



The AICUP Defense and Security Survey 2024: “Higher Education is the ‘Secret Weapon’ of National Defense.”

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Abstract

The goal of this survey is to explore the role of independent nonprofit higher education as an active partner in national defense. Today’s armed forces rely on technologies that are first conceived of at campus classrooms and labs, while colleges also play a leading role in rebuilding America’s industrial base. The 85 member institutions of the Association of Independent Colleges and Universities of Pennsylvania (AICUP) provide examples of how academic institutions propel US defense through research, innovation, partnerships, relevant courses of study, ROTC officer training, veteran support, and even direct institutional funding and veteran scholarships. Two-way “talent pipelines” lead graduates into the military and veterans into the classroom, from “boots to books,” in a process that taps both “brain and brawn.”

Preface: Context and Background

Pennsylvania's Pivotal Role in National Defense

When the *USS Harrisburg* was launched only last month, in October 2024,⁽¹⁾ some may have wondered why a Navy ship should be named after a landlocked city, which is the capital of a state that many people also contend is landlocked.⁽²⁾ Secretary of the Navy Richard V. Spencer explained the name choice like this: “The people of central Pennsylvania have always played a critical role in forging the strength of our Navy and fighting to defend our nation.”⁽³⁾

Indeed, to say that Pennsylvania plays a pivotal role in national defense would be an *understatement*. The **top seven (7) defense contractors** in the US all have an active presence in Pennsylvania (Lockheed, Raytheon, Northrup Grumman, Boeing, General Dynamics, BAE, and L3Harris).⁽⁴⁾ According to the Department of Defense (DoD), **defense spending in PA supports over 115,000 jobs**, and across the state, there are over **90 military sites** and Readiness and Environmental Protection Integration (REPI) installations spread over nearly 90,000 acres in PA that are managed by the DoD or on state-owned National Guard land.⁽⁵⁾ Nuclear **submarines**, which many people would not associate with Pennsylvania, have over 570 vital industrial suppliers in Pennsylvania alone, according to the Navy.⁽⁶⁾ The **nation's largest distribution facility operated by the DoD** is in the small borough of New Cumberland, across the river from Harrisburg.⁽⁷⁾ Central PA is home to the **busiest National Guard training center** in the country.⁽⁸⁾ **Naval Support Activity Mechanicsburg** manages close to 9 million square feet of storage space and is the parent installation of Naval Support Activity Philadelphia and the **Philadelphia Navy Yard Annex**.⁽⁹⁾ PA is home to among two of the Army's largest **ammunition production** and storage facilities (in Scranton and Chambersburg, respectively).⁽¹⁰⁾ The state is home to the **US Army's only graduate school** for officers and civilians, the Army War College in Carlisle.⁽¹¹⁾ **The US Navy and Marines were even founded in Pennsylvania** (Philadelphia).⁽¹²⁾

Pennsylvania is in close proximity to centers of national defense, and many Pennsylvania cities are within a short drive to Washington, DC, Aberdeen Proving Ground, Fort Meade (NSA), Langley (CIA), and the Pentagon. The “keystone” in the Keystone State refers to Pennsylvania's historic geographic, economic, and political position to the nation, a fact that remains true today, as Pennsylvania is at the center of the Northeast Megalopolis. Within one day's drive of the heart of PA is a region that represents 17% of the US population, 20% of the US GDP, nearly 100 of the Fortune 500 companies, 60% of the nation's top universities, the Capitol, all the headquarters of the nation's top defense contractors, and multiple major cities, bases, ports, and airports.⁽¹³⁾

Preface: Context and Background

Pennsylvania's Education Ecosystem is an Asset for Industry

Pennsylvania has the **4th most universities and colleges** of any state in the Union,⁽¹⁴⁾ about 250 postsecondary institutions according to the Pennsylvania Department of Education.⁽¹⁵⁾ The independent nonprofit colleges and universities of Pennsylvania (AICUP) lead higher education

in the state, educating 52% of all undergraduates, 67% of graduate and doctoral students, and attracting 2 in 3 of all out-of-state students.⁽¹⁶⁾ Pennsylvania is the second-most **popular destination for out-of-state students** in the US (based on 34 years of data),⁽¹⁷⁾ and 2023 saw a 51% gain in the number of college-educated new residents moving to Pennsylvania,⁽¹⁸⁾ both facts demonstrating a “**brain gain**” that underscores the state’s reputation as a **magnet for talent**.

This higher education ecosystem is an asset to the region with multiple positive externalities and pronounced examples of “**knowledge spillover**.” More than **1 in 10 American Nobel Prize winners** are affiliated with an AICUP member school in Pennsylvania (66 of the 409 American laureates from 1901-2023).⁽¹⁹⁾ Multiple **inventions** used in everyday life were first ideated at an AICUP member classroom or campus lab, including WiFi, CAPTCHA and multibillion-pixel photography technology utilized by Google and NASA. Dozens of university-based incubators and business accelerators are used by local communities across PA to spur economic development and spark new innovations.

Industry in general, as well as defense companies and the military in particular, have found numerous opportunities to **tap top talent** thanks to Pennsylvania’s fecund and thriving education ecosystem. The state is home to hundreds of thriving incubators, accelerators, the APEX Accelerators, innovation districts, and the Keystone Innovation Zones. **Pennsylvania ranks 9th in venture capital (VC)** in the nation overall (venture capital investment by company location),⁽²⁰⁾ and VC and defense-related VC firms are increasingly looking to Pennsylvania for their next opportunity, recognizing the state’s reputation for talent.

Preface: Context and Background

Brain and Brawn: Academy-Defense Partnerships

“There’s more than one way to defend your country,” wrote Joseph R. Urgo in the *Chronicle of Higher Education*, in a piece that highlights the longstanding ties between the academy and defense.⁽²¹⁾ Urgo, who was a liberal arts major at a Quaker college, recalls his surprise at learning that his student aid in 1974 was referred to as a “National Defense Loan.” The same program still exists today, though it has been rebranded as the Perkins Loan. This fact illustrates how the US military recognized “the need to defend the nation against hostile forces, and the need for highly educated, and technically and strategically trained people to lead the effort.” Even liberal arts majors and educated civilians with seemingly no connection to the military or the defense industry, as it turns out, are still a necessary component of the nation’s strength. In other words, higher education was and is still a vital and recognized part of the nation’s defense.

Military bases are only the most forward-facing component of the modern military, as the DoD has demonstrated through its partnerships and investments that other components of defense which are just as vital to national security include industry and manufacturing, research labs, and even universities. The role of the university as a partner to national defense has only enlarged since the second half of the 20th century. The National Defense Education Act (NDEA)

of 1958 marked a watershed moment when the US formally recognized the value of higher education in increasing the technological sophistication of American armed forces. After the advent of the GI Bill and famed academic-defense collaborations like the Manhattan Project, the NDEA ushered in a new era for collaboration that launched hundreds of innovations, new technologies and methodologies. Even the internet, to cite only one example, owes its existence to academic-defense partnerships, as the proto-web “ARPANET” was spearheaded by DARPA in a joint collaboration between university researchers and the Pentagon.

“America’s higher-education system strengthens our nation,” wrote former Secretary of the Treasury Robert Rubin. “Colleges and universities also help the United States maintain a geopolitical edge.”

“Many Americans don’t realize just how exceptional the country’s university system actually is. Although the United States can claim less than 5 percent of the world’s population, it is home to 65 percent of the world’s 20 highest-ranked universities (and 28 percent of the world’s top-200 universities),” added Rubin. “Institutions of higher education spur early-stage research of all kinds, create environments for commercializing that research, provide a base for start-up and technology hubs, and serve as a mentoring incubator for new generations of entrepreneurs and business leaders.”⁽²²⁾

An *educated* military also has a competitive advantage over potential adversaries, found journalist Garrett Graff during interviews at the Pentagon. “Historically, one bright dividing line between America’s commissioned and noncommissioned officers was education... But as the battlefield becomes more digital, the formal education distinction is blurring,” writes Graff, author of *Raven Rock*, which is about one of Pennsylvania’s largest yet little known facilities for national defense. “Today, higher education is becoming more common among the ranks. More than 100,000 of about 1 million enlisted active-duty personnel now have college degrees — a percentage that has more than doubled since 2010.”⁽²³⁾

Academy and Defense partnerships were touted in years past, but in the aftermath of the war in Vietnam, programs like the ROTC – which trains officers at university campuses, declined in popularity, and some were even shuttered. In recent years, however, ROTC officer training programs bounced back, with some high profile returns to college campuses, like at Harvard in 2011, for example, which had banned the ROTC for four decades.⁽²⁴⁾

Preface: Context and Background

Building the Base: Responding to Changing Needs

American industry rose to meet the needs of America’s defense during World War II in a way never seen before. “Rosie the Riveter” was the icon of an era, when manufacturing represented 40% of GNP.⁽²⁵⁾ “Liberty ships” were being built at an average rate of only 42 days per ship in Sausalito and Philadelphia,⁽²⁶⁾ places which today bear little resemblance to their maritime

manufacturing past. President Roosevelt called these civilian and industrial efforts the “Arsenal of Democracy,” underscoring the importance of America’s industrial base in defense.⁽²⁷⁾

Offshoring and globalization ushered a steep decline in American-based manufacturing as factories moved abroad. That shift in the industrial base and supply chain left a gap that the Pentagon came to see as a potential vulnerability. Energy, electronics, steel, ships, computer chips, and the thousands of components necessary to build an F-16 fighter jet, for example, are increasingly *imported* from outside US borders. Critical manufacturing and defense needs can be delayed or derailed by geopolitical events, war, or supply chain disruptions such as those seen during the COVID pandemic or during shipping lane bottlenecks such as at the Suez Canal in 2021⁽²⁸⁾ or the Gulf of Aden in 2024.⁽²⁹⁾ That’s why rebuilding America’s industrial base and making a reliable supply chain are high priorities for today’s military.

In response, in January 2024 the DoD released the first “**National Defense Industrial Strategy**” (NDIS), with the stated aim of “creating a modern, resilient defense industrial ecosystem designed to deter U.S. adversaries and meet the production demands posed by evolving threats.”⁽³⁰⁾ Higher education and academic research are a cornerstone for the NDIS, especially concerning areas like AI and machine learning, nanotechnology, skilled manufacturing, robotics, microchip research, hypersonics and more. The NDIS seeks to “promote and invest in partnerships with educational institutions,” promote internships and apprenticeships that build the industrial base, and supports “Innovation Driven Research/Education Ecosystem for Advanced Manufacturing for the Defense.” The Defense Industrial Base Talent Pipeline Program, hosted by the US Navy and piloted in Philadelphia, is one example of the NDIS in action. [See “Introduction: One School’s Story” for more on the Talent Pipeline].

New technologies –from robotics and AI to drones and quantum computing – have dramatically changed the landscape of defense and redefined the meaning of “building the base.” “Cyber warfare,” for example, can be potentially devastating in an increasingly connected world that is more reliant than ever on the internet, and economies can be brought down not only by *bombs and bullets* but by *bytes and bugs*. Journalist Nicole Perlroth points to the Stuxnet hack on Iran’s nuclear program, discovered in 2010, as an example of this new era in which a single cyberweapon can produce devastating results without jeopardizing human life and without deploying boots on the ground.⁽³¹⁾

“Cyberwarriors” and drone operators can orchestrate operations from thousands of miles away from an adversary, and that change in the defense landscape requires an educated and skilled workforce. Even the secretive the National Security Agency (NSA), once popularly nicknamed “No Such Agency,” now publicly advertises for cybersecurity specialists,⁽³²⁾ and actively recruits at college campuses.⁽³³⁾ The Cybersecurity and Infrastructure Security Agency (CISA), a unit of the Department of Homeland Security and a partner to the NSA, was established in 2018 to enhance domestic cybersecurity and cyber defense. CISA promotes cybersecurity training at colleges, recognizing 9 AICUP member schools as cybersecurity partners,⁽³⁴⁾ and 3 AICUP

member schools participate in the CyberCorps® Scholarship for Service.⁽³⁵⁾ 34 AICUP member schools offer cybersecurity majors and courses of study in Pennsylvania.

Venture Capital (VC) has even become a key player in the changing landscape of national defense, with several effects on and opportunities for universities. “Building the industrial base” increasingly serves a dual purpose for both commerce and defense, according to a DARPA spokesperson.⁽³⁶⁾ Recognizing that “technological superiority is a key element of the US military’s strength,” the DoD invests in “defense innovation organizations” (DIOs) to strengthen America’s technology advantage, and many of these DIOs emerge from academic and college-corporate partnerships, according to a RAND Corp report on “**Strengthening the Defense Innovation Ecosystem.**”⁽³⁷⁾ “VC investors have provided defense companies with more than \$130 billion in funding,” with about **100 defense start-ups** founded within a few years, from 2021-2024, according to the Congressional Budget Office (CBO) and *The Wall Street Journal*. The CBO’s 2024 report on “The U.S. Defense Industrial Base” highlights that even the Central Intelligence Agency (CIA) funds its own private VC firm to advance its intelligence capabilities.⁽³⁸⁾ The **CIA** VC firm, called In-Q-Tel (IQT), lists several investments in Pennsylvania startups in its publicly available portfolio, including corporate-academic collaborations with at least two **AICUP** member universities, one that aims to enhance spoken-language training software for intelligence agents,⁽³⁹⁾ and another that develops robot systems to autonomously navigate and collect data where maps and GPS do not exist.⁽⁴⁰⁾

Introduction: One School's Story (Drexel)

In less than a month from now, in December, [Drexel University](#) will again host a conference of the National Defense Industrial Association (NDIA). Secretary of the Navy Carlos Del Toro spoke at last year's conference, also at Drexel, where he addressed an audience that included representatives from nuclear submarine and aircraft carrier suppliers, the Office of Naval Research, the NavalX Accelerator, as well as the Secretary of the Pennsylvania Department of Labor and Industry. There at Drexel, only five miles from the historic Philadelphia Navy Yard, Del Toro called on industry and academia to work together to rebuild America's competitive shipbuilding and repair capabilities.

"Your expertise, time, and resources are essential for developing the cutting-edge technologies that will secure our maritime dominance," exclaimed Del Toro. "Pennsylvania alone boasts over 570 vital submarine industrial base suppliers, 39 of which are classified as critical. In just the past five years, we've invested over \$250 million to build capacity, increase capability, and add resiliency to these suppliers. We're going to need 150,000 new qualified workers in the next ten years."⁽⁴¹⁾

The phrase of that day, "*rebuilding the industrial base*," belies a complex process requiring sophisticated planning, engineering, and a highly-skilled, educated workforce. Del Toro's vision for the future of shipbuilding and repair, for example, relies on advances in modelling, virtual reality, and artificial intelligence, all technologies that are being advanced in Pennsylvania's college labs and classrooms. The Navy expects to even repair ships while at sea, advanced machinery and electronics and all, which is increasingly necessary in a hostile world where US ships might not always be welcome at foreign ports.

Drexel heard the call and has been forging active partnerships in defense. Drexel's College of Engineering entered into an Education Partnership Agreement with the Naval Surface Warfare Center, Philadelphia Division, which provides "engineering students access to military staff, and unique facilities and equipment, particularly in their primary research area of surface ship and undersea vehicle machinery."⁽⁴²⁾ The Navy's "**Talent Pipeline Initiative**" counts Drexel as a university partner – what started as a pilot program in Philadelphia has since expanded across PA, placing over 1,200 skilled workers with Pennsylvania suppliers.⁽⁴³⁾ And Drexel has also partnered with the Capstone Project Program at the Naval Air Warfare Center Aircraft Division (NAWCAD) in Lakehurst, New Jersey, a program that allows students to work on Navy engineering projects, while also welcoming Lakehurst recruitment from Drexel's graduate pool. More than a simple internship, students even have the opportunity to build robotic systems for aircraft weapons transport.⁽⁴⁴⁾

"Drexel's participation in the capstone initiative has already produced several new engineers with unlimited potential," said Kathleen Donnelly, NAWCAD LKE executive director, in a press statement. "Our goal is to tap into that potential and provide these students with real-world

objectives that support our Naval Aviation mission. The projects these students contribute to have already benefited the Navy.”⁽⁴⁴⁾

Drexel Quick Facts from the AICUP Defense and Security Survey:

“Defense-related” majors and courses of study available to Drexel students include **Military Science** (ROTC), **Naval Science** (NROTC), **Marine Engineering**, **Security Technology**, and **War and Society** (a history minor). Drexel hosts an Army **ROTC** unit and partners with the Navy **NROTC**. The campus hosts a “**veteran lounge**” for the use of student veterans –the Masci Family Student Veterans Lounge. The Center for Military and Veteran Services is tasked with ensuring a **military-friendly** campus community, and in fact, Drexel was ranked as one of the “**Best for Vets**” colleges by *Military Times*. The school supports **veterans entering the workforce**, and hosts a Veterans Association, Military Transition Program, and Drexel Veterans Alumni Network. Drexel has participated in the **Yellow Ribbon** Program for student veterans since 2008, and even advertises “tuition and fees covered 100% for eligible veterans and dependents.” Over 626 GI Bill Students enroll annually at Drexel, according to the VA.

By the Numbers:

Key Figures from the AICUP Defense and Security Survey 2024:

Partners in Innovation

- 10 incubators, labs, and business accelerators with a defense function. Examples include a program for **autonomous weapons systems**, a **Cyber Attack Lab** and Cyber Innovation Lab, an **army research** collaborative lab, an army-academia **Artificial Intelligence Integration Center**, an advanced manufacturing center where students use a **3D printer to make parts for the army**, an “Entrepreneurship Bootcamp for Veterans,” and a “**Military Accelerator**” supporting veterans to launch a business.
- 16 research and development partnerships (R&D) that are federally-funded (according to the National Center for Science and Engineering Statistics and NSF HERD).⁽⁴⁵⁾
- 2 universities rank among the top 50 in US for research funding from the National Science Foundation (NSF), 2 NSF Innovation Corps (I-Corps™) Hubs, 1 supercomputing joint research center, 1 Artificial Intelligence joint research center, 2 university partners in machine learning, 4 Innovations in Graduate Education (IGE) Active Awards.⁽⁴⁶⁾
- 1 university promotes “**CIA Student Programs**” in which students gain real-world experience at the Central Intelligence Agency.⁽⁴⁷⁾
- 13 schools are academic partners in the Keystone Space Collaborative, an independent nonprofit collaboration of the space industry, academia, and defense.⁽⁴⁸⁾ Keystone launched the “**Space and Defense Innovation District**” in collaboration with the US **Space Force** and **DoD**,⁽⁴⁹⁾ and sponsors an “innovation challenge” and conferences with representatives from NASA and Lockheed Martin.⁽⁵⁰⁾
- 34 schools offer **cybersecurity** majors. 9 cybersecurity programs recognized by the Center of Academic Excellence (CAE), co-sponsored by the National Security Agency (NSA), Department of Homeland Security (DHS), and Cybersecurity and Infrastructure Security Agency (CISA).⁽³⁴⁾ 3 participants in CyberCorps® Scholarship for Service.⁽³⁵⁾
- More than **1 in 10 of all American Nobel Prize winners** are affiliated with one of the AICUP member colleges and universities of Pennsylvania, a significant indication of how these schools are “knowledge partners” for research and innovation (16% or 66 of the 409 total American Nobels 1901-2023).⁽¹⁹⁾
- 12 university science and research partners of a **Keystone Innovation Zone**.
- Dozens more incubators and accelerators with a commercial focus, while not explicitly defense-focused, are still invaluable to the **Defense Industrial Initiative**. Examples include engineering and **robotics** labs, startup incubators and entrepreneurship centers, a commercial **drone** academy, and several “**manufacturing accelerators**” for liberal arts majors and those without a manufacturing background who wish to expand into a manufacturing or engineering career.

ROTC and officer training; military enrichment

- **69% support ROTC:** Officer training programs for students that are either hosted at an AICUP campus or supported by an AICUP school through a crosstown partnership. (56 of 81 eligible institutions total). Several also support Navy and Air Force ROTC.

- 1 university with historic ties to the military was previously known as the “Pennsylvania Military College,” and continues to offer a robust ROTC program.
- 1 college with historic ties to the military participates in the Army’s two-year Early Commissioning Program (ECP), one of only four military junior colleges in the nation.
- 2 Chamberlain Project schools (The program pairs “well-qualified retired or retiring military officers with liberal arts colleges and universities to teach two courses, mentor students, and engage in the life of the campus during an academic year.”).

Areas of Study (majors)

- 18 Military Science, Military Leadership, or Military Strategy
- 5 Aerospace Studies, Aerospace Engineering, Aviation, Aviation Tech, Aviation with Drones
- 5 Naval Science, Naval Architecture, or Marine Engineering
- 3 Intelligence (Intelligence Analysis and Applied Intelligence)
- 15 Homeland Security, Security Studies, Conflict Resolution, or Global Security
- 34 CyberSecurity
- 3 A.I., Machine Learning, 9 Robotics Engineering and other Defense-Critical Engineering (marine, aerospace, polymer, energy, electrical), 1 Nanotechnology

Veteran Support and Benefits (“Boots to Books”)

- **99%** accept educational benefits for veterans, such as the GI Bill, Post-9/11 GI Bill, Montgomery GI Bill Active Duty, etc. (80 of 81 eligible institutions).
- **90% offer Yellow Ribbon** Program supplemental funding for students who are military veterans, in addition to VA and GI Bill benefits. (73 of 81 eligible institutions). Several schools advertise fully-funded education via Yellow Ribbon to qualifying veterans.
- Approximately **5,000 GI Bill Students**, according to the VA, utilize their veteran benefits at AICUP member colleges and universities. ^(GIVA)
- 13 schools feature “**veterans lounges**,” dedicated exclusively for student veterans.
- 1 college was established specifically for the purpose of reintegrating Civil War veterans into the workforce.
- 19 “**Military Friendly**” designations by the Military Friendly® organization (8 Gold-standard Military Friendly®), 6 “Best for Vets” designations by *Military Times* magazine, 2024-2025, and additional schools received these same recognitions prior to 2024.
- Several advertise priority registration for veterans.

Note: The AICUP Defense and Security Survey considers data sourced from the 81 AICUP member colleges and universities in Pennsylvania. There are 85 AICUP members total, however data from four (4) members were not included due to: merging (Salus), closing (PAFA), location (Delaware), and one being a research institute which does not grant degrees (Wistar).

Survey Highlights by Region



AICUP Member Colleges and Universities by Region:

Capital Area (11)

Dickinson College • Elizabethtown College • Franklin & Marshall College • Gettysburg College • Harrisburg University of Science & Technology • Lancaster Bible College • Lebanon Valley College • Messiah University • Pennsylvania College of Art & Design • Wilson College • York College of Pennsylvania

Erie and Northwest (6)

Allegheny College • Gannon University • Grove City College • Lake Erie College of Osteopathic Medicine (LECOM) • Mercyhurst University • Thiel College

Lehigh Valley (8)

Albright College • Alvernia University • Cedar Crest College • Desales University • Lafayette College • Lehigh University • Moravian College • Muhlenberg College

Philadelphia Metro Area (31)

Arcadia University • Bryn Athyn College • Bryn Mawr College • Cairn University • Chestnut Hill College • Delaware Valley University • Drexel University • Eastern University • Gwynedd Mercy University • Harcum College • Haverford College • Holy Family University • Immaculata University • La Salle University • Manor College • Moore College of Art & Design • Neumann University • Pennsylvania Institute of Technology • Peirce College • Philadelphia College of Osteopathic Medicine (PCOM) • Rosemont College • Saint Joseph's University • Salus (Drexel) • Swarthmore College • Thomas Jefferson University ("Jefferson") • University of Pennsylvania • Ursinus College • Valley Forge Military College • Villanova University • Widener University • Wistar Institute

Pittsburgh Metro Area (13)

Carlow University • Carnegie Mellon University • Chatham University • Duquesne University • Geneva College • La Roche University • Point Park University • Robert Morris University • Saint Vincent College • Seton Hill University • Washington & Jefferson College • Waynesburg University • Westminster College

North Central (3)

Bucknell University • Lycoming College • Susquehanna University

South Central (3)

Juniata College • Mount Aloysius College • Saint Francis University

Scranton and Wilkes-Barre (9)

Geisinger Commonwealth School of Medicine • Johnson College • Keystone College • King's College • Lackawanna College • Marywood University • Misericordia University • University of Scranton • Wilkes University

Capital Area

Dickinson College • Elizabethtown College • Franklin & Marshall College • Gettysburg College • Harrisburg University of Science & Technology • Lancaster Bible College • Lebanon Valley College • Messiah University • Pennsylvania College of Art & Design • Wilson College • York College of Pennsylvania

All 11 of the AICUP member schools in the Capital Area support student veterans and accept VA/GI benefits, 5 offer ROTC, 10 participate in the Yellow Ribbon program, and one features a “veterans lounge.” More than 375 GI Bill Students are enrolled at Capital Area AICUP member schools.

[Dickinson College](#), founded in 1783, shares a rich **military heritage** with the town of Carlisle, which is also home to the US Army War College. Dickinson hosts a regional officer training program (ROTC), the “**Blue Mountain Battalion**.” Rising officers may pursue Military Science and Security Studies, in a program that combines leadership development with the enrichment of the liberal arts.

Freshmen at [Gettysburg College](#) participate in the “First-Year Walk” to the eponymous battlefield and National Cemetery to hear a recitation of the **Gettysburg Address**. Gettysburg College partners in an ROTC program in which students may study Military Science.

STORMWERX (the Center for Advanced Manufacturing and Materials) at [Harrisburg University](#) (HU) **makes parts for the US Army using 3D printers**, in collaboration with several universities. STORMWERX won a grant in 2024 funded in part by DoD Research & Engineering and the Air Force Research Laboratory. Also in 2024, the HU STORMWERX even hosted one of the three US **Marines** Expeditionary Forces for two weeks of advanced manufacturing training. HU hosts programs for veterans and active-duty personnel to launch their business ventures, including a “**Military Accelerator**.” HU recently hosted a statewide Cybersecurity Summit, and the school’s **cybersecurity** program is even designated as an **NSA** National Center of Academic Excellence.

[Lebanon Valley College](#) is perhaps the only school in the nation to offer a combined degree in Cyber Defense with a **Homeland Security** minor. [Messiah University](#)’s **robotics engineering** or mechatronics program, combines electrical engineering, mechanical engineering, and computer programming, and the school also supports a rigorous program in cybersecurity. [Wilson College](#) has been recognized as “**Military Friendly**,” and the school offers majors in cybersecurity and Military Science (ROTC).

[York College of Pennsylvania](#) caters to the changing needs of defense with majors like **Intelligence Analysis** (in which students study foreign policy and national security) and cybersecurity (cyber majors may even test their **hacking** skills at the student-led “YCP Hacks” competition). The college features a “**Veterans Lounge**” on campus, a study and recreational space for student veterans, and York even offers Priority Registration for student veterans. York College was recognized by **Military Friendly**® with a “Silver” designation, and examples of veteran support activities include the **Root for Boots** fundraiser in which participants run with a “ruck,” which is a weighted backpack used in military training.

Erie and Northwest

Allegheny College • Gannon University • Grove City College • Lake Erie College of Osteopathic Medicine (LECOM) • Mercyhurst University • Thiel College

4 AICUP member schools in Erie and Northwest PA accept education benefits for veterans, 4 participate in the Yellow Ribbon program, and 3 offer ROTC. More than 249 GI Bill Students are enrolled at Erie and Northwest AICUP member schools.

[Gannon University](#)'s impressive "**I-HACK**" center features multiple labs, including a **Cyber Attack Lab**, versatile maker spaces with lasers and 3D printers, and The Hatchery space that integrates industry and professional collaboration and development. Gannon hosts the "Pride of PA" regional ROTC program, and the school has sponsored the Air Force Association's CyberPatriot **National Youth Cyber Defense Competition**. Programs of study at Gannon include **Applied Intelligence**, Cybersecurity, and Military Science.

[Lake Erie College of Osteopathic Medicine](#) (LECOM) supports student **military residencies**, the **Health Professions Scholarship Program** (HPSP) for prospective military physicians and healthcare specialists, and many students have even had their **medical schooling fully paid for by the military** for their service.

[Allegheny College](#) supports a **manufacturing accelerator** for liberal arts students wishing to further their career in manufacturing, engineering, or management, at the Manufacturing Advanced Placement Program (MAPP), which is part of a suite of programs at the Allegheny Lab for Innovation and Creativity (ALIC).

[Thiel College](#) is recognized as a **Military Friendly** School by **G.I. Jobs** magazine. The school advertises that through its Yellow Ribbon program, qualifying veterans "could attend Thiel College for no out-of-pocket tuition expense."

[Mercyhurst University](#) offers ROTC to students through the "**Pride of PA**" unit. The school participates in Yellow Ribbon, and educates over 116 GI Bill Students.

Military training was integral in the history of [Grove City College](#), the school was an early home for officer training, and even hosted a Naval Training School. The wartime contributions of the college were recognized in 1945 with the naming of a victory ship, the **S.S. Grove City Victory**.

Lehigh Valley

Albright College • Alvernia University • Cedar Crest College • Desales University • Lafayette College • Lehigh University • Moravian College • Muhlenberg College

All 8 of the AICUP member schools in the Lehigh Valley support student veterans and accept VA/GI benefits, all 8 participate in the Yellow Ribbon program, 7 offer ROTC, and 2 feature a “veterans lounge.” More than 354 GI Bill Students are enrolled at Lehigh Valley AICUP member schools.

[Cedar Crest College](#), which is primarily a women's college, **supports women servicemembers** and veterans, participates in the Yellow Ribbon Program, and educates about 40 GI Bill Students annually, according to the VA.

The [Lafayette College](#) Gateway Career Center offers **veteran-specific career preparation** workshops, highlighting how to transition from the military into the workforce and training for veterans entering a new career.

[Muhlenberg College](#) is recognized as a Gold-level Military Friendly® School, and the college offers **veteran scholarships** in addition to accommodating VA, GI and Yellow Ribbon benefits.

[Albright College](#) supports an ROTC program for rising officers, and also offers a dual admission transfer partnership with Valley Forge Military College (VFMC).

The [Alvernia University](#) Veterans Center is touted as “a comfortable place” for veterans students replete with laptops and **lounge**, and the Center encourages participation in veteran organizations and outreach programs “designed to enlighten the Alvernia campus community about veteran culture and history.” [Moravian University](#) houses “**The Bunker**” lounge for student veterans, and touts that is a “Gold” designated Military Friendly® school, Guard Friendly, and it hosts a unit of the Student Veterans of America.

The [DeSales University](#) **Center for Homeland Security** attracts both working professionals and students, and supports areas of study that include Homeland Security, **Counterterrorism**, and Cyber Security. **Cyber Security** is additionally offered at Albright (“CyberCriminology”), Alvernia, Cedar Crest, and Moravian.

[Lehigh University](#)’s ATLSS Engineering Research Center conducts research with the Department of Defense (DoD) and National Science Foundation (NSF), among other partners, while its Institute for Cyber Physical Infrastructure and Energy, which receives some funding from the Department of Energy (DoE), is part of a research bulwark **mitigating threats to infrastructure**. Lehigh hosts one of only four **NSF I-CORPS HUBS** in Pennsylvania (“Innovation Corps”). Students may pursue studies critical to defense and the industrial base, such as energy and aerospace engineering, polymer science, and even nanotechnology. Lehigh hosts the “**Steel Battalion**” regional ROTC, where rising officers can pursue Military Science and Leadership. Lehigh is one of only two schools in Pennsylvania that participate in the **Chamberlain Project**.

Philadelphia Metro Area

Arcadia University • Bryn Athyn College • Bryn Mawr College • Cairn University • Chestnut Hill College • Delaware Valley University • Drexel University • Eastern University • Gwynedd Mercy University • Harcum College • Haverford College • Holy Family University • Immaculata University • La Salle University • Manor College • Moore College of Art & Design • Neumann University • Pennsylvania Institute of Technology • Peirce College • Philadelphia College of Osteopathic Medicine (PCOM) • Rosemont College • Saint Joseph's University • Salus (Drexel) • Swarthmore College • Thomas Jefferson University ("Jefferson") • University of Pennsylvania • Ursinus College • Valley Forge Military College • Villanova University • Widener University • Wistar Institute

All eligible AICUP member schools in the Philadelphia area support veterans and accept VA/GI benefits, 26 participate in the Yellow Ribbon Program (3 advertise fully-covered tuition to eligible veterans), 17 support ROTC, and 3 feature a “veterans lounge.” More than **3,374 GI Bill Students** are enrolled at Philly area AICUP member schools. Majors found at Philly-area AICUP member schools include Aerospace, Cybersecurity, Homeland Security, Machine Learning and AI, Marine Engineering, Military Science, Naval Science, War and Society.

The **military heritage** of Philly-area independent schools runs deep. [Pierce College](#), which caters to working adults, was established in 1865 specifically to **reintegrate Civil War veterans into the workforce**. [Widener University](#) was previously known as the “**Pennsylvania Military College**.” And [Valley Forge Military College](#), founded nearly a century ago, is the only school in the Northeast with a two-year college path for **rising officers**.

Crosstown ROTC units are hosted at [Saint Joseph's University](#), which supports 19 universities, both independent and public in PA and NJ, and also at Widener, which is touted as the “**largest Army ROTC in the region**.” [Cairn University](#) participates in a Crosstown ROTC unit, and Cairn Air Force ROTC students may even pursue **Aerospace Studies**. [Swarthmore College](#), also a Crosstown ROTC participant, is one of only two colleges in the state participating in the **Chamberlain Project**, which embeds well-qualified retired or retiring military officers at liberal arts colleges to teach and mentor students.

[Villanova University](#) engineering students can participate in projects with the **defense contractor** L3Harris that include operating underwater robots and research with the **Naval Air Warfare Center Aircraft Division** at Lakehurst, NJ. About **600 GI Bill Students** enroll annually at Villanova, according to the VA, making it one of the two most popular schools for veterans in the Philly area. The school is home to the Prince Family Veterans Resource Center, which has a dedicated study space for veterans and hosts **veteran career and networking** events.

The [University of Pennsylvania](#) (“Penn”) supports several research programs invaluable to national defense, including the Pennovation Center and the GRASP Lab (“General Robotics, Automation, Sensing and Perception”), which is an innovator in **Lethal Autonomous Weapons Systems**. Penn is one of only four **NSF I-CORPS HUBS** in Pennsylvania (“Innovation Corps”). The Penn Center for Undergraduate Research and Fellowships (PennCURF) includes a program on **Military Technology**, supporting research in “military innovation” and “the future of war.” ROTC-related courses include Military Science and **Naval Science**. PennCURF promotes “**CIA Student Programs**” in which students gain real-world experience at the Central Intelligence Agency.

Please see page 7, “Introduction: One School’s Story,” for details about [Drexel University](#).

Pittsburgh Metro Area

Carlow University • Carnegie Mellon University • Chatham University • Duquesne University • Geneva College • La Roche University • Point Park University • Robert Morris University • Saint Vincent College • Seton Hill University • Washington & Jefferson College • Waynesburg University • Westminster College

All 13 of the AICUP member schools in the Pittsburgh region support student veterans and accept VA/GI benefits, all 13 participate in the Yellow Ribbon program, 12 offer ROTC (several also offer Naval and Air Force ROTC), and 2 feature a “veterans lounge.”

Over 900 GI Bill Students are enrolled at all the Pittsburgh-area AICUP member schools. The top three schools with the highest number of enrolled GI Bill Students in the Pittsburgh area are, in order, [Duquesne University](#) (top), [Robert Morris University](#), and [Carnegie Mellon University](#), according to the VA.

Pittsburgh-area colleges aim high with many **defense and security programs** of study. Security-related majors and minors can be found at Duquesne (International Security Studies and Military Science), [La Roche University](#) (National Security), [Saint Vincent College](#) (Global Security), [Waynesburg University](#) (Military Science), [Washington and Jefferson College](#) (Conflict and Resolution). CyberSecurity is available at Duquesne, [Geneva College](#), La Roche, Robert Morris, Saint Vincent, [Seton Hill University](#), and Waynesburg.

[Point Park University](#) offers majors in Intelligence and National/Global Security, with courses like “**Ethics of Spying**” and “**Disinformation and Psychological Operations.**” The school offers ROTC with a General Military Course, and Air Force ROTC. Point Park’s Aviation Management program provides students with an **Unmanned Aircraft Systems (UAS) Flight Lab**.

Several schools were spotlighted by the “**Military Friendly**®” publication, including [Carlow University](#), Geneva, La Roche, Point Park, Robert Morris, and Seton Hill, among others, and Duquesne was awarded a high ranking and “Best for Vets” designation from *Military Times*. Waynesburg University features a **space for student veterans**, the “Veteran and Military Affiliated Center,” and Duquesne features a Veteran Center with study space and a lounge.

[Carnegie Mellon University](#) (“CMU”) is one of the **DoD’s top 3** university research partners and it supports several programs invaluable to national defense, such as the **Army’s Artificial Intelligence** Integration Center, the Institute for Strategy and Technology, and the **National Robotics Engineering** Center. CMU launched the Advanced Robotics for Manufacturing (“ARM”), which is part of the Manufacturing USA® network’s Central Pennsylvania **Defense Shipbuilding Talent and Innovation Defense Ecosystem** (“TIDE”). Multiple **Nobel Prizes** and life-changing inventions can be credited to the CMU community, boosting the school’s reputation as an asset to the economy. Programs of study available to CMU students include Artificial Intelligence, Military Strategy, Robotics, Security, and CyberSecurity.

North Central

Bucknell University • Lycoming College • Susquehanna University

All 3 of the AICUP member schools in North Central Pennsylvania support student veterans and accept VA/GI benefits, all 3 participate in the Yellow Ribbon program, and all 3 offer ROTC.

[Susquehanna University](#)'s ROTC students have the option to pursue Military Science and Strategic Studies. 29 GI Bill Students are enrolled at the school, according to the VA. Susquehanna participates in the **Yellow Ribbon** Program, and even advertises "*free tuition*" for qualifying members in that program.

[Lycoming College](#) welcomes all veterans, their eligible dependents, members of the National Guard and Reserves, and active-duty personnel. The school participates in a regional ROTC in which students enroll in Military Science courses and study the **Army's Leadership Requirements Model**. 20 GI Bill Students are enrolled at the school, according to the VA.

[Bucknell University](#) has hosted a regional ROTC program, the award-winning Bison Battalion, for **73 years**, and Bucknell's ROTC offers competitive scholarships for rising student officers. 28 GI Bill Students are enrolled at the school, according to the VA. The school features several industry partnerships and business incubators, including the **Engineering EXCEerator** Program for incoming first-year engineering students wanting to develop their skills in prototyping and fabrication by getting a head start in calculus and physics instruction.

South Central

Juniata College • Mount Aloysius College • Saint Francis University

All 3 of the AICUP member schools in South Central Pennsylvania support student veterans and accept VA/GI benefits, all 3 participate in the Yellow Ribbon program, and 2 offer ROTC.

[Mount Aloysius College](#) in Cresson was recognized with a “Gold” certification as a **Military Friendly**® school, and it ranks among the top 15% of military friendly colleges. 45 GI Bill Students are enrolled at the school, according to the VA. Mount Aloysius offers ROTC, in which students study “Army history, organization, structure and basic military skills, such as rifle **marksmanship**, first aid training and land navigation. The Advanced Course, taken in the junior and senior years, focuses on tactical operations and military instruction.”

[Saint Francis University](#) in Loretto offers students a Military Science program through the ROTC. SFU students collaborate with working professionals at the **Curry Innovation Lab** in downtown Altoona offers, used especially by chemistry and engineering students, where they even **work with industry on real-world projects** involving topics concerning structural integrity, mechanics, and hydrodynamics. 47 GI Bill Students are enrolled at the school, according to the VA.

CyberSecurity is offered at both Saint Francis and Mount Aloysius, and both schools’ programs are recognized as an **NSA/DHS Center of Academic Excellence in Cyber Defense** (2 of only 9 designated schools in the state).

Student veterans at [Juniata College](#) in Huntingdon, through the school’s Cultural Research Institute, teamed up with the **American Veterans Archaeological Recovery** for field work at Fort Ligonier. 27 GI Bill Students are enrolled at Juniata College, according to the VA, the school participates in the Yellow Ribbon Program, and accepts student VA educational benefits including Active Duty, Vocational Rehabilitation, Veterans Educational Assistance Program, Selected Reserve, Reservists Called to Active Duty, and Dependent’s Educational Assistance.

Scranton and Wilkes-Barre

Geisinger Commonwealth School of Medicine • Johnson College • Keystone College • King's College • Lackawanna College • Marywood University • Misericordia University • University of Scranton • Wilkes University

All 9 of the AICUP member schools in the Scranton and Wilkes-Barre area support student veterans and accept VA/GI benefits, 8 participate in the Yellow Ribbon program, 6 offer ROTC, and 5 are recognized as “Military Friendly” or “Best for Vets” by third party rankings. More than 440 GI Bill Students are enrolled at Scranton and Wilkes-Barre area AICUP member schools.

Building Community with Veterans Lounges: Five (5) AICUP member schools in the Scranton and Wilkes-Barre area feature a “veterans lounge,” which is a dedicated space where student veterans can study quietly, use resources like printers or laptops, bond and network, or simply relax and enjoy recreation with peers. Having such a “third place,” which is neither home nor work, builds a sense of community, enriches the campus life experience, and fosters an appreciation for veterans in the larger community. Some lounges or centers also offer career counseling, job interview workshops, and a space to meet for alumni groups or student veteran clubs. [Johnson College](#) offers veterans a dedicated study room, **priority class registration**, and a dedicated staff to assist student veterans. The Elmer R. **Hawk Center for Veterans** at [Keystone College](#) provides student veterans with a lounge and kitchen, computer lab, and accommodates study groups and the student-led **KC Armed Forces Club**. [Lackawanna College](#) features a lounge dedicated for our student veterans with a study space, kitchen amenities, and entertainment. [The University of Scranton](#) is home to a comfortable Veterans & ROTC Resource Lounge established as a place to encourage **peer support, advocacy, and community involvement**. The [Marywood University](#) Veterans Resource Center serves to both accommodate study and recreation with a study area and lounge, in addition to providing career and school services to student veterans. Marywood supports the **Student Veteran Alliance** and encourages study groups, student meetings, and social gatherings to utilize the center.

Aviation Tech and **Aerospace** are two majors at these schools, and Marywood’s **Aviation** program even offers a degree in Flight Operations for **student pilots**. Scranton offers a **Cybercrime** and Homeland Security program, Keystone offers a minor in **Homeland Security**, and three schools offer **Military Science**. Johnson College, which trains in trade skills that are invaluable to building the industrial base, also offers Industrial Technology and Electronic Engineering.

Conclusion

It should now be clear from the many examples cited throughout this paper that higher education is the proverbial “*secret weapon*” of national defense and national security. Underrecognized, perhaps, but still highly critical in every aspect of defense, from building the industrial base and supply chains, to strengthening the home economy (“cities as arsenals of democracy”), and from innovations in the lab and classroom to creating better leaders who can, it is hoped, lead to a more peaceful world.

The “Key Figures” survey summary cited here on pages 9-10 should strike anyone as incredible, when one sees through numbers the clear contribution of independent nonprofit colleges and universities to defense. It is here, at the 85 AICUP member campuses, where you will find the nation’s aspiring NSA cyber warriors, industry visionaries, submarine engineers and suppliers, military and civilian leaders, CIA intelligence analysts, technology innovators, and policy changemakers. 99% of these schools work with the VA to support student veterans, 90% offer additional Yellow Ribbon funding, and nearly 70% support the ROTC for aspiring officers.

Despite recent sensational criticisms of the value of higher education, it is our belief, based on numerous studies, that the need for a postsecondary education will only *increase* in coming years (“By 2031, 72 percent of jobs in the US will require postsecondary education,” according to a study by the Center on Education and the Workforce at Georgetown). Military servicemembers and veterans are no exception to this trend, as they too will find better opportunities through postsecondary education. As journalist Garrett Graff observed: “Higher education is becoming more common among the ranks,” and, “More than 100,000 of about 1 million enlisted active-duty personnel now have college degrees — a percentage that has more than doubled since 2010.” Indeed, more than 5,000 GI Bill Students *each year* find their path forward at an AICUP member school.

Pursuing a higher education is more than a personal journey of aspiration or the pursuit of a better career. There is also a ripple effect that impacts and improves the larger society with each individual decision toward self-improvement. This is the price and privilege of living in a free country. AICUP member schools will be here for years to come, serving Pennsylvanians and out-of-state students alike, helping to build America’s strengths and ensure American freedom.

To call higher education the “*secret weapon*” of national defense is not to condone militarism, but rather, this highlights the deterrence factor and strength of a skilled society and an educated people. Quoted earlier in this paper, and perhaps better illuminated now through examples, we reconsider the words of Robert Rubin, former Secretary of the Treasury: “America’s higher-education system strengthens our nation. Colleges and universities also help the United States maintain a geopolitical edge.” Or as Joseph R. Urgo put it, “*There’s more than one way to defend your country.*”

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Survey Methodology

The purpose of the AICUP Defense and Security Survey is to provide a snapshot of how AICUP member colleges and universities contribute to national security and defense, and how they help to educate military service members and veterans. The survey was conducted October-November, 2024, and includes these eight (8) items at member universities and colleges: ROTC support (either as a host campus or participant in a crosstown ROTC unit), Yellow Ribbon Program participation, whether schools work with the VA to support veterans using their VA/GI benefits, presence of a student veterans “lounge” or dedicated space for student veterans, designation as Military Friendly® or Best for Vets® by a third-party ranking, Keystone Space Collaborative participants (“Space and Defense Innovation District”), CISA/NSA-recognized CyberSecurity Programs, and study programs or majors related to defense and security.

The majors noted in this survey include Aerospace Studies, Aviation, Aviation Tech, Applied Intelligence, Conflict Resolution, Cyber Defense, CyberSecurity, Global Security, Homeland Security, Intelligence, Intelligence Analysis, Marine Engineering, Military Science, Military Strategy, National Security Studies, Naval Science, Security Studies, Terrorism and Homeland Security, and War and Society.

“Majors related to defense and security” are subjective, and for the purposes of this survey, we considered only majors that are immediately obvious as related to defense or security. Many more majors not considered in this survey are also certainly crucial for defense and security. (Engineering, for example, is critical to defense and security, but for the purposes of this survey, we only highlighted a few novel or defense-related engineering programs. The survey is not meant to be a comprehensive look at engineering programs).

The survey considers data from 81 AICUP member colleges and universities in Pennsylvania. There are 85 AICUP members total, however data from four (4) members were not included due to: merging (Salus), closing (PAFA), location (Delaware), and one being a research institute which does not grant degrees (Wistar).

Survey Sources

To **download the survey** spreadsheet, please visit this link on the AICUP website:
<https://aicup.org/wp-content/uploads/2024/11/Survey-11.21.24-Presentation.xlsx>

Member sites listed on the AICUP website: 85 AICUP members, 81 surveyed
<https://aicup.org/about-us/members/>

ROTC: ROTC and partner/crosstown ROTC
<https://www.goarmy.com/careers-and-jobs/find-your-path/army-officers/rotc/find-schools>

Yellow Ribbon: VA site or individual school websites.

<https://www.va.gov/education/gi-bill-comparison-tool/>

GI Bill Students: VA and GI Bill® Comparison Tool

<https://www.va.gov/education/gi-bill-comparison-tool/>

Lounge and/or dedicated space for veterans: Individual school websites' VA tabs.

<https://aicup.org/about-us/members/>

Military Friendly®: Military Friendly® is owned by VIQTORY.

<https://www.militaryfriendly.com/>

Best for Vets®: Military Times magazine: Best for Vets

<https://bestforvets.militarytimes.com/>

Keystone Space Collaborative member: Ecosystem map shows academic partners

<https://keystonespace.org/ecosystem/>

NSA/CISA CyberSecurity: CAE Institution Map

<https://www.caecommunity.org/cae-map>

Majors: Individual school websites, course catalogues

<https://aicup.org/about-us/members/>

Survey

Below are screenshots of the survey spreadsheet. To **download the spreadsheet** version of the survey with sources, please visit this link on the AICUP website:

<https://aicup.org/wp-content/uploads/2024/11/Survey-11.21.24-Presentation.xlsx>

2	Name	Region	ROTC	Yellow	GI Bill	LOUNGE	Military Fr	Keyst	NSA/CISA	Major	Major	Major	Major	Major
3	Albright College	Lehigh Valley	ROTC	YR	27					CyberCriminology				
4	Allegheny College	Erie and Northwest	ROTC	YR	26									
5	Alvernia University	Lehigh Valley	ROTC	YR	56	LOUNGE and/	Military Friendly *			CyberSecurity				
6	Arcadia University	Metro Philly	ROTC	YR	69									
7	Bryn Athyn College	Metro Philly	ROTC		6									
8	Bryn Mawr College	Metro Philly	ROTC	YR	32			Space						
9	Bucknell University	North Central	ROTC	YR	28			Space		Military Science				
10	Cairn University	Metro Philly	ROTC	YR	14					CyberSecu	Aerospace Studies			
11	Carlow University	Metro Pittsburgh	ROTC	YR	59									
12	Carnegie Mellon University	Metro Pittsburgh	ROTC	YR	148			Military Fr	Space	NSA/CISA	AI, Roboti	Security, I	Military St	Cybersecurity
13	Cedar Crest College	Lehigh Valley		YR	39						Cyber Security			
14	Chatham University	Metro Pittsburgh	ROTC	YR	59			Military Friendly *						
15	Chestnut Hill College	Metro Philly		YR	unavailable						Cybersecurity			
16	De Sales University	Lehigh Valley	ROTC	YR	70						Homeland Security			
17	Delaware Valley University	Metro Philly		YR	62	LOUNGE and/	Military Friendly *							
18	Dickinson College	Capital Area	ROTC	YR	38						Military Sc	Security Studies		
19	Drexel University	Metro Philly	ROTC	YR	626	LOUNGE and/	Military Fr	Space	NSA/CISA	Naval Scie	War and S	Security te	Marine En	Military Science
20	Duquesne University	Metro Pittsburgh	ROTC	YR	210	LOUNGE and/	Military Friendly *		Military Tir	CyberSecu	Internatio	Military Science		
21	Eastern University	Metro Philly	ROTC	YR	201						Cyber Defense			
22	Elizabethtown College	Capital Area		YR	44									
23	Franklin and Marshall College	Capital Area	ROTC	YR	7			Space						
24	Gannon University	Erie and Northwest	ROTC	YR	71			Military Fr	Space		Cybersecu	Applied In	Military Science	
25	Geneva College	Metro Pittsburgh		YR	38			Military Friendly *			Cybersecurity			
26	Gettysburg College	Capital Area	ROTC	YR	34			Space			Military Science			

2	Name	Region	ROTC	Yellow	GI Bil	LOUNGE	Militar	Keyst	NSA/C	Major	Major	Major	Major	Major
27	Giesinger Commonwealth Sch	Scranton, Wilkes-Barre				unavailable								
28	Grove City College	Erie and Northwest				unavailable				CyberSecurity				
29	Gwynedd Mercy University	Metro Philly		YR	44			Military Friendly *						
30	Harcum College	Metro Philly			17									
31	Harrisburg University	Capital Area			22				NSA/CISA	CyberSecurity				
32	Harverford College	Metro Philly	ROTC		5			Space						
33	Holy Family University	Metro Philly		YR	44					CyberSecurity				
34	Immaculata University	Metro Philly	ROTC	YR	29									
35	Jefferson (Thomas Jefferson U	Metro Philly	ROTC	YR	66									
36	Johnson College	Scranton, Wilkes-Barre		YR	45	LOUNGE and/		Military Friendly *		Electronic	Aviation Tech			
37	Juniata College	South Central		YR	27									
38	Keystone College	Scranton, Wilkes-Ba	ROTC	YR	unavaila	LOUNGE and/		Military Times Best for Vets 202		Homeland Security (minor)				
39	King's College	Scranton, Wilkes-Ba	ROTC	YR	41									
40	La Roche University	Metro Pittsburgh	ROTC	YR	29			Military Friendly *		National S	CyberSecurity			
41	Lackawana College	Scranton, Wilkes-Ba	ROTC	YR	68	LOUNGE and/		Military Friendly *		CyberSecu	Robotics (AA)			
42	Lafayette College	Lehigh Valley	ROTC	YR	17									
43	Lancaster Bible College	Capital Area		YR	58									
44	LaSalle University	Metro Philly	ROTC	YR	61			Military Times Best for Vets 202		CyberSecurity				
45	Lebanon Valley College	Capital Area		YR	45					Cyber Defense and Homeland Security Minor				
46	LECOM (LAKE ERIE COLLEGE O	Erie and Northwest			39									
47	Lehigh University	Lehigh Valley	ROTC	YR	55					Military Sc Aerospace Nanotechr	Polymer Si Energy Engineering Minor			
48	Lycoming College	North Central	ROTC	YR	20					Military Science				
49	Manor College	Metro Philly		YR	10									
50	Marywood University	Scranton, Wilkes-Ba	ROTC	YR	55	LOUNGE and/or dedicat		Space		CyberSecu	Aviation			

2	Name	Region	ROTC	Yellow	GI Bil	LOUNGE	Militar	Keyst	NSA/C	Major	Major	Major	Major	Major
51	Mercyhurst University	Erie and Northwest	ROTC	YR	116									
52	Messiah University	Capital Area	ROTC	YR	80				NSA/CISA	CyberSecu	Robotics Engineering			
53	Misericordia University	Scranton, Wilkes-Ba	ROTC	YR	44					Military Leadership / Military Science				
54	Moore College of Art and Desi	Metro Philly		YR	10									
55	Moravian College	Lehigh Valley	ROTC	YR	68	LOUNGE and/		Military Friendly *		CyberSecurity (master's)				
56	Mount Aloysius College	South Central	ROTC	YR	45			Military Friendly *	NSA/CISA	CyberSecurity				
57	Muhlenberg College	Lehigh Valley	ROTC	YR	22			Military Friendly *						
58	Neumann University	Metro Philly	ROTC	YR	46			Military Friendly *		CyberSecurity				
59	PCA&D Pennsylvania College c	Capital Area			unavailable									
60	PCOM Philadelphia College of	Metro Philly		YR	22									
61	Peirce College	Metro Philly		YR	unavailable					Cybersecurity				
62	Point Park University	Metro Pittsburgh	ROTC	YR	unavailable					Intelligenc	Intelligenc	General M	Aviation Management includes drones	
63	Robert Morris University	Metro Pittsburgh	ROTC	YR	173			Military Friendly *	NSA/CISA	Cybersecurity				
64	Rosemont College	Metro Philly		YR	23					Homeland Security (MA)				
65	Saint Francis University	South Central	ROTC	YR	47			Space	NSA/CISA	Military Sc	Cybersecurity			
66	Saint Joseph's University	Metro Philly	ROTC	YR	unavailable			Military Times Best for Vets 202		Machine Learning and Artificial Intelligence				
67	Saint Vincent College	Metro Pittsburgh	ROTC	YR	40			Space	NSA/CISA	Aviation I	Cybersecu	Global Security (minor)		
68	Seton Hill University	Metro Pittsburgh	ROTC	YR	62					Cybersecurity				
69	Susquehanna University	North Central	ROTC	YR	29					Military Science and Strategic Studies				
70	Swarthmore College	Metro Philly	ROTC	YR	17									
71	Thiel College	Erie and Northwest		YR	23									
72	University of Scranton	Scranton, Wilkes-Ba	ROTC	YR	72	LOUNGE and/or dedicat		Space		Military Sc	Cybercrime and Homeland Security			
73	University of Pennsylvania	Metro Philly	ROTC	YR	397					Military Sc	Naval Science			
74	Ursinus College	Metro Philly		YR	17					Machine Learning (CS)				

2	Name	Region	ROTC	Yellow	GI Bil	LOUNGE	Militar	Keyst	NSA/C	Major	Major	Major	Major	Major
75	Valley Forge Military College	Metro Philly	ROTC	YR	6				NSA/CISA	Security S	Cybersecurity (AS)			
76	Villanova University	Metro Philly	ROTC	YR	598	LOUNGE and/		Military Ti	Space	Cybersecurity (Masters)				
77	Washington and Jefferson Col	Metro Pittsburgh	ROTC	YR	18					Conflict & Resolution Studies				
78	Waynesburg University	Metro Pittsburgh	ROTC	YR	35	LOUNGE and/		Military Friendly *		Military Sc	Cybersecurity			
79	Westminster College	Metro Pittsburgh	ROTC	YR	24									
80	Widener University	Metro Philly	ROTC	YR	unavailable					Military Sc	Terrorism & Homeland Security (course, not major)			
81	Wilkes University	Scranton, Wilkes-Ba	ROTC	YR	115					Aerospace	Military Science			
82	Wilson College	Capital Area	ROTC	YR	47					Military Sc	Cybersecurity			
83	York College of Pennsylvania	Capital Area		YR	unavaila	LOUNGE and/		Military Friendly *		Cybersecu	Intelligence Analysis			

Citations

Preface: Pennsylvania's Pivotal Role in National Defense

- 1) LaGrone, Sam. "Ingalls Shipbuilding Launches Amphibious Warship Harrisburg." *USNI News*, October 8, 2024. <https://news.usni.org/2024/10/08/ingalls-shipbuilding-launches-amphibious-warship-harrisburg>
- 2) Lubrano, Alfred. "Is Pennsylvania landlocked? The answer isn't so simple." *The Philadelphia Inquirer*, April 1, 2023. <https://www.inquirer.com/news/pennsylvania/pennsylvania-border-delaware-river-lake-erie-landlocked-state-20230401.html>
- 3) "The Navy named its next warship after this city." *Navy Times*, Oct 10, 2019. <https://www.navytimes.com/news/your-navy/2019/10/10/the-navy-named-its-next-warship-after-this-city/>
- 4) Top defense contractors: "Top 100 for 2024." *Defense News*. <https://people.defensenews.com/top-100/>

Each of the top defense companies contracted with the US DoD show locations and/or jobs in Pennsylvania on their respective websites:

- Lockheed: <https://www.lockheedmartin.com/en-us/index.html>
 - King of Prussia, Archbald, Valley Forge.
 - Raytheon: <https://www.rtx.com/>
 - Chambersburg, State College, Letterkenny Army Depot
 - "Letterkenny, Raytheon sign Patriot partnership agreement:" https://www.army.mil/article/13406/letterkenny_raytheon_sign_patriot_partnership_agreement
 - Northrup Grumman: <https://www.northropgrumman.com/>
 - Annville (Fort Indiantown Gap)
 - Boeing: <https://www.boeing.com/>
 - Ridley Park, Boothwyn, Smithfield, Pittsburgh
 - Boeing Pennsylvania infographic: https://www.boeing.com/content/dam/boeing/boeingdotcom/government-operations/state_cards/Card_PA.pdf
 - General Dynamics: <https://www.gd.com/>
 - Red Lion, Scranton, Eynon, Pittsburgh
 - General Dynamics Viz Center of Excellence was "founded by Carnegie Mellon researchers:"
 - <https://gdmissionsystems.com/about-us/major-locations/pittsburgh>
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