

Capture the Flag (CTF) Competition

Advancing Cybersecurity Competence Through Hands-On Simulations at the CTF Event



INTRODUCTION

CyberTrust Massachusetts recently orchestrated an innovative Capture the Flag (CTF) challenge that marked a landmark achievement in public-private-academic collaboration.

With participation from four consortium schools, the event aligned closely with the state's focus on promoting STEM education, particularly in cybersecurity. The CTF initiative had multifaceted goals: elevating the standard of cybersecurity education through hands-on simulations, enhancing cyber resilience among member institutions, and offering students an arena for real-world skill development in teamwork, communication, and crisis management.

The event drew attention from a wide array of educational institutions and organizations from across the Commonwealth, including community colleges, event sponsors, and consortium members, reflecting the initiative's broad appeal and inclusive approach.

BENEFACTORS



Healey-Driscoll
Administration



MASSACHUSETTS
TECHNOLOGY
COLLABORATIVE



About CyberTrust and the
Cyber Range P6

TABLE OF CONTENTS

Introduction P1

Capture the Flag Goals P2

Event Details P3

Impact P4

STUDENT VOICES P5



INAUGURAL CTF EVENT

CyberTrust Massachusetts spearheaded the inaugural Student Range "Capture the Flag" Challenge.

This groundbreaking endeavor saw participation from four consortium schools and served as a seminal illustration of public-private-academic partnership, amplifying the state's commitment to fostering STEM education with a specific focus on cybersecurity.



capture the flag!

The CyberTrust Capture The Flag (CTF) event had three primary goals:

- 1** To elevate the level and breadth of cybersecurity education by creating a hands-on experience in a simulated environment where students practice identifying and mitigating real cyber threat scenarios.
- 2** To further develop cyber resilience and technical acuity among Consortium member institutions.
- 3** To provide a forum for real-world skills development including teamwork, communication, problem-solving, and crisis management — thereby better preparing students for employment as part of a high-functioning security team.

EVENT DETAILS



The collaborative initiative manifested in a highly engaging event, which was open to an expansive stakeholder group. The eligible schools represented a cross-section of the Commonwealth's educational landscape, including Springfield Technical Community College, Cambridge College, Per Scholas – Greater Boston, Bridgewater State University, MassBay Community College, Bay Path, and Elms College, among others. (It is noteworthy that Franklin Cummings Tech, a recent addition to the consortium, was not yet a participating member at the time of the event, but has since joined the consortium.)

To prepare the participants for the challenging scenario they would later confront, a series of lab warmups were conducted from September 27 through October 6.

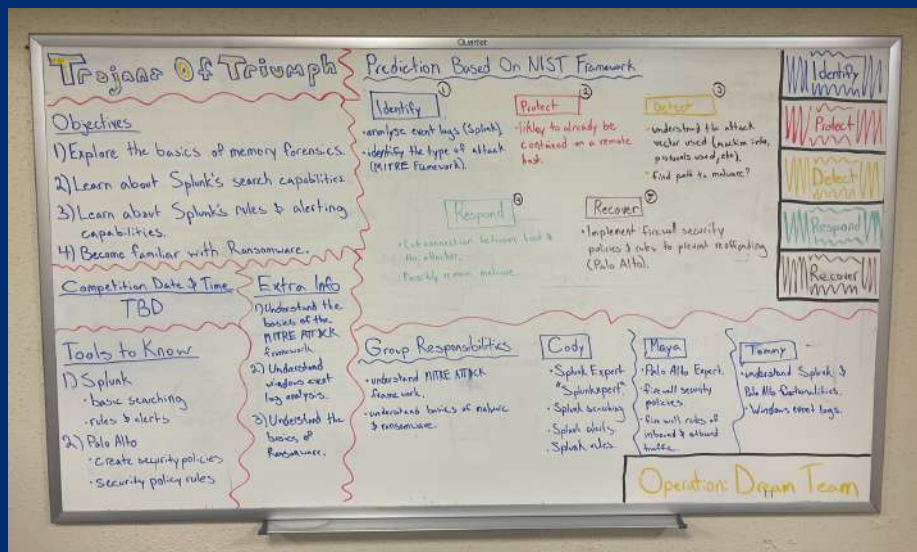
During the week of October 9, students from participating schools scheduled their four-hour time blocks to partake in a live-fire event scenario. This scenario was a simulated end-to-end attack, specifically a ransomware event, requiring students to identify and mitigate real cybersecurity threats in real-time.

RESULTS

The competition was robust, featuring eight teams that represented 24 students across the four institutions.

- MassBay Community College had two teams— Hackbeard's Crew and Hacking Pumpkins— who secured third and first place, respectively.
- Elms College's Team KiNETic clinched the second-place honor.
- Bay Path University distinguished itself by fielding all-female teams, namely M2N Cybercat Ciphers and Team Intelli404.
- Bridgewater State University contributed with three teams: Trojans of Triumph, BSUCyberBears3.0, and ByteBlockers.

PRE-WORK DONE BY TROJANS OF TRIUMPH IN PREP FOR THE CTF EVENT!



Students: Thomas, Maya, and Cody;
mentored by David Marion



WITH THANKS

Thank you to all of our member institution faculty and instructors who circulated the CTF amongst their students, and especially to those who were the primary points of contact for their student teams.

IMPACT

In a grand finale, the top three teams were publicly acknowledged on October 16. Further recognition for their outstanding performance was awarded at the Massachusetts Cyber Summit on October 27 where the teams and their institutions were honored with citations from Governor Healy's office, challenge coins from MassCyberCenter, and sweatshirts furnished by the CTF sponsor, Zscaler.

In essence, the event represents a microcosm of CyberTrust Massachusetts' larger educational agenda. It embodied the collaborative ethos of the initiative, engaged a diverse set of educational institutions, and, most importantly, equipped students with invaluable, hands-on cybersecurity skills.

CyberTrust's Cyber Range Director, Meghan Martinez with MassBay student, Andrew Eggleston and CyberTrust CEO, Peter Sherlock at the Massachusetts Cyber Summit, Oct 27



STUDENT VOICES



DALIA

I had the chance to be part of the CyberTrust competition ... and I would say it was a great opportunity for me to learn and get that the chance to actually be part of something workforce-related.

It was really helpful for me, and also, I know that it was really helpful for my classmates as well.

I'd say, this is a great opportunity. You should definitely keep on promoting these types of exercises and this type of training space for those students like me and my teammates that are just eagerly seeking these types of learning exercises.



TOM

I was on the team Trojans of Triumph, and I'm from Bridgewater State University. One my main reasons for signing up for the CTF was to get more of the Blue Team experience within cybersecurity.

One of my main passions is to later go on to Incident Response and I thought this would be a really good opportunity. I was very surprised by the size of the virtual environment and the enterprise that was inside the competition. I learned a lot. I learned how to use some certain tools like Splunk and Palo Alto, and overall it was a great experience.

I'd absolutely love to do another competition later in the future. In the future I hope to be working in Incident Response, so the overall competition was a great experience to learn from it.



MAYA

The reason why I signed up for CTF is because I wanted to be able to get hands-on experience and to also get a glimpse of how the real world is when it comes to cybersecurity.

I would love to do CTF again because it allowed me to know my strengths and weaknesses when it comes to cybersecurity. One of the things that was super surprising to me when doing the live event is how real it was. That was the first time I was able to experience something that was so real. I've learned so much throughout that, and being able to be exposed to that was amazing.

The aspects that I want to pursue in cybersecurity is being able to help individuals or anybody that has an institution or a business, because I believe that people should understand the value of cybersecurity and how impactful it can be to their lives.

CORPORATE MEMBERS



CONSORTIUM COLLEGES



CYBERTRUST MASSACHUSETTS OVERVIEW

The Commonwealth of Massachusetts holds a pioneering role in STEM initiatives, continually harnessing them to address far-reaching existential challenges, including climate change and cybersecurity threats.

CyberTrust Massachusetts – as a special-purpose organization and not-for-profit partner of the MassCyberCenter has formed a consortium — anchored in community colleges and state universities, and supported by member companies — to create cybersecurity educational programs to best reach underrepresented groups.

By partnering together, we can ensure that any student interested in cybersecurity has options towards a high-wage job with pathways for growth, and that any local government has access to affordable and effective cybersecurity services.

“Like a teaching hospital, but for cyber!”



PETER SHERLOCK
Chief Executive Officer

“This pioneering event transcends conventional classroom learning by offering students the opportunity to engage in real-world cyber threat scenarios. In doing so, it equips them with invaluable practical skills and the situational awareness crucial for future employment in the field.”

FACT SHEET:



Biden-Harris Administration Announces National Cyber Workforce and Education Strategy, Unleashing America’s Cyber Talent



LAURA MILEWSKI

For Consortium Membership, contact:
Laura Milewski
Director of Outreach and Development
laura@cybertrustmass.org
617-680-2203

CYBER RANGE LEADERSHIP



MEGHAN MARTINEZ

GCIH, GCFA, GCLD, CISSP



As a committed advocate for cybersecurity, Meghan ardently believes in the necessity of drawing people from diverse backgrounds and experiences into the field.

She recognizes the sector’s potential for providing high-wage, in-demand jobs that have the capacity to create generational wealth, particularly for underrepresented communities.

With a focus on mentorship, sponsorship, and community-building, Meghan has spearheaded initiatives aimed at fostering a more inclusive environment for those who are new or trying to enter the cybersecurity workforce from historically marginalized communities.

Recognizing the multi-faceted nature of the industry’s challenges, she is a strong proponent of multi-sector partnerships, involving academia, government, and corporate stakeholders for sustainable outcomes. Beyond that, she is deeply committed to investing in digital equity solutions that increase the pathways available for entering the cybersecurity field.

Grounded in an ethos of inclusivity and equitable opportunity, Meghan continues to be a seminal voice in shaping the cybersecurity landscape for the Commonwealth that welcomes diversity and is resilient in the face of evolving challenges.

CYBER RANGE SIMULATIONS PROVIDER

Cyberbit is our technology provider for Cyber Range simulations and attack scenarios.

