INSTITUTE FOR SOLDIER NANOTECHNOLOGIES

The Institute for Soldier Nanotechnologies (ISN) (https://isn.mit.edu) is a U.S. Army-sponsored University-Affiliated Research Center (UARC) established at MIT in 2002. Within MIT, the ISN reports to the MIT Vice President for Research.

The ISN mission is to bring together MIT, Army, and industry colleagues to collaborate on research that will dramatically improve soldier protection, survivability, and mission capabilities of the soldier and of soldier-supporting platforms and systems.

A major ISN goal is to enable advanced protection and survivability capabilities through multifunctional, lightweight clothing and equipage of increased comfort and decreased energy demand.

To these ends, the ISN performs research on improving blast and ballistic protection, detection and detoxification of chemical and biological substances, portable electric power, physiological monitoring, and medical care on mission and in remote locations, and providing the soldier with reliable situational awareness and secure means to receive and transmit voice and data communications.

ISN researchers and other MIT personnel have access to state-of-the-art instrumentation at the 40,000 square foot ISN facility. Most research is performed by graduate students as part of master’s and doctoral theses in MIT academic departments, by postdoctoral researchers, or occasionally by undergraduates participating in the Undergraduate Research Opportunities Program (UROP) (https://urop.mit.edu). Many theses are co-supervised by two or more faculty members representing different areas of technical expertise. Each year, more than 30 MIT faculty members from a dozen departments participate in ISN research.

Additionally, visiting researchers from Army and industry laboratories participate in ISN research and transitioning, bringing knowledge and practical perspectives that greatly enrich the learning environment. Army partners collaborate with the ISN on basic and applied research, provide guidance on the soldier relevancy of ISN research, and participate in tech transfer. Industry partners provide expertise on product development, systems integration, and affordable manufacturing in quantities needed by customers, helping bring laboratory-scale ISN innovations closer to real-world applications.

Students seeking to perform thesis or UROP research at the ISN should contact ISN-affiliated faculty members or professional research staff (https://isn.mit.edu/people/faculty) directly to express their interest. For further information, contact ISN Headquarters via email (isn@mit.edu) or by calling 617-324-4700.