

Interaction between Cognitive and Physical Fatigue

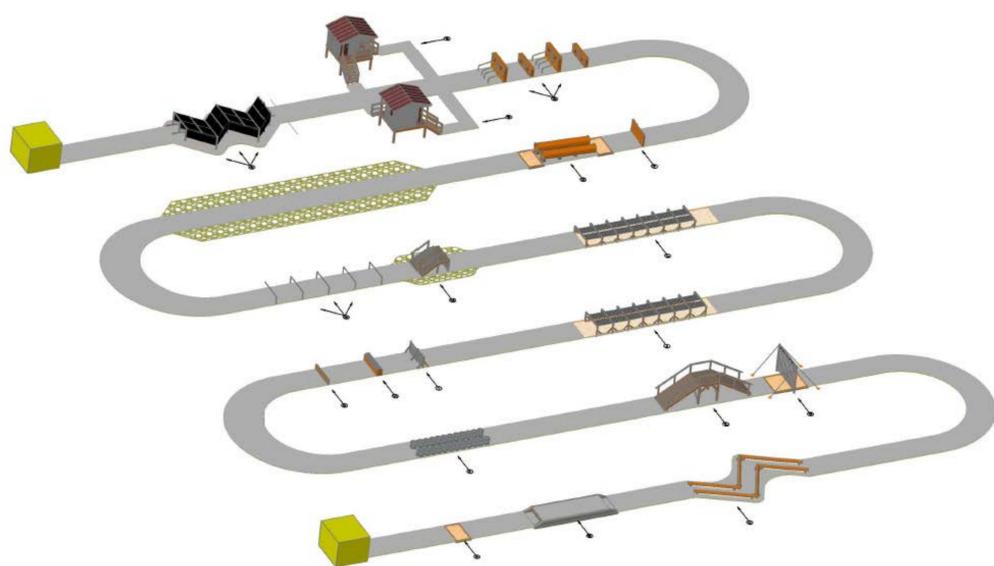


S&T Campaign: Human Sciences
Human Behavior

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Research Objective

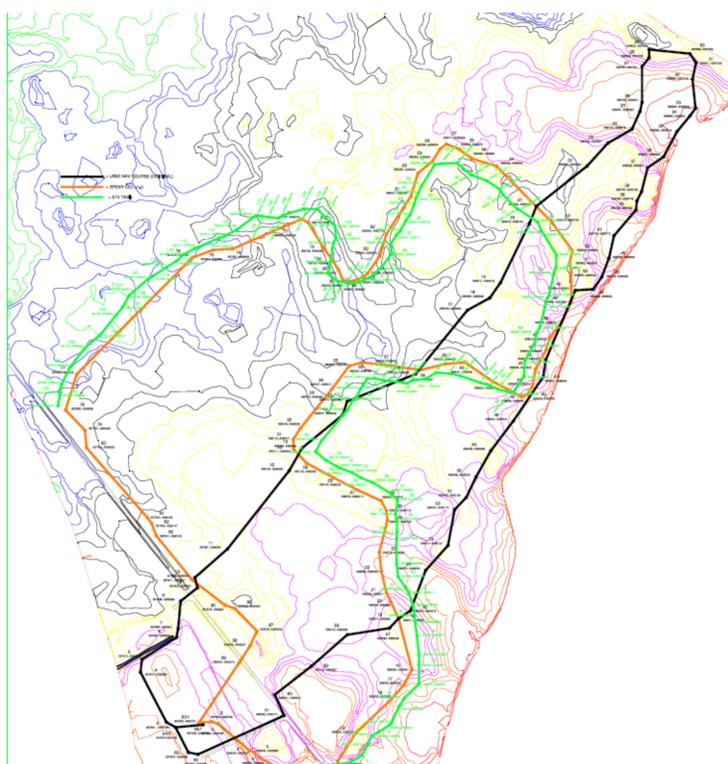
- Investigate the interaction between cognitive and physical fatigue on task performance
- Understand the role of response inhibition in marksmanship performance
- Quantify physical and cognitive fatigue



Obstacle course

Challenges

- Objectively quantifying physical and cognitive fatigue
- Understanding how cognitive fatigue influences physical fatigue and task performance
- Operationally relevant stimuli
- Procurement of Soldiers



Cross country course

ARL Facilities and Capabilities Available to Support Collaborative Research

- Soldier Performance and Equipment Advanced Research (SPEAR) at APG, MD
 - Instrumented treadmill
 - Motion capture
- M-range (outdoor shooting range) at APG, MD
 - Computer –driven targets
 - Accuracy and response time
- Command, Control, Communications, Intelligence, Surveillance, and Reconnaissance Lab (C4ISR) at APG, MD
 - 8 whisper rooms
 - Networked
- Obstacle course
 - Time gate measures
 - Operationally relevant tasks
- Networked cross country course
 - Wifi enabled
 - Pop up targets
- ARL expertise
 - Physiological performance
 - Human Factors
 - Biomechanical measures
 - Shooting performance
 - Vigilance and response inhibition

Complementary Expertise/ Facilities/ Capabilities Sought in Collaboration

- Subject matter (military) experts
- Innovative physiological techniques for objectively measuring workload
- Advanced statistical analysis (e.g., mixed modeling)
- Suggestions for innovative new research approaches to address stated research objectives



M-range