

# SMART Act Presentation

## SB18-086 Cyber Coding Cryptology For State Records

*Joint Business Committee Presentation*

January 10, 2023



# Western Colorado University

- Western is in the fifth year of offering a computer science major with an information security emphasis. This program is distinctive in Colorado as a technically focused cybersecurity bachelor's degree.
- 12 student scholarships totaling \$35,000 FY22. Anticipated ~45% increase in student scholarships to be awarded FY23.
- Currently 26 students (12 freshman, 4 sophomores, 7 juniors and 3 seniors) in the program are served by use of funds for 0.97 FTE.
- 7 degrees/certificates awarded last year
- Cyber funds supported 2 undergraduate TAs for CS 330 (a core cyberclass).
- Recruiting high school students for the 2023 summer Cybersecurity Camp.
- Additional cybersecurity graduate educational grant awarded to faculty member for FY23.
- CS Department Chair has applied for a sabbatical for Cybersecurity training.
- Actively participated in the Mountain West Cybersecurity Consortium (MWCC).
- Western faculty pursuing the National Security Agency (NSA) Center of Academic Excellence in Computer Defense (CAE-CDE) designation for Information Security
- Funding has been influential for our growing CS enrollment at Western and contributions to Colorado's cybersecurity workforce.





# Metropolitan State University of Denver

- Our B.S. Cybersecurity is in its 5<sup>th</sup> year as an academic offering and our Masters degree program has been in place for 4 years. These degree programs are interdisciplinary, integrating Computer Science, Computer Information Systems and Business Analytics, and Criminal Justice and Criminology curricula.
- 326 students currently enrolled in the B.S. Cybersecurity major, one of the fastest growing majors since its inception in Fall 2018. Nearly 600% growth over 4 years.
- In Spring 2022, the B.S. Cybersecurity program was designated by the NSA as a National Center of Academic Excellence in Cyber Defense.
- 59 current Masters students, growing from 15 students at launch (~300% increase).
- Awarded 19 scholarships in the 2021-22 school year to students enrolled in cybersecurity programs
- Secured \$133K in matching funds to expand the impact of the State's investment, including funding for a partnership with CompTIA to provide industry-recognized certificates to students through our Cybersecurity Certification Club.



# Colorado State University System



## SB 18-086 Report, CSU System - January 2023

	FY 19	FY 20	FY 21	FY22*
Total SB 18-086 Appropriation	\$1,200,000	\$1,200,000	\$729,412	\$1,200,000
Actual Amount Spent on Scholarships	\$122,435	\$306,050	\$286,005	\$1,166,083
Total Number of Scholarships Awarded	45	141	118	237
Required Allotted Amount Earmarked for Scholarships	\$180,000	\$180,000	\$108,000	\$180,000
<b>At or above allotted amount of scholarship earmark</b>	No	Yes	Yes	Yes
Number of faculty/adjuncts hired...	2	32	9	22
Number of student internships	71	129	118	198
Number of degrees/certificates/course completions	28	303	371	1,061
Number of presentations/seminars on cybersecurity	83	143	15	123
Amount of all other matching money raised	\$50,000	\$7,700,000	\$3,249,816	\$5,231,369
<ul style="list-style-type: none"><li>• More than one hundred and eighty (180) faculty/interns hired under the grant</li><li>• More than 500 student participants have graduated, virtually all have jobs in IT w/ IT Security prominent</li><li>• The CSU System invested \$79,810 for computers at Sturm, serving over 200 students in ITSec courses.</li></ul>				

# University of Colorado Colorado Springs

- In partnership with the NCC & Space ISAC, UCCS consistently exceeds legislative requirements: 20% of funding to scholarships. Awarded 337 student scholarships in cybersecurity programs in 5 of 6 UCCS colleges in 2021-2022
- More than 400 UCCS undergrad and graduate students with cybersecurity degrees, minors or certificates (Spring 2022)
  - Another 1,000 students earned cybersecurity industry certifications required by the workforce (NCC and UCCS)
- UCCS is expanding cybersecurity degrees – Engineering, Business and Letters, Arts and Science and Public Service
- UCCS cybersecurity faculty and students, in partnership with NCC and Space ISAC, significantly increased cybersecurity presentations, papers and seminars to 241 in 2021-2022 (a 100% increase over FY 2020)
- UCCS cybersecurity faculty leveraged state funds to obtain over \$8M in additional cybersecurity funds in 2021
  - EAS obtained over \$600K in additional cybersecurity grants in 2022 (ongoing \$4M)
  - CPO Obtained additional NSA funds for GenCyber intro teacher and student summer cybersecurity camps
- UCCS leads the Mountain West Cybersecurity Consortium (MWCC), over 40 post-secondary institutions cybersecurity and has applied for NSF and DoD grants on behalf of MWCC – still pending
- UCCS long-term strategic Cybersecurity POWER Strategy to maintain and expand cybersecurity programs – the state's investment is critical along the path toward sustainability
  - Five Faculty Seed grants awarded to faculty in Engineering, Business, Education, Letters, Arts & Sciences and Public Affairs
  - Four undergraduate students were provided summer research working Cybersecurity research projects
  - Cybersecurity psychology and sociology programs are being developed in Letters, Arts and Sciences

## SB18-086 Cybersecurity Summary

For Fiscal Year 2022, PPSC received \$300,000 from the Legislature as part of the college's fee for service allocation to support the institution's efforts in offering Cyber Security degrees and certificates.

### FY-22 Funding Highlights:

- **Scholarships:** PPSC awarded 12, \$2,500 scholarships.
- **Faculty:** All other monies funded salaries for three full-time Cybersecurity faculty.
- **Credentials:** PPSC Awarded **27 Associate of Applied Science (AAS) degrees** in Cybersecurity and **61 Certificates**—all a result of increased capacity of instruction.

### 5-Year Completion Trends in Cybersecurity\*

Academic Period	Degree Completers	Certificate Completers
AY 21–22	27	61
AY 20–21	29	30
AY 19–20	10	35
AY 18–19	1	28
AY 17–18	0	15

*\*Since the initiation of these funds, PPSC has more than tripled the number of degrees awarded in Cybersecurity—Certificates have doubled.*

# The Larger Cyber Picture

Increased staff capacity in Cybersecurity has allowed more significant engagement with industry partners in the form of competition and event participation:

- PPSC has participated in more than 50 competitions and events to promote cybersecurity.
- PPSC students have won and placed in events nationwide, to include the Rocky Mountain Collegiate Cyber Defense Competition, CyberMaryland competitions, and other regional cyber competitions. PPSC students have consistently outperformed and placed alongside students at 4-year institutions (UCCS, USAFA, etc.)





# Colorado Mesa University

- \$ 72,360 Spent on student scholarships, with 58 scholarships awarded
- Significant increase in the number of students in the cybersecurity certificate and minor. In the past few years, typically about 12 students declared the degree per year, in FY22 a total of 26 students declared the degree, giving a record high of 36 students in the program at the end of the fiscal year
- 5 out of 10 graduates of our computer science program also earned Cybersecurity Professional Certificate at the December 2022 commencement. One also earned a minor in Cybersecurity
- 10 interns were placed at the Cybersecurity Center
- Graduates of our programs are employed at Los Alamos National Lab, Lockheed Martin, Comcast, Deloitte, and Aspen Technology Groups
- The Cybersecurity Team made one poster presentation and published three peer-reviewed journal articles, including an article co-authored with students in *IEEE Access*.



***Thank you.***  
***We are happy to answer any questions.***

