

Neural Mechanisms of Sociability

May 3

Tuesday, 12:30pm

Online Webinar

For Researchers



Speaker:

Robert C. Malenka, M.D., Ph.D.

*Director, Nancy Pritzker Laboratory,
Dept. of Psychiatry and Behavioral
Sciences*

*Deputy Director, Wu Tsai
Neurosciences Institute
Stanford University*

Host: Rajiv R. Ratan, M.D., Ph.D.

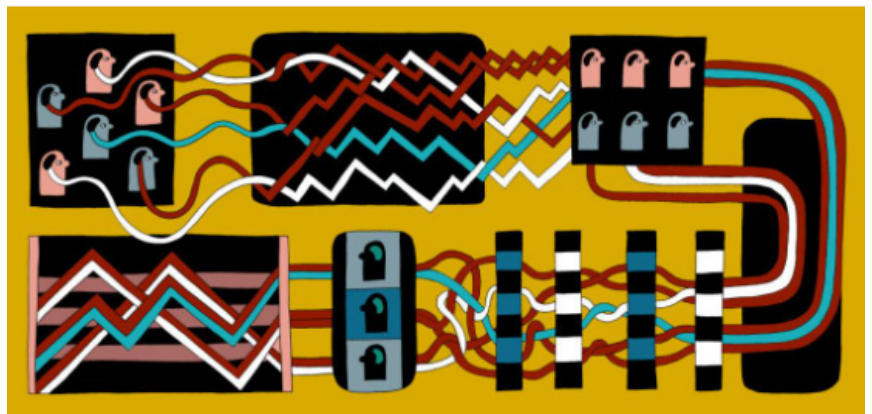
For more information contact

Darlene White

daw9085@med.cornell.edu

Abstract

Positive prosocial interactions contribute to the development and maintenance of a range of adaptive, cooperative behaviors. Conversely, inability to participate in normal social interactions is a debilitating symptom of several prominent neuropsychiatric disorders. Although the role of neuromodulators in social behaviors is an active area of investigation, relatively little is known about the detailed neural mechanisms that influence sociability. This talk will review evidence that release of serotonin in the nucleus accumbens plays a critical role in promoting sociability. Deficits in the action of serotonin in the nucleus accumbens may contribute to sociability deficits in mouse models of autism spectrum disorder (ASD). Consistent with this hypothesis, administration of specific serotonin receptor agonists can rescue sociability deficits in several ASD mouse models and administration of MDMA enhances sociability in mice due to its serotonin-releasing properties in the nucleus accumbens.



1. Heifets BD, Salgado JS, Taylor MD, Hoerbelt P, Cardozo Pinto DF, Steinberg EE, Walsh JJ, Sze JY, Malenka RC. **Distinct neural mechanisms for the prosocial and rewarding properties of MDMA.** *Sci Transl Med.* 2019 Dec 11;11(522):eaaw6435. doi: 10.1126/scitranslmed.aba0000
2. Walsh JJ, Christoffel DJ, Heifets BD, Ben-Dor GA, Selimbeyoglu A, Hung LW, Deisseroth K, Malenka RC. **5-HT release in nucleus accumbens rescues social deficits in mouse autism model.** *Nature.* 2018 Aug;560(7720):589-594. doi: 10.1038/s41586-018-0300-1
3. Walsh JJ, Llorach P, Cardozo Pinto DF, Wenderski W, Christoffel DJ, Salgado JS, Heifets BD, Crabtree GR, Malenka RC. **Systemic enhancement of serotonin signaling reverses social deficits in multiple mouse models for ASD.** *Neuropsychopharmacology.* 2021 Oct;46(11):2000-2010. doi: 10.1038/s41586-021-0300-1

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