Dear Committee,

It is my honor and pleasure to recommend Beth Cerrone to the review committee for the Presidential Cybersecurity Education Award. Over the past 23 years in cybersecurity education, I have worked with many outstanding educators; these are individuals who have led the way, cut the path, and pioneered cybersecurity education. In my early days of working in cybersecurity education, I worked on cybersecurity education projects focused on the graduate level and I have progressively moved into efforts in undergraduate cybersecurity education and now high school. I have done this work as a Professor at Purdue University and now as the founder and president of DARK Enterprises, Inc., a non-profit that advances the mission of developing, supporting, and stewarding cybersecurity education initiatives in the United States. Teach Cyber is a flagship project within DARK Enterprises, Inc. I introduce myself as a way of sharing that I have worked with hundreds of talented cybersecurity educators over my career. And in my opinion, Beth Cerrone is an exemplar teacher who has pioneered courses, clubs, opportunities, and a pathway in cybersecurity that 1) provides exceptional opportunities for a variety of deserving students, and 2) helps the United States address its critical cybersecurity workforce needs. Beth is deserving of this award not because of her position or title, but because of her commitment, acumen, and accomplishments. If by recognizing Beth with this honor, we are able to inspire 10, 20, or 100 other teachers to follow her lead, we will be better off.

Sincerely yours,

Dr. Melissa Dark
Founder and President

DARK Enterprises, Inc.
1820 Hemlock Rd., Lafayette, IN 47905

Ms. Elizabeth Cerrone
Presidential Cybersecurity Education Award Nomination

Nominees Name:	Elizabeth Cerrone
Level of Education Taught:	Secondary
Educator's State:	Colorado
Educator's City:	St. Vrain
Educator's School:	St. Vrain Valley School District
Educator's Work Email:	Cerrone_elizabeth@svvsd.org
Educator's Work Phone:	303-702-8200

Educator's Education:

Educator's Employment History:

Supplemental Links:
Cybersecurity at St. Vrain Valley School District
Innovation Center
Allaboutcyber.org

Beth Cerrone's Accomplishments

Beth built a rigorous cybersecurity pathway that serves a variety of students and is a national model. The pathway offers students 1) practical skills allowing them to hit the ground running upon entering the workforce, and 2) deep foundational knowledge allowing them to progress and meaningfully contribute to hard cybersecurity problems. **This is rare.** Research estimates that 7.5% of US high schools have enough depth to create a cybersecurity pathway but only than 2% (~300 schools) have done so (cybersupply.org). Moreover, most of these 300 cybersecurity pathways **only train students for entry level positions in a fraction of NICE work roles** and to pass a test. High school cybersecurity in the USA has a profound absence of foundational knowledge that opens the door to all NICE work roles, fosters for critical thinking and prepares a student for lifelong learning. Beth has built a **model high school pathway**.

The pathway includes: Introduction to Cybersecurity, Linux Essentials, Python Programming and Ethical Hacking. Linux is critical in cybersecurity. Linux is: 1) pervasive, 2) known for being the most secure OS making it appealing for security operations, and 3) usable with many different programming languages, making it optimal for efficient programming. Knowing Linux matters whether you are a cybersecurity professional and need to pull logs, use a tool for day-to-day security administration, or conduct penetration testing.

Python is used extensively in cybersecurity. Python is useful because it has many diverse libraries and frameworks. Python can be used in making payloads, malware analysis, decoding of packets, accessing servers, network scanning, port scanning, and automation that makes cybersecurity's reconnaissance (information gathering) more effortless. Python is also useful for pen testing. Both Linux and Python are needed foundations for Ethical Hacking.

Ethical Hacking is imperative for cybersecurity professionals. The ability to uncover threats and vulnerabilities from an adversarial point of view feeds the ability to prevent, detect, and recover from specific attacks, as well as to pursue platform breakthroughs that lead to a more secure and trustworthy cyberspace.

Beth builds students hands on skills by:

- Coaching teams
    - 8 Cyber Patriot
    - 1 Cyber Guardians
    - 1 HP Code Wars
    - 1 Lockheed Martin Code Quest
    - 1 School of Mines Coding Competition
- Work-based learning where students contribute to their community
    - Students are creating a CTF and Cyber Escape room for elementary-middle school students
    - Safe online practices training for Senior Citizens
    - Student conference presentations (CSTA 2022, CoSN 2023, NICE K12 2023, AEFP 2023)
    - Student internships conducting security audits for six local non-profits

Beth builds her own expertise:

- Earned certifications
    - PCEP
    - Network +
    - Linux Essential
    - Security + (underway)
    - Google Professional Cybersecurity Certification
- Completed a graduate certificate in cybersecurity from UC Boulder
- Graduate certificate in cybersecurity education from UALR underway

Finally, Beth has provides innovative experiences for students and other teachers:

- PISCES from Metropolitan State
- Infusing cybersecurity into other academic pathways: AI, Data Science, and Aeronautics
- Using hands on tools: US Cyber Range, TryHackMe, and CyberStart America
- Agile Remote to teach cybersecurity to rural students and teachers in Colorado

Academic Achievements of Beth Cerrone's Students

	AY 2020-2021	AY 2021-2022	AY 2022-23	AY 2023-24
Intro to Cybersecurity	19	45	82	120
Python	Not Yet Offered	34	45	44
Ethical Hacking	Not Yet Offered	13	43	34
Linux	Not Yet Offered	Not Yet Offered	15	20
Students in Pathway	19	92	185	218

Beth's students have earned several certifications:

- 82 students have earned PCEP certification plus concurrent enrollment with AIMS Community College
- 14 students have earned LINUX certification (also concurrent credit with AIMS)
- 4 students have earned Network+ certification
- 8 students have earned PCAP certification
- 1 student earned OSCP certification