



GEORGIA CYBER CENTER

NASCIO 2019 State IT Recognition Awards

Title: Georgia Cyber Center

Category: Cross-boundary Collaboration and Partnerships

State: Georgia

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Project Initiation Date: January 17, 2017

Project Completion Date: December 1, 2018

EXECUTIVE SUMMARY



It's rare to visit a news site, watch a TV newscast, or pick up a newspaper without encountering increasingly alarming reports about hackers and other cybercriminals. Many are state-sponsored and pose serious threats to the privacy of our personal information and our national security. The stakes are high, but Georgia and the nation currently lack the highly trained workforce needed to ensure our decisive advantage in cyberspace.

The National Association of State CIOs (NASCIO) recently called for states to take bold steps to address the cybersecurity workforce shortage. The [Georgia Cyber Center](#) is one of those bold steps. In fact, it may well be one of the boldest, most aggressive responses to cyber threats undertaken by any state government. Its core mission is to develop the next generation cybersecurity workforce by delivering affordable and relevant cybersecurity training and education. It seeks to achieve its mission through unparalleled collaboration among multiple sectors, including government, academia, law enforcement, the military, non-profit organizations, and industry-leading companies.

Located in Augusta's burgeoning cybersecurity corridor, the Georgia Cyber Center comprises two buildings with a total of 332,000 square feet and is the single largest investment in a cybersecurity facility by a state government to date. The first building opened within 18 months of its groundbreaking, and the second building, needed as demand outpaced initial expectations, opened within 12 months.



Georgia Cyber Center

Through its partnership with [Augusta University](#) and [Augusta Technical College](#), the Cyber Center is linked to certificate programs and undergraduate- and graduate-level programs in cybersecurity and cyber sciences. For the Spring 2019 semester, 349 students at Augusta University and 250 students at Augusta Technical College were enrolled in 31 classes taught at the Cyber Center. In addition, thousands of workers from local, state, and federal agencies have participated in cybersecurity-related events hosted at the Cyber Center, including specialized training, meetings, conferences, and cybersecurity competitions.



Government agencies and companies with an international footprint lease office space in the Cyber Center, and the Cyber Center's incubator/accelerator program is also providing essential support to innovative technology startups. Locating academic and training programs alongside government agencies and established and emerging technology companies provides students with opportunities to augment classroom studies with real-life experience through internships. Meanwhile, agencies and companies that partner with the Cyber Center have a competitive advantage in recruiting graduates with the kinds of cybersecurity skills required today.

The Cyber Center's numerous resources and amenities strengthen the relationship between academic programs and job opportunities. Among those resources is the [Cyber Range](#), which is available to students, companies, and government professionals to test the stability, security, and performance of cyber infrastructures and IT systems. Even the center's large common areas are thoughtfully designed to promote interaction and collaboration.

The Cyber Center's programs and physical spaces have been meticulously structured to foster nothing less than a cybersecurity ecosystem. Within a short time, Georgia is already seeing results that hold enormous promise for the future.

PROJECT CONCEPT



On Thursday, March 22, 2018, City of Atlanta government came to an almost complete standstill because of a ransomware attack. It has been described as one of the most sustained and consequential cyberattacks ever mounted against a major American city, and it represented a significant escalation from previous cyberattacks against municipal governments. It took five days before city workers could turn their computers on again, and even then, many services remained hobbled. Cybersecurity experts believe SamSam, the hacking crew responsible for the attack on Atlanta, is one of dozens of active ransomware attack groups. The crew is suspected of being behind attacks on hospitals, police departments, and universities. It doesn't take much to imagine a cyberattack crippling major infrastructure systems – including water, electrical power, and transportation – and lifesaving operations.

More recently, news reports chronicled increases in cyberattacks by government-affiliated hackers in China and Iran against American banks, government agencies, and companies, including Boeing, General Electric Aviation, and T-Mobile. Cybersecurity firm CrowdStrike reported tracking 240 billion cyber events each day in 2018, up from 90 billion in 2017. According to CrowdStrike, Russian hackers were able to move from their initial entry point to another area of the hacked system in an average of 18 minutes and 49 seconds.

The threat is clearly vast. It's also equally clear that no one sector can possibly succeed by addressing it alone. But alarmingly, the size of the cybersecurity workforce has not kept pace with the growing threat posed by cybercriminals.



In January 2017, then Governor Nathan Deal envisioned the Georgia Cyber Center as a place where various sectors – including state and local government, academia, law enforcement, the military, non-profit organizations, and the private sector – could come together to build, through innovative programs, the kind of professional workforce needed to effectively combat cybercriminals.

The worldwide shortage of cybersecurity professionals totals almost three million, as reported in the [2018 Cybersecurity Workforce Study from \(ISC\)²](#), an international, nonprofit association focused on cybersecurity. The study estimates the current shortage in North America at 498,000.

Reflecting the findings from (ISC)², state chief information security officers cite inadequate staffing as the second biggest barrier to addressing cybersecurity challenges, according to the [2018 Deloitte-NASCIO Cybersecurity Study](#). Insufficient funding ranks as the top barrier.

“Simply put, the time is now to be bold in state cybersecurity,” states the Deloitte-NASCIO study, which recommends three bold plays.

“Team with the private sector and higher education” to “provide a pipeline of new talent” is one of those bold plays, and it describes the Georgia Cyber Center's approach, but the Cyber Center goes even further by involving additional sectors.

The speed with which the state of Georgia moved to construct and open the Georgia Cyber Center and to develop and implement its programs reflects the urgency that underlies the need to boost Georgia's and the nation's cybersecurity workforce. Governor Deal announced the Georgia Cyber Center in his State of the State address on January 17, 2017. Groundbreaking on the Hull McKnight Building, the first of the center's two buildings, took place June 19, 2017, and the building opened July 10, 2018. Ground was broken for the second building, the Shaffer MacCartney Building, on January 3, 2018, and the building was completed in December 2018. The Georgia Cyber Center contains 332,000 total square feet and cost \$100 million, making it the single largest investment in a cybersecurity facility by a state government to date.

However, the Cyber Center's significance lies not in the buildings but in the people working in them, the programs in which they are participating, and the results they are already achieving. The Cyber Center and its resident partners have 70 employees onsite, but thousands of students and workers from local, state, and federal agencies have attended college classes or participated in specialized training at the center. Many others have attended cybersecurity-related events, such as meetings, conferences, hackathons, and capture-the-flag cyber competitions. The Cyber Center even hosted a *Shark Tank*-inspired event in which technology entrepreneurs pitched product proposals to potential investors.



Shark Tank-Inspired Event Presentation

Augusta was chosen as the location of the Georgia Cyber Center because of the city's growing cybersecurity corridor, which is anchored by Augusta University's School of Computer and Cyber Sciences, a National Center of Academic Excellence in Cyber Defenses, and the U.S. Army Cyber Command and the Cyber School of Excellence at Fort Gordon.

The Georgia Cyber Center's executive director, retired Army Col. Eric Toler, served as a military intelligence officer and retired with over 27 years of leadership and national security experience. He served in key positions in the U.S. Army Cyber Command, the U.S. Cyber Command, and the National Security Agency.

Under Mr. Toler's leadership, the Cyber Center is demonstrating results in its mission of creating an ecosystem where the combined talent of government, academia, and private industry will:



Deliver affordable and relevant training and education.



Solve complex cybersecurity challenges.



Develop the state's cybersecurity workforce.



Offer unbiased advice to policymakers to provide Georgia and the nation with a decisive advantage in cyberspace.

PROJECT SIGNIFICANCE



The Georgia Cyber Center represents a unique public/private partnership that includes [Augusta University](#), [Augusta Technical College](#), the [University System of Georgia's](#) research institutions, the [City of Augusta](#), the [Georgia Bureau of Investigation](#), the [Georgia Department of Defense](#), and the [Georgia Technology Authority](#).

The Cyber Center leases build-to-suit Class A office space to private-sector organizations and companies. The current private-sector partners are:

- **[theClubhou.se](#)**, an Augusta-based nonprofit organization that oversees the Cyber Center's incubator/accelerator program and provides support services to innovative technology startups. The organization has helped grow more than 50 companies.
- **[Parsons Corporation](#)**, an engineering, construction, technical, and professional services firm that offers cybersecurity and technical solutions. Parsons' clients include the U.S. Army Cyber Command, the U.S. Army Intelligence and Security Command, and other intelligence-community stakeholders.
- **[BAE Systems](#)**, a global defense, aerospace, and security firm. The company currently has more than 400 employees in the Augusta/Fort Gordon area who provide advanced analytics and information-assurance support. BAE Systems is using its presence in the Cyber Center to recruit skilled individuals to the fields of cloud services, artificial intelligence, and cybersecurity.

In partnership with Augusta University and Augusta Technical College, the Georgia Cyber Center is linked to certificate programs and undergraduate- and graduate-level programs in cybersecurity and cyber sciences. Offerings include both onsite and virtual courses to train the industry's current workforce and to develop talent to meet future workforce needs. Students may apply for internships with private-sector partners, including startups supported by theClubhou.se, and government agencies.

Georgia's research universities occupy demonstration space to highlight cyber research currently under way across the university system, including basic and applied research.



The Georgia Cyber Range is a key component of the Cyber Center. The range is a heterogeneous computing environment for such activities as practicing incident response, conducting penetration testing, and fuzzing binaries across multiple processor architectures. The tools available at the range are helping strengthen the stability, security, and performance of cyber infrastructures and IT systems. Its resources are available to students, private industry, and government professionals in education and training, product development, offensive activity and competition, detection and defensive competition, response and recovery, and evaluation and benchmarking.

The Cyber Center is home to a workspace, known as Tatooine after the desert planet in Star Wars, for the partnership between the U.S. Army Cyber Command and the Defense Digital Service (DDS), which refers to itself as the Rebel Alliance. Tatooine is an extension of Jyn Erso, a pilot project named after a Star Wars character and launched in 2017 to bring together DDS' civilian staff and Cyber Command soldiers to solve difficult cybersecurity challenges. Tatooine opened with a day-long hackathon involving cyber soldiers and members of the local technology community. DDS describes Tatooine as “a beacon for technical talent across the military – a place to write code and solve problems of impact.” Senior Army leadership see the partnership as a highly effective way to develop immediate-need cyber capabilities and as a powerful recruitment and retention tool for the military.



*Georgia Cyber Center
Capture the Flag Event*

The Georgia Bureau of Investigation's (GBI) first-ever cyber crime unit is headquartered at the Cyber Center, and law enforcement professionals throughout the state are taking advantage of the GBI's expertise in digital forensics. In addition to investigative and forensic resources, the GBI Cyber Crime Center manages the GBI Cyber Crime Training Center, which offers classroom and laboratory training that covers a full range of cyber-related topics to assist law enforcement agencies. The training prepares first responders, investigators, forensic analysts, and administrators with the skills necessary to address and contain cyber-related incidents. It also provides state prosecutors with hands-on training and resources to translate highly technical information into clear and concise courtroom presentations.

The Cyber Center includes a 340-seat auditorium with state-of-the-art audio/visual equipment and acoustics, making it ideal for multimedia presentations. The auditorium hosts STEM-related events in line with the Cyber Center's mission, and space adjacent to the auditorium is suitable for exhibits and receptions.

The interior of the Cyber Center features large common areas specially designed to promote interaction among people working at the center or attending classes, meetings, or other special events. In addition to a coffee and espresso bar, the center offers ample seating and tables in the common areas.

PROJECT IMPACT



Education and workforce development are at the core of the Georgia Cyber Center's activities.



349 students at Augusta University and 250 students at Augusta Technical College were enrolled in 31 classes taught at the Cyber Center for the Spring 2019 semester.



The Georgia Bureau of Investigation conducted 12 classes with a total of 550 participants.



The Cyber Workforce Academy offered 19 classes attended by 1,300 participants. The academy's classes cover Information Systems Security Officer certification, Linux I, Cisco CCNA Cyber Ops certification, Ansible, and other relevant topics.



1,900 workers from the U.S. Department of Defense and the U.S. Department of Energy attended training at the Cyber Center.

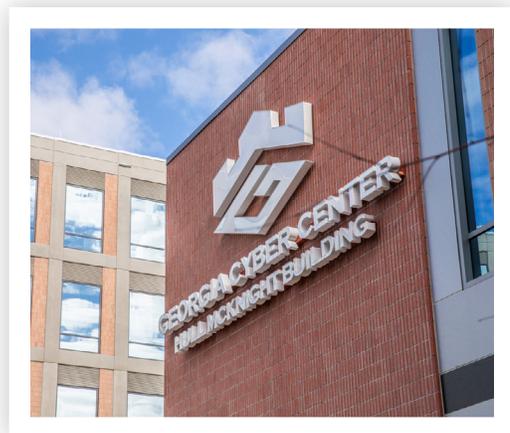
599 students, 31 classes

550 participants, 12 classes

1,300 participants, 19 classes

1,900 workers attended training

Workers from more than 47 state and federal agencies and local governments have attended training at the Cyber Center, including, Richmond County Sheriff's Department, Georgia Bureau of Investigation, U.S. Army Corp of Engineers, NSA Georgia, Georgia Association of Police Chiefs, Internet Crimes Against Children Task Force, Georgia Technology Authority, Office of the Attorney General (Georgia), Georgia State Financing and Investment Commission, Governor's Office of Planning and Budget, Georgia Department of Transportation, Georgia Public Broadcasting, Georgia Department of Juvenile Justice, Georgia Department of Agriculture, Employees Retirement System of Georgia, Georgia Department of Behavioral Health and Developmental Disabilities, Georgia State University, and Gwinnett County Government.



Georgia Cyber Center



The [GBI Cyber Crime Center](#), the bureau's first-ever cyber crime unit and headquartered at the Georgia Cyber Center, is demonstrating impressive capabilities in digital forensics to combat criminal activity. As part of Operation Interception, digital forensics investigators working at the GBI Cyber Crime Center played a pivotal role in [the arrests of 21 men](#) charged with using social media and dating apps to sexually exploit minors. The arrests took place in Atlanta during Super Bowl week, but the digital forensics work took place in Augusta. Digital forensics investigators at the GBI Cyber Crime Center processed 24 phones, tablets, and laptops, pulling conversations and photos from the devices to use as evidence, without having the devices brought to the Cyber Center. Police said suspects thought they were interacting with minors when they were actually interacting with law enforcement officers posing as minors. The GBI Cyber Crime Center is reporting a backlog of cases as local law enforcement agencies learn about its capabilities and ask for its assistance.



Hosting cybersecurity events for professionals in the field is another important aspect of the Georgia Cyber Center's mission. To date, 10,000 people have attended events at the Cyber Center or toured its facilities, including:

Representatives from **18 countries, 15 states, and all 159 counties in Georgia**

1,273 workers from the U.S. Department of Defense

928 members of the U.S. Army

190 workers from the National Security Agency

101 members of the U.S. Airforce

652 workers from the U.S. Department of Energy

The Cyber Center's incubator/accelerator program, managed by theClubhou.se, is currently supporting 59 businesses. The following are examples of recent success stories.

- **SkyAgTech** formed a strategic partnership with a large agricultural company to develop automated crop-management systems. SkyAgTech is a veteran-owned business that uses aerial systems to provide farms, contractors, and golf courses with solutions to improve their productivity and efficiency.
- **DREAM Enterprises** is working with Augusta University to develop and test a new medical device for Alzheimer's patients.
- **Sumo Robot League** shipped the first 1,000 units for its second-generation Sumo Robot Kit. The company supports STEM education by helping students learn about robotics and programming. It provides tools to science and mathematics teachers and works to give marginalized students the same recognition for efforts in technology as that given to students in athletics.

Cyberspace is the new battlefield. The resources and programs available through the Georgia Cyber Center are models for other states as they examine their strategies for addressing ever-evolving cyber threats. Those resources and programs are already delivering tangible results and promise even greater returns on the state's investment in the not-too-distant future. Nothing less than our national security and even our democracy depend on their success.