

MALTZ PRIZE

FOR INNOVATIVE & PROMISING SCHIZOPHRENIA RESEARCH



Guillermo Horga, M.D., Ph.D.

Assistant Professor of Clinical Psychiatry
New York State Psychiatric Institute,
Columbia University Medical Center

“Receiving the 2018 Brain & Behavior Research Foundation Maltz Prize for Innovative and Promising Schizophrenia Research is a great honor for me. BBRF provides critical support to develop innovative and risky projects, which I believe are absolutely essential for advancing our understanding of mental illness. This support is particularly important for junior investigators to launch their research programs and push the field forward. In my case, the Maltz Prize represents an immensely gratifying validation of my research trajectory and provides me with invaluable support to continue my research into the neurocomputational mechanisms of psychosis.”

Guillermo Horga, M.D., Ph.D., is an Assistant Professor of Clinical Psychiatry at the New York State Psychiatric Institute, Columbia University Medical Center. He received his M.D. degree from Miguel Hernandez University, Spain, and his Ph.D. in experimental neuroscience from the University of Barcelona, Spain. Following his residency training in Psychiatry, Dr. Horga completed a Postdoctoral Research Fellowship at Columbia University. He worked in the Division of Translational Imaging under the mentorship of Dr. Anissa Abi-Dargham, M.D., before starting his own laboratory in 2016.

Dr. Horga’s research focuses on the neurobiological and computational mechanisms of psychotic symptoms in schizophrenia and of related cognitive functions in health, including sensory and reward-based learning and decision-making. To understand these neural mechanisms, he uses behavioral paradigms and computational tools in combination with a variety of functional, structural, and molecular in vivo neuroimaging techniques—mainly functional Magnetic Resonance Imaging [fMRI] and Positron

Emission Tomography [PET]—in healthy humans and patients with psychotic disorders.

His early research showed that voice-sensitive regions of the auditory cortex have increased activity while patients experience auditory hallucinations. This increase in neural activity was further associated with abnormal learning signals, suggesting that a learning dysfunction could lead to faulty sensory attenuation and hallucinatory percepts. Dr. Horga’s research has also uncovered that abnormal functional connectivity between the striatum and associative cortical regions, including parts of the auditory cortex, relate to psychosis and to dopamine receptor density.

His current projects aim at describing the relationships between dopamine abnormalities and downstream cortical dysfunctions associated with specific symptoms of psychosis and to formalize these mechanisms in a computational model of psychosis. He also seeks to develop neuroimaging biomarkers that can be used to predict clinically relevant outcomes and guide clinical decision-making.

“The work of Dr. Horga is mechanistic and rigorous, bringing together multiple technologies to address important and clinically relevant questions. I have no doubt that he will have a major impact on the field in the coming few years.”

—Anissa Abi-Dargham, M.D., 2018 recipient of the Lieber Prize