Neurobiology 204: Neurophysiology of Central Circuits

Week 6 (March 4 & 9) Attention

This lecture will cover how the responses of sensory neurons change when a subject directs attention toward or away from the stimulus that drives those responses. The activity of most sensory neurons is modulated by attention, and understanding those changes is important for establishing a link between neuronal activity and perception. We will consider experiments and computational studies that have considered how attention affects the sensitivity, selectivity and reliability of sensory responses. Some forms of attentional modulation closely follow the effects that you have encountered in sensory adaptation.

The discussion will consider the following paper:

Mitchell JF, Sundberg KA, Reynolds JH (2007) Differential attention-dependent response modulation across cell classes in macaque visual area V4. *Neuron*, **55**:131–141.

Your assignment is to write a commentary on this paper, which is the first to examine whether attention has different effects on cell classes that can be distinguished by the width of their action potentials.