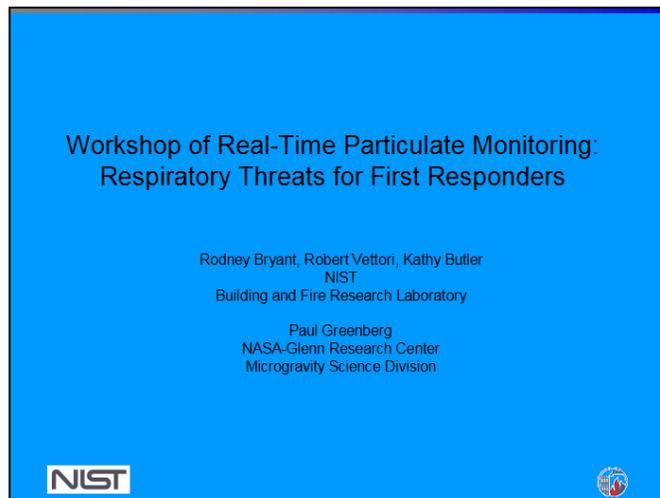


APPENDIX 3 - WORKSHOP PRESENTATIONS

APPENDIX 3.A – Workshop Objectives

Rodney Bryant, Building and Fire Research Laboratory, NIST

There is a need for real-time identification of hazards to enable selection of appropriate respiratory protection for firefighters. The challenge is to transfer the protocols and technology used in industrial environments where the respiratory threats are better characterized to the fire environment where the threats are less characterized. This can be accomplished by first identifying existing devices that can be applied for real-time particulate detection during fire overhaul, then determining performance criteria and standards that modify these devices to better suit the application. The workshop is intended to bring members of key organizations together to begin this process. In addition to the production of a report that lays out priorities for research and detector performance, the workshop is anticipated to expose attendees to new tools and methods to improve safety, provide opportunities to expand the applications of available technology, and present opportunities for new research, new focus, and future collaborations.



Fire Overhaul: Occupational Environment

Unknown respiratory threats
Limited active monitoring of threats
SCBA first option of defense
Low compliance

Manufacturing: Occupational Environment

Known respiratory threats
Frequent monitoring of threats
Engineered control of threats is first option of protection

Applications

Personal monitoring for compliance
Walk-through surveys
Site dust levels
Filtration systems
Indoor air quality (IAQ)
Clean room contamination



Addressing the Need

Fire Service Issues/Needs

- Should the SCBA be required during all fire overhaul operations? Should alternative options of respiratory protection be applied to fit the task? (RAND MR-1646, 2003)
- Choosing the appropriate respiratory protection to fit the task can only be accomplished with real-time information to identify the hazards. (National Fire Service Research Agenda Symposium, 2005)



Approach

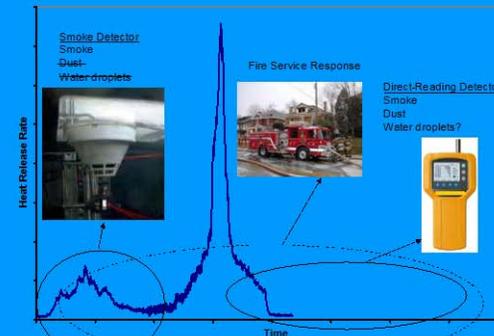
- Transfer the current protocols and technology used in industrial environments where the respiratory threats are better characterized to the fire environment where the threats are less characterized.



Anticipated Output

- New tools to aid fire fighters in selecting the appropriate respiratory protection
 - Recommended testing protocols
 - Recommendations for improvements to the technology
-

NIST/BFRL: Detection to Protection



Key Steps

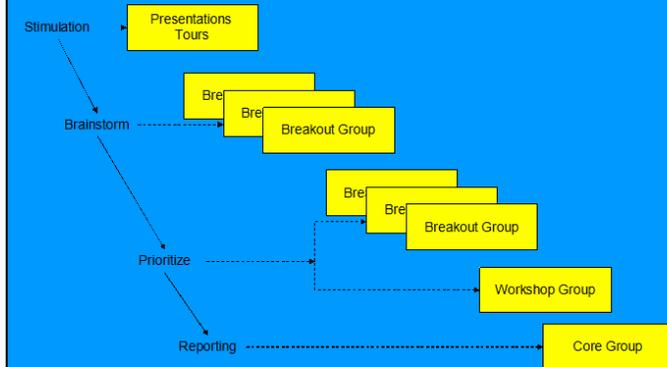
- Identify existing devices and technology that can be applied for real-time particulate detection during fire overhaul
- Define performance criteria for these devices that considers the needs of the first responder community and their applications
- Design and conduct experiments to evaluate the devices according to the performance criteria

Particulate Challenge	Single source: smoke, dust	Mixtures: smoke, humidity, dust
Measured Response	Mass, Other	Number concentration (size distribution)

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Workshop Overview



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Anticipated Results of the Workshop

- NIST Report
 - Priorities for performance
 - Priorities for research
- Exposure to new tools and methods to improve safety
- Opportunities to expand the applications of available technology
- Opportunities for new research, new focus, and future collaborations
- Additional energy and momentum

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