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Subject: EM: Neuroscience Speaker Series: Anubhuti Goel

From: Tom Borowski

NEUROSCIENCE SPEAKER SERIES



Dr. Anubhuti Goel

**Department of Psychology
University of California, Riverside**

Neural mechanisms of overcoming distractors

Tuesday, February 13th

4:30 PM

**Burns Lecture Hall (RM B31)
Keck Science Center**

Abstract: Performing a goal driven task requires selective attention to task-relevant stimuli while ignoring distractions: for example, focusing on a conversation without being distracted by construction noise or other irrelevant stimuli. An inability to selectively attend to stimuli can result in learning difficulties, and sensory issues often associated with Autism Spectrum Disorder, Fragile X Syndrome (FXS) and Attention Deficit Disorder. Our research focuses on examining the excitatory and inhibitory dynamics that allow neural circuits to discriminate between sensory stimuli and ignore distractions in a goal driven task. Insights from neurotypical circuits shed light on the dysfunctional dynamics in the context of sensory issues in FXS. Using a diverse set of tools, our research underscores the role of vasoactive intestinal peptide (VIP), Parvalbumin and Pyramidal neurons in mediating learning and overcoming distractors in a visual discrimination task, in a mouse model of FXS. Further I will highlight the deficiencies in intra-cortical dynamics that contribute to distractor susceptibility. To highlight the translational component of our findings I will provide compelling evidence for similar deficits in sensory atypicalities in mice and humans with FXS.