CASBBI SEMINAR

GEORGE MASON UNIVERSITY | Center for Adaptive Systems of Brain-Body Interactions

Dissociable and overlapping mechanisms for time and space perception

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Time and space are vital dimensions for accurate navigation. However, whether these two dimensions are processed independently is still being debated. In this talk, I will discuss a series of experiments demonstrating separate yet partially overlapping networks for temporal and spatial processing. First, I will present meta-analytic results suggesting that temporal and spatial processing are largely separated along anterior/posterior and cortical/sub-cortical dimensions. Second, I will present EEG data recorded while subjects reproduced distances and durations in a virtual-reality environment, demonstrating separable oscillatory frequency bands (beta for time, theta for space) when attending to either dimension. Lastly, I will show fMRI data during the same task, in which the attended task dimension can be decoded from voxelwise patterns in separate regions. Altogether, these results will argue for separable neural axes in which the brain situates itself in space and time for planning actions.

Biography: Dr. Wiener is an Assistant Professor of Psychology at GMU. He received his PhD in Psychology from the University of Pennsylvania. He has experience with fMRI, EEG, brain stimulation (TMS, tES), and computational modeling of behavior. His work is primarily interested in time perception, but also extends into spatial processing and movement.

Friday, October 11th @ 1:00 p.m.
Krasnow Institute, Room 229