Center for Occupational Robotics Research PPOP

What are our priorities?

The National Institute for Occupational Safety and Health (NIOSH) 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?

- Co-organized the 2020 ErgoX Symposium on Exoskeletons, Robotics, and Cybersecurity to improve safe and effective adoption of these technologies. There were over 200 attendees.
- Collaborated with the NIOSH Mining Program to host the first meeting of the NIOSH Mine Automation and Emerging Technologies Health and Safety Partnership, a two-day virtual event with over 130 attendees.
- Co-authored a journal article on the opportunities, challenges, and future directions for use of simulation in robotics research.
- Contributed to the development of the ANSI Standard, Standardization Roadmap for Unmanned Aircraft Systems (Version 2.0), including identifying the need for specific standards to ensure worker safety.
- Published a book chapter on robots in an industrial hygiene textbook.
- Partnered with the National Science Foundation (NSF) to fund studies of co-robot safety in the workplace through the National Robotics Initiative 2.0.

What's next?

- Partner with NSF to fund studies on innovations in integration of robotics to improve worker safety through the National Robotics Initiative 3.0.
- Publish a journal article reviewing case studies of industrial robots implemented as insurer-supported safety and health interventions.
- Provide input on worker safety needs to the Autonomous Mobile Robots (AMR) Standards Task Force to inform the development of a standards road map for AMR.
- Disseminate information on an Occupational Safety Health Administration (OSHA) document on working safely with robots that is being updated through an alliance including the Association for Advancing Automation (A3) and NIOSH.

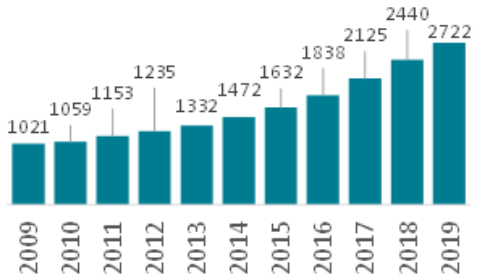
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

Mention of any company or product does not constitute endorsement by the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention

At-A-Glance

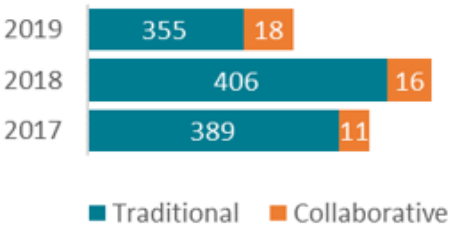
The Center provides scientific leadership to guide the development and use of occupational robots that enhance worker safety, health, and well-being. This snapshot shows recent accomplishments and upcoming work.

Operational Stock of industrial Robots Worldwide (1,000 units)



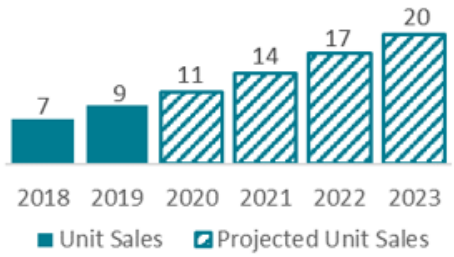
Source: International Federation of Robotics [2020]. World Robotics Industrial Robots 2020.

Collaborative and Traditional Industrial Robots: Sales volume (1,000 units)



Source: International Federation of Robotics [2020]. World Robotics Industrial Robots 2020.

Powered Human Exoskeleton: Unit Sales (1,000 units)



Source: International Federation of Robotics [2020]. World Robotics Industrial Robots 2020.

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www.cdc.gov/niosh/topics/robotics
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