Meeting Minutes
Subcommittee on Education and Workforce Development
Maryland Cybersecurity Council
July 2, 2020
11:00 am – 12:00 am
Virtual Format

Attendance (9/16)
Subcommittee members attending: Senator Katie Fry Hester (chair), Senator Bryan Simonaire, Dr. Michel Cukier, Dr. Anupam Joshi, Dr. Kevin Kornegay (for Dr. David Wilson, President of Morgan State University), Laura Nelson, Rodney Petersen, Jonathan Powell, and Russell Strickland.

Staff: Howard Barr (Assistant Attorney General & Principal Counsel, Office of the Attorney General, Department of Information Technology), Nithin Venkatraman (Chief of Staff, Office of Senator Hester), and Dr. Greg von Lehmen (University Maryland Global Campus, Staff to the Maryland Cybersecurity Council)

1. Senator Hester welcomed the members and expressed her appreciation for their commitment to the subcommittee and its work. She reminded that the purpose of the meeting was to regroup since the last meeting and to consider ideas for advancing the workforce development needs of the State. She noted that these ideas did not necessarily have to be legislative.
2. She was informed that a quorum of the subcommittee was present. Turning to the minutes of the 22 November 2019 meeting, she asked if there were any amendments, and if there were none, whether there were motions to approve. No amendments were requested. Motions were made and seconded by Dr. Kornegay and Ms. Nelson, respectively, and approved without objection.
3. Senator Hester asked Dr. von Lehmen to walk the members though the Subcommittee's Working Document to provide a baseline for the meeting's discussion. He highlighted a number of ideas that had been grouped under three major headings: coordination and scaling of existing workforce development initiatives, pathways to cybersecurity jobs, and funding for cyber R&D, including collaborative projects across universities. Discussion followed in relation to two of these objectives.

Pathways

Dr. Joshi observed that the State's Workforce Development Initiative (WDI) had made substantial matching funds available to USM institutions to develop cybersecurity

programs. What was needed was a clearer articulation of the pathways from high schools into those programs.

Dr. Kornegay mentioned two pathways, namely high school Career and Technical Education (CTE) tracks in computer science and cybersecurity and the youth apprenticeships programs in some school districts. He thought that apprenticeships do a good job of preparing students for practical jobs in the short term, although he asked whether workers who had been apprentices were able to develop as jobs changed. Moreover, he indicated that some universities were finding that CTE students needed more math in order to be successful and that to make CTE a successful pathway, this experience should be considered.

To pursue Dr. Kornegay's questions, the subcommittee asked Dr. von Lehmen to see if MSDE could provide aggregate data on its CTE students and their success both in meeting university admission requirements in computer science and cybersecurity and their persistence in those programs.

Ms. Nelson observed that a major pipeline-related issue has been the absence of K12 curricular guidelines for cybersecurity in particular. She noted that the Cyber Center for Education and Innovation at the National Cryptologic Museum Foundation had developed a version of such guidelines that were in the pilot phase. Senator Hester asked if she could provide those to Dr. von Lehmen for circulation to the subcommittee.

Scaling existing efforts

Referencing the Subcommittee Working Document, Senator Hester asked if it were possible for schools to achieve scale in offering courses in courses in computer science and cybersecurity. This would entail several schools potentially leveraging courses taught in real time by teachers at other schools via some appropriate remote teaching/learning technology. This could help address the shortage of teachers in these areas.

A question was asked whether the State's Cybersecurity Scholarship for Service students could help meet the teacher shortage in a critical area by teaching. Senator Simonaire, the sponsor of the bill establishing the program, noted that under the law teaching in a public-school setting can be used as service.

Rodney Peterson commended the State for the program, noting that it is a welcome parallel effort to the federal scholarship-for-service program. While these graduates may have substantive knowledge, he raised the question whether they would have the necessary teaching credentials in order to be eligible for a high-school level teaching position. This has been an obstacle in other states.

Dr. Kornegay mentioned that teacher training programs for retirees might be a way to supplement the cadre of teachers who can teach computer science and cybersecurity. He also noted that Morgan State University offers a program that allows high school teachers to come in for the summer to train and learn more about cybersecurity. He asked whether this could be made a model across higher education in the State.

4. Senator Hester then asked her Chief of Staff, Nithin Venkatraman, to review the bills on the agenda from the last session for comments that might be incorporated for the 2021 Session.

   SB 724 (Maryland IT Hiring Act). The bill references the NICE National Cybersecurity Workforce Framework as a standard for cyber-related position descriptions. Mr. Peterson had offered a few changes to the text of the bill in order to reference 'competencies'. He noted that the NICE National Cybersecurity Workforce Framework in its next version will again include competencies. He also mentioned that there is a similar framework for IT jobs in general and would share it with the members.

   Dr. Joshi noted that the Greater Washington Partnership's credentialing program was defining its own KSAs for cybersecurity related jobs and that USM schools participating in the program had to map their curricula to those KSAs. He indicated that he would share the website with the subcommittee and suggested that the subcommittee review them.

   Mr. Peterson mentioned that the NICE Framework was the standard for the federal government by law and that DoD contractors are required to align with it as well. He pointed out that he has met with successive directors of the Greater Washington Partnership's efforts in this area to familiarize them with the work that NICE has already achieved.

   SB 895 (Maryland Tech Internship Program). The objective of the bill is to incentivize State agencies to take on interns by funding internships out of the general fund instead of agency budgets. Given the funds involved, it was thought this change might be achievable in the next session.

   SB 1049 (Cybersecurity Talent Pipeline Management Program). The bill would fund an effort to lead a Talent Pipeline Management Program on the model of the US Chamber of Commerce. For context, Senator Hester pointed out that members of the subcommittee had met with members of the US Chamber Foundation and the Kentucky Chamber of Commerce (an implementer of the model). Senator Hester observed that funding for new programs would be difficult and asked whether funds could be diverted from other programs to support the effort.

   Senator Simonaire asked what higher education is doing with corporations to inform its

degree programs in cybersecurity. Dr. Joshi and Dr. Kornegay noted that their institutions work closely with industry, as do all of the universities across the State. Senator Simonaire observed that apart from the question of whether schools were producing graduates with the needed skills, there was also the question of sheer numbers. While his own company (Northrop Grumman) recruits heavily in Maryland, it is not able to find all the talent it needs.

Senator Hester commended schools for their partnerships with industry and suggested that TPM might address the "last mile" of connecting academic preparation to the job. To obtain more information, she suggested a meeting with the Kentucky Chamber of Commerce to better understand how their effort fit into the larger workforce development initiatives in that State. She indicated her office would coordinate the meeting and invite any subcommittee members who might participate.

Dr. Kornegay observed that part of the long-term solution is to do a better job of preparing diverse populations to enter the cybersecurity workforce. He noted that there is a digital divide in Maryland and what is required is more investment in lagging public schools. Senator Hester noted that her recent joint committee hearing on the digital divide and agreed that the digital divide is relevant to the pipeline issue.

Senator Hester asked Dr. von Lehmen to coordinate another meeting of the subcommittee in September where she would like to include industry representatives as was done in the subcommittee's November 15 meeting last year.

With no further business, the subcommittee adjourned at 12:15 pm.