

AFRL FY16 Research Topic Template – DAGSI – AFIT - USAFA

1. Research Title: The Quantified Shooter Virtual Environment

2. Individual Sponsor:

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- 3. Academic Area/Field and Education Level:** Psychology / Cognitive Modeling, Judgment and Decision Making (BA/BS, MS or Ph.D. level); Computer Science / Information Visualization or Immersive Interactive Environments (BA/BS, MS or Ph.D. level)
- 4. Objectives:** Develop an immersive virtual environment for assessing shooter performance, bias, and decision making, measuring decision making behavior (e.g., response choice), speed and accuracy of shooting response, and physiological measures during an immersive game-like shooter experiment.
- 5. Description:** The Quantified Shooter is a human performance optimization program designed to assess and improve cognitive and physiological awareness in the performance of complex firearm related tasks. In order to fully develop the ability to both assess shooter physical state (optimizing target accuracy) and shooter decision making bias (discharge of firearm in contextual decisions), we desire an immersive virtual environment for Quantified Shooter decision making research. In this environment, a human participant will be presented various theater-centric scenarios and be provided shoot-or-don't-shoot decision making criteria using simulated firearms amenable to the virtual environment. Physiological state will be measurable by utilizing sensors suites placed on the user, and cognitive performance will be measureable through the virtual environment software. Additional capability to provide feedback to the shooter through the interface is desirable. The long term vision is to build an adaptive feedback interface in the virtual environment for Quantified Shooter testing and training applications.
- 6. Research Classification/Restrictions:** None
- 7. Eligible Research Institutions:** Indicate to what organizations this topic should be provided. Check all that apply.

DAGSI

AFIT (only)

USAFA (only)

If you are submitting a topic for the USAFA, please indicate if you are also interested in sponsoring a USAF Cadet in summer of 2014 (**Avg Cost for USAF Cadet for 33 days was \$5000**)

Yes No