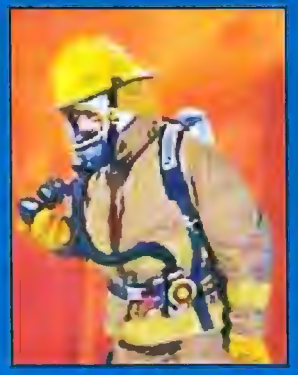
ISRP 2002 abstract

Presenter/author	Title	Abstract
Berryann, Roland **Metzler**, Richard Zhuang, Ziqing *National Personal Protective Technology Laboratory, NIOSH, Pittsburgh, Philadelphia, USA*	**Setting the Respirator Research Agenda**	Every day millions of American workers rely on personal protective equipment and other protective technologies to reduce the occurrence of disease, injury, and death at work. To focus resources on this important issue, NIOSH established a new laboratory, the National Personal Protective Technology Laboratory (NPPTL). A substantial portion of NPPTL's resources will be devoted to respiratory protection. Three basic functions of the NPPTL respirator research program were identified: (1) developing performance tests and setting performance standards for the respirator certification program; (2) developing a scientific basis for making recommendations on practical respirator use; and (3) performing research and development activities in the areas of performance criteria, new technologies, and new products. To implement these three basic functions, the NPPTL respirator research program emphasizes the following eight priority areas: (1) development, evaluation, and validation of performance tests; (2) face size/shape characteristics; (3) assigned protection factors; (4) air-purifying element; (5) respiratory physiology; (6) development of new products; (7) respirator use surveillance; and (8) recommendations for responders of terrorism situations.

Setting a National Respirator Research Agenda



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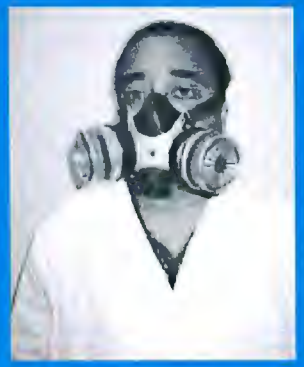

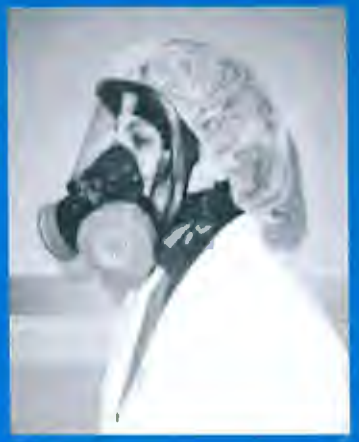

CDC Workplace Safety and Health

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Background

- Establishment of the National Personal Protective Technology Laboratory (NPPTL)
- Need for the respirator research agenda
- Process to develop the agenda

Prominent Drivers

- Address Emerging Hazards
- Adapt Existing Technologies to New Uses
- Implement new Technologies/Product Innovations
- Fill Gaps in Knowledge,Methods and Measurement Techniques
- Support Rulemaking, Standards Development

Elements of an Effective Process

- Establish Partnerships
- Prioritize the Correct Needs, Stay on Target
- Publish Agenda
- Adjust Agenda as needed based on Feedback

Initiating Discussion on Possible Priority Research Areas

- Respirator Technology & Use Data
- CBRN Respirator Performance & Use
- New Technologies & Innovative Products
- Define Worker Facial Anthropometrics
- Air-purifying Element
- Respiratory Physiology
- Protection Provided

Respirator Technology & Use Data

- Performance & Failures
- Programs, Hazards & Selection
- Worker Training & Guidance
- Worker Monitoring

CBRN Respirator Performance & Use

- Protection Against Biological Agents
- Emergency Responder Protection
- Civilian Protection

CDC Workplace Safety and Health

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New Technologies & Innovative Products

- Multi-function PAPR's
- Combination SCBA/Air-Purifying
- Escape Devices
- Breath Response Respirators
- Computer-Integrated Smart Respirators
- Project Heroes (Future Firefighter)

Define Worker Facial Anthropometrics

- Establish anthropometric database of users
- Investigate respirator fit & facial anthropometry
- Develop fit-test panels representative of today's worker population
- Develop respirator sizing system
- Develop 3-D Human Face Forms

Air-Purifying Element

- Particulate Filter Performance
- Chemical-Cartridge Change Schedule Models
- End of Service Life Indicator Technologies
- Component/Interchangeability Certification

Respiratory Physiology

- Breathing Simulators to evaluate Respirator Performance
- Human Factors & Ventilation Rates anticipated in use
- Air-Purifying Respirator CO2 levels

ISRP Role

- Participate as Full Partner via ISRP Web Site
- Define Perspectives of Global Membership
- Establish a Project Team
- Publish an International Research Agenda

Protection Provided

- Effective & Appropriate Fit
- Assigned Protection Factors (APF) & Certification Rating
- Alternative Measures of Protection Assessment