USARIEM Research Areas

Environmental Physiology Research
- Hot, Cold and High Terrestrial Altitude Environments
- Acclimatization, Performance and Environmental Injury
- Heat Exchange & Clothing Biophysics
- Predictive Modeling & Physiological Monitoring

Occupational Medicine & Performance Research
- Warfighter Performance – Physical / Cognitive
- Nutrition and Metabolism
- Injury Epidemiology
- Biomechanics
- Bone Health

Location/Facilities
USARIEM is co-located with Soldier Systems Center in Natick, Massachusetts. Located a short distance from Boston, the institute offers researchers its own unique facilities and is in close proximity to many of the finest universities.

Unique Facilities
Hypobaric Chambers (9,000m, -15°C to 40°C)
Biophysical Chambers (-10°C to 50°C)
Environmental Chambers (-10°C to 50°C)
Water Immersion Laboratory (5°C to 45°C)
Biomechanical Laboratory
Human Exercise Physiology Laboratories
Laser and Flow Cytometers
Pikes Peak Research Facility (4,300m)
USARIEM / Womack Medical Research Facility

Career Opportunities
Research Scientists
Research Support Staff
National Research Council Post-Doctoral Fellowships
Military Positions
Research Student Internships

Visit Our Web Site: www.usariem.army.mil

United States Army Research Institute of Environmental Medicine
The Department of Defense's Premier Institution for Environmental and Exercise Physiology Research.

Natick, Massachusetts
Biophysics & Biomedical Modeling
Develop and validate biomedical models to simulate the effects of heat, cold, high altitude, hydration, nutritional status (metabolic enhancers), and clothing systems and equipment on Soldier performance.

Recent Accomplishments: Provided guidance on work-rest and water modifications for altitude & thermal stress for troops in Afghanistan, Operation Enduring Freedom. • Executed prolonged work-rest cycle model for operations in water for Operation Enduring Freedom. • Warfighter Physiological Status Monitoring Program

Military Performance
Conduct research to enhance the performance (physical, cognitive, behavioral and psychomotor) of military occupational tasks, or to prevent performance decrements due to physical overload, nutritional deprivation, environmental and operational stresses, and musculoskeletal injuries.

Recent Accomplishments: Vigilance Sentry Studies showed caffeine improves target detection response time and reduces friendly fire errors over 3 hours. • Demonstrated use of MOLLE Backpack Hip Belt transfers 30% of weight to hips, reducing back pain. • Biomechanical studies planned for Scorpion Load Carriage System.

Military Nutrition
Conduct research and provide policy on nutritional issues affecting service members, and support the Surgeon General’s responsibilities as the Department of Defense executive agent for nutrition. Evaluate new rations and examine interactions between nutrition, performance and the environment.

Recent Accomplishments: Demonstrated cognitive enhancement with caffeine supplements during periods of operational stress.

Thermal & Mountain Medicine
Conduct human research to extend physical work capabilities and minimize medical problems associated with military operations at environmental extremes of heat, cold, and high terrestrial altitude. Identify and elucidate the etiology and pathophysiological mechanisms of heat, cold, and altitude induced injuries and illnesses.

Recent Accomplishments: Demonstrated efficacy of intermittent hypoxic exposures to improve physical performance and reduce sickness at high altitude. • Research in progress on genetic markers for susceptibility to heat injury.