

Functional MRI Laboratory Speaker Series

When: Tuesday, March 25, 3:30 – 5:00

Where: East Hall, Room 4464

Speaker: Daphna Shohamy, Ph.D.

Assistant Professor, Department of Psychology
Columbia University

**Presentation Title: “How Different Forms of Memory
Guide Decisions and Actions”**

ABSTRACT

A longstanding question, at the nexus of cognition and neuroscience, concerns the distribution of the labor of learning across different brain systems: “What are the different ways in which the brain learns?”

Recent research has focused on the role of the striatum and midbrain dopamine regions in habitual learning of stimulus-reward associations. However, emerging evidence suggests that the hippocampus – widely known for its role in building flexible memories – is also modulated by reward and innervated by dopamine. This raises new hypotheses about the role of the hippocampus in learning, the unique contributions of the hippocampus and the striatum, and the nature of the relationship between them.

During this talk Dr. Shohamy will present studies that address these hypotheses using an integrative approach that combines functional magnetic resonance imaging (fMRI) in healthy individuals with studies of learning in patients with selective damage to the striatum or the hippocampus. Converging data from these approaches suggests that both the striatum and the hippocampus contribute to learning, with distinct implications for how learned information guides decisions.