

Department of Legislative Services  
 Maryland General Assembly  
 2018 Session

FISCAL AND POLICY NOTE  
 Third Reader - Revised

House Bill 1819  
 Appropriations

(Delegate Jackson, *et al.*)

Education, Health, and Environmental Affairs

Higher Education – Cyber Warrior Diversity Program – Established

This bill establishes the Cyber Warrior Diversity Program (CWDP) at Baltimore City Community College (BCCC), Bowie State University (BSU), Coppin State University (CSU), Morgan State University (MSU), and the University of Maryland Eastern Shore (UMES) to train students in computer networking and cybersecurity, including training to achieve specified CompTIA (Computing Technology Industry Association) certifications. For fiscal 2020, and each fiscal year thereafter, the Governor must include an annual appropriation of \$2.5 million in the Maryland Higher Education Commission (MHEC) budget to provide grants to BCCC, BSU, CSU, MSU, and UMES for their CWDPs. **The bill takes effect July 1, 2018.**

Fiscal Summary

**State Effect:** Beginning in FY 2020, general fund expenditures increase by \$2.5 million annually. Higher education revenues and expenditures likewise increase by \$2.5 million annually and may increase further, as discussed below. **This bill establishes a mandated appropriation beginning in FY 2020.**

(\$ in millions)	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Higher Ed Rev.	\$0	\$2.5	\$2.5	\$2.5	\$2.5
GF Expenditure	\$0	\$2.5	\$2.5	\$2.5	\$2.5
Higher Ed Exp.	\$0	\$2.5	\$2.5	\$2.5	\$2.5
Net Effect	\$0	(\$2.5)	(\$2.5)	(\$2.5)	(\$2.5)

*Note:() = decrease; GF = general funds; FF = federal funds; SF = special funds; - = indeterminate increase; (-) = indeterminate decrease*

**Local Effect:** None.

**Small Business Effect:** None.

## Analysis

**Bill Summary:** By November 1, 2018, and each November thereafter, BCCC, BSU, CSU, MSU, and UMES must notify MHEC of the number of students enrolled in each institution's program for the *current* academic year. MHEC must annually allocate funds to those institutions on a pro rata basis according to the most recent enrollment data for each institution's CWDP as reported to the commission. The funding provided under the bill each year must supplement, but not supplant, any funds that would otherwise be provided for each institution.

By December 1, 2019, BCCC, BSU, CSU, MSU, and UMES must jointly hold a National Cyber Warrior Diversity Conference.

MHEC must compare successful completers of each CWDP to similarly situated students who did not enroll in either program in a specified manner and report its findings by December 1, 2021.

**Background:** Cybersecurity is the body of technologies, processes, and practices designed to protect networks, computers, programs, and data from attack, damage, or unauthorized access. According to the U.S. Bureau of Labor Statistics, employment within computer and information technology [occupations](#) is projected to grow 13% from 2016 to 2026, faster than average for all occupations. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security. In 2016, the median pay for [information security analysts](#), the job category that plans and carries out security measures to protect an organization's computer networks and systems, was \$92,600.

### *CompTIA*

CompTIA has been offering vendor-neutral IT (information technology) certifications since 1993. As of 2018, CompTIA offers [four IT certification series](#) that test different knowledge standards, from entry level to expert. In North America, CompTIA certification tests are taken at any Pearson VUE testing center.

Cybersecurity is one of the four certifications pathways. CompTIA A+, CompTIA Network+, and CompTIA Security+ are the first three certifications on the cybersecurity pathway following CompTIA IT fundamentals. Basic certification exams for those certifications cost from \$211 to \$330; deluxe and premium packages with practice questions and other material are also available.

No specific training is required prior to taking a CompTIA certification exam; however, CompTIA offers self-study packages and classroom instruction. CompTIA also partners

with other organizations, including institutions of higher education, to provide training suitable to prepare for CompTIA certification.

### *Certification required for U.S. Department of Defense Employment*

The [U.S. Department of Defense](#) requires certification from an approved certification provider for cybersecurity related employment. CompTIA is one of the approved certification providers.

### *Cyber Security Programs in the State*

There are specific [“cybersecurity” degree programs](#) at the bachelor’s degree, master’s degree, or doctoral level at Capitol Technology University, Johns Hopkins University, Mount St. Mary’s University, University of Maryland Eastern Shore, and University of Maryland University College. The majority of programs in Maryland specific to cybersecurity are at the associate’s degree level in community colleges. There are also post-baccalaureate and post-master’s degree certificates in cybersecurity in the State.

There are also programs in computer science or information systems at many institutions of higher education in the State.

### *Federal Scholarships for Cybersecurity Programs*

[CyberCorps Scholarship for Service](#) is a federal program that provides stipends of up to \$22,500 per academic year for undergraduate students and up to \$34,000 for graduate students. In addition, these scholarships for service may cover expenses normally incurred by full-time students in the institution, including tuition, education-related fees, and other related expenses. These scholarships may be awarded for three years. Recipients must agree to work after graduation for a government agency (including at the state or local level) or, subject to approval, in a position related to cybersecurity for a period equal to the length of the scholarship.

### *Cyber Security at Coppin State University*

In March 2017, Northrop Grumman Corporation and Baltimore-based tech company, Digit All City, entered into an agreement with the U.S. Department of Defense Mentor-Protégé program to offer cyber security at CSU. According to news reports, the program will provide training to CSU and MSU students in computer networking and security, leading to eventual certification in the following CompTIA certifications: A+, Network+, and Security+.

In fall 2016, CSU had 60 undergraduate students enrolled in computer science and 25 undergraduate student enrolled in management information systems.

#### *Cyber Security Center at Morgan State University*

The fiscal 2019 State budget includes \$2.0 million for MSU to support the university's Cyber Security Center of Excellence. According to MSU's website, the university's Network Information and Embedded Systems Security Center of Academic Excellence (NIESS-CAE) is designed to provide a portal through which students and faculty can learn about reducing vulnerabilities in the national information infrastructure. MSU expects, by promoting cyber defense related education and research through the center, to produce a growing number of professionals with expertise in various cyber defense disciplines.

MSU's website states that the CWDP at CSU will enable at least 20 MSU students from various departments to participate in the fully funded workshops, at no cost to the students.

In fall 2016, MSU had 204 undergraduate students enrolled in computer science and 147 students enrolled in information systems.

#### *Cybersecurity at Other Institutions Listed in the Bill*

BCCC currently offers a cybersecurity program that leads to CompTIA certification. In fall 2016, BCCC had 22 students enrolled in a computer science transfer program and 180 students enrolled in a computer information systems program.

In fall 2016, BSU had 130 undergraduate students enrolled in computer science and 207 students enrolled in computer technology.

In 2016, UMES had 168 undergraduate students enrolled in a computer science/data processing program.

#### **State Fiscal Effect:**

##### *General Fund Expenditures*

The bill mandates an appropriation of \$2.5 million annually in the budget for MHEC to provide grants to BCCC, BSU, CSU, MSU, and UMES for the CWDPs established under the bill. Thus, general fund expenditures increase by \$2.5 million annually beginning in fiscal 2020. Due to the timing of the required reporting and the availability of funding, MHEC must distribute the funding to the institutions based on the number of students enrolled in each institution's CWDP for the *prior* academic year. For example, the funding

for academic year 2019-2020, the first year in which funding is available (fiscal 2020), will be based on enrollment for academic year 2018-2019 as reported to MHEC on November 1, 2018. The funding must not supplant any funding that would otherwise be provided for each institution.

### *Higher Education Revenues and Expenditures*

BCCC, BSU, CSU, MSU, and UMES revenues and expenditures increase by a total of \$2.5 million annually beginning in fiscal 2020. The amount available to each institution depends on its share of total enrollment for CWDPs as reported to MHEC and may change from year to year. Higher education expenditures for the institutions may further increase, likely minimally, in fiscal 2020 to jointly hold the National Cyber Warrior Diversity Conference. To the extent that the CWDPs at the institutions increase enrollment, tuition revenues increase further. Undergraduate in-state proposed tuition for fall 2018 is \$8,234 for BSU, \$6,625 for CSU, \$7,892 for MSU, and \$8,203 for UMES.

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## **Additional Information**

**Prior Introductions:** None.

**Cross File:** SB 615 (Senator Robinson, *et al.*) - Education, Health, and Environmental Affairs.

**Information Source(s):** Maryland Higher Education Commission; Morgan State University; U.S. Department of Defense; Department of Budget and Management; U.S. Bureau of Labor Statistics; CompTIA; Department of Legislative Services

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