical Care Section provides oversight of the center and training and debriefing for residents, fellows, nurses, respiratory therapists, medical students, and attending physicians. Several peer-reviewed articles and abstracts in simulation have been published by the CAMS simulation faculty. The center has received research grants from government as well as private foundations and is preparing to submit an accreditation application to the Society for Simulation in Health Care this year.

In July 2014, first year fellows from all Mount Sinai Health System Pulmonary and Critical Care Fellowship sites participated in a one-day intensive hands-on training at the Mount Sinai Roosevelt Hospital Center for Advanced Medical Simulation. The training was conducted using high fidelity bronchoscopy, and task trainer simulators with faculty instructors from Mount Sinai Roosevelt and St. Luke's Hospitals, Mount Sinai Beth Israel Hospital, and The Mount Sinai Hospital. Fellows were trained on three standardized modules: ultrasound guided central line insertion with emphasis on sterile techniques, basic and advanced airway management skills, and introduction to bronchoscopy.

At Mount Sinai St. Luke's and Mount Sinai Roosevelt they have started a project to improve communication and accountability for critically ill patients in the Emergency Department. The project led to utilization of standard handoff between ED and ICU in 80% of patients, reduced time for ICU decision (from 120 to 90 minutes), and reduction in boarding time from ICU decision to ED discharge from four to three hours. The project is led by Dr. Janet Shapiro. Faculty involved include: Drs. Shapiro, Gopal Narayanswami, and Andre Sotelo as well as two pulmonary/critical care fellows. This was presented at the Society of Critical Care Medicine 2014, San Francisco.

Division of Rheumatology



A highly invasive synovial fibroblast (Percio Gulko, MD)

The Division of Rheumatology at the Icahn School of Medicine at Mount Sinai has a long tradition of clinical excellence, patient care and education for medical students, medicine residents and in-training rheumatology fellows. The recent merger with Mount Sinai Beth Israel, Mount Sinai St. Luke's and Mount Sinai Roosevelt Hospitals increased the number of rheumatologist in the system from five to 15 and will enable a faster expansion and standardization of patient care, as well as easier patient access to cutting-edge rheumatology care. As a result, the number of referrals to rheumatology and patient visits has significantly increased across the Mount Sinai Health System.

PRACTICAL APPLICATIONS

The division uses the most recent advances in patient care and new drugs, including biologics. New technologies, such as MRI for early detection of joint damage in psoriatic and rheumatoid arthritis, as well as for diagnosing and monitoring myositis, are being used. There is new expertise in musculoskeletal ultrasound.

Facts and Figures

Mount Sinai Health System:
Percio S. Gulko, MD, Chief, Lillian and Henry M. Stratton Professor of Medicine

Mount Sinai Beth Israel:
Harry Fischer, MD, Chief, Associate Professor of Medicine

Mount Sinai St. Luke's and Mount Sinai Roosevelt:
Nazia Hussein, MD, Chief, Assistant Professor of Medicine

Faculty: 28
Total Research: $1,658,572
Fellows: 3

This provides a more accurate diagnosis of soft tissue diseases and helps to guide injections to difficult joints and soft tissues, such as bursa and tendons.

Clinically, the division has been revitalized, with new recruits coming on board and existing faculty reengaging at all levels of their practices. A new Mount Sinai Beth Israel-based infusion center is being developed. This new center will increase the rheumatology division and Department of Medicine's control over infusion, quality, patient satisfaction and revenue.

RHEUMATOLOGY RESEARCH

New collaborations to expand research have been established with the Immunology Institute and the Icahn Institute for Genomics and Multiscale Biology to discover and study new arthritis, autoimmune and inflammation regulatory genes. Rheumatology has also taken a center role in establishing a new Autoimmune Disease Research Group, and the division is establishing a strong partnership with the Dermatology Department to study and treat psoriatic arthritis.

Under the new leadership of Percio Gulko, MD, the division is now expanding its activities and developing new translational disease-oriented research activities centered on the development of new therapies and new prognostic biomarkers and predictors of drug responses for rheumatoid arthritis, psoriatic arthritis and other autoimmune and inflammatory conditions. Additionally, preliminary evidence suggests that some of these new emerging drugs from the Gulko laboratory may suppress the ability of cancer cells to invade and potentially metastasize, thus having a major potential to help treat patients with different forms of cancer. The division has been in contact with several pharmaceutical and biotechnology companies and will be involved in testing new cutting-edge technologies and drugs. It is also in the advance stages of becoming a site for four new trials. Patient care will also be greatly enhanced with the development of a new mobile application designed to assist patients who suffer from rheumatoid arthritis. The app, currently in production and designed in conjunction with Mount Sinai's AppLab, will help patients monitor their disease activity for early therapeutic modifications and intervention.

The division's collaborative and integrated approach to research has allowed data to be analyzed in new ways, using new pathway and candidate gene discoveries. In addition, the division is exploring partnership to enable the analysis of genetic data from patients, including the more than 1,400 patients with rheumatoid arthritis and the nearly 500 patients with psoriatic arthritis currently followed in the division.

CROSS-DEPARTMENTAL COURSES

There have been significant improvements in the rheumatology fellowship training and educational program and the division will continue to attract top tier applicants, including those interested in pursuing an academic and translational research career. The division is working with the Mount Sinai Graduate School to enroll physician-scholars that would obtain research training and a PhD degree while doing their rheumatology fellowship training and would therefore be better equipped for a successful research career.

Recently, the division has been making several changes and improvements in the training program. Schedules are incorporating rotations through the Department of Orthopaedics, Department of Rehabilitation, as well as bone radiology. These new cross-departmental relationships are critical for excellent rheumatology care and knowledge. Establishing combined seminars/lectures will create new opportunities for collaborations and improved patient care. The division is also in the process of establishing combined conferences and a new Lupus and Autoimmune Nephritis Clinic with the Division of Nephrology.

New opportunities for training are being developed with the creation of a unique combined Dermatology-Rheumatology practice and training program. The first combined program in the tri-state area, led by Mark Lebwohl, MD, Chair of Dermatology, has already selected its first applicant for 2016.

New Arthritis Center

Arthritis is the leading cause of disability in the United States and the Division of Rheumatology is currently working on evaluating and identifying genes that regulate disease severity and joint damage in Rheumatoid Arthritis (RA). The division is in the process of creating a new Arthritis Center that extends across the health system and will have three major arms: clinical care, the development and testing of novel therapies, and translational-basic rheumatology research.

The goal is to provide "one-stop comprehensive rheumatology care" as part of the Arthritis Center at Mount Sinai by integrating services in the areas of rehabilitation, orthopedics and dermatology. The center will offer a multidisciplinary holistic and patient-centered approach that aims to optimize patient outcomes and improve quality of life. Since the care will be centrally coordinated, this will dramatically improve efficiency and lower issues with patient access. Full-time rheumatologists and clinical faculty to assist with this mission are actively being recruited.

The new Arthritis Center will expand the research activities centered on inflammatory arthritis and extend services to the patients and local community. Grant applications that can advance translational work in RA are being submitted. The laboratories have been renovated and two independent laboratories are being added as well as two senior scientists. Collaborations within Mount Sinai as well as outside institutions are being established. With this support, in addition to active research, the aim is to educate the next generation of clinicians and researchers in rheumatic disease by expanding the opportunities for both rheumatology fellows and trainees from other disciplines to study and work with patients who suffer from this debilitating disease.

Achievements

Leadership Appointments

Yousaf Ali, MD, Vice Chair for Faculty Affairs

Dr. Ali became the Vice Chair of Faculty Affairs in 2013. Prior to that, he was the Acting Chief of the Division of Rheumatology. Dr. Ali is a graduate of the Royal Free Hospital School of Medicine in London and he trained in Rheumatology at Yale University. He is board certified in both Rheumatology and Internal Medicine. Dr. Ali has received numerous awards, including the prestigious Beckwith Family award for outstanding teaching in 2006.

Judith Aberg, MD, Chief of the Division of Infectious Diseases

Dr. Aberg is a nationally renowned researcher in the field of HIV and AIDS, and was appointed Chief of the Division of Infectious Diseases at the Icahn School of Medicine at Mount Sinai in 2014. She is a Professor of Medicine and researcher, focusing on HIV-associated co-morbidities and coinfections. She has been actively involved in the development of national, state and local guidelines regarding HIV prevention and treatment.

Ashish Atreja, MD, MPH, Chief Technology Engagement and Innovation Officer

Dr. Atreja is one of the first physicians in the country to be board certified in both GI and Clinical Informatics. Since joining Mount Sinai two years ago as an Assistant Professor of Medicine in the Division of Gastroenterology and the Director of Informatics, Dr. Atreja has been integrating and improving the Department of Medicine's engagement with technology. He started the Sinai AppLab which recently released an NIH-funded app called Health PROMISE that helps IBD patients and their doctors manage symptoms by using a cloud-based system that integrates seamlessly with Epic. He has also been working with IT on the development of unified, quality-focused, metric-driven dashboards for our new clinical institutes.

Conor Barrett, MD, Associate Director of Cardiology and Director of Clinical Operations for Cardiology at Mount Sinai St. Luke's and Mount Sinai Roosevelt

Dr. Barrett is Director of the Al-Sabah Arrhythmia Institute at Mount Sinai St. Luke's, and was promoted to Associate Director and Director of Clinical Operations for Cardiology at Mount Sinai St. Luke's and Mount Sinai Roosevelt in 2015. In his new role, Dr. Barrett will focus on making operational improvements in quality and patient experience for cardiac services at Mount Sinai St. Luke's and Mount Sinai Roosevelt.

Brett Bernstein, MD, Director of Clinical Integration for Gastroenterology and Endoscopy

The Mount Sinai Health System's Gastroenterology and Endoscopy Programs are under the direction of Dr. Bernstein. He is responsible for streamlining and integrating GI and Endoscopy operations across the system working with Bruce Sands, MD, Chief of the Mount Sinai Health System's Division of Gastroenterology. Dr. Bernstein is an Assistant Professor of Medicine at the Icahn School of Medicine and an Attending at Mount Sinai Beth Israel, where he has worked for more than two decades. He received his MD from the Icahn School of Medicine at Mount Sinai. He completed his residency and was Chief Resident at Beth Israel prior to his GI fellowship.

Sidney Braman, MD, Professor, Pulmonary, Critical Care and Sleep Medicine

Dr. Sidney Braman joined the faculty of the Icahn School of Medicine at Mount Sinai as Professor of Medicine in 2012. He began his academic career at The Alpert Medical School of Brown University achieving the rank of Professor of Medicine in 1989 and remaining in this position until 2011. In 2000 he became the Division Director of Pulmonary and Critical Care Medicine at Brown and served in this position until 2009. He was Director of the Division of Pulmonary, Sleep Medicine and Critical Care Medicine at The Rhode Island Hospital from 1973 until 2009. Dr. Braman is currently an editorial board member of *The Journal COPD.* He is author or co-author of 100 peer-reviewed articles and many book chapters. His major academic interests are COPD and asthma.

Blase A. Carabello, MD, Chair of Cardiology at Mount Sinai Beth Israel

Dr. Carabello was appointed Chair of Cardiology at Mount Sinai Beth Israel in May 2014. Dr. Carabello is also serving as Medical Director of the Heart Valve Center at The Mount Sinai Hospital. He is an internationally recognized expert in the field of valvular heart disease and specializes in the care of patients who have this complex disease, and also the practice of general internal medicine. Last year, Dr. Carabello launched a new Valve Clinic at Mount Sinai Beth Israel.

Kelly Cassano, DO, Assistant Dean for Clinical Affairs for Mount Sinai Doctors Faculty Practice and Chief of Ambulatory Care for Mount Sinai Beth Israel

Dr. Cassano will focus on integrating the Mount Sinai Beth Israel physicians into the Faculty Practice and Icahn School of Medicine at Mount Sinai. In addition, she will work on modernizing and increasing efficiencies at the Phillips Ambulatory Care Center at Union Square. Dr. Cassano was the Senior Medical Director of the Continuum Medical Group, responsible for clinical operations and financial oversight for multiple primary care practices. Dr. Cassano received her DO from University of New England College of Osteopathic Medicine, completed her residency at St. Vincent's and has been a practicing internist in New York for nearly 20 years.

Patrick Chae, MD, Assistant Professor, Director of Inpatient Services for the Respiratory Institute

Dr. Chae joined the faculty of the Division of Pulmonary, Critical Care and Sleep Medicine and the Respiratory Institute. Until recently, Dr. Chae has been in private practice with Louis DePalo, MD, who also recently joined the faculty He did his residency and his fellowship in Pulmonary, Critical Care and Sleep Medicine at Mount Sinai.

Judy H. Cho, MD, Ward-Coleman Professor of Translational Genetics and Medicine

Dr. Cho was recently named Associate Chief of Research in the Dr. Henry D. Janowitz Division of Gastroenterology and Vice Chair for Translational Genetics in the Department of Genetics and Genomic Sciences. Dr. Cho led a team of researchers from 15 countries in a groundbreaking study that confirmed 92 genome regions, and identified 71 new regions, associated with increased risk of IBD. Dr. Cho remains the principal investigator of the Data Coordinating Center and Chair of the Steering Committee of the National Institute of Diabetes and Digestive and Kidney Diseases Inflammatory Bowel Disease Genetics Consortium at the National Institutes of Health.

Salvatore Cilmi, MD, Director of the Internal Medicine Residency Program

Dr. Cilmi was named the Internal Medicine Residency Program Director in the Department of Medicine in 2012. Dr. Cilmi oversees the comprehensive training of Mount Sinai's Internal Medicine Residents and develops new strategies to recruit talented medical students. Dr. Cilmi is board certified in Internal Medicine and Infectious Diseases and has joined the faculty of the Infectious Diseases Division. He has conducted laboratory research on the molecular pathogenesis of bacterial and parasitic infections.

Jean-Frédéric Colombel, MD, Director of The Leona M. and Harry B. Helmsley Charitable Trust Inflammatory Bowel Disease Center

Dr. Colombel is a world-renowned clinician and researcher in inflammatory bowel disease (IBD) and is best known for his participation in the identification of NOD2 as a susceptibility gene for Crohn's disease and the identification of a new subtype of *Escherichia coli* associated with Crohn's disease. He also helped develop the Anti-*Saccaromyces cerevisiae* Antibody (ASCA) test, still the most sensitive and specific marker for Crohn's disease. A prolific researcher and writer, Dr. Colombel has authored or co-authored more than 500 peer-reviewed articles, books, and book chapters on IBD and has served on the editorial board of all of the major gastroenterology journals.

Brian L. David, MBA, Vice Chair for Clinical Integration and Administration

Mr. David comes to the Mount Sinai Department of Medicine from Columbia University where he served as the Vice Chair for Finance and Administration for the Department of Medicine. Prior to that, he worked at Stanford University as the Director of Finance and Administration for the Departments of Surgery and Otolaryngology. He received his BA and MBA from the University of Chicago and was recently President of the Administrators of Internal Medicine (AIM).

Louis R. DePalo, MD, Lane Associate Professor of Pulmonary Medicine

Dr. DePalo is a graduate of Georgetown University and New York Medical College. He has a graduate degree in Human Physiology and extensive research experience in cell and molecular biology. Following many years of productive study in the Cardiovascular Institute of The Mount Sinai Hospital, Dr. DePalo directed his research efforts to clinical medicine. In collaboration with the Cardiovascular Institute and The Recanati-Miller Transplantation Institute, Dr. DePalo has served as a consultant with the Pulmonary Hypertension and Lung Transplant Programs. Research in these areas includes the application of new therapeutic and diagnostic modalities to the treatment of patients with these disorders.

Larry Di Fabrizio, MD, Senior Faculty, Pulmonary, Critical Care and Sleep Medicine

Dr. Di Fabrizio joined Mount Sinai in 2012 as the Director of the Pulmonary Faculty Practice and Associate Professor in the Department of Medicine in the Division of Pulmonary, Critical Care and Sleep Medicine. He is a seasoned clinician with a strong academic background with more than two decades of private practice in NYC while also serving as a fellowship training program director for over a decade, most recently at Lenox Hill Hospital and previously at St. Vincent's Hospital. He is a graduate of Columbia College, received his medical degree with distinction from Washington University in St. Louis. He interned and served as a medical resident and fellow in Pulmonary and Critical Care Medicine at the Brigham and Women's Hospital at Harvard Medical School.

Steven Feinsilver, MD, Professor, Pulmonary, Critical Care and Sleep Medicine

Dr. Feinsilver joined the faculty of the Icahn School of Medicine as Director of the Center for Sleep Medicine in 2011. He received his MD from Brown University, did his residency at University Hospital in Boston, and his fellowship in Pulmonary Medicine at Stanford University Medical Center. Dr. Feinsilver has published more than 100 articles and book chapters and is currently on the Steering Committee for the Sleep Section of the ACCP.

David Greenwald, MD, Clinical Director of Gastroenterology and Endoscopy

Dr. Greenwald joined the Division of Gastroenterology in 2015. In his new role as Clinical Director of Gastroenterology and Endoscopy, he is responsible for the development and management of GI outpatient practices and coordinating patient experience and quality improvement initiatives for the Mount Sinai Endoscopy Center. Dr. Greenwald comes from Montefiore Medical Center, where he was the Director of the GI Fellowship Program at Albert Einstein College of Medicine. He received his MD from Albert Einstein and completed his residency and fellowship in GI at Columbia Presbyterian.

Percio S. Gulko, MD, Chief of the Division of Rheumatology

Dr. Gulko was named the Chief for the Division of Rheumatology in 2014. Dr. Gulko completed research fellowships in the Division of Clinical Immunology and Rheumatology at the University of Alabama at Birmingham, and at the Arthritis and Rheumatism Branch at the National Institutes of Health (NIH). He joined the faculty at Columbia University College of Physicians and Surgeons (Divisions of Autoimmune and Molecular Disease and Rheumatology), and later moved to the Feinstein Institute. Dr. Gulko's research focuses on discovering new genes implicated in arthritis severity and joint damage and his group is generating new drugs and prognostic biomarkers for rheumatoid arthritis. Dr. Gulko has received numerous grants from the NIH, given lectures both nationally and internationally and has been published in leading peer-reviewed journals throughout the world. He serves on the editorial board of *Genes and Immunity* and *Physiological Genomics* and is a member of the American College of Rheumatology.

John Cijiang He, MD, PhD, Chief of the Division of Nephrology

Dr. He, a leading clinician and innovative researcher of kidney fibrosis, was appointed Chief of the Division of Nephrology in 2013. Dr. He is also Professor of Medicine (Nephrology), and Pharmacology and Systems Therapeutics. His most recent research identified a regulator protein known as HIPK2 protein kinase that was highly active in mice with kidney fibrosis. When researchers eliminated HIPK2, they discovered fibrosis was less prominent and the condition of the mice greatly improved. Dr. He and his team will continue to assess the potential of HIPK2 as a possible therapeutic target. Dr. He was elected President of the Chinese American Society of Nephrology in 2014.

Ira Jacobson, MD, Chair of Medicine, Mount Sinai Beth Israel

Dr. Jacobson is the new chair of the Department of Medicine at Mount Sinai Beth Israel. Formerly, he was the Chief of the Division of Gastroenterology and Hepatology, and the Vincent Astor Distinguished Professor of Medicine and Medical Director of the Center for the Study of Hepatitis C at Weill Cornell Medical College. Dr. Jacobson has been deeply involved in the development of antiviral therapy for viral hepatitis for more than 25 years. As a principal investigator for several landmark trials on interferon-based therapy and the new direct-acting antiviral agents, he is helping to transform the treatment of Hepatitis C. He has published extensively in the *New England Journal of Medicine, Lancet* and other major journals, and has served as Associate Editor of the *Journal of Hepatology.*

James Marion, MD, Director of Education, Feinstein IBD Clinical Center

Dr. Marion joined the Department of Medicine as full-time faculty in the Division of Gastroenterology. Dr. Marion is also the Director of Education for The Susan and Leonard Feinstein Clinical Center for Inflammatory Bowel Disease Center. Dr. Marion did his residency at Columbia Presbyterian Hospital and his Gastroenterology Fellowship at Mount Sinai. He is known nationally for his work on chromoendoscopy for cancer surveillance in IBD.

Jagat Narula, MD, PhD, Chief of Cardiology, Mount Sinai St. Luke's and Mount Sinai Roosevelt

Dr. Narula is the new Chief of Cardiology at Mount Sinai St. Luke's and Mount Sinai Roosevelt. He will continue to serve as Director of Cardiovascular Imagining for the Mount Sinai Health System, Professor of Medicine Cardiology and Radiology, and Associate Dean for Global Affairs, Icahn School of Medicine at Mount Sinai.

Beth Oliver, RN, DNP

Beth Oliver was appointed the Vice President of Cardiac Services for the Mount Sinai Health System in February 2014. Since 2012 Beth Served as VP of Clinical Operations at Mount Sinai Heart at The Mount Sinai Hospital.

Beth Raucher, MD, Vice Chair for Quality and Clinical Affairs

Dr. Raucher is the Vice Chair for Quality and Clinical Affairs. She is a graduate of the Icahn School of Medicine at Mount Sinai where she also completed her Internal Medicine Residency and Fellowship in Clinical Microbiology and Public Health. Subsequently, she trained in Infectious Diseases at the Albert Einstein College of Medicine. After completing a fellowship, Dr. Raucher joined Beth Israel Medical Center where she was Chief of Infection Control, Medical Director for Clinical Informatics and Chief of the Division of Quality Improvement for the Department of Medicine. In 2006, Dr. Raucher became the Chief Medical Officer at Lutheran Medical Center where she championed several quality improvement initiatives including a Rapid Response Team, a hospital-wide Sepsis recognition and management program, which resulted in decreased mortality, various maternal/fetal safety initiatives and Medical Staff adoption of the Electronic Medical Record. In her new role, Dr. Raucher will work closely with the quality champions at all of the hospitals to achieve the MSHS quality goals.

Alan Rozanski, MD, Director of Wellness and Prevention Programs for Mount Sinai Heart

Dr. Rozanski held the position of Chief of Cardiology at Mount Sinai St. Luke's and Mount Sinai Roosevelt, and was promoted to serve as Director of Wellness and Prevention Programs for Mount Sinai Heart in 2015. In this newly created position, Dr. Rozanski will work closely with Dr. Narula and Valentin Fuster, MD, PhD, Director of Mount Sinai Heart, in the creation of a future prevention center and wellness programs across all campuses of the Mount Sinai Health System. Dr. Rozanski will continue to run the cardiology fellowship program at Mount Sinai St. Luke's and Mount Sinai Roosevelt.

Andrew Fyfe Stewart, MD, Director of the Diabetes, Obesity and Metabolism Institute

Dr. Fyfe Stewart is a renowned expert in endocrinology and diabetes research and is the Irene and Dr. Arthur M. Fishberg Professor of Medicine. Under his leadership, Mount Sinai expects to advance the application of clinical and basic research toward the development of new therapies for Type 1 and Type 2 diabetes. As Chief of the Division of Endocrinology and Metabolism at the University of Pittsburgh School of Medicine, Dr. Stewart and his research team were the first to demonstrate that adult human beta cells can be induced to replicate at substantial rates. Dr. Stewart has devoted more than 30 years to patient care and scientific research, received numerous honors, and published more than 230 papers in top journals.

Aida Vega, MD, Director of the Department of Medicine Faculty Practice

Dr. Vega became the Director of the Department of Medicine Faculty Practice in 2014. For the last three years, Dr. Vega has transformed the Primary Care practice into a model for all medicine practices in the FPA. Under her watch, the practice's metrics have met or exceeded all expectations, particularly in areas such as meaningful use and patient satisfaction. Dr. Vega has also played a major role in developing and standardizing meaningful use metrics for Epic, which are now being implemented across the entire health system.

Mone Zaidi, MD, PhD, Chair, Nominations and Awards Committee (NAC)

Dr. Zaidi is the chair of this newly formed committee that will oversee nominations of faculty for national, regional and local awards and membership in national honor societies. The focus of the NAC will be to select and nominate the most accomplished and deserving members of the Department of Medicine faculty.

Outstanding Achievements

Every year, Department of Medicine faculty members receive numerous awards and honors from professional societies, foundations, universities and other organizations. In addition to outside awards, Department of Medicine faculty members are often recognized with special honors within the Mount Sinai Health System. This sampling of outstanding achievements from the past few years captures just some of the many accolades conferred upon the faculty and groups within the Department of Medicine.

LISTED IN ALPHABETICAL ORDER:

Yousaf Ali, MD
Dr. Ali was awarded the Mount Sinai Faculty Practice Award; voted #1 physician in the FPA for patient satisfaction in 2010.

Avi Barbasch, MD
Dr. Barbasch was honored with the 2012 Jacobi Medallion for his dedication and service to Mount Sinai.

Cardiac Care Unit at The Mount Sinai Hospital
In January 2014, under the leadership of Beth Oliver, RN, DNP, VP of Cardiac Services at the Mount Sinai Health System, the Cardiac Care Unit (CCU) was awarded The Beacon Award for Excellence from The American Association of Critical-Care Nurses.

Harry Cho, MD
Dr. Cho received a Teaching Value and Choosing Wisely Award Costs of Care and ABIM Foundation in 2015. He also won a Choosing Wisely Case Study Award, from the Society of Hospital Medicine in 2015 and a RightCare Young Innovator Grant from the Lown Institute in 2014. In 2014, Dr. Cho was also named one of the nation's Top Hospitalist by ACP Hospitalist.

Jean-Frédéric Colombel, MD
Director of The Leona M. and Harry B. Helmsley Charitable Trust Inflammatory Bowel Disease Center, Dr. Colombel was listed in the Thomas Reuters publication *World's Most Influential Scientific Minds 2014* in the clinical medicine category based on his analysis of publications and impact. Dr. Colombel, Judy Cho, MD, and David Sachar, MD, were awarded the Crohn's & Colitis Foundation of America's awards for Clinical Research, Basic Research and Lifetime Achievement in 2014 – the first time all three awards have ever been given to three individuals from the same institution.

Continuum Cancer Centers of New York (CCCNY)
CCCNY earned a three-year Network accreditation, with Gold Level Commendation, from the American College of Surgeons' Commission on Cancer. May 2013.

Andrew Dunn, MD
Dr. Dunn, Chief of the Division of Hospital Medicine, was elected as Chair of ACP Board of Governors and President of the NY Chapter of the ACP in 2014.

Melisa Freeman, MD
Dr. Freeman won the Beth Israel Doctors Alumni Association Award in 2014.

Gerald Friedman, MD
Dr. Friedman received The Mount Sinai Alumni Special Recognition Award for Achievement in Medical Education in 2012.

Scott L. Friedman, MD
Dr. Friedman was honored with the 2014 Jacobi Medallion for his dedication and service to Mount Sinai. He also received The Beijing Friendship Award, which is the People's Republic of China's highest award for "foreign experts who have made outstanding contributions to the country's economic and social progress." The award is given directly by the Chinese Prime Minister.

Valentin Fuster, MD, PhD
In July 2014, Dr. Fuster began his five-year term as Editor-in-Chief of the *Journal of the American College of Cardiology* (JACC). In 2012, he was named by the American College of Cardiology (ACC) as one of the Living Legends in Cardiovascular Medicine and awarded the Research Achievement Award, the highest honor of the American Heart Association.

Vani Gandhi, MD
Dr. Gandhi received the St. Luke's-Roosevelt Hospital Center Care and Compassion Award in 2012.

Robert Goldstein, MD
The Infectious Diseases Society of America Trainee Award was given to mentored infectious diseases fellow Dr. Goldstein in 2011.

Eyal Herzog, MD
Dr. Herzog received the St. Luke's-Roosevelt Hospital Alumni Society: 2011 Young Alumnus Award.

Icahn School of Medicine at Mount Sinai
In 2015 Mount Sinai published the *Mount Sinai Expert Guides: Gastroenterology* – edited by Bruce E. Sands, MD, Dr. Burrill B. Crohn Professor of Medicine (Gastroenterology) and Chief of the Dr. Henry D. Janowitz Division of Gastroenterology at the Icahn School of Medicine at Mount Sinai. It is available in print and digital formats. Video clips are included online, as well as case studies, interactive multiple-choice questions, and patient advice. *Mount Sinai Expert Guides: Gastroenterology* follows the publication of the original guide, *Mount Sinai Expert Guides: Hepatology,* which was printed in 2014. In the coming months, additional guides in Cardiology and Allergy and Clinical Immunology will be published.

James P. Jones, MD
Dr. Jones received the St. Luke's-Roosevelt Hospital Alumni Society: 2014 Young Alumnus Award.

Leslie Kerr, MD
Dr. Kerr was awarded the 2013 Department of Geriatrics Consultant of the Year Award.

Thomas Killip, MD
Dr. Killip won the Beth Israel Doctors Alumni Association Award for Cardiology in 2012.

Derek LeRoith, MD, PhD
Dr. LeRoith received the 2011 J. Lester Gabrilove Award.

James Marion, MD
Dr. Marion received the Physician of the Year Award from the Crohn's and Colitis Foundation Greater New York Chapter in 2012.

Yasmin Meah, MD
Dr. Meah received the Mount Sinai Department of Medicine's Ruth Abramson Award for Humanism in Medicine in 2013.

Mount Sinai Beth Israel
Mount Sinai Beth Israel received the 2014 American Heart Association's Get With The Guidelines® – Heart Failure Gold Quality Achievement Award. The Gold level award recognizes Mount Sinai Beth Israel's achievement of at least two years of 85 percent or higher adherence to all Get With The Guidelines® program quality indicators to improve quality of heart failure patient care and outcomes Mount Sinai Beth Israel received American Heart Association/ American Stroke Association "Get With The Guidelines® – Stroke Gold Plus Quality Achievement Awards for their success in implementing excellent care for Stroke patients in 2013.

In 2013 Mount Sinai Beth Israel received the United States Department of Health and Human Services and Critical Care Societies Collaborative Outstanding Achievement and Leadership Award for Eliminating Catheter Associated Urinary Tract Infections (CAUTIs).

In 2012 Mount Sinai Beth Israel received the United States Department of Health and Human Services and Critical Care Societies Collaborative Outstanding Achievement and Leadership Award for Eliminating Central Line Associated Bloodstream Infections (CLABS).

Mount Sinai Beth Israel received an American Heart Association/American Stroke Association "Get With The Guidelines® – Heart Failure Bronze Performance Achievement Award. The award recognizes Beth Israel for attaining outstanding standards of care for heart failure in 2012.

Mount Sinai St. Luke's and Mount Sinai Roosevelt
Mount Sinai St. Luke's and Mount Sinai Roosevelt received American Heart Association/American Stroke Association "Get With The Guidelines® – Stroke Gold Plus Quality Achievement Awards for their success in implementing excellent care for stroke patients in 2013.

Mount Sinai St. Luke's Medical Group
located at 147th Street in Harlem received Patient Centered Medical Home Level 3 designation, the highest, from the National Committee for Quality Assurance in 2012.

Barbara Murphy, MB, BAO, BCh, FRCPI
Dr. Murphy, Chair of the Department of Medicine at the Icahn School of Medicine at Mount Sinai, Murray M. Rosenberg Professor of Medicine, Dean for Clinical Integration and Population Health, was honored with the 2014 Jacobi Medallion for her dedication and service to Mount Sinai. In 2014, Dr. Murphy also received an honorary degree from University College Dublin, Ireland.

Jagat Narula, MD, PhD
Dr. Narula was designated a Master of the American College of Cardiology (MACC), named one of the "Innovators of CV Medicine," and received the ACC's Gifted Educator Award. In 2015 he received the Distinguished Scientist Award at the ACC's 2015 meeting.

Lauren Peccoralo, MD, MPH
Dr. Peccoralo was honored with the 2014 Mid-Atlantic Society of General Internal Medicine (SGIM) Clinician Educator Award.

Jessica I. Petilla, MD
Dr. Petilla received the St. Luke's-Roosevelt Hospital Alumni Society, 2013 Young Alumna Award.

George Psevdos, MD
Dr. Psevodos was named "Outstanding Teacher of the Year" in 2011 and 2012 from the Internal Medicine Residents and the Department of Medicine of St. Luke's-Roosevelt Hospital Center, Columbia University College of Physicians and Surgeons.

Elliot Rayfield, MD
Dr. Rayfield received The Mount Sinai Alumni Special Recognition Award 2012.

Jonathan Ripp, MD, MPH
Dr. Ripp was honored with a 2014 Mount Sinai Auxiliary Board Award for Outstanding Service to the International Community.

Janet Shapiro, MD
Dr. Shapiro, in the Division of Pulmonary Medicine at Mount Sinai St. Luke's and Roosevelt, was honored with a Wholeness of Life Award in 2013 for her exceptional compassionate care.

Samin Sharma, MD
For 16 consecutive years, the Cardiac Catheterization Laboratory at The Mount Sinai Hospital under the leadership of Dr. Sharma has received the highest "two-star" safety rating designation from New York State for its percutaneous coronary interventions (PCI) for safety rates significantly exceeding the statewide average.

Michael Silverberg, MD
Dr. Silverberg was awarded American College of Chest Physicians Annual Meeting, Young Investigator Award, 2013 for his top research/abstract presentation.

Anthony Squire, MD
Dr. Squire received The Mount Sinai Alumni Special Recognition Award in 2010 and was honored with a 2011 Jacobi Medallion.

William G. Stein, MD
Dr. Stein received The Mount Sinai Alumni Special Recognition Award in 2010.

Gerard M. Turino, MD
Dr. Turino received the St. Luke's-Roosevelt Hospital Alumni Society, 2014 Distinguished Alumnus Award.

Thomas Ullman, MD
Dr. Ullman was honored on February 28, 2015 by the Fairfield/Westchester Chapter of the Crohn's and Colitis Foundation of America. Dr. Ullman received the Suzanne Rosenthal Humanitarian Award for his work treating and advocating for patients with Crohn's colitis.

Ania Wajnberg, MD
Dr. Wajnberg was honored with a 2014 Icahn School of Medicine at Mount Sinai Solomon Silver Award in Clinical Medicine.

Jerome Waye, MD
Dr. Waye was honored with The Mount Sinai Alumni Special Recognition Award for Achievement in Medical Education in 2013.

Karen Zier, PhD
Dr. Zier was honored with the 2013 Jacobi Medallion for her dedication and service to Mount Sinai.

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