

EDUCATION



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Hot Commodity

Cybersecurity, emergency response degrees are in demand

By Robin Roenker

RECENT HEADLINE-GRABBING STORIES SUCH as the Solar-Winds and Colonial Pipeline hackings, wildfires in California and a deadly deep freeze in Texas point to the growing need for both state and federal workers who are able to combat cyberattacks and respond to a range of real-world emergencies.

This summer, the Department of Homeland Security (DHS) conducted a workforce hiring sprint, adding 300

cybersecurity professionals and making 500 job offers. But that only filled 12 percent of the agency's vacancies in the field. "As cybersecurity threats to our communities continue to rise, we must recruit and retain diverse top talent to defend against today's threats and build a more resilient future," DHS Secretary Alejandro Mayorkas said in a statement.

With a high number of job vacancies, schools are seeing a demand for their programs. "We as a university have seen an explosion in (the popularity of) our cyber degrees, particularly the cyber op-

erations degree, which offers a hands-on technical blend of computer science with a cybersecurity focus," says Pat Engbretson, dean of Dakota State University's Beacom College of Computer and Cyber Sciences in Madison, S.D.

Students like Luke Gleba, who earned a master of science degree in cybersecurity engineering at Auburn University in 2020, are drawn to the opportunity to serve their country in a tangible way. Gleba works as a cybersecurity engineer at Georgia Tech Research Institute in Atlanta, a leading center for government

defense research. "I'm patriotic from the standpoint of wanting to protect our country," Gleba says. "And one of the things I like most about cybersecurity is that you're able to directly help people—even if you're not in their presence."

CYBER READY

"The threat of cybercrime is continuing to increase," says Chad Knutson, a Dakota State University graduate and president of SBS CyberSecurity, which

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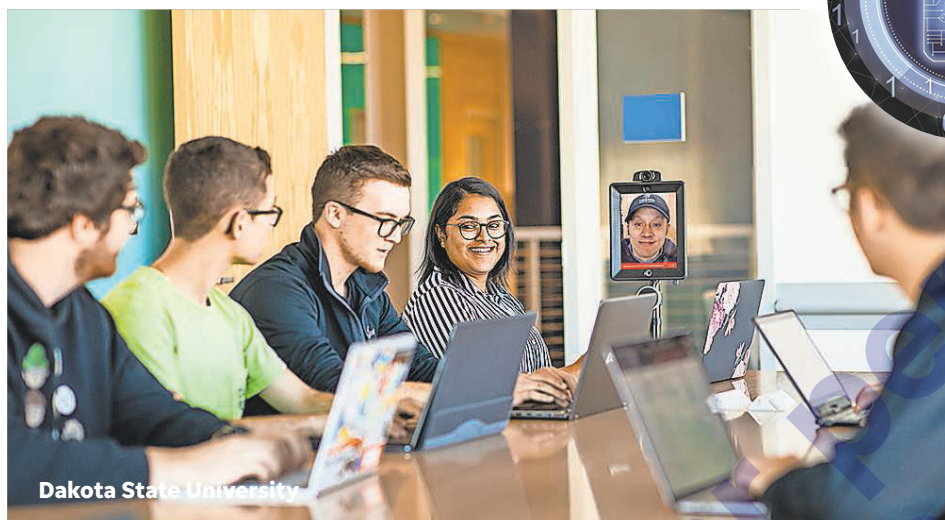
EDUCATION



Eastern Michigan University



Savannah State University students at FEMA's Atlanta offices



Dakota State University



Curtis Brown at Virginia's emergency operations center

EASTERN MICHIGAN UNIVERSITY; SAVANNAH STATE UNIVERSITY; VIRGINIA COMMONWEALTH UNIVERSITY; DAKOTA STATE UNIVERSITY; GETTY IMAGES

specializes in cybersecurity for the banking and financial services industry.

While these cyberthreats are a challenge, they're also what keep the field exciting. "If you like solving problems, you'll always get presented with a new opportunity to do so," says Knutson.

At Auburn University's cyber research center, students are actively involved in research. "We are cutting-edge. We are doing the latest (research) here and that ... informs the quality of our education," says Daniel Tauritz, the center's interim director and chief cyber AI (artificial intelligence) strategist.

For cybersecurity graduates like Graham Miles — who earned a master's degree in cybersecurity engineering from Auburn University in 2020 — part of what makes the field exciting is its fast-paced nature. "You're always learning, always trying to stay ahead — like a cat and mouse game," says Miles, who recently began a cybersecurity career with the National Security Agency.

"Working on defense security is where

all the hot cybersecurity jobs are," says James Banfield, program coordinator for Eastern Michigan University (EMU)'s Information Assurance and Cyber Defense program. Thanks to its proximity to Detroit, another area of focus for many EMU faculty and students is research to ensure the cyber safety of future autonomous vehicles.

EMERGENCY RESPONSE

Like Gleba, it was a feeling of duty that motivated former Marine Wisdom Akpanagan when he selected the homeland security and emergency management program at Georgia's Savannah State University in 2019. He says the major allows him "to continue to serve the nation."

Graduates from emergency management degree programs are well prepared for emergency response roles at the local, state and federal levels. As flooding, fires and public health emergencies have swept the country, their expertise has been in particularly high demand.

NEW GRADUATE DEGREE PROGRAM

George Washington University, Washington, D.C.

The George Washington University School of Business in Washington, D.C., recently launched a DHS-affiliated MBA program focused on security technology transition in the nation's capital. The program supports the development and integration of innovative technologies to better address emerging threats in homeland security, says Greg Simmons, program manager for minority serving institutions and workforce development at the DHS Science and Technology (S&T) Directorate, office of university programs, where he oversees S&T research and internship opportunities for faculty and students. One specific program goal: reducing barriers to transition so emerging technology can get into the hands of DHS field agents before it becomes obsolete.

"At one point during 2020, we had three simultaneous state of emergency declarations, including ones for COVID-19 and Hurricane Isaias (in Virginia)," says Curtis Brown, Virginia's state coordinator of emergency management. "We have been very busy responding to major

flooding events, and within the COVID-environment, working to help mitigate the potential spread of the disease."

With the demand for emergency responders who are able to address an

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Graham Miles at Auburn University

PROVIDED BY GRAHAM MILES

array of challenges. “My hope is that, because of the value we demonstrate in the field, more people will be attracted to emergency management as a career option,” says Brown, who has a master’s degree in homeland security and emergency preparedness from Virginia Commonwealth University (VCU) and now is an adjunct professor there.

Brown’s colleague agrees. “Students in our program are introduced to all the key elements of the homeland security facet — such as terrorism, terrorism prevention and intel — plus they also learn about all aspects of emergency response, including disaster communications, strategic planning and public health,” says William Pelfrey Jr., chair of the homeland security and emergency preparedness program at VCU’s Wilder School of Government and Public Affairs. “And when you put all that together, you find students are much

better prepared.”

These degrees provide an array of job options. Emmanuel Nojang, Savannah State University’s homeland security and emergency management program coordinator, says graduates from are well trained to find careers with DHS not only at the Federal Emergency Management Agency, but at Customs and Border Protection and the Transportation Security Administration, as well as the FBI and state and local emergency management agencies and law enforcement. Graduate Akpanagan uses his degree as law enforcement officer in California. “Our students work across the United States in a variety of disciplines,” says Nojang, adding that Savannah State graduates enter their professions equipped with “knowledge, compassion, cultural understanding and cultural competency” to successfully serve their communities.”



DEGREE PATHS TO DHS

At the Department of Homeland Security (DHS), graduates with cybersecurity training — as well as those well-versed in homeland security and emergency management best practices — are in high demand. Here are colleges offering degrees that can open the door to a DHS career:

CYBERSECURITY

These schools have been named National Centers of Academic Excellence in Cybersecurity by DHS:

Auburn University

[Auburn, Ala.](#)

While pursuing a degree, students can take part in cutting-edge cyber investigations at the Auburn Cyber Research Center.

Dakota State University

[Madison, S.D.](#)

Dakota State’s undergraduate cyber studies options include a B.S. in cyber operations as well as a new major in artificial intelligence.

Eastern Michigan University (EMU)

[Ypsilanti, Mich.](#)

Graduates of EMU’s cyber programs have gone on to careers in cybersecurity at major corporations like Google and Facebook as well within the nearby Detroit auto industry.

Arizona State University (ASU)

[Tempe, Ariz.](#)

Housed at ASU, the Center for Accelerating Operational Efficiency focuses on improving homeland security operations, including through use of artificial intelligence and cyberdefense.

Indiana University Bloomington (IU)

[Bloomington, Ind.](#)

IU’s bachelor’s degree in cybersecurity and global policy gives students in-depth awareness of networked systems and their global policy implications.

HOMELAND SECURITY & EMERGENCY MANAGEMENT

Virginia Commonwealth University (VCU)

[Richmond, Va.](#)

VCU’s program was one of the earliest to combine homeland security and emergency management under a single degree program. Its graduates often pursue careers in private and public-sector emergency management, security, law enforcement and policy planning.

Savannah State University (SSU)

[Savannah, Ga.](#)

SSU’s joint homeland security and emergency management program equips graduates for careers in a wide array of sectors, from the FBI to the Federal Emergency Management Agency.

University of Alaska**Fairbanks (UAF)**

[Fairbanks, Alaska](#)

Faculty at UAF’s homeland security and emergency management program have extensive in-field backgrounds in security, defense and emergency operations.

St. John’s University

[New York City](#)

Students can concentrate on emergency management, national security or intelligence while pursuing a B.S. in homeland security.

Texas Southern University (TSU)

[Houston](#)

Graduates of the B.S. in emergency management and homeland security program at TSU routinely pursue careers at local, state and federal government agencies.