

ACCELERATING SCIENCE – ADVANCING MEDICINE

My objective is to help The Mount Sinai Medical Center shape the future of nephrology by building on our position as a leader in patient care, clinical and basic research, and education.

The most important element in our ability to achieve this goal is our proven track record of leadership. The first hemodialysis in America was performed at Mount Sinai. Our fellowship graduates and faculty have gone on to national leadership roles, including positions as director of the National Institutes of Health (NIH) Division of Kidney, Urologic, and Hematologic Diseases; the chief executive officer of a major academic medical center; and chiefs of other divisions of nephrology. Current faculty in national leadership positions include Jonathan Winston, MD, Chair of the Scientific Advisory Council of the Kidney and Urology Foundation of America; and Joseph Vassalotti, MD, Chief Medical Officer for the National Kidney Foundation. I am a past president of the American Society of Transplantation.

Our clinical faculty has built a reputation as one of the top kidney treatment and transplantation centers in the country, according to *U.S. News & World Report*. Proof of our clinical excellence is evident daily in our practice and hospital: Our

physicians care for patients referred to us by other nephrologists who recognize the need for our expertise for their most challenging cases.

We have one of the largest NIH research budgets of any nephrology division in the United States, with more than \$20 million in funds. Faculty in the division are recognized as international authorities in renal development, polycystic kidney disease, HIV-associated nephropathy, diabetic renal disease, glomerular disease, hypertensive renal disease, gene therapy, transplant immunology, peritoneal dialysis, and hemodialysis.

Our faculty's success in competing for grants and earning national leadership roles make them ideal mentors both for fellows and junior faculty. Our fellowship attracts top graduates from prestigious residency programs nationwide. Nine members of the division have earned NIH Career Development Awards in the past eight years. Five of these individuals have already earned at least one NIH Research Project (R01) grant.



Barbara Murphy, MD, Irene and Dr. Arthur M. Fishberg Professor of Medicine, Chief of the Division of Nephrology

With so many resources, our division is poised to develop new treatments, set the standard for patient care, and train the next generation of nephrologists.

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■ DISTINGUISHED BY SERVICE

Nephrology Fellowship Program Celebrates 50th Anniversary



Madhav Menon, MD, Nephrology Fellow

The Nephrology Fellowship Program recently celebrated 50 years of training the next generation of nephrologists. Founded in 1959 by Marvin Levitt, MD, the first Chief of Mount Sinai's Division of Nephrology, the fellowship has a history of developing academic leaders, many of whom built careers at Mount Sinai.

The first graduate, Daniel Hauser, MD, for instance, remains on faculty and has been active in training generations of fellows. Richard Stein, MD, graduated in 1961 and went on to serve as Vice Chair of Medicine. The late Ruth Abramson, MD, who graduated in 1963, served as Associate Dean for Research at Mount Sinai and directed the Institutional Review Board for 15 years. Seventeen former fellows are current faculty members.

John Ci-jiang He, MD, PhD, Associate Professor of Medicine, is one recent graduate who, at an early stage of his career, is already making critical contributions to the study of kidney disease. A recipient of an NIH K08 Career Development Award, Dr. He's work is currently funded by multiple R01 awards, including an NIH Transformative R01 Award to study the filtration barrier of the kidney glomerulus. Dr. He and colleagues are developing a 3-D tissue assembly and identifying general design principles for assembling functional tissues to aid in understanding disease processes and are screening for new drugs.

Dr. He says he was drawn to the fellowship because of its academic orientation and its practice of encouraging senior fellows to write independent grants to transition into junior faculty positions. Fellows receive bench-to-bedside education and then spend two years performing research.

■ PATIENT-CENTERED CARE

Mount Sinai Is National Leader in Geriatric Nephrology

Mount Sinai has both the highest-ranking geriatrics program in the United States and one of the top 30 nephrology programs, according to *U.S. News & World Report*. The Division of Nephrology has integrated expertise from these two renowned programs to form a geriatric nephrology and renal palliative care program.

With the aging population, the mean age of dialysis patients is 65 years, and many dialysis patients are in nursing home and assisted living environments. Most elderly dialysis patients present with multiple comorbidities, making treatment more complex, according to Mark Swidler, MD, Assistant Professor of Medicine. As a result, the treatment of geriatric patients goes beyond dialysis. Clinicians in the Division of Nephrology are embracing the concept of nondialysis and palliative medical therapy for some elderly patients with end-stage renal disease. This includes discussing with patients and their caregivers the pros and cons of both types of therapies and guiding them through the treatment they choose, according to Dr. Swidler.

Dr. Swidler was led to develop the nation's first fellowship in geriatrics and renal palliative care after recognizing that the need for geriatric and



With the resources of its top-ranked geriatrics and nephrology services, Mount Sinai is addressing the unique needs of kidney disease patients over 65 years of age.

palliative care for kidney patients will continue to grow. The fellowship will train physicians to manage not only kidney disease but also the geriatric and palliative aspects of care, such as functional impairment, frailty, and end-of-life issues, says Dr. Swidler.

The division also is poised to be a leader in geriatric nephrology research. Currently, Dr. Swidler and colleagues are researching the correlation of disability and inflammation with frailty in older dialysis patients with chronic kidney disease. New research opportunities also will be available as the team works with nursing home residents undergoing dialysis.

■ RESEARCH FRONTIERS



Barbara Murphy, MD

International Consortium to Study Genomics of Chronic Allograft Rejection

Barbara Murphy, MD, Chief of the Division of Nephrology, is the recipient of an NIH Division of Allergy, Immunology, and Transplantation genomics consortium grant. As part of this grant she and her collaborators from six medical centers over two continents will investigate the role of genetics and genomics in the development of chronic renal allograft rejection. This is the first study to prospectively examine whether chronic allograft rejection correlates with immune reactivity. Dr. Murphy and colleagues are investigating the role of cell-mediated and antibody-mediated immune responses in chronic rejection, identifying gene expression profiles associated with development of chronic rejection, and examining the role of donor and recipient gene polymorphisms in conferring susceptibility to chronic allograft rejection.



Peter Heeger, MD

Leading Studies of Allograft Survival in Transplant Patients

Peter Heeger, MD, Irene and Dr. Arthur M. Fishberg Professor of Medicine, is the principal investigator and chair of the steering committee of the NIH-funded, multi-center Clinical Trials in Organ Transplant Consortium. He is leading efforts to develop noninvasive strategies for detecting subclinical graft injury in human kidney, lung, liver, and heart transplant recipients.

One goal of these studies is to define approaches for tailoring treatments to each patient to improve patient health, prolong life, and limit drug-related toxicities. The team is taking a number of approaches, including testing the hypothesis that the absence of antidonor T cell memory will facilitate safe calcineurin inhibitor elimination in nonsensitized, low-risk recipients of kidney allografts.

Identifying Biomarkers in Chronic Kidney Disease



Erwin Böttinger, MD

The New York Chronic Kidney Disease (CKD) Biomarker Program, led by Erwin Böttinger, MD, Irene and Dr. Arthur M. Fishberg Professor of Medicine and Director of the Charles R. Bronfman Institute for Personalized Medicine at Mount Sinai,

received a five-year grant from the National Institute of Diabetes and Digestive and Kidney Diseases to identify biomarkers that predict the risk and/or rate of progression in individual CKD patients sufficiently to guide preventive interventions.

Dr. Böttinger will oversee the program's interdisciplinary team. During the second phase, candidate biomarkers will be taken from patients who have been followed in well-characterized, long-term cohorts. Each biomarker will be assessed for its ability to act as a predictor of CKD progression.