2023 HARVARD BETH ISRAEL DEACONESS MEDICAL CENTER PSYCHIATRY SUMMER RESEARCH FELLOWSHIP

The Department of Psychiatry within Beth Israel Deaconess Medical Center, a teaching hospital of Harvard Medical School located in the Longwood Medical Area of Boston, is sponsoring up to three summer research fellowships for medical students to engage in intensive 8-week summer projects under the mentorship of a faculty member. Our fellowships are intended to increase diversity and representation within the field of biomedical research in psychiatry. They offer an opportunity for US medical students who are either from diverse backgrounds themselves, or are engaged in efforts to improve diversity in the field, to become familiar with academic research in psychiatry.

Additional career mentorship will be available from the following faculty:

- Roscoe Brady, MD, PhD, Vice Chair for Research
- Paulo Lizano, MD, PhD, Division Head of Translational Neuroscience
- Christie Sams, MD, Psychiatry Residency Program Director
- Matcheri Keshavan, MD, Academic Chair of the Department
- Donna Norris, MD, Director of Diversity and Inclusion for the Department
- William Greenberg, MD, Psychiatrist-in-Chief

Eligibility

Medical students currently enrolled in US or Canadian LCME-accredited programs who are citizens or non-citizen nationals or permanent residents. This program is not eligible for U.S. Immigration sponsorship.

As noted above, this program is designed to improve the diversity within our field. Therefore, the program is open to students who either come from underrepresented backgrounds personally, or those who have a demonstrated interest and commitment to improving the diversity of the field. The following racial and ethnic groups have been shown to be underrepresented in biomedical research: Blacks or African Americans, Hispanics or Latinos, American Indians or Alaska Natives, Native Hawaiians and other Pacific Islanders. In addition, it is recognized that underrepresentation can vary from setting to setting; individuals from racial or ethnic groups that can be demonstrated to be underrepresented are also encouraged to apply.

The program runs from June 4 to July 29; however, students whose schools' summer breaks begin slightly later are encouraged to apply and to indicate this in their applications.

Funding

Students who are awarded the fellowship will be provided housing at Emmanuel College, will receive a $200 meal card that can be used in the hospital cafeteria, and will receive a stipend of $2000 to assist with living expenses and travel to the area. The stipend will be paid as follows: half at the midpoint of the program, and half at the end, as per hospital policies. The housing consists of a private locking bedroom within two-bedroom, two-bathroom apartment (2 people of the same gender per apartment), which includes a separate locking bathroom for each resident, in-unit laundry room, and full kitchen.

The combined value of the stipend, housing, and meal card is $5900, reported to you on a form 1099. Your tax implications will vary depending on your individual circumstances.

Research Opportunities

Each research fellow will spend the 8 weeks in one of the following research groups:

Improving Outcomes early in Psychotic Disorders
Mentor: Matcheri Keshavan, MD
The Keshavan lab works on early intervention and improving outcomes in psychotic disorders. Some studies look for biomarkers and others evaluate strategies for cognitive remediation. The lab is also interested in understanding disparities in outcomes for patients with psychotic illnesses.

Personalized Brain Based Interventions to Treat Psychotic Disorders
Mentor: Roscoe Brady, MD, PhD
The goal of the Laboratory of Applied Neuroscience is to understand individual differences in mental disorders and then translate that understanding into clinical care. Individuals diagnosed with psychotic disorders differ tremendously from each other in terms of their symptoms and the impact of mental illness on their lives. People with these diagnoses also experience large changes over time in terms of symptom severity. What is the brain basis of these differences between individuals and within-individuals over time? We work with individuals diagnosed with psychotic disorders and use a combination of brain imaging and neuromodulation to understand these differences. The goal is to develop interventions that offer personalized treatment for the medication resistant symptoms of these disorders.

A Multi-Modal Approach to Understanding and Treating Psychosis
Mentor: Paulo Lizano, MD, PhD, URIM Faculty Member at HMS/BIDMC
The Lizano Lab investigates neurobiological alterations in brain structure and function in major psychiatric disorders such as schizophrenia and bipolar disorder. Our goal is to understand the pathophysiology of these disorders, investigate new approaches for diagnostics, and treatment response prediction. Students will have the opportunity to engage in clinical and neurocognitive assessments, collection of neurobiological markers (EEG, MRI, retinal imaging), and assist with administration of non-invasive brain stimulation (tES). Current projects in the lab include: Transcranial electrical stimulation (tES) effects on symptoms and cognitive impairments in psychosis spectrum disorders; Retinal/brain structural and vascular links in early course psychosis via optical coherence tomography and MRI; and Effects of single infusion IV function of Sodium Nitroprusside on improving inflammation and vascular function in early psychosis

Psychosocial Interventions to Reduce Depression and Suicidal Behavior

Mentor: Shirley Yen, PhD
Dr. Yen's research focuses on identifying risk factors and developing interventions for suicidal behaviors in adolescents and adults. Dr. Yen has been an NIMH-funded investigator for the past 20+ years, and has authored over 130 peer-reviewed publications. As an investigator on prospective, longitudinal studies of youth with bipolar disorder, adults with personality disorders, and suicidal adolescents, Dr. Yen has examined prospective predictors of suicidal behavior. Dr. Yen's research has also focused on translational work towards developing interventions to reduce suicidal behaviors. She was recently awarded an R01 from the National Institute of Mental Health, to test the effectiveness of a new intervention she developed, Skills to Enhance Positivity (STEP), in reducing suicidal behaviors in acutely suicidal adolescents. Students will have the opportunity to get involved in suicide risk assessments of adolescents in the context of a research protocol, data analyses, preparation of a poster or paper using collected longitudinal data ranging from multi-year

longitudinal studies on bipolar disorders and personality disorders, to short-term mixed-method prospective data using daily diary ratings that examines mechanisms of risk for suicidal and self-injurious ideation in sexual and gender minority youth.

Improving Outcomes in Psychosis: Cognition, Olfaction, Reward, and Partnerships
Mentor: Raquelle Mesholam-Gately, PhD
Dr. Mesholam-Gately's research is broadly focused on characterizing and/or intervening in neurocognitive, olfactory, and reward-related deficiencies in psychotic disorders, including through partnerships with individuals who have lived experience with serious mental illness. This work includes neurocognitive functioning over the illness course, olfaction and brain reward system linkages, and improvement of cognitive remediation efforts, as well as partnering with the MMHC Consumer Advisory Board (CAB) in participatory mental health research including a recent project related to renaming schizophrenia. Some projects include the examination of olfactory hedonic ratings as moderators of psychosocial treatment effectiveness, as well as collaborating with the CAB on several current and planned initiatives.

Evaluating Mental Health Apps
Mentor: John Torous, MD, MBI
Students working with this team will have the opportunity to learn about digital psychiatry and the potential of smartphone apps to advance mental health access and quality. Students will gain hands on experience learning to evaluate mental health apps, educate patients about their risks and benefits, and may be able to even support patients in using apps as part of their care. Students will also gain experience around the testing and design of the team's open-source smartphone app mindLAMP used around the world and in global mental health efforts.

Using Sleep as a Tool to Understand Mental Health and Wellness
Mentor: Tony Cunningham, PhD, Early Career Faculty Member at HMS/BIDMC
Dr. Cunningham's primary research focus is understanding the role of sleep and sleep loss in emotion and memory processing, and how knowledge of these systems can be applied to both healthy and clinical populations. The long-term research goal of the lab is to understand changes in underlying brain networks responsible for cognitive and emotional processing following sleep loss, and translate this knowledge into the development of novel and effective therapeutic interventions. Dr. Cunningham has two funded sleep-based projects: (1) the effects of tES stimulation during sleep in healthy controls and patients with Schizophrenia (in collaboration with Drs. Keshavan and Lizano), and (2) the effects of multiple nights of sleep restriction on behavioral and neural processing of emotions. Students will have the opportunity to engage in clinical and cognitive assessments, collection of neurobiological markers (EEG, PSG, fMRI), and assist with administration of non-invasive brain stimulation (tES). Both studies will be conducted in the newly renovated Clinical Research Center at BIDMC.

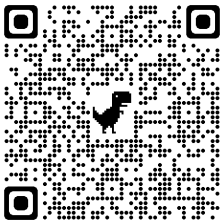
Additional Opportunities

Students in the program will also be offered mentorship and career guidance meetings with leaders in our program, opportunities for shadowing in clinical services, such as inpatient psychiatry and the Consult Liaison service, and social events with residents in our program.

Applying

Application Materials:

1. **Complete the online application form here, or by scanning the QR code below.**



2. **Send the following materials electronically as email attachments to ccusick1@bidmc.harvard.edu:**

    - Curriculum vitae or resume
    - Personal statement of up to one page in length about your experience and interest in psychiatry and research. Please include personal career goals for you as they relate to this summer fellowship.
    - One letter of recommendation from a faculty member.
    - Letter from your dean's office indicating you are in good standing in your program.

The application form can also be accessed at: https://forms.gle/8TVc3esUa9HCZ7S09

Progress Reports and Presentations

Students receiving summer funding through this application will be invited to present their summer work in the laboratory of their mentor. They will also be asked to submit a one page reflection on what the summer experience has provided them, as well as any suggestions for how the program might be made stronger.

All application materials must be submitted electronically no later than January 15, 2023. Decisions will be made by February 15, 2023. Any questions may be directed to Ms. Colleen Cusick, at ccusick1@bidmc.harvard.edu.