Center for Direct Reading and Sensor Technologies PPOP

What are our priorities?

The National Institute for Occupational Safety and Health (NIOSH) Center for Direct Reading and Sensor Technologies (CDRST) focuses on increasing knowledge among leaders, cultures, and systems to advance the development and use of sensors for occupational safety, health, well-being, and productivity. The CDRST coordinates a national research agenda for direct-reading methods and sensor technologies. Specifically:

- To develop guidance documents pertinent to direct-reading methods and sensors, including validation and performance characteristics.
- To develop training protocols for using direct reading instruments in the workplace; and
- To establish partnerships to collaborate in the Center's activities.

What do we do?

- Coordinate a national research agenda for direct reading methods and sensor technologies.
- Develop sensor-relevant guidance documents and training protocols to help others learn how to select, use, and interpret the data of direct reading methods and sensor technologies.
- Partner with industries, workers, governments, academia, and scientific and professional communities, both nationally and internationally. Examples include the Environmental Protection Agency and the American Industrial Hygiene Association (AIHA).
- Foster and participate in research activities for the advancement of science and technology related to direct reading and sensor technologies.
- Promote the development of new methodologies and technologies within NIOSH.

What have we accomplished?

- Developed the Right Sensors Used Right approach for the selection and adoption of direct-reading methodologies and sensor technologies.
- Developed laboratory and field testing protocols and frameworks in collaboration with the Health and Safety Executive (HSE) in the United Kingdom and the Organization for Applied Scientific Research in the Netherlands. The collaboration focuses on a variety of topics, including the use of low-cost sensors for hazard monitoring in the workplace.
- Delivered five training webinars to more than 100 participants each on the advancements, selection, use, and challenges related to wearable sensors for occupational health and safety. The, webinars were conducted for the NIOSH Total Worker Health program, NASA, and the American Industrial Hygiene Conference and Expo.
- Contributed to the creation of a Technical Framework by the AIHA Real-time Detection Systems committee and AIHA Fact Sheets for return to work and low-cost aerosol sensors.
- Co-authored a NIOSH blog with the NIOSH Office of Construction Safety and Health and the Center for Construction Research and Training on wearable technologies for improved safety and health on construction sites.

What's next?

- Update the NIOSH Manual of Analytical Methods Chapters relative to real-time respirable aerosol monitors, portable electrochemical sensor methods, combustible gas monitors, and gas and vapor detection methods.
- Develop training modules and outputs on Big Data related to sensors and fatigue monitors with other NIOSH Centers: Center for Workers' Compensation Studies, Center for Motor Vehicle Safety, and the Center for Work and Fatigue Research
- Deliver and consolidate training and informative material on wearable sensors for health and safety in workplaces, such as additive manufacturing and oil & gas.

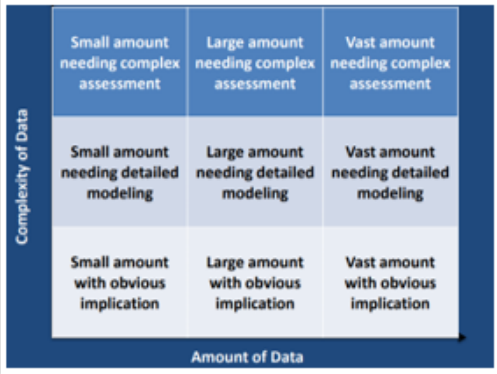
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

At-A-Glance

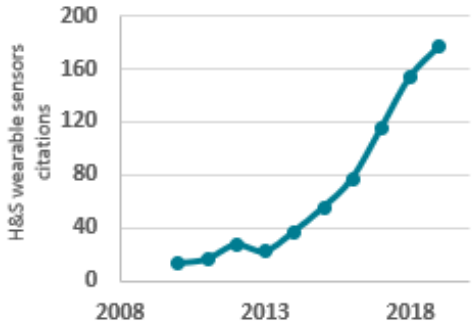
The virtual Center for Direct Reading and Sensor Technologies provides scientific and technical leadership to the development and use of 21st century technologies in occupational safety and health. This snapshot shows recent accomplishments and upcoming work.

NIOSH Sensor Development Lifecycle

Concept of **Big Data** for worker protection informatics



Number of citations found for wearable sensors in the workplace, 2010-2020



Source: NIOSH program records (found by literature search)

To learn more, visit
www.cdc.gov/niosh/topics/drst/default.html
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