ISRP 2002 abstract

Presenter/author	Title	Abstract
Berryann, Roland **Zhuang**, Ziqing *National Personal Protective Technology Laboratory, NIOSH, Pittsburgh, Pennsylvania, USA*	**Recent NIOSH Research on Fit-test**	Fit testing is an art as well as science. Such a dichotomy leads to imperfection in fit-test results. The art part helps fill in gap left by science. The aim of respirator research is to eliminate, reduce or define the uncertainty in testing results. The focus of NIOSH research is to reduce the art and increase the science in three primary areas: validation of fit-test methods, characterization of worker faces to validate fit-test panels representative of the US workforce, and investigation of the use of new test protocols and procedures to increase fit-test accuracy. NIOSH effort in the first area has demonstrated the correlations of quantitative fit-tests to measured exposure dose of Freon-113 or protection factors under actual workplace environments for half-facepiece respirators. Similar studies are being conducted or planned for full-facepiece and loose-fitting respirators. In the second area, we found that the respirator fit-test panels based on military data were not representative of civilian workers. A study is underway to develop an anthropometric database of 4000 workers to redefine fit-test panels. In the third area, we found that a multi-donning approach had potentials to reduce fit-test errors. Fit testing is an invaluable tool in assessing the fit of half-facepiece respirators and increasing worker protection.