Advanced Headform Total Inward Leakage Test System – FY17 (927ZJRV)

Objective

1) Develop and validate a total inward leakage (TIL) test system using headforms that have human-like characteristics

Applicable Standards

- 42 CFR 84
- ISO TC94 SC 15

Key Partners

- AFRL (funding)
- BARDA (funding)
- Headform fabricators

Stakeholders

- ISO
- Respirator manufacturers
- Respirator users

Project Scope

- Define objectives and optimal characteristics for a novel headform TIL test system
- Design and construct the test system
- Compare protection factors between headforms and human test subjects

FY 17 Milestones

- Q1 Collected preliminary data assessing PAPR performance.
- Q2 Draft paper on assessment of PAPR performance.
- Q3 Collect data for 2015 Innovation award using worker breathing waveforms to assess PAPR performance.
- Q4 Compare human test subject FFR and EHR performance to a robotic advanced headform.

Outputs

- Manuscript published or submitted to peer-reviewed journals **(3)**
- Presentations to stakeholders or conferences **(9)**
- Standards committee meetings & public meetings **(0)**

Outcomes

- Project outputs will be used by ISO, ANSI, FDA, and NIOSH in the development of new standards **(0)**
- Manufacturers will use the advanced headforms **(1)**
- Other researchers utilize the project outputs to initiate new research related to TIL testing **(2)**
  - U. Cincinnati articles utilizing the static headform

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