

REPPERGER RESEARCH INTERN PROGRAM

RESEARCH PROJECT #: AFRL-RHW-25-05

Cognitive and Human Factors Aspects of Space Object Observation

PROJECT DESCRIPTION: Space-based activities in commercial, civil, and military sectors across the globe are rapidly increasing in frequency and importance. Key to tracking and understanding these activities is the observation of objects in space, through the use of telescopes across the electromagnetic spectrum (e.g., optical or radio frequency data). The successful use of varying types of telescopes is driven by skilled telescope operators, scientists, and engineers who demonstrate and advance capabilities for observing space objects. Thus, studying the knowledge of domain experts in telescope use provides opportunities for advancing education and training relevant to space situational awareness. This supports the use of space for numerous commercial, civil, and national security purposes. For this project, the intern will investigate the cognitive and human factors aspects of telescope use for space object observation.

LEARNING OBJECTIVE: All participants will gain experience with scientific writing for the behavioral sciences, literature review and research planning activities, as well as an understanding of cognitive factors for telescope use. Depending on participant interest and project scope, participants may gain experience with expert knowledge elicitation or experimental design and data analysis.

ACADEMIC LEVEL: Undergraduate; Masters; Doctoral

DISCIPLINE NEEDED:

- Cognitive Science
- Human Factors
- Psychology
- Astronomy

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

RESEARCH MENTOR: Erin N. McCormick, Ph.D.
Decision Science, Psychology, Carnegie Mellon University, 2021



Dr. Erin McCormick is a Research Psychologist in the 711th Human Performance Wing of the Air Force Research Laboratory. She earned her PhD in Behavioral Decision Research, from Carnegie Mellon University in 2021. Her current work at AFRL focuses on improving how human-machine teams learn and train, through developing educational capabilities, cognitive models, and conducting experiments relevant to human-machine teams.