



DHS Funds Biometric Study of Wildland Firefighters During Pack Tests
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The U.S. Department of Homeland Security is funding a project to gather detailed physiologic data on 500 wildland firefighters during their annual work capacity fitness test. The firefighters will wear a garment embedded with sensors beneath their protective gear to record their vital statistics and physiologic data in real time during their tests.

VivoMetrics Government Services and Storm King Mountain Technologies in April announced the award of a \$749 million Assistance to Firefighters grant from the U.S. Department of Homeland Security's Office of State and Local Government Coordination and Preparedness to conduct firefighter physiologic assessment during pack tests with the VivoMetrics LifeShirt System.

Pack tests determine the physical fitness of wildland firefighters by requiring them to walk 3.5 miles wearing a 45-pound pack in 45 minutes or less. While the test provides a valuable gauge of physical fitness, the stress can be dangerous - in 2004, two firefighters died during pack tests in the United States, according to the National Interagency Fire Center.

According to VivoMetrics, the LifeShirt System is the first non-invasive, ambulatory monitoring system that continuously collects records and analyzes a broad range of cardiopulmonary parameters. The garment is embedded with sensors that collect pulmonary, cardiac, posture and activity signals.

Data collected by integrated peripheral devices measure blood pressure, blood oxygen saturation, EEG/EOG, periodic leg movement, temperature, end tidal CO2 and cough. An electronic diary captures subjective user input and all physiologic and subject data are correlated over time.

Researchers hope the data from the tests will provide a greater understanding of the physiologic changes firefighters undergo during the pack test and will lead to guidelines for the monitoring of physiologic responses to increase the safety in future pack tests, training scenarios and deployment in the field.

"In my opinion, there is no better use of fire prevention and safety funds than to help save firefighters' lives," said Matt Mayer, acting executive director of the OSLGCP. "For the last 30 years, we have spent a lot of time and research on how to make firefighting safer, and now we are starting to apply some of that work to wildland firefighters. This is a great way for us to partner with our colleagues at the state and local level and the private sector to try to bring down the number of deaths that have occurred on the line and help our fire service get stronger and better." "Today, we have no information about how a wildland firefighter is being affected by the stresses of fighting a forest fire," said Andrew Behar, president of VivoMetrics Government Services. "By wearing a LifeShirt beneath their protective gear we can gather the data needed to develop guidelines to help reduce the threat of injury or fatality that accompany this line of work."

VivoMetrics, based in Ventura, Calif., develops and markets the LifeShirt System and provides services for the collection, analysis and reporting of subject-specific physiologic data. The company's products also enable academic researchers to discover new clinical signatures of disease, and U.S. Government agencies to protect the lives of military and civilian first responders.

Storm King Mountain Technologies, a Camarillo, Calif.-based company formed in 1994, develops products and services to help reduce injuries and fatalities in wildland firefighting applications.

For more information about Assistance to Firefighters Grant Program and awards for 2005, visit www.firegrantsupport.com/fps/awards/