Five Specialists in the Field of Psychotic Illnesses Join Mount Sinai’s Department of Psychiatry

The recent recruitment of five specialists to the Department of Psychiatry at the Icahn School of Medicine at Mount Sinai has revitalized research, treatment, and prevention efforts in the field of psychotic illnesses and has led to the creation of the Critical Connections Program, which will help advance these endeavors. Critical Connections will incorporate the collaborative efforts of multiple specialties within the Mount Sinai Health System—including neuroimaging, psychophysiology, genetics, neural stem cells, immunology, and epidemiology—with the goal of using the latest technologies and developments to find personalized interventions and treatments for psychosis. Clinical sites across the Health System also will contribute to a shared biorepository of samples collected from people with these illnesses.

Dolores Malaspina, MD, MSPH, MS, a leader in the field of psychosis, and Director of the new Critical Connections Program, says, “The most fundamental

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Blocking a Hormone Builds Bone and Burns Fat At Menopause, a Promising Study Finds

A single hormone whose levels rise at menopause could be responsible for the weight gain and bone loss that many women experience in middle age, and blocking that hormone could help reverse those effects, according to a study in mice that was led by Mone Zaidi, MD, PhD, Professor of Medicine (Endocrinology, Diabetes and Bone Disease), at the Icahn School of Medicine at Mount Sinai. The strong clinical potential of these results has been noted in The New England Journal of Medicine, and in Nature Medicine, which in December 2017 named the study one of the year’s eight “notable advances.”

The work began about 10 years ago when Dr. Zaidi challenged endocrinology’s long-held notion that the pituitary follicle-stimulating hormone (FSH) controlled only reproductive targets: the production of estrogen in women and sperm in men. Using animal models, Dr. Zaidi showed that FSH had direct effects in conserving bone. That discovery piqued Dr. Zaidi’s curiosity: Could FSH also play a role in the sharp increase in visceral fat that occurs in women during late perimenopause?

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human quality is the ability to connect with others. Severe mental illness, particularly psychosis in schizophrenia, bipolar disorder, depression, and other conditions, disrupts this capacity and has an enormous impact on individuals, families, communities, and the general population. The costs of social services, hospitals, courts, and prisons have an economic impact, as well. “In spite of significant scientific advances, we still know little about how to prevent and treat most psychotic illnesses. Breakthrough discoveries require innovative designs,” she adds.

Resilience, genetic susceptibility, family characteristics, environmental exposures, and other factors that account for the influences of nature and nurture will be studied by the program’s researchers. Pivotal changes occur in the brain throughout young adulthood that can be directed toward recovery and resilience. Plans call for educational training of medical students, residents, and fellows to translate new findings into evidence-based treatments.

Prior to her recruitment to Mount Sinai, Dr. Malaspina established successful clinical research programs in psychosis at the New York State Psychiatric Institute and at Bellevue Hospital Center. One of her currently funded National Institutes of Health studies that uses the Genomic Psychiatry Cohort examines the gut microbiome-brain axis, with respect to brain inflammation.

The following renowned recruits to the Icahn School of Medicine will be working with Dr. Malaspina to create a robust center of psychosis at the Mount Sinai Health System: Cheryl Corcoran, MD, Senior Faculty, and Program Leader in Psychosis Risk at the Mount Sinai Health System, plans to launch two programs: a clinical risk and resilience research program for teens and young adults who have unusual thoughts, perceptual disturbances, and suspiciousness, and a familial-risk program for young relatives of patients with psychosis. Dr. Corcoran also plans to partner with community clinicians and experts in adolescent medicine to implement early identification and intervention programs for at-risk youth, and collaborate with basic and translational neuroscientists to study the pathophysiology underlying illness risk.

Currently, her main focus is natural language in neuropsychiatric disorders. Working with computational neuroscientists, Dr. Corcoran has identified language features that predict psychosis onset in at-risk youths. This includes subtle decreases in semantic coherence and complexity of speech (such as using shorter sentences and eliminating the words “which” and “that”). Funding from the National Institute of Mental Health has enabled Dr. Corcoran to study the neural correlates of these language abnormalities in a larger international cohort that will determine replicability and develop targets for preventive intervention.

David Kimhy, PhD, Senior Faculty, also serves as Director of the Experimental Psychopathology Laboratory, and Leader in New Interventions in Schizophrenia at the Icahn School of Medicine at Mount Sinai. Dr. Kimhy will focus on the development of novel interventions for schizophrenia and investigate the pathophysiology and phenomenology of cognitive, affective, and social functioning in individuals with schizophrenia.
A Celebration of Achievement and Alumni Bonds at the VF Society Anniversary Dinner

More than 140 members of the VF Society, a nonprofit alumni association for the training graduates of Mount Sinai’s Zena and Michael A. Wiener Cardiovascular Institute, recently gathered for its 16th Year Anniversary Dinner. The Society is named for Valentin Fuster, MD, PhD, the Institute’s Director, who is also Physician-in-Chief of The Mount Sinai Hospital, and the Director of Mount Sinai Heart and the Marie-Josée and Henry R. Kravis Center for Cardiovascular Health. The VF Society was created by former trainees to honor Dr. Fuster’s strong commitment to them, and to strengthen their alumni bonds with The Mount Sinai Hospital.

Over the past decade, Dr. Kimhy has pioneered the use of mobile phone technologies in the study of psychotic symptoms and functioning, and the use of active-play video games as part of aerobic exercise training aimed at improving neurocognition in people with schizophrenia. Preliminary work from his laboratory indicates that aerobic exercise training is effective in improving cognitive functioning in this population, with improvements linked to exercise-related upregulation of Brain-Derived Neurotrophic Factor (BDNF), a biomarker of neuroplasticity. His current funding includes an award from the National Institute of Mental Health supporting a multisite, single-blind, randomized clinical trial examining the impact of aerobic exercise on neurocognition and biomarkers of neuroplasticity in individuals with schizophrenia.

As Director of Education at The Mental Illness Research, Education and Clinical Center at the James J. Peters VA Medical Center in the Bronx, Dr. Kimhy will continue his longstanding commitment to training future researchers and clinicians.

Lotje de Witte, MD, PhD, Assistant Professor of Psychiatry, combines clinical work and scientific exploration in immunology in pursuit of treatments and interventions for psychiatric diseases. Her laboratory investigates the connection between the immune system and the pathogenesis of psychiatric disorders, such as schizophrenia, mood disorders, and autism.

Recently, Dr. de Witte set up a novel stem-cell derived brain organoid model to study microglia, and established the methodology to isolate microglia from postmortem brain tissue. Microglia cells are part of the immune system and involved in both inflammation and reconstruction in the brain, processes thought to be involved in schizophrenia. After studying the cell biological mechanisms of HIV-1 transmission, Dr. de Witte used this experience to start a distinctive research line at the Brain Center Rudolf Magnus in Utrecht, the Netherlands. She received her MD and PhD at the VU University Medical Centre, Amsterdam. Her research has been published in Nature Medicine, the Journal of Clinical Investigation, PLOS Pathogens, and Proceedings of the National Academy of Sciences.

Judith Weissman, PhD, JD, MPH, Assistant Professor of Psychiatry, serves as a Research Health Specialist at the James J. Peters VA Medical Center. Her expertise is in using national data sets to examine health care patterns in the mentally ill. At the VA Medical Center, she will collaborate with other researchers to investigate the incidence and risk factors of suicide, along with the access and utilization of mental health care services among vulnerable populations, particularly military veterans with mental illness. Dr. Weissman will also research possible interventions. Suicide by veterans remains a critical problem, and few empirically based treatment strategies for suicide prevention among post-deployed military personnel currently exist. Serving as a Senior Service Fellow at the U.S. Centers for Disease Control and Prevention earlier in her career helped hone Dr. Weissman’s skill in analyzing large data sets. She has also investigated topics such as polypharmacy in the nation’s elderly and disparities in antidepressant prescribing practices.
To answer the question, his group conducted a study that included injecting a polyclonal antibody that blocked FSH signaling into several groups of mice: females that had their ovaries removed and were fed a normal diet; male and female mice that were fed a high-fat diet; and female mice on a normal diet.

“What we found was that by targeting FSH and blocking its action, we could not only prevent bone loss but also reduce body fat and improve energy homeostasis,” he observes. “We thought to ourselves, ‘This is really a weird finding.’”

Dr. Zaidi, who is founding director of the Mount Sinai Bone Program, then enlisted the support of Clifford J. Rosen, MD, a bone and fat expert who is Director of the Center for Clinical & Translational Research at the Maine Medical Center Research Institute. For the next two and a half years, the scientists replicated each other’s work, culminating in the publication of a comprehensive study in the June 2017 issue of the journal Nature. Their findings confirmed that blocking access of FSH to its receptor using an epitope-specific polyclonal antibody resulted in increased bone mass and a marked reduction in visceral fat in ovariectomized mice. As for the possible mechanism behind these changes, Dr. Zaidi found that the antibody reduced white adipose tissue—where fat is stored—and converted it to brown (or beige) adipose tissue, the type of fat that is burned to provide energy.

In humans, a version of the antibody used in his study might be able to simultaneously treat bone loss and fat accumulation in women, offering a new approach to associated medical conditions, such as osteoporosis, cardiovascular disease, cancer, and diabetes. And because the antibody was found to be effective in both male and female mice, the benefits could extend to both genders in humans, particularly in controlling obesity.

Dr. Zaidi points out that two classes of obesity drugs are currently on the market: those that suppress appetite and those that reduce the absorption of fat from the gut. Both classes, however, come with significant side effects. “The FSH-blocking antibody works on neither of these sites, but instead acts directly on fat cells by converting white to brown fat tissue,” Dr. Zaidi says. “This is truly a new game.”

In collaboration with Mount Sinai Innovation Partners, Dr. Zaidi is exploring opportunities to realize the vast potential of this research through commercial partnerships.

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Dubin Breast Center Honors Three Individuals at Sixth Annual Benefit

The Dubin Breast Center of The Tisch Cancer Institute at the Mount Sinai Health System recently held its sixth annual benefit at the Ziegfeld Ballroom in Manhattan. The celebratory event attracted 520 guests and raised a record $3.4 million to support the Center’s breast health and treatment programs.

The evening honored Kara DioGuardi, Brooke Morrow, and Steven J. Burakoff, MD, Dean for Cancer Innovation at The Tisch Cancer Institute, Eva Andersson-Dubin, MD, founder of the Center and a Mount Sinai Trustee, and Elisa Port, MD, FACS, the Center’s Director, presented the awards.

Ms. DioGuardi and Ms. Morrow, close friends who helped each other through two different breast cancer journeys at the Center, were recognized for their inspirational stories of survivorship and their ongoing support of the Center. Dr. Burakoff was honored for his overall commitment to cancer research and clinical care and for his role in leading The Tisch Cancer Institute to be recognized as a National Cancer Institute-designated cancer program. Dr. Burakoff, the Founding Director of The Tisch Cancer Institute, is also Lilian and Henry M. Stratton Professor of Cancer Medicine at the Icahn School of Medicine at Mount Sinai.
Smiles and Encouragement From 2017 Heisman Trophy Winner

The 2017 Heisman Memorial Trophy winner Baker Mayfield delighted patients at Kravis Children’s Hospital at Mount Sinai during a visit on Sunday, December 10, a day after receiving college football’s most prestigious award. Mr. Mayfield’s visit was arranged by Companions in Courage, a nonprofit foundation founded by hockey star Pat LaFontaine, and coordinated by the Child Life and Creative Arts Therapy Department. The senior quarterback from the University of Oklahoma autographed footballs for patients and participated in a question-and-answer session before patients and families with Dennis S. Charney, MD, Anne and Joel Ehrenkranz Dean, Icahn School of Medicine at Mount Sinai, and President for Academic Affairs, Mount Sinai Health System. Recorded in the KidZone TV studio, the session was broadcast live throughout the hospital for those who were unable to attend. “Kids who have had struggles, they put a smile on their faces,” Mr. Mayfield said. “They are fighting for happiness.” He told patients, “Never give up. Just keep fighting.”

Medical Students Organize Gift Drive

Students from the Icahn School of Medicine at Mount Sinai distributed more than 150 gifts—at a value of more than $4,000—to patients of the East Harlem Health Outreach Partnership (EHHOP) on Saturday, December 16. The student-run clinic provides free health care to uninsured patients in East Harlem. The students compiled an Amazon “wish list” of gift requests for patients or their family members that included winter clothing, kitchenware, children’s toys, and books. “We were so pleased by how many people generously contributed,” says Emily Leven, a fourth-year medical student who led the project. Ms. Leven credited the success to medical students and faculty, doormen at the student residence building who helped organize packages on arrival, administration staff who helped publicize the event, and those who donated. “Donors purchased every gift we asked for and wrote kind notes to our patients,” she says. “It highlighted that we are part of a community here.”

Learning About Lung Health

Several dozen individuals signed up for lung screenings at a recent event hosted by the Mount Sinai Health System’s Lung Screening Program in Guggenheim Pavilion to raise awareness about lung health. “We want certain at-risk people to understand they need an annual lung scan in much the same way they get an annual physical,” says Claudia I. Henschke, PhD, MD, Professor of Radiology, Icahn School of Medicine at Mount Sinai, and Lung Screening Program Co-Director. Attendees picked up literature, spoke with representatives from smoking-cessation programs and lung cancer support groups, and were able to walk through a large inflated educational model of a pair of lungs.
### Personalized Nutrition Sessions With a Registered Dietitian

Personal nutrition sessions are available to Mount Sinai Health System employees interested in making nutrition and lifestyle changes. A Mount Sinai Health System Registered Dietitian who is also a Certified Diabetes Educator is available to see employees with obesity, prediabetes, and/or diabetes on campus, and create a customized meal plan and address other health matters, such as average blood sugar (A1C), blood pressure, cholesterol levels, and self-care skills. For more information, or to schedule an appointment, email wellness@mountsinai.org.

### Cervical Cancer Awareness Month

The Tisch Cancer Institute will host a get-together to celebrate all caregivers and survivors of cervical cancer. The event will feature Stephanie V. Blank, MD, Director, Women’s Health, Mount Sinai Chelsea; Ann Marie Beddoe, MD, Director, Global Women’s Health, The Mount Sinai Hospital; and Stacy Lewis, LMSW, Women’s Cancers Program Coordinator, CancerCare. To RSVP, contact Alison Snow, PhD, LCSW-R, at 212-844-6022, or alison.snow@mountsinai.org. Light refreshments will be served.

**Thursday, January 25**
3 – 5 pm
Mount Sinai Union Square Second Floor Auditorium
10 Union Square East

**Thursday, February 22**
5:30 – 8:30 pm
Melba’s
300 West 114th Street

### Mount Sinai Brooklyn Launching “Epic ASAP”

In February, “Epic ASAP” will replace Healthmatics, the current system in use in the Emergency Department at Mount Sinai Brooklyn—an effort to further improve clinical workflow efficiencies, as well as patient care quality and safety.

The new system has several key benefits, including:

- The availability of Electronic Prescribing of Controlled Substances (EPCS)
- Decreased wait times for patients within the Emergency Department.

The “Go-Live” will occur Saturday night, February 3, into Sunday, February 4.

For more information, contact EpicMSB@mountsinai.org.

### Friedman Brain Institute’s Annual “Call for Images”

Artistic images of the brain will be selected for the Tenth Annual Neuroscience Retreat Competition scheduled for Friday, April 27, and also will be considered for the “Art of the Brain” Exhibition being held Monday, March 12, through Friday, April 20. Faculty, postdocs, staff, and students within all Friedman Brain Institute departments are encouraged to participate.

To submit, go to neuroscience.mssm.edu/retreat_2018/Call_for_Images.html.

**Thursday, February 1**
Submission Deadline

### 2017 First-Place Winner

**Mouse Neural Stem Cells**

By Nicolas Daviaud, PhD, postdoctoral fellow, Neuroscience