Perceptual learning (PL) refers to long-term performance improvement on a visual task. We have found that PL results from interactions between reinforcement and bottom-up signals from an exposed feature, irrespective of whether the feature is task-relevant or task-irrelevant (Watanabe et al., *Nature*, 2001; Watanabe et al., 2002, *Nature Neuroscience*; Seitz & Watanabe, *Nature*, 2003; Shibata et al., 2011, *Science*). We also found that PL is determined by inhibitory control (Tsushima et al., 2006, *Science*; Chang et al., 2014, *Current Biol*). That is, low-level visual plasticity is determined by high-level factors (Watanabe & Sasaki, 2015, *Ann Rev Psychol*).

**Dr. Takeo Watanabe**
Department of Cognitive, Linguistic and Psychological Sciences, Brown University

**Date:** Friday, December 21, 2018  
**Time:** 12:15 – 13:00  
**Venue:** 1F Auditorium, IIIS Building