

Statement by Gretchen Bliss, UCCS Director of Cybersecurity Programs

Senate Small Business Committee

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UCCS Kevin W. O'Neil Cybersecurity Education and Research Center

I am Gretchen Bliss, Director of Cybersecurity Programs at the University of Colorado at Colorado Springs (UCCS). I am honored to be invited to discuss my thoughts and background in bringing cybersecurity, small business, education, and students together to raise the bar in cybersecurity for all.

The Colorado Springs ecosystem has been developing for the last nine years into a coalition of the willing that connects education, industry, government, and community. The workforce demand for cybersecurity professionals is HUGE: over 663,000 jobs are available today across the nation (22,641 in Colorado alone). Cybersecurity is needed across **all** industry sectors, not just for military or government contractors, agencies, and departments. The National Cybersecurity Workforce and Education Strategy recently stated, "Responsibility for defending cyberspace should be shifted from individuals and small businesses to the most capable actors in cyberspace, and vigorous collaboration among education, labor, and commercial stakeholders is essential to success." Small Businesses face mounting and expanding challenges regarding cybersecurity protection and threats. To underscore the need, Forbes reports that in 2021, [70% of ransomware attacks](#) were directed at small- and mid-sized businesses.

We are currently leveraging several federally funded initiatives to support collaboration among education and small business. Years back, our Pikes Peak State College team received a Regional Alliances and Multistakeholder Partnerships to Stimulate (RAMPS) grant from NIST's National Initiative of Cybersecurity Education (NICE). We built the Cyber Prep program, where 17 high school students were paired with 14 small businesses in Colorado Springs for a summer paid internship and cybersecurity training sessions. Businesses were shocked at the depth of talent that high school students possessed in cybersecurity; two students continued with their companies through college and beyond.

Of the over 400 US institutions that the National Security Agency designates as Centers of Academic Excellence (CAE) in Cybersecurity, 15 are in Colorado. UCCS was the first CU system school designated as a CAE in 2012. The CAE program helps to standardize academic cybersecurity programs. It provides grants to support educational programs that develop cyber clinics, like legal and medical clinics, where students get practical hands-on experience helping small businesses. Industry demands three things from a cybersecurity student: a degree, industry-recognized certifications, and hands-on experience. Clinics give students the experience and knowledge they need to be later hired to support cybersecurity needs across industries.

Regionally, education and small businesses collaborate through Small Business Development Center (SBDC) programs called Cyber Cover Your Assets (CYA) and the annual Colorado SBDC Network Cybersecurity conference. This program was the first of its kind and is a leading program nationwide. Small businesses work with the SBDC under the 8-week cyber implementation program where they receive a risk assessment and education- and budget-friendly solutions to secure their business assets. In addition, community experts, small businesses -- represented by my co-panelist Shawn Murray -- and

high school and community college students conduct cybersecurity hygiene checkups for small businesses. Senate funding for these initiatives will support their proliferation across the country.

Research is also fundamental to bringing businesses, government, and students together to solve the wicked-hard problems in cybersecurity. UCCS has a robust cybersecurity faculty that was awarded over \$19M in government funds over the past three years to conduct in-depth research for the DoD, DoE, NSF, CyberCOM, SpaceCOM, and industry. Research not only solves complex problems; but also, prepares students for industries' workforce needs. Continued research funding across government agencies remains critical.

The Space Information Sharing and Analysis Center (ISAC) is an embedded partner with UCCS and has over 70 small, medium- and large-sized companies as members. The Space ISAC facilitates collaboration against cyber and space threats across the global space industry, enhancing industry preparation for -- and response to -- vulnerabilities, incidents, and threats. It also hosts a fellowship program for industry and educational fellows. Cross-disciplinary organizations, such as the Space ISAC, develop cyberspace resiliency throughout industry, government, and education.

UCCS is leading the University of Colorado system and the state in finding new and unique ways to create cybersecurity partnerships with small businesses. UCCS has developed a workforce pipeline that begins in K-12 and crosses into community colleges and the CU system to ensure cyber capabilities are available to Colorado at many levels. Over the past four years, UCCS has expanded cybersecurity degrees and programs to 20 pathways across five colleges, beyond the long-standing cornerstone programs in engineering at the bachelor's, masters and doctorate levels. Programs can now be found in the College of Public Service with a cyber law, policy, and forensics concentration; Letters Arts and Sciences with a Technical Communication and Information Design Degree; College of Business with Cybersecurity Management at the BS, MBA, and DBA levels, and College of Education teacher prep workshops to bring cybersecurity into the classroom. Needless to say, UCCS believes strongly in cybersecurity as an interdisciplinary necessity.

The Nation benefits greatly from community programs such as those at UCCS, NIST and NICE, CAE, Space ISAC, and SBDC. These programs develop a workforce so direly needed to protect our national security and solve hard technical problems for the country. They bring small businesses together with education to create the future workforce that will solve complex problems and raise the bar for cybersecurity nationwide.

Links to referenced programs:

Cyberseek heatmap: <https://www.cyberseek.org/heatmap.html>

RAMPS Program: <https://www.nist.gov/itl/applied-cybersecurity/nice/ramps-communities>

CAE Community: <https://www.caecommunity.org/>

Pikes Peak SBDC CYA: <https://pikespeaksbdc.org/what-we-do/programs/sbdc-techsource-cyber-cya/>

Space ISAC: <https://s-isac.org/>

UCCS Cybersecurity: <https://cybersecurity.uccs.edu/>

UCCS research:

UCCS Cybersecurity Expertise

Policy/Law-maker

DoD Commander

CEO/CTO/CSO/CIO

Public Policies, Laws, Governance, Ethics, Compliance			
Quantitative, Trustworthy, Autonomous, and Agile (QTAA) Decision-Making (e.g., for Command and Control)			
Cybersecurity Metrics and Quantification			
Trustworthy Sensing/Intelligence (Situational Awareness)			
Trustworthy Artificial Intelligence/Machine Learning			
Resilient Architectures and Security & Privacy Mechanisms			
Enterprise/IT networks	CPS/IoT/IoBT/5 &6G networks	Critical infrastructure (Smart "X")	Blockchain networks

Legend

UCCS-unique & world-leading expertise