APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

U.S. ARMY RDECOM

Virtual World Research

ARL open campus

S&T Campaign: Human Sciences

Human Capability Enhancement

Dr. Douglas Maxwell, (407) 242-0209
douglas.maxwell3.civ@mail.mil

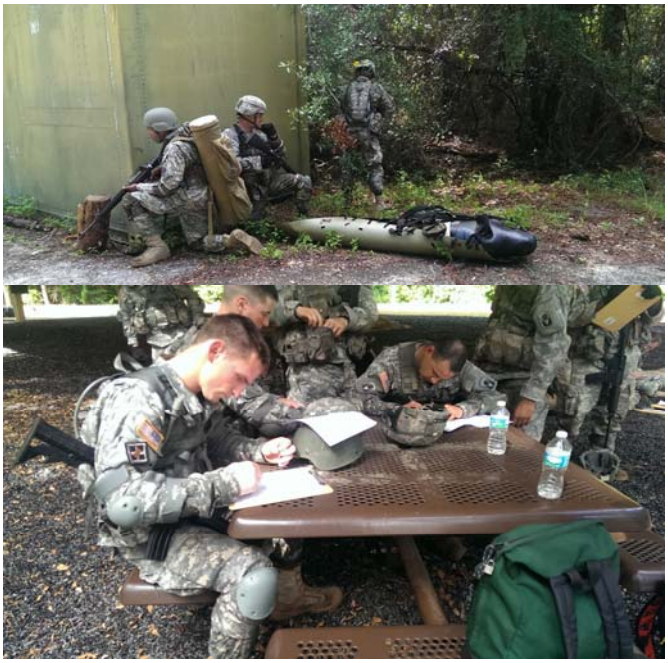
Research Objective

- **Establish Return on Investment for Simulation Based Training Systems for Infantry Soldier Skills**
- **Understand the impact on infantry Soldier skills performance for individual and teams when trained using virtual means.**
- **Establish "Applicability Continuum" where performance, funding, and time can be estimated for usage of SBT for any given infantry training activity.**

Simulation Based Training

Challenges

- **Establishing correct and applicable tasks for simulation based skills training; Not a Boolean decision.**
- **Simulator interfaces present a significant challenge to the immersion and presence maintenance in the training systems.**



Field Data Collection

ARL Facilities and Capabilities Available to Support Collaborative Research

- **ARL Simulation and Training Technology Center, Orlando Florida.**
- **In-house developed Open Source simulation based trainer, MOSES (Military Open Simulator Enterprise Strategy)**
- **Access to large pools of Soldiers, relevant leadership classes and curriculum.**
- **Data collected only from correct Soldier demographics.**
- **Significant Early Findings:**
  - Current assessment methods inadequate to determine ROI/Need new Rubric with scale.
  - Slight individual performance deltas when training conditions have parity.
  - Simulation based training (SBT) can be safely introduced earlier in the training cycle.
  - Dramatic increases in performance happen when SBT is combined with kinesthesis & feedback.
  - Need more data to make any conclusions for team training conditions.
  - Time in simulator a critical factor.
- **Selected Publications:**

  - Lackey, S.J., Salcedo, J.N., & Maxwell, D., (2014). Virtual World Room Clearing: A Study in Training Effectiveness. Proceedings of the 2014 Interservice/Industry Training, Simulation, and Education Conference, December 1-4.
  - Maraj, C.S., Lackey ,S.J., Badillo-Urquiola, K. A., Ogreten, S.J. & Maxwell, D.B., (2015). Empirically Derived Recommendations for Training Novices Using Virtual Worlds. Proceedings of the 2015 Interservice/Industry Training, Simulation, and Education Conference, Nov 30-Dec 4.
  - Maraj, C.S., Lackey ,S.J., Badillo-Urquiola, K. A ., Martinez, S., & Maxwell, D.B.,. Exploring the Virtual World Experience for Kinetic Tasks: A study in Room Clearing Training. 2016 Spring Simulation Multi-Conference April 3-6.
  - Maraj, C.S., Lackey ,S.J., Badillo-Urquiola, K. A ., Martinez, S., & Maxwell, D.B.,. Exploring the impact of Simulator Sickness on the Virtual World Experience. Proceedings of the 2016 International Annual Meeting of the Human Factors and Ergonomics Society, Sept 19-23.

Complementary Expertise/ Facilities/ Capabilities Sought in Collaboration

- **Advanced Human – Computer Interface Expertise**
- **Distributed Simulation Based Training Expertise**

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED