HEALTH EFFECTS LABORATORY DIVISION

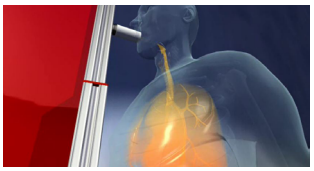
National Institute for Occupational Safety and Health

The **Health Effects Laboratory Division (HELD)** is a part of the **National Institute for Occupational Safety and Health (NIOSH)**. HELD conducts focused, basic, applied, and preventive laboratory research for controlling and preventing workplace safety and health problems. The division has the following goals:

- Investigate the biological factors responsible for occupational health problems.
- Perform occupationally-related research in the area of pathology and physiology.
- Research novel and improved techniques for assessing the exposure of workers principally to chemical, but also to physical and biological hazards.
- Conduct basic and applied laboratory research in areas of immunology, allergy, and inflammation relevant to occupational diseases.
- Provide statistical design, analysis, and interpretation for experimental research in the division and conduct collaborative observational research focused on introducing new laboratory-based technology into population-based studies.

Technology & Product Highlights

Cough Analyzer



A licensed technology, the Cough Analyzer diagnoses obstructive lung disease and provides a detailed analysis of workers afflicted with pulmonary disorders. The technology uses signal analysis techniques to extract quantitative information from recorded cough sound pressure waves. The generated data quickly and reliably screens individuals at risk of pulmonary disorders and diseases.

Local Positioning System

During a typical workday, employees in many occupations are exposed to varying environmental hazards. Industry safety officials and health professionals use our Local Positioning System, a licensed personal monitoring system, to map exposure intensity and location, reveal hot spots, identify their sources, and control hazardous conditions at the work site. The unit logs a worker's location from signals transmitted by existing GPS satellites to an antenna connected to a battery-powered worker unit. The unit contains four ports that can connect to a variety of external sensors and real-time monitoring systems. These systems can detect and quantify toxic gases, excessive noise, dust, and other hazards in the workplace, as well as body temperature and heart rate.

Personal Bioaerosol Cyclone Sampler

This licensed technology collects airborne particles from the environment. Workers can wear this technology as a personal sampler. The air entering the sampler swirls like a cyclone, sticking the airborne particles against the sampler's walls. The sampler then separates the particles into three size ranges. Particle size determines where the particles will deposit in the lungs and how dangerous they are to the worker's health. The Bioaerosol Cyclone 251 and its sister designs have been used to study many types of airborne hazards, such as airborne influenza, respiratory syncytial virus, mold spores, grain dusts, metal-working fluids, pollen, and bacteria particles.

NIOSH is the U.S. federal agency that conducts research and makes recommendations to prevent worker injury and illness. NIOSH was established under the Occupational Safety and Health Act of 1970. It is part of the Centers for Disease Control and Prevention in the U.S. Department of Health and Human Services.

For more information

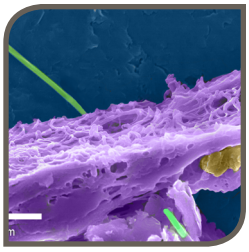
www.cdc.gov/niosh/contact/im-held.html

(304) 285-6121

OUR SAFETY AND HEALTH RESEARCH AREAS

Occupational Immunology

Inhalation Toxicology and Respiratory Disease



Nanotoxicology

Biostatistics Analysis

Infectious Disease Transmission

Neurotoxicology

Genomics and Biomarkers

Epidemiology of Subclinical Measures

Musculoskeletal Disorders Control

Exposure Assessment

OUR STAFF

HELD has 161 full time positions and has offices and labs in Morgantown, West Virginia.
Staff have experience in the following areas:

Biostatistics & Epidemiology: Epidemiologist I Psychologist I Statistician
Engineering: Biomechanical/Biomedical/Computer/Mechanical/Industrial Engineers I Computer Scientist Informatics
Exposure Assessment: Chemical Engineer I Chemist I Environmental Health Specialist I Physical Chemist I Industrial Hygienist
Pathology: Biologist I Physical Scientist I Pathology Technician I Physiologist I Veterinary Medical Officer
Quality Assurance: Laboratory Quality Coordinator
Toxicology: Biologist I Pharmacologist I Toxicologist
Support: Medical Technologist I Public Health Analyst I Visual Information Specialist

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https://doi.org/10.26616/NIOSHPUB2018140
DHHS (NIOSH) Publication No. 2018-140
July 2018

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