Next Generation Structural Fire Fighting PPE Ensemble: Project HEROES – FY12 (939ZUNQ)

Objective

The goal of the project is to develop test methods to assess the performance of prototype PPE ensemble for firefighters that provides improved protection against chemical and biological agents.

Applicable Standards

- ASTM F23.6 - WK8818 Standard Practice for the Physiological Evaluation of Protective Clothing
- ASTM F2588-06 Standard Test Method for Man-In-Simulant Test (MIST) for Protective Ensembles
- NFPA 1971 (structural fire fighting ensembles)
- NFPA 1994 (CBRN ensembles)

Stakeholders

- Firefighters/emergency responders
- Standards organizations (NFPA, ASTM)
- Manufacturers of materials and ensembles

Key Partners

Funded in part by TSWG

Project Scope

- Develop physiological test protocol and conduct ergonomic and physiological testing to assess the performance of the HEROES ensemble.
- Support the development of test methods to ensure all ensembles and materials are tested appropriately
- Supply language and support to NFPA to remove design restrictions and allow advanced technologies to be incorporated and possibly certified

Milestones FY12

- Q1 Submit 2nd HEROES physiology manuscript for peer review
- Q2 Submit 3rd HEROES physiology manuscript for peer review
- Q3 Resubmit 2nd HEROES physiology manuscript back for consideration
- Q4 Submit draft 3rd HEROES physiology manuscript for consideration and ASTM Ergonomics Standard Test Practice

Outputs

- Manuscripts published or submitted to peer review journals (8) and 1 more in preparation and Presentations at conferences (15)
- Final report to TSWG (Feb 2008)

Outcomes

- Research resulted in an ASTM standard test practice on physiological testing “ASTM F2668-07 Standard Practice for determining the Physiological Responses of the Wearer to Protective Clothing Ensembles”
- ASTM F2668-07 utilized by Air Force Research Labs for ensemble studies
- NPPTL contributed significantly to the 2007 revision of NFPA 1971 and 1994
- Outputs from this project have been cited 11 times (to date) in the peer-reviewed literature