REPPERGER RESEARCH INTERN PROGRAM

RESEARCH PROJECT #: AFRL-RHB-24-02

Optimized Warfighter Decision Making

PROJECT DESCRIPTION: The aim of the Optimized Warfighter Decision Making program is to uncover patterns associated with optimal decision making performance. Data will be collected through a combination of neural (e.g., EEG, fNIRS), peripherial (e.g., eye tracking), behavioral, and physiological sensors. The multimodal data will be fused and subsequently analyzed using sophisticated machine learning techniques to derive actionable insights about an individual's decision making progress and quality. Depending on the student intern's interests, there will be an opportunity to experience aspects of cognitive neuroscience experiment development, data collection, data analysis and visualization, neural and physiological sensor testing and development, multi-sensor data fusion, and algorithm development. Experience with MATLAB, Python, or R may be necessary depending on the student's interests.

ACADEMIC LEVEL: Undergraduate; Masters; Doctoral

DISCIPLINE NEEDED:
- Neuroscience
- Cognitive Neuroscience

RESEARCH LOCATION: Wright-Patterson Air Force Base, Dayton, Ohio

RESEARCH MENTOR: William Aue, PhD
Experimental Psychology, Syracuse University, 2014

Dr. William Aue is a Research Psychologist in the Cognitive Neuroscience Section within the 711th Human Performance Wing at the Air Force Research Laboratory. His research is focused on the development of neurotechnology-enabled solutions to sense, assess and augment warfighter cognitive performance. His projects include an evaluation of commercial brain-machine interface devices for potential Air Force applications and the development of approaches for monitoring and augmenting warfighter decision making.