

WEBINARS

Webinar: Michael Platt discusses monkey models for autism

BY CLAIRE CAMERON

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Here's how Platt describes what he will discuss in this webinar:

Recent studies have identified convincing genetic contributions to autism. Yet our ability to

determine the genetic causes of any human condition in mouse models is limited by the behavioral and neural circuitry differences between people and mice. To address this gap, we employ an integrated approach in which we characterize the genetic, epigenetic and neural causes and consequences of variation in social behavior in free-ranging rhesus macaques. In parallel, we determine the neural mechanisms that mediate human-relevant social behaviors. We then leverage this macaque model to evaluate potential therapies, including oxytocin and transcranial magnetic stimulation, for social impairments in autism.

In this webinar, I will describe the current state of these efforts. We have built upon our prior work demonstrating conservation of complex human social behaviors, including visually guided social reward, joint attention, empathy and strategic decision-making in rhesus macaques. We have also shown heritable variation in some of these behaviors, and have determined the neurobiological basis of these behaviors, which we have found to be sensitive to oxytocin.

I will conclude with our plan to map the gene-regulatory landscape in brain areas implicated in social behavior in hundreds of free-ranging macaques, using high-throughput sequencing. The goal is to identify gene-regulatory signatures that co-vary with social and cognitive abilities, as well as receptor densities within, and structural connectivity between, these key brain areas. This integrative approach offers new potential for understanding the genetic and environmental contributions to human-relevant social phenotypes at the molecular, structural and functional levels.