Icahn School of Medicine at Mount Sinai

PhD+ Track
Current Trainees (PGY 1s – 5s), 2017-18

PGY-5

Kenechi Ejebe, MD (PhD candidate)

My Background

Born in Nigeria to a professor and a judge, Kenechi Gabriel Ejebe immigrated to Plymouth, Minnesota when he was 8 years old. He learned English in grade school ESL classes and eventually went on to compete in speech and debate tournaments in high school, and he has continued to excel in academic pursuits and leadership. Kenechi's academic interests center on psychiatric genetics, innovative medicines, and diagnostics. In college, he worked alongside Dr. Susan Singer, on research funded by the National Science Foundation, investigating the genetic regulation of inflorescence in plant-based systems. He was elected to the Sigma Xi chapter for his research contributions and was honored as the Student Commencement Speaker for the graduating Class of 2002. For 2 years after college, Kenechi conducted research under an Intramural Research Training Award at NIH with Dr. Henry Levin, studying yeast genetics and using yeast as a model system to characterize HIV reverse transcription; this work was published in the Journal of Virology. During medical school, Kenechi broadened his research interests to include social activism. He interned at the World Health Organization in Geneva and was co- Leader of Physicians for Human Rights at GW. He directed the GW Chapter of the Student National Medical Association (SNMA) and served on SNMA's National Board of Directors. These and other accomplishments lead to Kenechi's 2006 selection as 1 of 10 American Medical Association Minority Scholars in the country. In 2008 during his third year of medical school, Kenechi received a Sarnoff Foundation Research Fellowship and joined the lab of Dr. Sekar Kathiresan at MGH/Harvard and the Broad Institute of Harvard/MIT. Kenechi's focus was on statistical analysis of SNPs in common disease, and he led a GWAS study of approximately 8,000 African-American patients. Upon graduation from medical school, Kenechi joined the Kathiresan lab as a Research Scientist and in 2011 was recruited as a Senior Scientist to join Moderna Therapeutics, an RNA-based personalized medicine start-up company based out of Harvard and founded by Flagship Ventures. Moderna is pioneering an entirely new drug modality using mRNA therapeutics to produce, in vivo, human proteins or antibodies inside patient cells that are in turn active intracellularly or secreted into the serum. As a member of the founding scientific team, he was involved in due-diligence activities, IP strategy/execution, and conducted medical needs assessments of potential IND candidates. In 2013, Moderna entered into an exclusive research agreement with AztraZeneca and Alexion Pharmaceuticals. Kenechi has co-authored over 9 peer- reviewed journal articles including in Nature (x2), Nature Genetics, PLoS Genetics (x2), and Human Genetics. He is also named as an Inventor on 9 patents.

Kenechi describes choosing Mount Sinai's Psychiatry Residency Program because of its commitment to Human Genomics and Translational Neuroscience, and he first entered residency in the Physician- Scientist Track. During his PGY-1 year, he became involved in the Division of Psychiatric Genomics led by Pamela Sklar, MD, PhD. Under her

mentorship, he began to familiarize himself with stem cell techniques by completing a research rotation in the lab of Kristen Brennand, PHD. In his PGY-2 year, in addition to beginning his outpatient clinical work, he continued to work on a rotation project involving using genome-editing technology to modulate targets of interest and explore their role in the epigenetics of schizophrenia. As a PGY-3, he began a new research rotation under the supervision of Dr. Panagiotis (Panos) Roussos an expert in functional genomics and continued outpatient clinical work in the OPD. He attended his first ACNP meeting December 2015, and continues to receive mentorship as a member of the ACNP URM Networking Group. In addition to research and clinical efforts, Kenechi become involved with teaching fellow PGY-1 residents as one of the Instructors for their Neuroscience course. As a PGY-4, Kenechi continued his work with Dr. Roussos using computational techniques to discover novel variants implicated in neuropsychiatric disease.

Dr. Ejebe joined the Psychosis Research Integrating Science and Medicine (PRISM) program to embark on his PhD thesis work under Dr. M. Mercedes Perez-Rodriguez's mentorship. He intends on submitting his PHD thesis proposal for review this academic year as well as applying for independent sources to support research efforts. Dr. Ejebe's thesis involves the characterization of reward processing in bipolar disorder and addiction. His thesis advisory committee includes world-renowned experts in the fields of bipolar disorder, addiction, and cognition, including Drs. Katherine Burdick, Mark Baxter, and Rita Goldstein. Dr. Ejebe has been involved as a Study Physician for four on-going NIH- and NARSAD-funded clinical trials at Mount Sinai focused on the enhancement of cognition in patients with schizophrenia spectrum disorders. Dr. Ejebe's education will be greatly enriched under the mentorship of Dr. Perez as he receives guidance on clinical trial design, research ethics, data analysis, and drafting protocols and grant proposals. He was invited to attend the ACNP 2016 Annual Meeting by Dr. Perez, where he attended numerous state-of-the-art scientific talks, engaged with leaders in the field, and received mentorship at events organized by their Minority Task Force.

In addition to basic research efforts, Kenechi has become interested in developing innovative tools to help patients with schizophrenia empower themselves in the community. He was recently chosen as an Innovation Leader and presented his mobile app idea at the Psychiatry Innovation Lab at APA Annual Meeting last year. He was also the 2016 National Semi-finalist at the Institute of Psychiatric Services (IPS) October meeting for his mobile app idea for patients with schizophrenia. He was also chosen to serve as a member of the leadership team organizing the Psychiatry Innovation Lab at the 2017 APA Meeting in San Diego, CA which awarded over $35,000 in prizes to participants. Dr. Ejebe received a competitive fellowship award to attend the 2017 Workshop on Clinical Trials, sponsored by the American Society of Clinical Psychopharmacology and the American College of Neuropsychopharmacology. He was also appointed to be a member of the Planning Committee at the 3rd Annual Innovations in Psychiatry Conference that will be held at Stanford University in October 2017. Dr. Ejebe has recently been selected for the prestigious APA/SAMHSA Minority Fellowship in collaboration with the Psychosis Research Integrating Science and Medicine (PRISM) clinic, to further develop his mobile app. He was recently named as a Founding Partner to Brainstorm, a special multi-site educational initiative based at Stanford University that seeks to transform behavioral health through education, collaboration, and translation.

Within our program he has served as a Clinical Instructor to first and second year residents as part of our enhanced Neuroscience curriculum. He continues to provide mentorship to minority medical students working closely with our Office for Diversity and Inclusion.

Selected Publications:

- Schrum J, Bancel S, Afeyan N, **Ejebe K**. *Engineered Nucleic Acids and Methods of Use Thereof*. September 20th, 2016. US Patent 9,447,164.
- Schrum J, Siddiqi S, **Ejebe K**, Ellsworth J, Guild J. *Modified nucleosides, nucleotides, and nucleic acids, and uses thereof*. May 10th, 2016. US Patent 9,334,328.
- Bancel S, Chakraborty T, De Fougerolles A, Elbashir S, Matthias J, Roy A, Whoriskey S, Wood K, Hatala P, Schrum J, **Ejebe K**, Ellsworth J, Guild J. *Modified Polynucleotides for the production of proteins.* February 9th, 2016. US Patent 9,254,211.
- Bancel S, Chakraborty T, De Fougerolles A, Elbashir S, Matthias J, Roy A, Whoriskey S, Wood K, Hatala P, Schrum J, **Ejebe K**, Ellsworth J, Guild J. *In Vivo Production of Proteins.* December 29th, 2015. US Patent 9,221,891.
- Bancel S, Chakraborty T, De Fougerolles A, Elbashir S, Matthias J, Roy A, Whoriskey S, Wood K, Hatala P, Schrum J, **Ejebe K**, Ellsworth J, Guild J. *Modified Polynucleotides for the Production of Biologics and Proteins Associated with Human Disease.* April 7th, 2015. US Patent 8,999,380.
- Schrum J, Bancel S, Afeyan N, **Ejebe K**. *Engineered nucleic acids and methods of use thereof.* September 14th, 2014. US Patent 8,822,663.
- De Fougerolles A, Wood K, Elbashir S, Schrum J, **Ejebe K**. *DLIN-KC2-DMA lipid nanoparticle delivery of modified polynucleotides.* June 17, 2014. US Patent 8,754,062.
- De Fougerolles A, Wood K, Elbashir S, Schrum J, **Ejebe K**. *Modified polynucleotides for the production of G-CSF*. March 25, 2014. US Patent 8,680,069.
- De Fougerolles A, Wood K, Elbashir S, Schrum J, **Ejebe K**. *Method for producing a protein of interest in primate*. March 4, 2014. US Patent 8,664,194.

PGY-4

Alexander Charney, MD (PhD candidate)

My Background

Alex's interest, both in clinical practice and research, is in understanding the complex system of rules governing human brain function in both healthy and pathological states. Since 2011, he has been training under Pamela Sklar and Eric Schadt, two of the world's foremost experts on large-scale genomics and multiscale biology, and following medical school he worked as a postdoctoral researcher for 2 years before entering Mount Sinai's Psychiatry Residency Program in July 2014, which allowed him to continue his research without interruption. His expertise lies in the genetic architecture of neuropsychiatric illness, having been the lead bioinformatician on the largest genome-wide association study of bipolar disorder to date, and having played a lead role in developing a novel method that uses genetics to characterize the overlap between schizophrenia pathogenesis and antipsychotic mechanism of action. Currently, Alexander is a lead bioinformatician for the PsychChip and CommonMind Consortiums, as well as for a study of the role of somatic variation in the brain in schizophrenia. Alexander is also a primary investigator for

the Living Brain Project, a multiscale, data-driven investigation of the human brain wherein a single living population is being studied using all of the tools available for human-subject neuroscience, including the powerful tools of molecular and cellular biology that to date have been applied primarily in the post-mortem setting.

***Publications <u>during residency</u>*:**

- Roussos P, Mitchell AC, Voloudakis G, Fullard JF, Pothula VM, Tsang J, Stahl EA, Georgakopoulos A, Ruderfer DM, **Charney A**, Okada Y, Siminovitch KA, Worthington J, Padyukov L, Klareskog L, Gregersen PK, Plenge RM, Raychaudhuri S, Fromer M, Purcell SM, Brennand KJ, Robakis NK, Schadt EE, Akbarian S, Sklar P. A role for noncoding variation in schizophrenia. *Cell Rep*. 2014 Nov 20;9(4):1417-29.
- Song J, Bergen SE, Di Florio A, Karlsson R, **Charney A**, Ruderfer DM et al. Genome-wide association study identifies SESTD1 as a novel risk gene for lithium-responsive bipolar disorder. *Mol Psychiatry* 2015. doi:10.1038/mp.2015.165.
- Castro VM, Minnier J, Murphy SN, Kohane I, Churchill SE, Gainer V, Cai T, Hoffnagle AG, Dai Y, Block S, Weill SR, Nadal-Vicens M, Pollastri AR, Rosenquist JN, Goryachev S, Ongur D, Sklar P, Perlis RH, Smoller JW; International Cohort Collection for Bipolar Disorder Consortium. Validation of electronic health record phenotyping of bipolar disorder cases and controls. *Am J Psychiatry*. 2015 Apr;172(4):363-72.
- Ruderfer DM, **Charney AW**, Readhead B, Kidd BA, Kähler AK, Kenny PJ et al. Polygenic overlap between schizophrenia risk and antipsychotic response: a genomic medicine approach. *The Lancet Psychiatry* 2016. doi:10.1016/S2215-0366(15)00553-2.
- **Charney AW,** Ruderfer DM, Stahl EA, Moran JL, Chambert K, Belliveau RA, Forty L, et al. "Evidence for genetic heterogeneity between clinical subtypes of bipolar disorder." *Translational psychiatry.* 7, no. 1 (2017): e993.
- **Charney AW**, Moughal S, Charney DS. An assessment of the catecholamine hypothesis of bipolar disorder. Bipolar Disorders: Basic Mechanisms and Therapeutic Implications, 3rd Ed. (in press). Soares and Young (editors). Cambridge Academic Press.
- **Charney AW**, Scarpa J, Ruderfer DM, Charney DS. Drug Repositioning in Psychiatry. Drug Repositioning: Approaches and Applications for Neurotherapeutics. (in press). Dudley and Berliocchi (editors). CRC Press-Taylor & Francis Group (Boca Raton, US).

PGY-4

Whitney McFadden, MD (PhD candidate)

My Background

I was born in Baltimore, MD as my father finished psychiatry residency and my mother worked at University of Maryland studying astronomy. Both of their careers continue to serve as inspiration for me. After my parents split, I moved to Bethesda, MD with my mother and sister, and grew up excited about discovery and influenced by my

mother's scientific determination in exploring the solar system. In college, I was drawn to study neurobiology as the most mysterious and uncharted of the biological sciences, and I sought to understand the neuroanatomy of human consciousness and perceptions. I am humbled and grateful for my inspirational mentors in neurobiology at UC Berkeley, including Dr. David Presti, physicist and neurochemist, and Dr. Randy Schekman, molecular biologist whose work earned a Nobel Prize in 2013 for vesicle trafficking of the cell.

From Berkeley, I moved to San Diego for medical school, drawn by the strength of the neuroscience program and the proximity to the beach. This was surprising, as I hadn't grown up a beach kid, nor did I particularly enjoy the vastness of the sea; rather, I was actually afraid of the ocean's power and feared large waves. I saw the ocean as a challenge, and to conquer my fear, I learned to surf. The rush of surfing a wave and riding alongside something that I once feared is rewarding and powerful and has kept me going through some of my toughest challenges in life.

As I learned more about the brain and psychiatry in medical school, I became increasingly interested in studying schizophrenia. I was struck by the vastly different, painful, and confusing perceptions and senses of consciousness experienced by patients with schizophrenia. I've been curious, open, and eager to understand more ever since. I took a scholarly year in medical school and was awarded a fellowship in the HHMI/Medical Research Scholars Program at NIMH, where I conducted research under the mentorship of Joel Kleinman and Barbara Lipska in The Lieber Institute for Brain Development. My first study used differential RNA expression as an intermediate phenotype and showed that a genetic variant affects coding for the alpha7-nicotinic acetylcholine receptor. The clinical manifestations of variants of this gene include cognitive deficits in episodic memory and learning, making it a possible target in high risk patients with psychiatric disease and cognitive symptoms. In another project I helped identify genetic risk variants for the persistence of altered white matter neurons in the DLPFC, suggesting cellular mechanisms contributing to altered circuitry. I was fortunate to present my findings at the cumulative NIH MRSP symposium and at the Society for Biological Psychiatry as well as publish in the*American Journal of Psychiatry*.

In addition to the incredible interest I found in the biological rooting and implications of schizophrenia, I was also witness to the human and interpersonal tolls it exacts on patients and families, and I became active in the American Medical Student Association's leadership, ultimately serving as National Health Policy Coordinator and Health Policy Chair.

Why I Chose Mount Sinai

While interviewing at institutions on the east and west coast, I began to see patterns in residency programs that were important for research residents. I was looking for a supportive and understanding program that encourages exploration and facilitates flexibility. I found it essential to choose a program with a culture that acknowledges the important opportunities and complications that are inherent when undertaking simultaneous research and clinical training. Not only is Mount Sinai a leader in this respect—being the only institution to formally offer a PhD degree during psychiatry residency—it also provided the financial backing, mentorship, and collaborative effort across disciplines to provide the most supportive experience during residency. As each trainee's needs are different, the value of working together across the neuroscience, genetics, and psychiatry programs was understood here more than any other program I visited. In addition to the rich neuroscience faculty I could foresee as possible mentors, I also highly valued the strength of the Multiscale Biology Program directed by Eric Schadt and the strong team of computational biologists integrating industry and academic pursuits as resources for pushing the fields of genetic and genomic psychiatry.

At Mount Sinai, I felt the camaraderie of the residents, and the emphasis on support and collaboration and mutual respect that is invaluable for a workplace and a place to grow. The program encouraged nurturing of self-exploration through psychotherapy, which has contributed immensely to my growth as a psychiatrist and researcher alike. New York City itself also contributed to my choice because so many of the people who chose to live here are among the most motivated and determined people I know. My close friends from high school, local family, running group November Project, and the Mount Sinai community have all made this city the place I lovingly call home.

My Schedule and Professional Life

At the beginning of my first year, I was able to investigate working with different research mentors. Along with clinical rotations in the emergency room, the inpatient medical ward, and the inpatient psychiatric units, I was able to attend lab meetings and explore the wealth of neuroscience and technology talks and symposia at Mount Sinai. In my second year, I began half-time clinical outpatient work, allowing me to undertake graduate courses in neuroscience, biostatistics, and genetic/genomics. My interest in studying schizophrenia led me to begin my PhD work studying single cell RNA expression of human brain tissue in psychiatric disease focusing on schizophrenia, cognition, and psychosis. I am privileged to be mentored by Pamela Sklar, a world-renowned researcher, while also working closely with Panos Roussos and learning the steps in developing one's own lab. As a budding PhD-level researcher, I couldn't ask for a more tailored program. Additionally, I'm further inspired by Panos Roussos and Mercedes Perez-Rodriguez, both products of Mount Sinai's physician-scientist research track, and both superstar examples of the strong residents who come into the program and then continue as mentors.

As a current PGY-4, I spend my time recruiting patients, analyzing data, and learning how to code to manage the big data involved in genomics work. I have a panel of patients who I see on a weekly basis in our resident outpatient clinic and have the privilege of receiving supervision from Dr. Asher Simon who is also trained in psychotherapy, allowing me to provide services for my patients at a high standard as well as incorporate an understanding of neuroscience into my clinical practices. I have learned the importance of scheduling, goal setting, and not only how to be a physician-scientist, but also the immeasurable value of developing and maintaining close relationships with co-residents and mentors. Humility in science, clinical care, and learning about what drives my passion is what defines me today. Discovering patterns in myself, research, and my patients are what make this work fulfilling. I look forward to many more years (and there are many!) of growth, studying the brain on the level of single cells, and learning about what it means to rigorously dive into the science of the human mind.

Publications <u>during Residency</u>:

- Kunii Y, Zhang W, Xu Q, Hyde TM, **McFadden W**, Shin JH, Deep-Soboslay A, Ye T, Li C, Kleinman JE, Wang KH, Lipska BK. CHRNA7 and CHRFAM7A mRNAs: Co-Localized and Their Expression Levels Altered in the Postmortem Dorsolateral Prefrontal Cortex in Major Psychiatric Disorders. *Am J Psychiatry*. 2015 Jul 24.
- McFadden, W. C. et al. Assessment of genetic risk for distribution of total interstitial white matter neurons in dorsolateral prefrontal cortex: role in schizophrenia. Schizophr. Res. 176, 141–143 (2016).

Icahn School of Medicine at Mount Sinai

PGY-2

Amirhossein Modabbernia, MD (PhD candidate)

My Background

I was born and raised in the northernmost part of Iran, near the Caspian Sea, and finished high school in one of the schools affiliated with the National Organization for Development of Exceptional Talents in Iran. I then ranked 7th among more than 300,000 participants in the national entrance exam and entered Tehran University, the highest ranked university in Iran to study medicine. During my years as a medical student, I scored 1st in the country in both the basic and clinical sciences exams.

My father, a brilliant psychiatrist, was the one who ignited in me an interest (which later became a passion) in psychiatry. His incredible stories of mental illness and how he was able to ease the patients' excruciating pains were inspiring. During my clinical rotations, my interest in psychiatry increased exponentially, as I started to see the impact that our minds have on our everyday lives. Be it a patient with "medical illness" or "mental illness", the role that the brain was playing was enormous. I was fortunate to have the opportunity to work with several research centers at our university that were addressing various aspects of brain health. In the Digestive Disease Research Institute, I proposed my interest in assessing mental health in patients with chronic hepatitis, and my mentors were so supportive that they immediately provided me with the necessary instruments to begin my research, the result of which was several publications on mental health issues in these patients. My central focus, however, was my work at the Psychiatric Research Center that led to a number of studies looking at the efficacy of novel therapeutics for psychiatric disorders. I was particularly interested in the clinical evidence for inflammation in psychiatric disorders. Throughout those years, I constantly tried to hone my skills in clinical research methods, which were largely self-taught.

In subsequent years I continued to explore my interests in psychiatry, and in 2014 I was fortunate to join Avi Reichenberg's lab at Mount Sinai to work with big data in studying environmental risk factors for autism and schizophrenia. Avi, a brilliant scientist, has also been a wonderful mentor and friend and has been incredibly supportive of my research efforts. During that time, I was also mentored by Dr. Joseph Buxbaum, a world leader in autism research, and Dr. Dorothy Grice, a wonderful psychiatrist and world expert in OCD. Between 2014-2016 I was privileged to work with various large cohorts of people with autism and OCD and was also able to coauthor several publications on environmental risk factors for psychosis.

Why I Chose Mount Sinai

In 2016, I joined the psychiatric residency/PhD+ program at Mount Sinai to pursue my dream in becoming a psychiatrist and neuroscientist. There were many reasons why I chose Mount Sinai. Antonia New, Mercedes Perez, and Asher Simon (our program directors) have created an incredibly supportive and nurturing environment in which the residents can pursue whatever interests they have to the fullest while living a healthy life. My colleagues and classmates are all passionate and kind people with various clinical/research interests but they all share the same goal: to help our patients suffer less and live their lives to the fullest. Last but not least, Mount Sinai provides one of

the best research environments in the country for studying brain and behavior. Our Departments of Psychiatry and Neuroscience are led by world leaders in depression, psychosis, addiction, autism, and OCD. Our new Chairman Dr. Rene Kahn, a world leader in studying schizophrenia, is investing a lot in resident education through focusing on evidence-based psychiatry and growing clinical research opportunities for residents.

During my intern year, I was busy adjusting to the new environment and learning how to take good care of my patients. Nevertheless, I was able to contribute to several projects and managed to publish a few papers on environmental risk factors of psychiatric disorders. In the summer of my second year, I had two months of consultation liaison psychiatry where I was on full clinical duty. More recently I have started to attend PhD classes in systems neuroscience and advanced biostatistics as well as our weekly didactics for psychiatric residency, and the rest of the time, I am either in the lab or in the outpatient clinic. Oh! And I take calls too. It might sound a lot, but it is one of the most educationally stimulating experiences one could imagine! I have gradually come to narrow down my research interest to studying changes in brain connectivity in disorders with a neurodevelopmental basis, most importantly schizophrenia. In years to come, I am expecting to gain expertise in neuroimaging as well as data analysis to help me pursue my interest in studying schizophrenia.

Selected Publications:

1. Janecka M, Rijsdijk F, Rai D, **Modabbernia A**, Reichenberg A. Advantageous developmental outcomes of advancing paternal age. *Transl Psychiatry*. 2017 Jun 20;7(6):e1156.
2. Pakpour AH, **Modabbernia A**, Lin CY, Saffari M, Ahmadzad Asl M, Webb TL. Promoting medication adherence among patients with bipolar disorder: a multicenter randomized controlled trial of a multifaceted intervention. *Psychol Med*. 2017 Oct;47(14):2528-2539.
3. **Modabbernia A**, Velthorst E, Reichenberg A. Environmental risk factors for autism: an evidence-based review of systematic reviews and meta-analyses. *Mol Autism*. 2017 Mar 17;8:13.
4. Browne HA, **Modabbernia A**, Buxbaum JD, Hansen SN, Schendel DE, Parner ET, Reichenberg A, Grice DE. Prenatal Maternal Smoking and Increased Risk for Tourette Syndrome and Chronic Tic Disorders. *J Am Acad Child Adolesc Psychiatry*. 2016 Sep;55(9):784-91.
5. **Modabbernia A**, Velthorst E, Gennings C, De Haan L, Austin C, Sutterland A, Mollon J, Frangou S, Wright R, Arora M, Reichenberg A. Early-life metal exposure and schizophrenia: A proof-of-concept study using novel tooth-matrix biomarkers. *Eur Psychiatry*. 2016 Aug;36:1-6.
6. Pishnamazi M, Tafakhori A, Loloee S, **Modabbernia A**, Aghamollaii V, Bahrami B, Winston JS. Attentional bias towards and away from fearful faces is modulated by developmental amygdala damage. *Cortex*. 2016 Aug;81:24-34.
7. Taslimi S, **Modabbernia A**, Amin-Hanjani S, Barker FG 2nd, Macdonald RL. Natural history of cavernous malformation: Systematic review and meta-analysis of 25 studies. *Neurology*. 2016 May 24;86(21):1984-91.
8. **Modabbernia A**, Arora M, Reichenberg A. Environmental exposure to metals, neurodevelopment, and psychosis. *Curr Opin Pediatr*. 2016 Apr;28(2):243-9.
9. **Modabbernia A**, Mollon J, Boffetta P, Reichenberg A. Impaired Gas Exchange at Birth and Risk of Intellectual Disability and Autism: A Meta-analysis. *J Autism Dev Disord*. 2016 May;46(5):1847-59.
10. **Modabbernia A**, Yaghoubidoust M, Lin CY, Fridlund B, Michalak EE, Murray G, Pakpour AH. Quality of life in Iranian patients with bipolar disorder: a psychometric study of the Persian Brief Quality of Life in Bipolar Disorder (QoL.BD). *Qual Life Res*. 2016 Jul;25(7):1835-44.
11. Noruzzadeh R, **Modabbernia A**, Aghamollaii V, Ghaffarpour M, Harirchian MH, Salahi S, Nikbakht N, Noruzi N, Tafakhori A. Memantine for Prophylactic Treatment of Migraine Without Aura: A Randomized Double-Blind

Placebo-Controlled Study. *Headache*. 2016 Jan;56(1):95-103.

12. **Modabbernia A**, Heidari P, Soleimani R, Sobhani A, Roshan ZA, Taslimi S, Ashrafi M, Modabbernia MJ. Melatonin for prevention of metabolic side-effects of olanzapine in patients with first-episode schizophrenia: randomized double-blind placebo-controlled study. *J Psychiatr Res*. 2014 Jun;53:133-40.
13. **Modabbernia A,** Poustchi H, Malekzadeh R. Neuropsychiatric and psychosocial issues of patients with hepatitis C infection: a selective literature review. *Hepat Mon*. 2013 Jan;13(1):e8340.
14. **Modabbernia A**, Akhondzadeh S. Saffron, passionflower, valerian and sage for mental health. *Psychiatr Clin North Am*. 2013 Mar;36(1):85-91.
15. **Modabbernia A**, Taslimi S, Brietzke E, Ashrafi M. Cytokine alterations in bipolar disorder: a meta-analysis of 30 studies. Biol Psychiatry. 2013 Jul 1;74(1):15-25.
16. **Modabbernia A**, Ashrafi M, Malekzadeh R, Poustchi H. A review of psychosocial issues in patients with chronic hepatitis B. *Arch Iran Med*. 2013 Feb;16(2):114-22.
17. Taslimi S, Vahidi H, Pourvaziri A, **Modabbernia A**, Fallah AY, Yazdani N, Taslimi N, Hosseini M, Zarandi MM. Ondansetron in patients with tinnitus: randomized double-blind placebo-controlled study. *Eur Arch Otorhinolaryngol*. 2013 May;270(5):1635-41.
18. Kashani L, Omidvar T, Farazmand B, **Modabbernia A,** Ramzanzadeh F, Tehraninejad ES, Ashrafi M, Tabrizi M, Akhondzadeh S. Does pioglitazone improve depression through insulin-sensitization? Results of a randomized double-blind metformin-controlled trial in patients with polycystic ovarian syndrome and comorbid depression. *Psychoneuroendocrinology*. 2013 Jun;38(6):767-76.
19. Ashrafi M, **Modabbernia A**, Dalir M, Taslimi S, Karami M, Ostovaneh MR, Malekzadeh R, Poustchi H. Predictors of mental and physical health in non-cirrhotic patients with viral hepatitis: a case control study. *J Psychosom Res*. 2012 Sep;73(3):218-24.
20. Sepanjnia K, **Modabbernia A**, Ashrafi M, Modabbernia MJ, Akhondzadeh S. Pioglitazone adjunctive therapy for moderate-to-severe major depressive disorder: randomized double-blind placebo-controlled trial. *Neuropsychopharmacology*. 2012 Aug;37(9):2093-100.
21. Poorkaveh A, **Modabbernia A**, Ashrafi M, Taslimi S, Karami M, Dalir M, Estakhri A, Malekzadeh R, Pasha Sharifi H, Poustchi H. Validity, reliability and factor structure of Hepatitis B Quality of Life Questionnaire version 1.0: findings in a large sample of 320 patients. *Arch Iran Med*. 2012 May;15(5):290-7. doi: 012155/AIM.009. PubMed PMID: 22519378.
22. Abbasi SH, Hosseini F, **Modabbernia A**, Ashrafi M, Akhondzadeh S. Effect of celecoxib add-on treatment on symptoms and serum IL-6 concentrations in patients with major depressive disorder: randomized double-blind placebo-controlled study. *J Affect Disord*. 2012 Dec 10;141(2-3):308-14.
23. Harirchian MH, Tekieh AH, **Modabbernia A,** Aghamollaii V, Tafakhori A, Ghaffarpour M, Sahraian MA, Naji M, Yazdankhah M. Serum and CSF PDGF-AA and FGF-2 in relapsing-remitting multiple sclerosis: a case-control study. *Eur J Neurol*. 2012 Feb;19(2):241-7.
24. **Modabbernia A**, Ashrafi M, Keyvani H, Taslimi S, Poorkaveh A, Merat S, Poustchi H, Malekzadeh R. Brain-derived neurotrophic factor predicts physical health in untreated patients with hepatitis C. *Biol Psychiatry*. 2011 Sep 1;70(5):e31-2.
25. **Modabbernia A**, Ashrafi M, Modabbernia MJ. Let's try erythropoietin in Alzheimer's disease. *Med Hypotheses*. 2010 Aug;75(2):270-1.

Icahn School of Medicine at Mount Sinai

PGY-1

Lauren Lepow, MD (PhD candidate)

My Background

Always yearning to solve the mysteries of the brain, my first real exposure to the clinical neurosciences was in high school when I began an apprenticeship with Dr. Paul Schulz, a neuropsychiatrist. Sometimes taking years and having to invent his own tools to gain some understanding of his patients' illnesses, Dr. Schulz worked across research approaches such as neuroimaging, basic science, and clinical scales to probe the brain for clues. I studied the cognitive effects of ALS as my eyes were being opened to the world of research.

Studying neuroscience and behavior for my undergraduate degree at Columbia University, this passion to understand the mechanics of the mind and brain pulled me in many directions as I found myself asking questions that landed me in diverse settings. I spent much of my time at the New York Presbyterian neurosurgery department in the lab of Dr. Guy McKhann watching and learning about DBS for Parkinson's and OCD as well as administering cognitive tasks to patients with Normal Pressure Hydrocephalus for a large clinical trial. I also conducted my own pilot study in the lab of Frances Champagne at Columbia where I measured oxytocin receptor density in the brains of pregnant rats who were chronically stressed. I was drawn to theatre as a study of human behavior and produced musicals and experimental novel theatre at Columbia and in New York.

When I returned to my family and Dr. Schulz to attend the University of Texas medical school in Houston, I found my community with the Student Interest Group in Neurology and Psychiatry, a combined group of which I eventually became president. In Dr. Schulz' lab I worked on the early stages of developing Plasma Exchange for treatment of Alzheimer's disease. I was reluctant to limit myself to one of the two fields, but then as the chair of the department Dr. Jair Soares introduced me to other biologically-minded psychiatrists at the Society of Biological Psychiatry meeting, there was no turning back. I spent the summer at the NIMH in the Experimental Therapeutics & Pathophysiology Branch studying the mechanism of ketamine for treatment-resistant depression with Dr. Carlos Zarate and Dr. Lawrence Park. Eager to explore, at the end of medical school I had the opportunity to see the process of developing a novel treatment for PTSD in Cornell's Program for Anxiety and Traumatic Stress.

Why I Chose Mount Sinai

I knew that eventually I would need to set aside time to immerse myself in the rigorous work of a neuroscientist, but also that the only way to focus my diverse interests into research questions was to meet the patients and to realize which paths might translate to clinical solutions. Having never taken time off from schooling, I had previously thought my dedicated research time would come in the form of a fellowship or that I would have to forge my own trail to get the experience I needed. This program is unique in that it allows for in-depth exploration of both the complexity of the human experience and the biology of the mind. Of course, I was also drawn to Mount Sinai's renowned translational research. So far in my first year, the people I have met at Mount Sinai are brilliant, well-rounded, approachable, and enthusiastic to share their academic passions. Every PI I have reached out to has already made the time to include me in lab meetings and projects. At every corner, I have found incredible research taking place.

The biggest challenge will be deciding how to spend the next 6.5 years taking full advantage of it all!

Selected Publications:

- Lepow L, Luckenbaugh DA, Park L, Henter ID, Zarate CA, Case series: Antidepressant effects of low-affinity and low-trapping NMDA receptor antagonists did not predict response to ketamine in seven subjects. *Journal of Psychiatric Research*, Volume 86, 2017, Pages 55-57.
- Lepow L, Van Sweringen J, Strutt AM, Jawaid A, MacAdam C, Harati Y, Schulz PE, York MK. Frontal and temporal lobe involvement on verbal fluency measures in amyotrophic lateral sclerosis. *Journal of clinical and experimental neuropsychology*. 2010, Nov; 32(9): 913-22. PMID: 20390792.
- Lepow LA, Younes K, Estrada E, Schulz P. (May, 2016). Neuropsychiatric Presentation of a Paraneoplastic Syndrome. Poster at Society of Biological Psychiatry; Atlanta, GA, USA.
- Lepow LA, Kim U, Schulz PE. (December, 2015). Developing Plasma Exchange as a Therapy for Alzheimer's Disease. Poster at 22nd Annual Neuroscience Poster Session, Baylor College of Medicine/UTHealth/Rice; Houston, TX, USA.
- Lepow LA, Lee M, Silverman DA. (December, 2015). Ornithine Transcarbamylase Deficiency, Late Onset. Pediatric Neurology Grand Rounds, McGovern Medical School; Houston, TX, USA.