

# WEST POINT WERX INNOVATION HUB



West Point  
**READY**    
READY TO **SERVE**. READY TO **LEAD**.





## WEST POINT WERX

The nature of warfare and the complexity of the battlefield are evolving rapidly. Advanced technologies like artificial intelligence, autonomous weapons systems, advanced materials, and electronic warfare make it paramount that our Army's leaders understand not only the capabilities and limitations of these technologies in warfare, but also other important considerations. This is where West Point Werx Innovation Hub can make a difference. The United States Military Academy (USMA) is a tremendous source of agile, creative and innovative thought leaders and has the capability to evolve right along with the emerging battlefield. The Werx Innovation Hub enhances cadet leader development by bringing together cadets, faculty, and partners in an environment that deliberately fosters collaboration, integration, and synchronization of ideas to address the Army's and the nation's greatest challenges.

### WHY AT WEST POINT?

There are four primary characteristics that make West Point ideally suited to fill this critical innovation role:

- **Warrior Scholars:** West Point has a significant population of gifted scholars - across multiple disciplines - with military and/or other national defense experience.
- **Interdisciplinary Agility:** West Point has the ability to rapidly concentrate on important questions with subject matter experts from across the STEM, humanities, and social science disciplines.
- **Unique Position:** West Point is well positioned to see and engage across the entire Department of the Army innovation ecosystem, as well as to partner with relevant industry and academic partners.
- **Future Warfighters:** West Point develops leaders of character to fight and win our nation's wars. Innovation at the Academy starts with cadet education through project-based learning which teaches them to lead cross-functional teams that can apply knowledge to solve real problems impacting national defense.

*"West Point is a tremendous source of intellectual capital, and can be a great "think tank" for the Army. The Werx will amplify our ability to address some of the most challenging problems. Uniquely positioned within the Army's innovation ecosystem, we have an ideal environment for experts from various academic departments and research centers to come together and generate the kinds of intellectual collisions that form the foundation of innovation."*

— Dr. Kraig Sheetz, Vice Dean for Engagement & Research



### ELEMENTS OF WEST POINT WERX

*Research Portfolios* includes Space, Sustainability, Cyber & Data, Human-Machine Integration, and Law & Ethics of Warfare. The ever-evolving list of research portfolios will enable Communities of Practice, consisting of domain experts from across departments to leverage intellectual capital against critical Army needs.

*Innovation Education* will support the teaching and study of service through entrepreneurship, disruption, and innovation (STEDI) methodologies that enable cadets to think critically and creatively as future junior officers.

*Future Facilities* will include flexible spaces and meeting rooms, designed to inspire creativity and collaboration, accommodating interdisciplinary teams, fostering a cross pollination of ideas and expertise. Assessing the potential for an innovation workspace on or adjacent to the West Point campus which would promote collaborative innovation among cadets, faculty, federal agencies, industry, and academia.

## WERX COLLABORATION SPOTLIGHT



Approaching what appears to be a deep cave complex, a platoon leader stops the formation. Recent intelligence indicates possible radiological threats and a high risk of improvised explosive devices (IEDs) within the complex. The platoon leader decides to map the area with the platoon's autonomous four-legged robot. The robot enters the GPS-obscured cave complex opening and autonomously navigates the caves and tunnels, traversing rocks and hills. When it has completed its mission, the robot returns and provides the platoon leader with a map of the cave complex, including objects of interest in each room, likely IED locations, and a radiological heat map.

USMA's Engineering Psychology Program and the West Point Robotics Research Center worked in collaboration to integrate a four-legged autonomous robot into two Cadet Leader Development Training lanes in the summer of 2023. The resulting data will enable the research team to develop models of trust evolution that predict future beliefs and behaviors of human autonomous teams in dynamic environments.

Through the E2MAPS Cadet Capstone, the West Point Robotics Research Center performed simultaneous localization, mapping, and classification of objects of interest using machine learning for future integration at the edge of the battlefield.

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### THE WAY AHEAD

The West Point Werx Innovation Hub is dedicated to supporting the warfighters of today and tomorrow. Through partnerships with Army and Department of Defense (DOD) organizations, industry and academe, the Werx provides a venue to synchronize and integrate cutting-edge research.

Collaborative research projects will address real-world warfighting challenges and drive innovation. Professional development workshops and seminars, entrepreneurship courses, and experiential learning opportunities will cultivate an entrepreneurial mindset among cadets and faculty.

Events, conferences, and networking opportunities will facilitate knowledge exchange,

collaboration, and networking among academia, industry, and the broader defense community. Outreach programs will engage with business, government, and the community to foster economic development.

The U.S. Army Futures Command is focused on designing Army 2040 and delivering Army 2030. West Point has the privilege of helping design the battalion commanders of 2040 (cadets) and deliver the battalion commanders of 2030 (rotating military faculty). The West Point Werx Innovation Hub will play a significant role to this end. Private support will amplify the Academy's innovation efforts, contribute knowledge, and enable partnerships to make this vision a reality.



*"To develop innovative thoughts, people have got to be willing to go out on the cutting edge to lead, to experience failure, to be able to step back, regroup, consolidate, and reorganize in some cases, and then push forward with the lessons that they've learned."*

— LTG Steven Gilland '90, 61st Superintendent of the United States Military Academy





Photo: Lee Ross '73

# FUNDING OPPORTUNITIES

## West Point Werx Innovation Hub

Werx Director

Werx Deputy Director for Outreach

Werx Education

STEDI Fellow

Werx Research Portfolios

Individual Research Portfolio topics to be determined in discussion with the Academy

Werx Facilities

Future Workspace Expansion Planning Fund

Current Workspace Renovation Fund (*funded*)

MARGIN OF  
EXCELLENCE



Claudia Phillips | West Point Association of Graduates

698 Mills Road, West Point, NY 10996

Phone 845.446.1575

[WestPointAOG.org](http://WestPointAOG.org)

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