

Monitoring the Physiological Status of Subjects wearing Logging PPE: Laboratory-based Study - FY12 (939ZRUT-2)

Objective

- Heat stress is a significant health risk to more than 43,000 workers in the logging profession. The number of studies on heat stress in loggers are limited.
- We hypothesize that: 1) Physiological data from the “Smart Shirt” technology used will correlate with physiological data from the standard laboratory equipment, and 2) Logging PPE will cause an increase in heat stress and other physiological responses (e.g., heart rate, skin temperature, core body temperature) compared to bush clothing (control).



Applicable Standards

- 29 CFR 1910 Subpart G - 1910 Subpart G Environmental
- ASTM F2668-07 Standard Practice for Determining the Physiological Responses of the Wearer to Protective Clothing Ensembles

Stakeholders/Partners

- Workers and companies in the logging community
- Dr. J.J. Garland, PE, Consulting Forest Engineer
- Oregon OSHA
- University of Texas, Austin
- Association of Oregon Loggers, Inc.



Project Scope

- Monitor the physiological responses of the human test subject to an environmental heat stress (a combination of heat and humidity) comparable to that experienced on the logging site and to workloads typical of that experienced by loggers using both wearable physiological sensing technology (“smart shirts”) and standard laboratory physiological monitoring systems,
- Determine the contribution of logging PPE to the overall heat stress.

Milestones FY12

- Q2 Collect data for 6 additional subjects to validate Zephyr physiological sensor system
- Q3 Present two posters at ACMS
- Q4 Submit 3 manuscripts to peer-reviewed journals

Outputs:

- Publication of results in peer-reviewed journal (3 mss in preparation).
- Two abstracts to be presented at 2012 ASCM Conference

Outcomes:

- Logging community uses project outputs to develop recommendations regarding protection from heat stress
- Other researchers cite project outputs in their manuscripts.

Updated: 05 April 2012