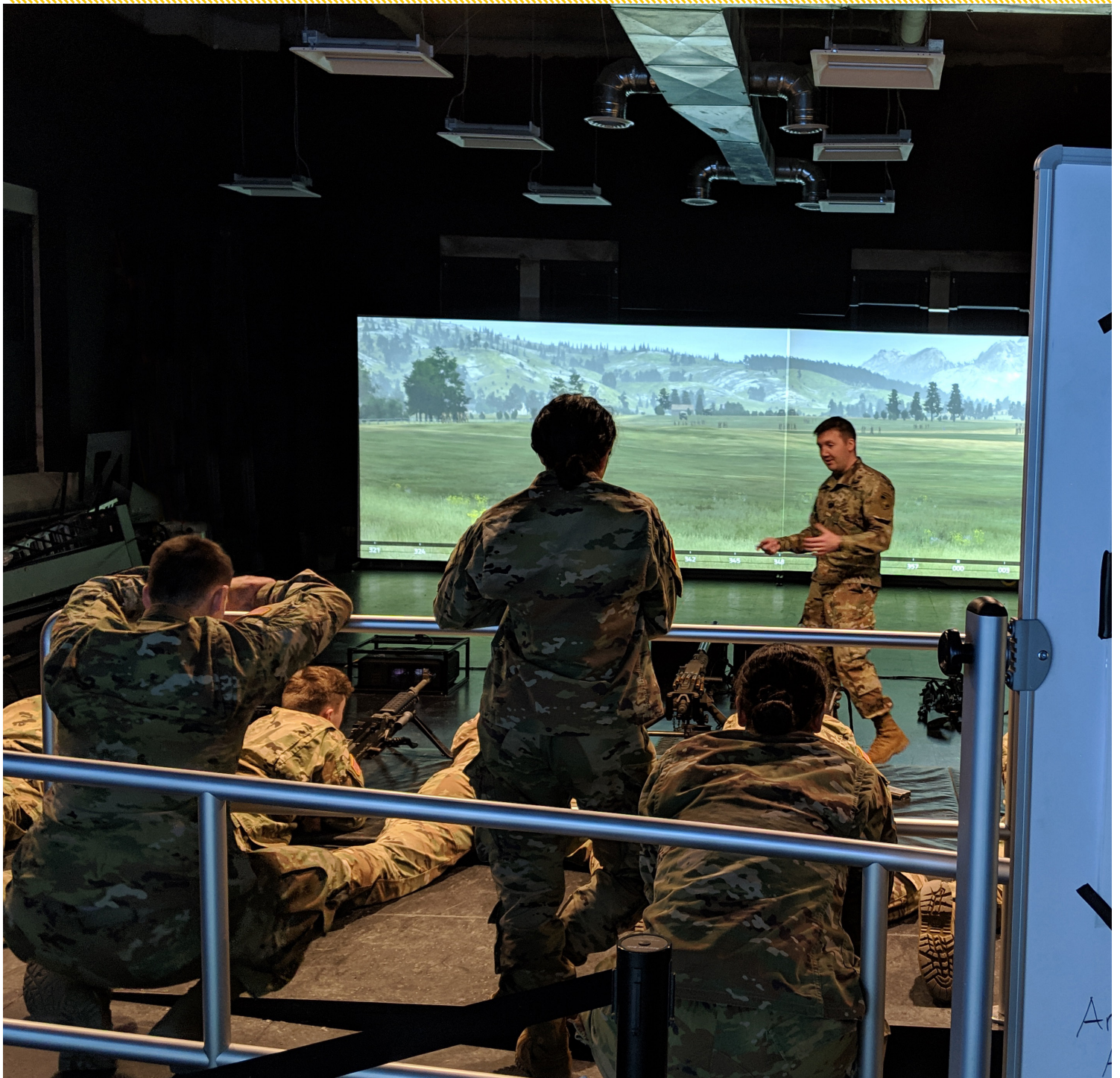


WEST POINT SIMULATION CENTER



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



THE EXPANDING ROLE OF TECHNOLOGY

The name “West Point” is synonymous with Tradition. Although West Point honors its 200-year history and traditions, it is also constantly changing in its pursuit of excellence. West Point’s “preserve/transform” dialectic always balances out in the end because today’s change becomes tomorrow’s tradition. Technology—a catalyst of recent disruptive change in education, society, the economy, and the armed services—has driven significant change at the Academy. Founded as America’s first engineering school, West Point continues to pioneer a path in training cadet leaders to understand and use technology to keep up with the rapidly evolving needs of the Army and the nation. Our graduates must be prepared to face and overcome previously unimagined challenges in an increasingly complex multi-domain operational environment. Today’s leaders are dealing with challenges we couldn’t have imagined 20 or 30 years ago.

The West Point Simulation Center (Sim Center) mission is to educate, train, and inspire the Corps of Cadets to meet these challenges by designing, developing, and applying full-spectrum, technology-based simulation training capabilities. Officially housed within the Department of Military Instruction (DMI), the Sim Center’s primary focus is military training via simulated combat and field scenarios. Yet, the Sim Center also supports instructors and research across numerous academic and athletic departments, including the Department of Behavioral Sciences and Leadership, the Department of Foreign Languages, and the Department of Geography and Environmental Engineering.

CURRENT CAPABILITIES AND TECHNOLOGY

So, what technologies does the Sim Center offer? It currently provides a 2,100-square-foot computer lab in Washington Hall hosting 89 computer terminals that run a variety of training simulation programs, along with housing various training equipment, including:

Virtual Battlespace 3 (VBS3), the Army’s top training simulation game. Instructors can create specified scenarios needed to train for certain situations, and VBS3’s real-time editor option allows altering the battlespace during the mission to assess how Cadets react in real-time. Realism is a hallmark of VBS3, which has a growing content library of more than 9,000 assets (avatars, equipment, and environmental factors), realistic buildings and terrains, and more than 100 combined arms training tasks for both mounted and dismounted operations. This training involves individual soldier task such as land navigation and Call for fire (artillery and mortars) up to company-level collective maneuvers.

The Engagement Skills Trainer 2000 (EST) II, a virtual weapon firing simulator with ten firing lanes, supports three modes of weapons training: marksmanship for individual and crew-served weapons; fire team collective core exercises; and judgmental use of force (“shoot/don’t shoot” scenarios that challenge the understanding and application of rules of engagement). The EST is also used to teach senior Cadets how to secure a resource for training their units, something they’ll have to do in the Army as leaders.

“Our time in the sim center helped me to grasp what I was asking my squads to do, and whether or not it was feasible. I believe it helped deepen my understanding of platoon level tactics and proved to be a great resource for mission analysis and planning.”

— Cadet Renita K. Williams ’21

“My experience with the West Point Simulation Center was far more helpful than I could imagine. The technology is next level and that type of quality is not offered as easily at military posts around the country. The level of expertise within the staff of the West Point Simulation Center goes unmatched. They are always asking if you need any additional instruction and if so, they are more than willing to help. I am grateful for my experiences at the West Point Simulation Center and I would recommend this resource to anyone!”

— Second Lieutenant Nikiya Comer ’19

In the Computer Assisted Virtual Environment (CAVE), users stand in a simulated virtual environment where projectors are directed to screens that make up the 24x12 space, floor and ceiling included. The Virtual Battlespace 4 software can model West Point’s terrain based on global positioning system data, accurately within one meter. It allows a Cadet, utilizing a virtual avatar, to simulate traversing through terrain for leaders reconnaissance, squad ambush, raid missions, terrain analysis, and scenario development for tactical planning.

The Combat Mission Professional allows a Cadet to play as a Squad Leader or Platoon leader and give orders to his subordinates to execute a mission. The program allows a Cadet to run battle scenarios, tactical maneuvers, and decision making strategies in an artificial intelligent (AI) environment.

FUTURE CAPABILITIES AND TECHNOLOGY

The addition to the Washington Hall footprint will be the 4,500 square-foot space in the basement of Bradley Barracks. This space will host multiple capabilities that the instructors and Cadets can use to achieve different educational and training objectives. Some of the capabilities are virtual reality (VR), augmented reality (AR), Army legacy systems (such as Engagement Skills Trainer), Synthetic Training Environment Network (STE), Modeling and Simulation Research, and current West Point Simulation Center capabilities. This space can be equipped and configured to support these systems, capabilities, and new technology that may be developed over time.

Virtual Reality (VR) Immersive Training

This capability will utilize virtual reality headsets to enable Cadets to be immersed in an environment connected to other Cadets in the same domain to operate as a fighting squad. Each cadet will have their own space to work and maneuver physically in the real

world, translated to an immersive virtual world. This will also enable the Cadet to connect to other Cadets playing as the enemy in the Simulation lab in Washington Hall. Below is a rendering of people playing in a virtual environment in their pod playing and synched to other players to their left and right. They will accomplish this by wearing a headset that enables this event.

Augmented Reality (AR) Training

Working with industry partners, the West Point Simulation Center has the opportunity to conduct research and develop emerging technology. Augmented Reality gives an individual the ability to see augmented entities in the real world and still interact with real people. This capability will enable cadets to maneuver a team and squad in a shoot house. The rooms will be configured from heavy materials to replicate the walls in the space, lidar scanned, and then inputted into the computer or IPAD. The instructor will then be able to emplace augmented enemy (artificial) in those spaces. The cadets will wear glasses to see their squad members and actual items in the entire area to engage the (artificial) augmented entities.

Synthetic Training Environment (STE)

As the Simulation Center continues to provide simulated training for Cadets, the Army is developing the Synthetic Training Environment network and systems. This network will enable all spaces in the Bradley Arena and in Washington Hall to connect to other military installations, allowing Cadets to have the opportunity to play, train, and connect to Soldiers at other installations using new systems such as the Reconfigurable Virtual Collective Trainer (RVCT). The RVCT is a trainer that can host multiple vehicle platforms and allows a Cadet to be familiarized with what they will encounter as a commissioned officer. Collaborating with Army organizations such as the Synthetic Training Environment Cross-Functional Team (STE CFT), Cadets can be apart of the requirements development process for Army systems by testing new equipment. Being part of that requirements development process will give Cadets hands on new technology they will see as commissioned officers in the future.

Army West Point Esports

This initiative will serve as the Academy's answer to the competitive gaming or Esports arena. The inception of Army West Point Esports demonstrated the application of competitive gaming to enhance the Cadet experience and the development of cognitive abilities, communication, and tactics. As the popularity

increases, it will become increasingly essential to host not just one but two facilities dedicated to the multiple echelons of interaction that revolve around competitive gaming. The competition and training space will serve as a centralized location for all elements of competitive gaming, development, and implementation. Availability of all the components of the Esports competitions can support areas of broadcasting, communications, and intercollegiate competition.

EXPANDING THE CENTER'S REACH TO NEW TECHNOLOGY AND RESEARCH

"We are the middle step between the classroom and the field," says Victor Castro, Deputy Director of the West Point Simulation Center. "There's a big difference between learning about tactics and performing them while on patrol or seeing a terrain map of Afghanistan and negotiating its mountains." The Sim Center trains cadets on nearly every pre-commissioning training task via simulation and does so efficiently. According to Castro, the Sim Center can train up to 1,200 cadets in just nine days.

A primary goal of the Sim Center is to provide a mechanism through which to coordinate activities with the Army and the Joint Force by maximizing the utilization of Army Program of Record training capabilities, collaborating with industry partners on new and emerging technology, and leveraging capabilities unique to West Point. A permanent endowment will help to sustain the Center's work into the future, for periodic technology refreshes to maintain state-of-the-art hardware, software, and cyber-security tools; and for providing opportunities for cadet and faculty research to complement academic and military training.

Technology has changed how we learn, communicate, and connect with the world around us, and it has undoubtedly changed the nature of the profession of arms. As the preeminent leader of development and academic institutions globally, it's vitally important that we understand how technology enables this generation to learn and leverage it to prepare our graduates to lead and thrive in tomorrow's complex and technologically advanced environments. West Point is on the cutting edge of educational technology and pedagogy, incorporating technology into each of our leader development programs. Given all that it is doing now and all that it is poised to achieve in the future, the West Point Simulation Center is a state-of-the-art facility that is helping to make "West Point" synonymous with Technology.

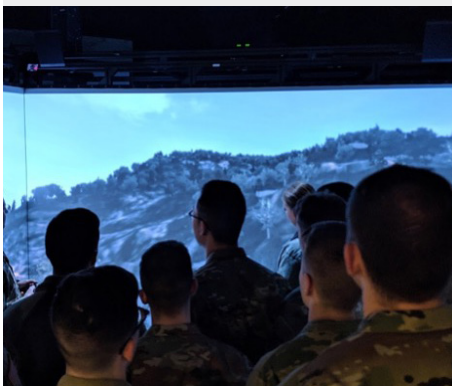




Photo: Lee Ross '73

FUNDING OPPORTUNITIES

GENEROUS GRADUATES AND FRIENDS OF THE ACADEMY WHO SUPPORT THE WEST POINT SIMULATION CENTER WILL TAKE PRIDE IN THE TRANSFORMATIVE POWER OF THEIR GIFTS.

Simulation Center Endowment \$18 million

Personnel

Technical Integration Specialist \$4.3 million endowment/155,000 annual

Simulation Center Physical Development

Simulation Center Arena Renovation (Bradley Barracks basement) \$5.6 million

Virtual POD Development \$560,000

Augmented Reality Development (*reserved*) \$560,000

Network Development \$560,000

Programs Licenses \$280,000

Endowments

Cognitive, Research, Testing & Evaluation Simulations ... \$1.5 million endowment/\$55,000 annual

Programs Licenses \$1.5 million endowment/\$55,000 annual

Equipment \$1.5 million endowment/\$55,000 annual

Infrastructure \$1.5 million endowment/\$55,000 annual

MARGIN OF
EXCELLENCE



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