



Seeing with Feeling: Changes in Local and Network Brain Dynamics During Emotional Learning

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8:30-9:30am

Biotechnology Building BI 2221 (ITC Conference Room)

Humans inhabit rich visual environments with continuously changing patterns of stimulation. Some estimates suggest that information transmission through the optic nerve reaches approximately 10^7 bits per second – a quantity that rivals an Ethernet-type connection. The combination of high throughput sensory traffic and limited capacity buffers for analysis and control has resulted in the evolution of selective attention mechanisms as one solution for the constraint of massive afferent input. In natural environments, objects that predict potential danger or reward readily capture our attention and evoke more robust responses in sensory regions. This talk will focus on how simple stimuli that have acquired emotional relevance through aversive conditioning come to be prioritized in human visual cortex. This series of experiments exploits the fact that the visual cortex of mammals can be entrained by rhythmic stimulation in order to track fluctuations of neuronal population activity. In the first part of the talk I will summarize findings indicating that conditioned danger symbols become selectively amplified within the visual system. In the second part, I will review evidence related to large-scale cortical network re-organization inferred from measures of EEG-based functional connectivity. The results suggest considerable potential for experience-dependent modification of the visual brain.

Dr. Miskovic is an Assistant Professor of Psychology. He recently joined Binghamton University in January 2014. His research interests include affective neuroscience, emotion-cognition interactions, aversive conditioning, fear and anxiety.

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