UPCOMING EVENTS

26 October + Prediction, Neurostimulation, and Design Guidance & Synthetic Training environments study execution at the Center for Applied Brain and Cognitive Sciences (a cooperative research initiative between Tufts School of Engineering and the Combat Capabilities Development Command Soldier Center), Medford, MA

27 October MASTR-E Quarterly In-progress Program Review (QIPR), Virtual

28 October MASTR-E Advisory Council Meeting, Virtual

28-29 October Field Study Meet and Greet, Virtual

Mid-November MASTR-E OHWS VIP Day with 10th MTN and MRDC, Virtual

Team Spotlight: MEASUREMENT and PREDICTION OF CLOSE COMBAT TASK PERFORMANCE

The Measurement and Prediction of Close Combat Task Performance work package delivers the capability to predict combat power by measuring physical, health, cognitive, and social-emotional states and traits. The project utilizes an iterative approach to machine learning model development to maximize predictive performance. The first iteration models use existing and preliminary data from laboratory-based measures of cognitive, physical, and biomechanical performance. Future model iterations will integrate data across MASTR-E.

Once the model has been developed and optimized, it will be evaluated using data from the 72-hour field study work package. To support model development, the research team established a database which resides on the cloud-based U.S. Army Futures Command (AFC) Modernization Application and Data Environment (MADE). This database will be used to store, organize, and analyze MASTR-E data throughout the program. Deliverables of this work package include data, models, and a software tool relating stress and fatigue impacts to human performance.

When this work is completed, Soldiers will be able to monitor, predict and enhance their performance (physical, health, cognitive, and social-emotional traits) for improved training, readiness and lethality. Deliverables will be transitioned for use within PEO–Soldier’s Integrated Visual Augmentation System and U.S. Army Medical Materiel Development Activity’s Health Readiness and Performance System.

EFFECTS

• Design Guidance for Technology and Synthetic Training Environment
• 72 Hour Field Study • Gut Optimization for Performance Enhancement
• MADE (MASTR-E Application Demonstration Experimentation) • Neurostimulation
• OHWS (Optimizing the Human Weapon System) • Predictive Algorithms
• SUPRA (Small Unit Performance Analytics)
• TSMA (Tactical Stress Marksmanship Assessment)
RECENT EVENTS RUNDOWN

OCTOBER
The Measuring and Advancing Soldier Tactical Readiness and Effectiveness (MASTR-E), Small Unit Performance Analytics (SUPRA) Team, Hosts a Virtual Stakeholder Event and Capability Demonstration

The MASTR-E SUPRA team conducted a review of its status, activities, timelines, and example data outputs. In addition, the research team presented a wearables capabilities demonstration video and mission data capability demonstrations. The mission data capability demonstrations utilized sample data generated from “Digital Squads”. Partners from DoD, academia, and industry contributed to presenting information and sharing updates. Over seventy (70) stakeholders, collaborators, and researchers attended. Participating organizations included Combat Capabilities Development Command Soldier Center (SC) leadership, the 82nd Airborne Division, Army Futures Command (Head Quarters, Futures and Concepts Center), Soldier Lethality Cross Functional Team, Army Research Institute, CCDC Army Research Laboratory, Medical Research & Development Command (US Army Research Institute of Environmental Medicine and Walter Reed Army Institute of Research) PEO-Soldier (Program Manager Integrated Visual Augmentation System), Training and Doctrine Command (Maneuver Center of Excellence and Combined Arms Center), Air Force Research Laboratory, Naval Health Research Center, Office of Naval Research, Lockheed Martin, Northrop Grumman, and Quantum Improvements Consulting.

SEPTEMBER
MASTR-E OHWS Equips an Infantry Battalion with Wearable Sensors for COVID Screening and Performance Optimization.

The MASTR-E team enrolled and equipped over 530 Soldiers of 4-31, 2nd BCT, 10th MTN Division (LI) in the Optimizing the Human Weapon System (OHWS) year-long study, achieving FOC 5 months after project conception. MASTR-E OHWS is a partnership between CCDC SC, MRDC, and Holistic Health and Fitness to equip an infantry battalion with wearable sensors to triage and screen Soldiers for COVID and to enable data driven decisions to improve training and performance.

MASTR-E Team Meets with CCDC, AFC, and FORSCOM to Secure Troops for Studies

The MASTR-E team met with representatives from CCDC HQ, AFC, and US Army Forces Command (FORSCOM) to discuss troop requirements for the program studies. The team answered questions and provided context to the headquarters elements, explaining the relative priority of the program, its needs, and what it will do for Soldiers. At AFC/FORSCOM’s request, the team rapidly assembled slides to provide additional information to assist with sourcing the Soldiers. After providing the FORSCOM team with follow-up information, the sourcing of the existing MASTR-E troop requests was completed.

DID YOU KNOW?
The MASTR-E program is developing the first cloud-based database to support Army-led human performance research, which will facilitate data sharing and collaborative analysis with partners across the DoD and will maximize the utility of Soldier Touch Points.