



Neurotheory Forum

[Online] Circuit mechanisms underlying the dynamic control of cortical processing by subcortical neuromodulators

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Host: Tim Vogels

Behavioral states such as arousal and attention can have profound effects on sensory processing, determining how – sometimes whether – a stimulus is processed. This state-dependence is believed to arise, at least in part, as a result of inputs to cortex from subcortical structures that release neuromodulators such as acetylcholine, noradrenaline, and serotonin, often non-synaptically. The mechanisms that underlie the interaction between these “wireless” non-synaptic signals and the “wired” cortical circuit are not well understood. Furthermore, neuromodulatory signaling is traditionally considered broad in its impact across cortex (within a species) and consistent in its form and function across species (at least in mammals). The work I will present approaches the challenge of understanding neuromodulatory action in the cortex from a number of angles: anatomy, physiology, pharmacology, and chemistry. The overarching goal of our effort is to elucidate the mechanisms behind local neuromodulation in the cortex of non-human primates, and to reveal differences in structure and function across cortical model systems.

Friday, October 23, 2020 03:00pm - 04:00pm

Online



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