Center for Occupational Robotics Research

What are our priorities?

The Center for Occupational Robotics Research (CORR) addresses the safety of today's workers who use, wear, or work near robots. CORR accomplishes this by working in partnership with academic researchers, trade associations, robotics manufacturers, employers using robotics, integrators who set up robotic systems in workplaces, labor organizations, and government agencies. The Center addresses traditional robots and emerging technologies such as collaborative robots, mobile robots, powered human exoskeletons, and remotely controlled or autonomous vehicles and drones. The Center focuses on:

- Identifying opportunities to better protect worker safety and health using robotics
- Increasing understanding of human and robot interactions to ensure human worker safety
- Improving the ability to identify and track injuries and fatalities involving robotics
- Providing guidance on working safely with robotics

What do we do?

- Monitor trends in robotics and associated injuries.
- Evaluate robotics as sources of, and interventions for, workplace injuries and illnesses.
- Identify research needs and conduct studies to improve the safety, health, and well-being of humans working with robots and robotics.
- Establish risk profiles of robotics applications in workplaces.
- Support the development and adoption of consensus safety standards.
- Develop and communicate best practices, guidance, and training for safe interactions between human workers and robots.

What have we accomplished?

- For the 3rd consecutive year, we continued our partnership with the National Robotics Initiative to include worker safety research in a multi-agency funding opportunity announcement. So far, NIOSH has funded two grants, and the National Science Foundation and other agencies have funded additional research addressing worker safety.
- Through a cooperative agreement with CPWR, funded small studies that developed methods for reducing worker risks when interacting with robots and using drones in construction.
- Published scientific review articles on applications and roles of exoskeletons in patient handling and evaluation and test methods of industrial exoskeletons. These articles provide important information to help reduce the risks of work-related musculoskeletal disorders with this emerging technology.
- Disseminated an Occupational Safety and Health Administration (OSHA) Technical Manual on Robots and Robot System Safety. OSHA, the Association for Advancing Automation, and NIOSH collaborated to update this document.

What's next?

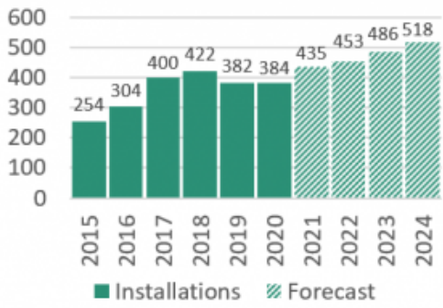
- Publish a peer-reviewed article estimating work-related deaths associated with robots and noting challenges in identifying occupational robot-related injuries.
- Partner on a scientific workshop on robotics safety in agriculture.
- Publish research that advances knowledge on the use of robots to prevent work-related injuries.
- Publish a fact sheet on how employers can partner with NIOSH to establish risk profiles for robotics applications.
- Contribute to updated American National Standards Institute/Robotics Industry Association standards on occupational robot safety.

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

At-A-Glance

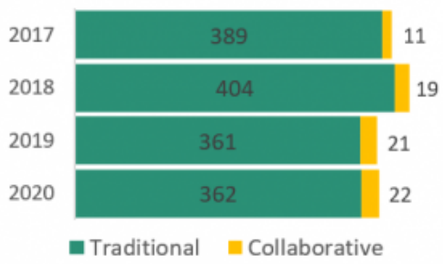
The Center for Occupational Robotics Research provides scientific leadership to guide the development and use of occupational robots to enhance worker safety, health, and well-being. The Center includes a multi-disciplinary team of scientists from across NIOSH. This snapshot shows recent accomplishments and upcoming work.

Worldwide Annual Industrial Robot Installations ('000s of Units)



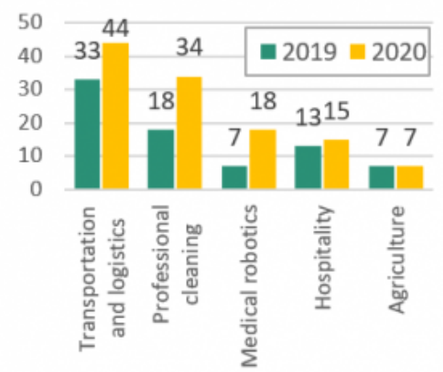
Source: International Federation of Robotics [2021]. World Robotics Industrial Robots 2021.

Worldwide Installations of Collaborative vs Traditional Industrial Robots ('000s of Units)



Source: International Federation of Robotics [2021]. World Robotics Industrial Robots 2021.

Service Robots for Professional Use Sales of Top 5 Applications ('000s of Units)



Source: International Federation of Robotics [2021]. World Robotics Industrial Robots 2021.

To learn more, visit
www.cdc.gov/niosh/topics/robotics
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