Biane, Malik, Nowakowski, Scangos named 2018 NARSAD Young Investigator Grant recipients

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By Nicholas Roznovsky [1]

(L to R) Jeremy Biane, PhD [2]; Ruchi Malik, PhD [3]; Tomasz Nowakowski, PhD [4]; and Katherine Scangos, MD, PhD [5]

Four UCSF Department of Psychiatry researchers?Jeremy Biane, PhD [2]; Ruchi Malik, PhD [3]; Tomasz Nowakowski, PhD [4]; and Katherine Scangos, MD, PhD [5]?have been awarded 2018 NARSAD Young Investigator Grants [6] by the Brain & Behavior Research Foundation (BBRF) [7] in recognition of their work as promising young scientists conducting innovative, cutting-edge neurobiological and psychiatric research. The four are among the nine researchers at UCSF and 200 from around the world selected to receive a combined $13.8 million in grants to further their research.

The two-year awards will provide them each with up to $70,000 for the purposes of extending their research fellowship training or fostering a career as an independent research faculty member. In addition, they will be eligible for consideration to present at the foundation's annual Scientific Symposium in New York.

?Young Investigator Grants enable outstanding scientists to pursue bold new ideas that expand our understanding of psychiatric illness and help identify potentially game-changing targets for treatment,? said BBRF Scientific Council President Herbert Padres, MD. "In many cases, foundation grants offer the first critical support for a young scientist?s work that may not otherwise received funding.?
Funding to support research in basic science and new technologies

Biane, a former postdoctoral researcher in the Kheirbek Laboratory at UCSF, will examine an area of the brain that is crucial to generating and processing anxiety. Known as the ventral hippocampus (vHPC), this region becomes active when a person explores an anxiety-inducing environment. By tracking the activity of individual mouse brain cells in the vHPC in real time, he hopes to elucidate how the vHPC reacts to anxiety-inducing cues from the environment and influences behavior.

Malik, an associate specialist in the Sohal Laboratory at UCSF, is studying the genes behind tuberous sclerosis (Tsc), a brain disorder that can cause autism spectrum disorder (ASD) in some patients. The goal of her research is to learn more about the role of Tsc genes in regulating the function of interneurons—cells that modulate signals between excitatory neurons in the brain. The study will help researchers learn more about how Tsc mutations might contribute to abnormal behavior and communication in people with tuberous sclerosis and ASD, and to find potential markers in the brain that would aid in the diagnosis and future treatment of these disorders.

Nowakowski, an assistant professor of anatomy and psychiatry, will continue his work examining the role that a class of regulatory RNA molecules, called microRNAs, may have on neuropsychiatric disorders in general and ASD in particular. MicroRNAs act to fine-tune gene expression, and Nowakowski has learned that previously identified ASD genes may be a target of microRNAs. His goal is to learn more about what happens when groups of these microRNAs are depleted or increased, to confirm which are most closely linked to ASD genes, and to learn more about the role of these RNAs in human brain cell development.

Scangos, an assistant professor of clinical psychiatry, will use high-density intracranial electroencephalography (iEEG) in humans to study circuits thought to be involved in major depression (MDD). In this technique, electrode strips are placed directly on the cortical surface and thin electrodes are inserted through deep structures in patients undergoing presurgical monitoring for medication-refractive epilepsy. This provides a powerful tool to study the circuit dynamics involved in people with epilepsy who also suffer from major depression. She will specifically investigate neural activity patterns within corticolimbic structures that may underlie MDD, building on pilot data.

An investment in the careers of promising young scientists

NARSAD Young Investigator Grants are designed to help researchers launch their careers in neuroscience and psychiatric research and gather pilot data to apply for larger federal and university grants on research relevant to the understanding, treatment, and prevention of serious brain and behavior disorders such as schizophrenia, mood disorders, anxiety disorders, or child and adolescent mental illnesses. Since the program’s founding in 1987, more than 4,400 grants have been awarded totaling $271 million in funding, which in turn has generated more than $2.7 billion in subsequent research funding.

This year, BBRF received 818 grant applications, and the selected recipients represent 110 institutions in 17 countries. Grant awardees were selected by the BBRF’s world-renowned Scientific Council, which counts two Nobel Prize winners, three current or former directors of the National Institute of Mental Health, and ten UCSF Psychiatry faculty members among its ranks. The 2018 NARSAD Young Investigator Grant Selection Committee was co-chaired by
the University of Rochester’s Suzanne N. Haber, PhD, and UCSF Psychiatry’s Judith M. Ford, PhD [10].

“One in five people in the United States is living with a mental illness,” says Jeffrey Borenstein, MD, president and CEO of the Brain & Behavior Research Foundation. “The research our grantees conduct provides tremendous hope for continued advancements in our understanding of the brain and continued improvements in treatment and ultimately, cures and methods of prevention.”

Other 2018 NARSAD Young Investigator Grant recipients from UCSF include James Maas, MD [11]; Simone Mayer, PhD [12]; Mercedes Paredes, MD, PhD [13], from the Department of Neurology; Evan Feinberg, PhD [14], from the Department of Anatomy; and Lakshmi Subramanian, PhD [15], of the Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research.

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### About UCSF Psychiatry

The UCSF Department of Psychiatry [16], UCSF Langley Porter Psychiatric Hospital and Clinics [17], and the Langley Porter Psychiatric Institute are among the nation’s foremost resources in the fields of child, adolescent, adult, and geriatric mental health. Together they constitute one of the largest departments in the UCSF School of Medicine and the UCSF Weill Institute for Neurosciences, with a mission focused on research (basic, translational, clinical), teaching, patient care, and public service.

UCSF Psychiatry conducts its clinical, educational and research efforts at a variety of locations in Northern California, including UCSF campuses at Parnassus Heights, Mission Bay and Laurel Heights, UCSF Medical Center, UCSF Benioff Children’s Hospitals, Zuckerberg San Francisco General Hospital and Trauma Center, the San Francisco VA Health Care System, and UCSF Fresno.

### About the UCSF Weill Institute for Neurosciences

The UCSF Weill Institute for Neurosciences [18], established by the extraordinary generosity of Joan and Sanford I. “Sandy” Weill, brings together world-class researchers with top-ranked physicians to solve some of the most complex challenges in the human brain.

The UCSF Weill Institute leverages UCSF’s unrivaled bench-to-bedside excellence in the neurosciences. It unites three UCSF departments—Neurology, Psychiatry, and Neurological Surgery—that are highly esteemed for both patient care and research, as well as the Neuroscience Graduate Program, a cross-disciplinary alliance of nearly 100 UCSF faculty members from 15 basic-science departments, as well as the UCSF Institute for Neurodegenerative Diseases, a multidisciplinary research center focused on finding effective treatments for Alzheimer’s disease, frontotemporal dementia, Parkinson’s disease, and other neurodegenerative disorders.

### About UCSF

UC San Francisco (UCSF) [19] is a leading university dedicated to promoting health worldwide through advanced biomedical research, graduate-level education in the life sciences and
health professions, and excellence in patient care. It includes top-ranked graduate schools of
dentistry, medicine, nursing and pharmacy; a graduate division with nationally renowned
programs in basic, biomedical, translational and population sciences; and a preeminent
biomedical research enterprise.

It also includes UCSF Health [20], which comprises three top-ranked hospitals ? UCSF Medical
Center and UCSF Benioff Children?s Hospitals in San Francisco [21] and Oakland [22] ? as well
as Langley Porter Psychiatric Hospital and Clinics, UCSF Benioff Children?s Physicians, and
the UCSF Faculty Practice. UCSF Health has affiliations with hospitals and health
organizations throughout the Bay Area. UCSF faculty also provide all physician care at the
public Zuckerberg San Francisco General Hospital and Trauma Center, and the San
Francisco VA Medical Center. The UCSF Fresno Medical Education Program is a major
branch of the University of California, San Francisco?s School of Medicine.

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