In the past years, alterations in the gut microbiome have been associated with different neuropsychiatric disorders, including drug use and substance use disorders (SUDs). However, determining whether these microbiome changes cause, enhance, or are the consequences of these disorders remains a challenge in the field. During this seminar Dr. Cuesta will present data showing a mechanistically defined relation between drug exposure, gut microbiota composition, and vulnerability to develop SUDs. Drug use and SUDs affect more than 27 million people in the United States, and yet, no successful evidence-based treatments have been developed. Dr. Cuesta's results introduce the possibility of manipulating intestinal bacteria as potential signaling nodes that can be used to impact the course of psychiatric diseases.