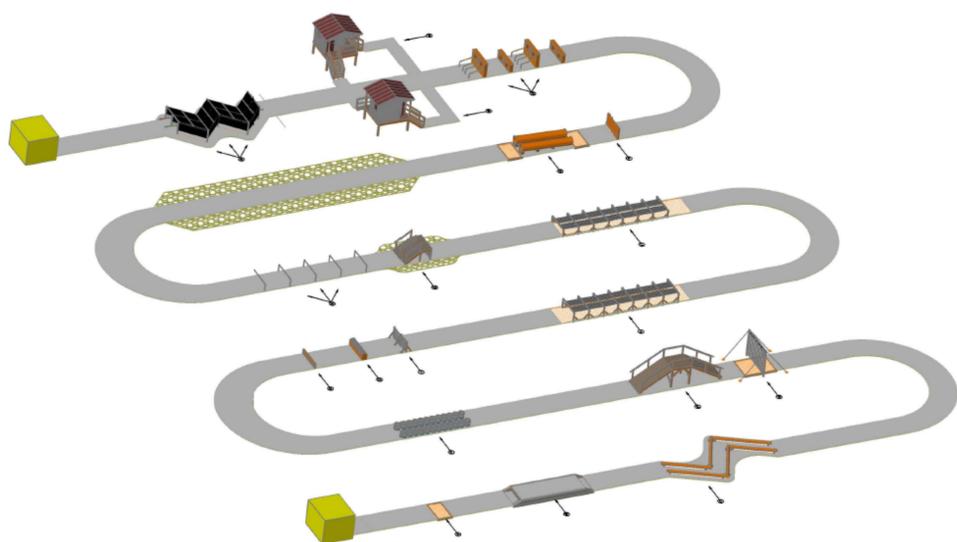


S&T Campaign: Human Sciences
Human Behavior
Real World Behavior

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Research Objective

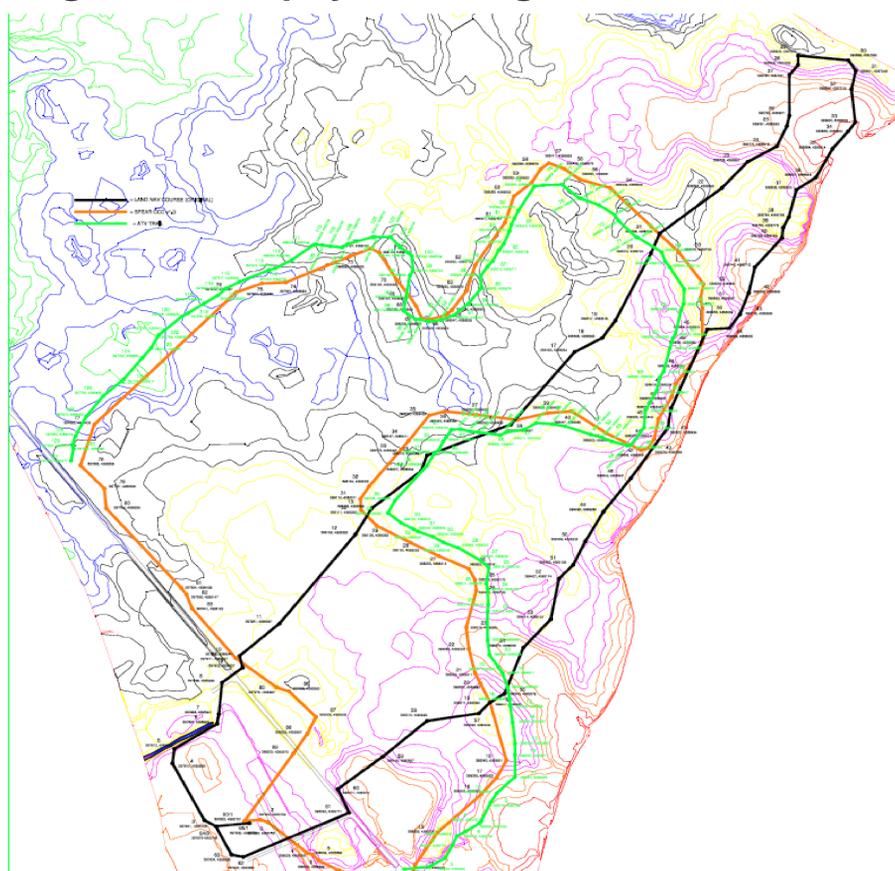
- Investigate the interaction between cognitive and physical fatigue in relevant ecological scenarios for Soldiers



Obstacle course

Challenges

- Objectively quantifying physical and cognitive fatigue
- Understanding how cognitive fatigue influences physical fatigue
- Deriving experimental tasks that are operationally relevant to investigate the interaction between cognitive and physical fatigue



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 (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 at APG, MD**
 - Time gate measures
 - Operational relevant tasks
- Networked Cross country course at APG, MD**
 - Wifi enabled
 - Pop up targets
- ARL expertise**
 - Physiological performance
 - Human Factors & applied cognition
 - Biomechanical measures
 - Shooting performance
 - Social psychology

Complementary Expertise / Facilities / Capabilities Sought in Collaboration

- Subject matter (military) experts
- Innovated 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