

SOLUTIONS

FOR A STRONG, SAFE, SECURE WORLD

The Purdue Institute for National Security aims to advance defense through research, technology transition, and workforce development, working hand-in-hand with government and corporate partners.

The Purdue Institute for National Security (PINS) is an interdisciplinary organization that provides strategic access to Purdue's full spectrum of research capabilities, cleared and clearable talent and world-renowned facilities. PINS raises Purdue's visibility in the defense ecosystem and streamlines engagements with key stakeholders in government, industry and academia. PINS coverage areas include microelectronics, energetic materials, hypersonics, cybersecurity, quantum science, space and autonomy — top-priority technologies the United States needs to protect itself and ensure economic security.

RECORD-BREAKING GROWTH

Since 2019, Purdue has seen unparalleled growth in external funding for national security and defense-related research from federal agencies — from \$48 million to \$82 million in fiscal year 2022, a 72% increase. This has enhanced a rich, high-tech ecosystem in mission-critical areas. It bolsters the institute's vision as a preeminent, agile and trusted partner for national security research, testing, evaluation and workforce development.



Purdue's interdisciplinary team of hypersonic research experts brings great depth and breadth of experience in basic and applied research for designing the next-generation of hypersonic systems. (Purdue University/ Charles Jischke)

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#4

**RANKED GRADUATE
ENGINEERING
PROGRAM**

U.S. News and World Report

#8

**MOST INNOVATIVE
UNIVERSITY**

U.S. News and World Report

#9

**CYBERSECURITY
PROGRAM**

U.S. News and World Report


**PURDUE
UNIVERSITY**

Institute for National Security



Hypersonics

Purdue has some of the most comprehensive hypersonics capabilities in the nation, with more than 40 subject matter experts in navigation, aerodynamics, aerothermal effects, propulsion, autonomy, system engineering, high-temperature materials and manufacturing.

Microelectronics

Microelectronics research at Purdue spans from first principles to the factory floor. The continued security and prosperity of the United States presumes access to advanced, trusted microelectronics embedded into systems that power defense, infrastructure, health care, industry and our homes. Purdue leads the nation in programs to train a skilled domestic workforce.

Energetic Materials

Advancing energetic materials, inclusive of explosives, propellants, and pyrotechnics, is essential to keeping United States citizens safe. As the nation works to address this critical need, Purdue's expertise, research facilities and industrial and governmental partnerships strengthen this all-important resource.

Space

In addition to graduating 27 astronauts, Purdue boasts world-class faculty and research facilities to explore areas such as space-based radio transmissions, remote sensing, satellite navigation and control, surveillance and planetary defense.

Quantum

Purdue's quantum science programs leverage interdisciplinary collaboration and the advanced capabilities of facilities such as the Birck Nanotechnology Center. These contribute to technologies that accelerate innovation and address industry challenges. Research areas include atomic and molecular optics, solid-state systems, information and communication, nanophotonics, informatics and data analytics.

Autonomy

Purdue strives to develop autonomous technology and systems that enhance U.S. safety and security. With 15 research centers focusing on autonomy research, Purdue delivers expertise and innovation in areas such as vehicle-to-vehicle software, AI algorithms, hardware development, sensor technologies, mobility, logistics, economic development and public policy.

Cybersecurity

As the world's foremost interdisciplinary academic center for cyber and cyber-physical systems, CERIAS (Center for Education and Research in Information Assurance and Security) has set the bar for research to identify threats, create defenses and help industry and government erect effective cybercrime barricades.

(LEFT) Scifres Nanofabrication Laboratory, the second largest clean room in academia. (Purdue University/Vincent Walter)

(MIDDLE) Combustion studies at Zucrow Laboratories. (Purdue University/Susan Fleck Photography)

(RIGHT) National security innovation brings Deputy Secretary of Defense Kathleen Hicks to Purdue. (DOD photo/Lisa Ferdinand)

\$82M

FOR NATIONAL SECURITY AND DEFENSE-RELATED RESEARCH FROM FEDERAL AGENCIES

\$30M

DOD FUNDING FOR SCALE MICROELECTRONICS WORKFORCE DEVELOPMENT PROGRAM



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