UNIVERSITY OF South Carolina

Institute for Mind and Brain Colloquium Series
Invited Speaker

Dr. Darrell Worthy
Associate Professor
Department of Psychology
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"Neural and Computational Representations of Gain-Loss Frequency in Older and Younger Adults"

Abstract: Research on the biological basis of reinforcement learning has focused on how brain regions track average reward. However, recent work suggests that humans are more attuned to reward frequency. This raises the question of whether brain regions like the medial and lateral prefrontal cortex that are assumed to be sensitive to average reward may also or instead track reward frequency. To test this, we scanned older and younger adults while performing the Soochow Gambling task, which separates reward frequency from average reward. Overall, participants preferred the sub-optimal decks that resulted in negative net payoffs, but provided frequent gains. Older adults improved less over time, and were more reactive to recent negative outcomes. Older adults showed greater frequency-related activation in several regions, including lateral PFC. In addition, we found broader recruitment of prefrontal and parietal regions in older adults than in younger adults, which may indicate compensatory activation in older adults.

March 2, 2021 @ 3:30pm – 5:00pm
Institute for Mind and Brain Sponsored Zoom Meeting:
https://us02web.zoom.us/j/88044128414?pwd=QlFyN1lqbWNibXBRNEVSeVREZE5UZz09
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