



Apr 14th, 10:00 AM - 11:00 AM

# Frontal Midline Theta as an Index of Emotional Modulation in Working Memory

Sean O'Bryan

*Illinois Wesleyan University*

Joseph Williams, Faculty Advisor

*Illinois Wesleyan University*

Follow this and additional works at: <http://digitalcommons.iwu.edu/jwprc>

 Part of the [Psychology Commons](#)

O'Bryan, Sean and Williams, Faculty Advisor, Joseph, "Frontal Midline Theta as an Index of Emotional Modulation in Working Memory" (2012). *John Wesley Powell Student Research Conference*. 1.  
<http://digitalcommons.iwu.edu/jwprc/2012/oralpres3/1>

This Event is brought to you for free and open access by The Ames Library, the Andrew W. Mellon Center for Curricular and Faculty Development, the Office of the Provost and the Office of the President. It has been accepted for inclusion in Digital Commons @ IWU by the faculty at Illinois Wesleyan University. For more information, please contact [digitalcommons@iwu.edu](mailto:digitalcommons@iwu.edu).

©Copyright is owned by the author of this document.

Oral Presentation O3.1

**FRONTAL MIDLINE THETA AS AN INDEX OF EMOTIONAL MODULATION  
IN WORKING MEMORY**

Sean O'Bryan and Joseph Williams\*  
Psychology Department, Illinois Wesleyan University

While the influence of emotion on long-term memory processes is well-understood, it remains unclear whether the presence of emotional information improves or diminishes working memory (WM) performance. Emotional stimuli may in fact enhance WM by activating attentional systems in the brain. Electrophysiological investigations have determined that brain areas associated with memory and emotion interact via a phenomenon known as the theta rhythm. As a common correlate of both WM and emotional processing in the frontal lobe, the theta rhythm may serve as a promising neurophysiological link between these cognitive processes. The present study utilized a WM task with dot arrays while electrical activity in the brain was recorded with an electroencephalograph (EEG). Face stimuli (positive, negative, and neutral affective faces) were incorporated throughout the memory task to determine the effects of emotion on both the theta rhythm and working memory performance.