WEST POINT CYBER INITIATIVES

From left to right: Cadets during the Academy's Projects Day, demonstrating their research through the CRC in fiber optic communications; the CRC's Cyber Defense Exercise cadets decide how to defend against the aggressors; Secretary of the Army John McHugh with the 2014 Cyber Defense Exercise leadership team.

A PRESSING NEED

Our nation and our military are at a critical juncture. Cyberspace operations are a critical part of war fighting, and cyber warriors seek direct engagement with humans and their machines in order to influence the way they behave, think, and act. Properly executed, cyberspace operations preclude the adversary's ability to direct its own machines or to optimize its own operational strategy.

Despite a great need, important policy, doctrine, and law surrounding cyber warfare remains unsettled. For more than a decade, West Point has been preparing cyber-savvy leaders as well as subject matter experts for the Army and the nation despite limited resources. But the need for more leaders and experts is greater than ever. As Army Secretary John McHugh stated at West Point in 2014, "In the past few years, cyber has escalated from a Department of Defense issue of moderate concern, to one of the most serious threats facing our national security."

West Point has responded to these challenges with the creation of several cyber initiatives aimed at better educating and preparing cadets, the Army, and the nation. West Point's Cyber Initiatives include the West Point Cyber Research Center (CRC), the Army Cyber Institute at West Point (ACI), and the USMA Cyber Chair. Together, these initiatives will work cooperatively to address the nation's most pressing cyber security challenges through distinct programs and for distinct audiences, and they will strengthen the Academy's, the Army's, and the nation's preparation and response to cyber threats.

THE WEST POINT CYBER RESEARCH CENTER (CADET FOCUSED)

In 2001, the United States Military Academy (USMA) became the first undergraduate institution the National Security Agency certified as a "Center of Excellence" in Information Assurance Education. The CRC, housed within the Department of Electrical Engineering and Computer Science, educates and trains cadets in cyber space operations, provides undergraduate research opportunities, and continues to build and sustain deep ties with the national cyberspace operations community. This work is relevant and vital as these cadets will soon lead the Army's soldiers against cyber threats and terrorism. The center's staff and faculty teach, oversee cadet research, and facilitate outreach and cadet partnerships with the Army, Department of Defense, and other federal agencies.

The CRC requires private dollars to strengthen and sustain its Margin of Excellence programs. The following broad categories highlight these areas where private funding is necessary:

Cadet Cyber Enrichment Program

The CRC's Cyber Enrichment Program augments the development of West Point cadets and faculty with external opportunities that would otherwise not be available to them. Opportunities include internships at government and industry organizations at the leading edge of cyber security issues; a speaker series with guest lecturers; training and certification events; external conferences, colloquiums, and symposiums; and research.

Cadet Cyber Event Series

The CRC provides opportunities to participate in a number of events and contests that inspire and motivate while simultaneously honing critical technical and leadership skills. Examples of these types of events include the Cyber Defense Exercise (CDX), Cyber Capture the Flag, DARPA's "Cyber Stakes", and technology competitions such as the Intelligent Ground Vehicle Competition and MIT's Soldier Design Competition. These ever-evolving opportunities allow cadets to pursue solutions to real-world challenges and promote dialogue and interaction between students around the country studying cyber studies.

Center Support

The CRC seeks to hire a Post-Doctoral Research Fellow, a Research Associate, and a Program Assistant to coordinate the center's programming, develop and implement strategic plans, and advance the overall mission of the center.

THE ARMY CYBER INSTITUTE (GLOBAL IMPACT)

In the fall of 2012, the Chief of Staff of the Army expressed an urgent requirement to address the Army's critically short supply of cyber-qualified leaders and provide a source of strategic insight and advice on cyber related issues affecting the Army. The Army created the Army Cyber Institute (ACI) and provided appropriated dollars for its mission-essential requirements. It houses civilian and military cyber experts and educators and has an objective to be a national strategic initiatives group for cyber issues affecting the Army. Its broad national charter incorporates the Joint Force, industry, corporations, non-governmental organizations, West Point, and government at the tactical, operational, and strategic levels. Reporting directly to the Superintendent, the ACI develops intellectual capital and uses subject matter experts to expand the knowledge base for Army cyber defense and operations. This will help the nation to outmaneuver its adversaries in cyberspace as well as bridge gaps and promote information exchange across the Army, military, academics, industrial, corporate, and governmental (as well as non-governmental) cyber communities.

While the Department of the Army directly funds ACI's operational requirements, there remain important Margin of Excellence programs consistent with the Secretary of the Army's vision that require private funding. West Point cadets will be natural direct and indirect beneficiaries of this expertise and mission, but the institute's global reach and accessibility to those outside of the Academy will allow it to be an internationally recognized leader in the cyber field and influence other students at undergraduate and graduate levels. Margin of Excellence opportunities within the ACI fall under the following broad headings:

Cyber Enrichment Program

The ACI's Cyber Enrichment Program augments the development of USMA cadets, ACI faculty, and external constituents by providing enrichment opportunities that would otherwise not be available, to include lectures, internships, training, and external conferences. Participants, be it ROTC cadets, civilian students, faculty, or West Point cadets, will be carefully selected, ensuring that those who are purposefully pursuing cyber studies will have access to specialized and renowned engagement opportunities.

Cyber Event Series

Sponsoring high-visibility events that draw top-notch cyber practitioners is critical to establishing the ACI as a world-class hub of knowledge and collaboration. The purpose of the ACI's Cyber Event Series is to bring the cyber community of interest into West Point to share work, exchange ideas, and maximize exposure for our cadets and faculty. Events include the Junior Cyber Leaders Workshops Series, the Annual Cyber Conference, Targeted Cyber Seminar Series, and the Senior Leader Cyber Summit.

From left to right: Secretary of the Army John McHugh, Superintendent Robert Caslen, and the ACI Director Greg Conti at the ACI's ribbon-cutting ceremony in October 2014; ACI Cyber Law Fellow Bob Clark engages cadets in a lecture on the legal aspects of cyber operations.

Cyber Awareness Program

It is important to simultaneously inform the general public of cyber security threats while also attracting promising candidates to the cyber workforce. To that end, the ACI's Cyber Awareness Program develops engagement opportunities across a variety of mediums (to include video, social media, publications, events) to disseminate the ACI's work. The nation's thirst for cyber talent is unquenchable, so we must develop novel approaches to recruit and retain the best candidates.

Cyber Leadership Award

This annual award will recognize individuals from multiple sectors, to include government, academia, corporate, and non-government, who have made significant contributions to U.S. cyber operations. The award will inspire future cyber leaders and reaffirm West Point's role as the leader in this realm.

THE USMA CYBER CHAIR

The USMA Cyber Chair informs the work of both the Army Cyber Institute and the Cyber Research Center, making this a critical position for West Point's overall Cyber Initiative. The chair will be a distinguished world-class expert who will advise and enrich both cyber centers, coordinate programs, and serve as a central contact for all of West Point's cyber work. Furthermore, as a highly qualified expert in the field of cyber security, the chair will provide leadership and experience in the development of West Point's new and evolving cyber programs and help support the Army's and the Academy's cyber-related educational, outreach, and research activities.

West Point has a long and strong history in the cyber security domain. For more than a decade now, the United States Military Academy has been an innovator and leader in cyber security education, operations, outreach, doctrine, and research. West Point is able to leverage its unique positioning in both the military and academic spheres to reach cadets and faculty as well as the wider cyber security community, to include government, military, the private sector, and non-government organizations. Please join us as we ensure West Point as a critical leader in Cyber Security for the nation.

MARGIN OF
EXCELLENCE

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