ELSC Seminar: Yonatan Kupchik

November 26, 2015

On the topic of "Novel insights into the roles of different nucleus accumbens projection neurons in addiction"

ELSC cordially invite you

to the lecture given by:

Yonatan Kupchik
Department of Medical Neurobiology, IMRIC ,The Hebrew University of Jerusalem

On the topic of

"Novel insights into the roles of different nucleus accumbens projection neurons in addiction"

The lecture will be held on Thursday, November 26, 2015
at 17:00, at ELSC: Silverman Bldg., 3rd Wing, 6th Floor, Edmond J. Safra Campus

Light refreshments at 16:45

Abstract:

Motivational and addictive behaviors are governed by two parallel circuits of the nucleus accumbens (NAc). Canonical thinking asserts that the two circuits (the direct and indirect pathways) originate in two separate groups of NAc medium spiny neurons (MSNs) ? those that express the D1 dopamine receptor (D1-MSNs) and those that express the D2 dopamine receptor (D2-MSNs). However, despite the seemingly simple circuitry, the role of each pathway in addiction and its cellular composition remain poorly understood. Combining optogenetic and electrophysiological tools with an animal model of relapse to cocaine we found drug-induced synaptic plasticity in the NAc and revealed a surprising role for each pathway in relapse. Even more surprisingly, using functional circuitry mapping tools we discovered that in contrast to canonical thinking the direct and indirect pathways of the NAc are not segregated to different cell types and that in fact the NAc pathways governing addictive and motivational behaviors are far more complex than previously assumed. Collectively, our findings shed new light on the neural mechanisms of addiction and call for a revision of current concepts in the field.
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