

# Characterizing Task Performance of Injured Soldiers



S&T Campaign: Assessment & Analysis  
Military Injury Biomechanics

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## Research Objective

Derive a rigorous replacement for subjective judgment when mapping from Soldier impairment to Soldier performance.

## Challenge

- Optimizing design for survivability requires a solid foundation of validated data of human performance.
- The need for such data is particularly acute in understanding the dependency of human behavior on the physical condition of an injured Soldier.

## ARL Facilities and Capabilities Available to Support Collaborative Research

- Marksmanship range with data collection capabilities
- Biomechanics facility
- Soldier-performance obstacle course
- Personnel vulnerability model (Operational Requirement-based Casualty Assessment model)



Hand Grenade Toss Study<sup>1</sup>



Marksmanship Study<sup>2</sup>

Soldier-performance obstacle course

Operational Requirement-based Casualty Assessment Model

Studies to validate the capabilities required for military tasks

## Complementary Expertise/ Facilities/ Capabilities Sought in Collaboration

Non-destructive techniques and models based on human data to represent impairment in performance experiments

<sup>1</sup>Swoboda, J., Harper, W., Morelli, F., & Wiley, P. (2014). The Effects of Physical Impairment on Grenade Throw and Weapon Loading (in review).

<sup>2</sup>Swoboda, J., Harper, W., Morelli, F., & Wiley, P. (2012). The Effects of Physical Impairment on Shooting Performance. ARL-TR-6102.