Title: Memory and the statistical structure of the world
When: Monday, October 20, 2014 from 3pm – 4pm
Where: Paige Hall, Terrace Room

Abstract: When do we modify old memories, and when do we create new ones? I propose that this question is fundamentally linked to our inferences about the latent structure of the world: we create new memories when we infer that our observations are generated by unfamiliar latent causes. I present a computational theory of latent causal inference, and discuss how this viewpoint has wide-ranging implications for how we understand classic learning phenomena, such as Pavlovian conditioning and episodic memory. New experiments with rats and humans confirm some of the predictions of this theory. The link between memory and latent structure may potentially reshape how we think about "disorders of pathological memory" such as PTSD and addiction.

Bio: Sam Gershman received his B.A. in Neuroscience and Behavior from Columbia University and his Ph.D. in Psychology and Neuroscience from Princeton University. He is currently a postdoctoral fellow in the Department of Brain and Cognitive Sciences at MIT. In July 2015, he will start as an Assistant Professor in the Department of Psychology and Center for Brain Science at Harvard. His research focuses on the role of statistical inference in learning and memory, using a combination of mathematical models and experiments in humans and animals.