

# Advanced Headform Total Inward Leakage Test System – FY15 (927ZJRV)

## Objective

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



## Applicable Standards

- 42 CFR 84
- ISO TC94 SC 15

## Key Partners

- AFRL (funding)
- BARDA (funding)
- Hanson Robotics, Inc.
- Lunar Studios, Inc.

## 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 fit factors between headforms and human test subjects

## FY 15 Milestones

- Q1 Received and evaluated two large static headforms
- Q2 Completed data collection on N95 FFR probe bias testing
- Q3 Complete initial evaluation of refurbished articulated headform
- Q4 Complete human subject data collection for study comparing N95 FFR fit between humans and the articulated headform

## Outputs

- Manuscript published or submitted to peer-reviewed journals (**3**)
- Presentations to stakeholders or conferences (**7**)
- 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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