The Logic and Foundations of Synaptic Plasticity

ELSC and The Silberman Institute of Life Sciences cordially invites you to a special seminar given by:

Dr. Ithai Rabinowitch

Fred Hutchinson Cancer Research Center, Seattle, USA

On the topic of:

?The Logic and Foundations of Synaptic Plasticity?

The lecture will be held on Sunday, January 22, at 16:00

at the Faculty Club in the Silberman Building,

Edmond J. Safra Campus

Light refreshments at 15:45

Abstract:

Synaptic plasticity enables the brain to continuously adjust to a dynamic environment. This is done through a host of molecular mechanisms that modify individual synaptic connections between neurons. How do such local changes in connectivity impact the global performance of the entire system; how can they properly accommodate an enormous diversity of possible changes in the environment; and how do they co-exist? To address these questions, I have examined both natural and artificial synaptic modifications in the microscopic worm C. elegans, as a platform for observing system-wide effects of individual synaptic changes and as a window into the origins of plasticity. Results of these studies link discrete synaptic modifications with beneficial behavioral outcomes, but also expose certain limitations of synaptic plasticity,
indicating potential avenues for artificial manipulation of connectivity beyond the natural rules of plasticity.

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