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1. Accession No.	Agency Identifiers		5. Work Unit/Project No.	6. Status
	2. NIFA	3. LA.B	LAB94167	A = New Project
7. Title Improving Safety and Health of Wildland Firefighters Through Personal Protective Clothing			Integrated Activity	
8. Performing Organization 1001 - 2010 School of Renewable Natural Resources Agricultural Experiment Sta, Louisiana State Univ			9. Cooperating Departments within State Performing Institution	
10. Multistate Project No. W2192			11. Cooperating States	
12. Investigator Name(s) Last Name and Initials)			Date: <u>9/12/12</u>	
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14. Project Type Hatch/Multistate	15. Contract/Grant/Agreement No.	16. Amount	17. FY	
18. Award Date (Month/Day/Year)	19. Start Date (Month/Day/Year)	20. Termination Date (Month/Day/Year)		
	10/01/2012	09/30/2017		
Goals/Objectives/Expected Outputs				
<p>Objective 1: Identification of comfort and fit issues related to the protective clothing of wildland firefighters.</p> <p>Objective 2: Identification and testing of textile materials suitable for protective clothing for wildland firefighters.</p> <p>Objective 4: Education and communication of findings to government and industry wildland fire management agencies. Outputs: 1. Development of new protective apparel designs for wildland firefighters with improved function and comfort. 2. Develop educational materials and/or trainings that can be used by federal and state government wildland fire management agencies based on the research. Milestones (timeline): 2012/2013 - Conduct the needs assessment and evaluation of designs of current wildland firefighter protective clothing. 2014 - Identify materials currently used in PPE equipment for wildland firefighters as well as textile performance materials for use in protective clothing for firefighting. Develop design specifications for the prototype, begin prototype design process 2016 - Test and evaluate prototypes. 2016 - Develop educational materials for federal and state interagency wildland fire management personnel; possibly transfer technologies to industry for production.</p>				
Methods				
<p>Methods, Obj. 1: Comfort issues will be grounded in the Branson and Sweeney's (1991) clothing comfort model. The comfort model addresses both physical and social-psychological dimensions of comfort for a clothing comfort judgment. Physical dimensions of attributes of the person, clothing, and environment, including daily activities, fit, mobility, and garment design, related to comfort will be the focus of this study. Market research will be performed to establish the PPE designs currently available to wildland firefighters. Design features will be examined and analyzed in terms of potential for performance. The results of the analysis will inform the planning as well as the understanding of investigations of the comfort issues associated with PPE for wildland firefighters. To identify comfort issues related to protective gear used by wildland firefighters, input will be sought from firefighters through focus groups and interviews (Branson, Farr, Peksoz, Nam & Cao, 2004). United States Interagency and state wildland firefighting agencies will be contacted to seek assistance in finding participants. Firefighters from each of the states will be interviewed allowing for issues in diverse working environments to be addressed. Louisiana will provide leadership for this using techniques built from experience with previous surveys in the forestry community (de Hoop et al. 1997, 2004, 2007 and 2008; Gerald and de Hoop 2008, Greene et al. 2004). Obj. 2: Market research will be performed to determine the materials currently used in PPE equipment for wildland firefighters. Research of novel textile performance materials for use in protective clothing for firefighting will also be done, and a list of suitable materials will be compiled. Unless data about textile</p>				



materials are available from the manufacturers, testing of the most-promising materials will be performed to establish the effects on the properties of the fabrics due to sun exposure, heat exposure, abrasion and wear, soiling through various agents, and laundering/cleaning procedures. Identification of materials currently being used will be the primary responsibility of the researcher from Louisiana. Researchers from the other participating states will be involved in testing of properties of materials identified to be used in prototype development. Obj. 4: The initial process will be to establish a communication network to facilitate research across university, government, and industry. The successful establishment of any network will also depend on the availability of long term financial support from agencies and industry. An online system that serves as a primary source of information for protective clothing for wildland firefighters will be developed. This system will also be publicly available and may include information about the material or garment, its availability, performance, selection, use, care, and maintenance. The system could also be developed such that it can be used to obtain user input for future research on wildland firefighter protective clothing.


23. Non-Technical Summary

This project addresses the need for cooler and more comfortably fitting clothing for wildland firefighters, while still providing the protection from the elements of current firefighter clothing. Issues with the fit of clothing for female wildland firefighters will also be addressed. Louisiana's role in this project will be to identify current state of the art and needs. Other states will develop prototype clothing. Louisiana will be involved again in testing, evaluation and information dissemination of the prototypes.

24. Keywords

Wildland firefighter, clothing, ; PPE, ; Personal Protective Equipment,; Female firefighter,; Clothing design;

**** The Original signed document is on file at this institution. ****

Signature	Title	Date
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