



NCAE-C K-12 Cybersecurity CTA Development Status, Challenges, and Potential Solutions

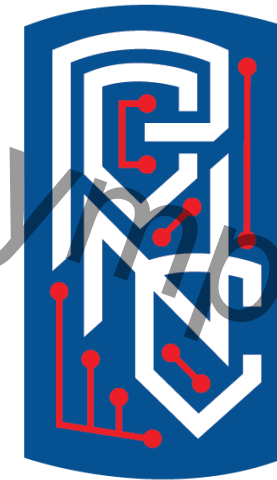
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Purdue University Northwest

2024 CAE Community Symposium

Task: 2.1.8.1 (CTA Status + Development)

Task: 2.1.8.2 (CTA Database)

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- PNW Team
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- Mr. Robert Richardson
- Task PI: Thomas Brown
- Forsyth Technical Community College



Careers
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2024 CAE NCAE-C Cybersecurity Credit Transfer Agreements (CTA) Tasks

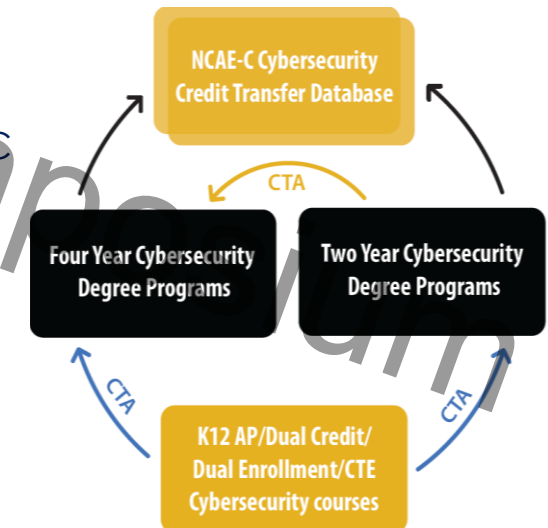
Task 1: Compile a set of cybersecurity CTAs

- 2-Year to 4-Year CAE programs
- K12 schools and CAE institutions: **K-12 CTAs**
- Methods: survey and follow ups
 - Collaborate with regional hubs, and others.

Task 2: Facilitate cybersecurity CTA development

- Focus on K12 CTAs Development (K12 schools and CAEs).
- Identify and engage with CAE schools with interests
 - establish independent contracts with 20 CAEs
- Methods:
 - Virtual K-12 CTA Development workshops + recruit
 - One-on-one mentoring:
 - follow ups + zoom meetings
 - Collaboration: regional hubs, RING, NCTA (ECCC Workshop committee), Concurrent enrollment (NACEP)/dual credit community
 - email, conference/workshops

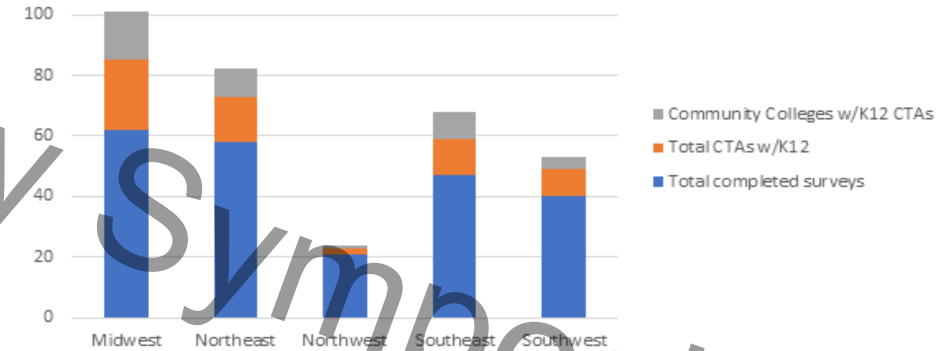
Task 3: Establish a database of the of the CTA



US Region	CAEs	2Y-4Y	K12	w/AP	w/DC	w/CTE	w/Other
Midwest	62	42	23	5	22	7	5
Northeast	58	37	15	8	10	7	2
Northwest	21	15	2	1	3		
Southeast	47	25	12	4	8	5	2
Southwest	40	22	9	6	10	4	1
Grand Total	228	141	61	24	53	23	10

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Cybersecurity CTA Status Info Collection – Dec. 04, 2023



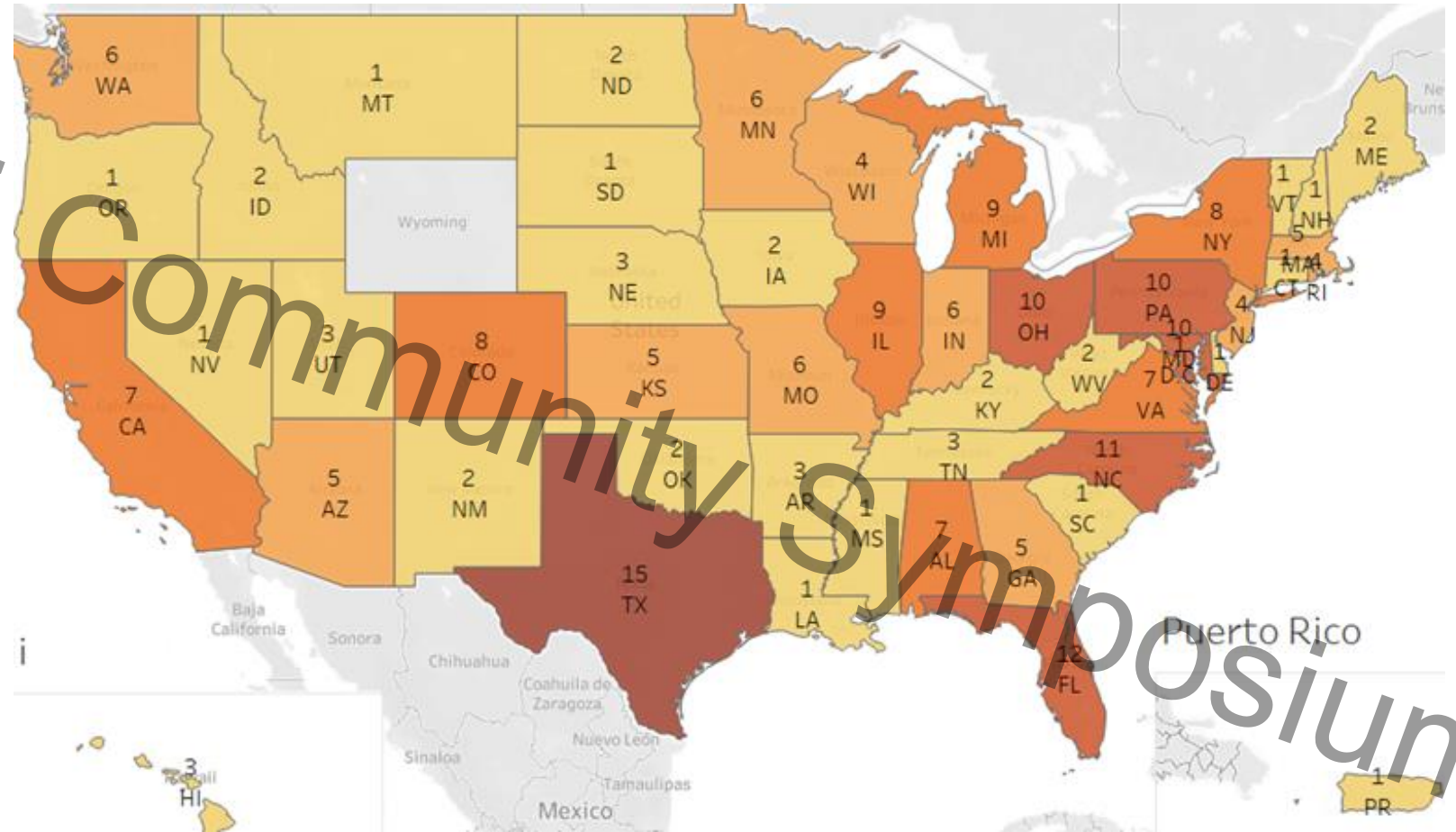
Among the 61 CAE institutions with K-12 CTAs
39 are Community Colleges

Ongoing:

1. Contact individual CAEs who has not responded yet
2. Another survey to 61 CAE schools for more details on their
K-12 CTAs: very few uses **cybersecurity course** as part of CTA
3. plan: One contact per semester in the future for CTA updates

2024 CAE

The Results of NCAE-C Cybersecurity CTA Status Collection (Nov 10, 2023)



The Status of NCAE-C Cybersecurity CTA Development (March 01, 2024)

K-12 CTA DEVELOPMENT WORKSHOP

CAE schools who participate in the workshop and develop a new K-12 CTA **may qualify for \$1000 stipend** through the grant.

Fill out the survey below if you are interested.



NCAE-C Cybersecurity Credit Transfer Task

is offering a workshop for CAE schools to develop a new cybersecurity Credit Transfer Agreement (CTA) with a K-12 school. This workshop is part of the effort from the CPNC-Careers Preparation National Center

The CTAs are expected to help recruit more students into CAE programs and create collaboration opportunities across the CAE and K-12 communities.

Join Virtually on Zoom

DATE: Tuesday, February 6th MEETING ID: 977 6203 3385
TIME: 1:30 - 3:00 PM CT PASSCODE: CTA
ZOOM LINK:

<https://purdue-edu.zoom.us/j/97762033385?pwd=RVEwWFNPOXoK2NkTDFlUzNHk1wQ109>

CAE Institution Name	CAE	US Region	High School(s)
Anderson University	4Y	MW (Anderson, IN)	NLPS (CTE) model
Cal Poly Pomona	4Y	SW (Pomona, CA)	
Capital Technology University	4Y	NE (Laurel, MD)	
College of Coastal Georgia	4Y	SE (Brunswick, GA)	
College of DuPage	2Y	MW (DuPage, IL)	
College of Eastern Idaho	2Y	NW (Idaho Falls, ID)	Career & Technical Education Center (CTEC)
College of Western Idaho	2Y	NW (Nampa, ID)	
Forsyth Technical Community College	2Y	SE (Winston-Salem, NC)	
Guilford Technical Community College	2Y	SE (James Town, NC)	
Hennepin Technical College	2Y	MW (Brooklyn, MN)	
Hinds Community College	2Y	SE (Raymond, MS)	
Indiana State University	4Y	MW (Terre Haute)	
Indiana University Bloomington	4Y	MW (Bloomington, IN)	
Ivy Tech Community College Valparaiso	2Y	MW (Valparaiso, IN)	
Johnson & Wales University	4Y	SE (Providence, RI)	
Laurel Ridge Community College	2Y	NE (Virginia)	
Middle Georgia State University (MGA)	4Y	SE (Macon, GA)	
MontGomery College	2Y	NE (GermanTown, MD)	
Northern Kentucky University (NKU)	4Y	SE (Highland Heights,	
Norwich University	4Y	NE (Northfield, VT)	
Pace University	4Y	NE (NY, NY)	
Purdue University Northwest	4Y	MW (Hammond, IN)	Hobart, Munster, East Chicago High, Concurrent enrollment
Pittsburgh Technical College	2Y/4Y	NE (Pittsburgh, PA)	
Rock Valley College	2Y	MW (Rockford, IL)	
Southeast Missouri State University	4Y	MW (Cape Girardeau,	
St. Cloud Technical & Community College	2Y	MW (St. Cloud, MN)	
Western Illinois University	4Y	MW (Macomb, IL)	MaComb, Maoline, Cambridge, Alwood, West Prairie High
University of Colorado--Colorado Springs	4Y	SW (Colorado Springs,	
University of Idaho?	4Y	NW (Moscow, Idaho)	3 teachers so far (CYB110), 20-30 per year, first 2 years
University of Louisville	4Y	SE (Louisville, KY)	
University of North Carolina Pembroke	4Y	SE (Pembroke, NC)	
University of North Carolina Wilmington	4Y	SE (Wilmington, NC)	
University of Southern Mississippi	4Y	SE (Hattiesburg, MS)	
Polytechnic University of Puerto Rico	4Y	SE (San Juan, PR)	

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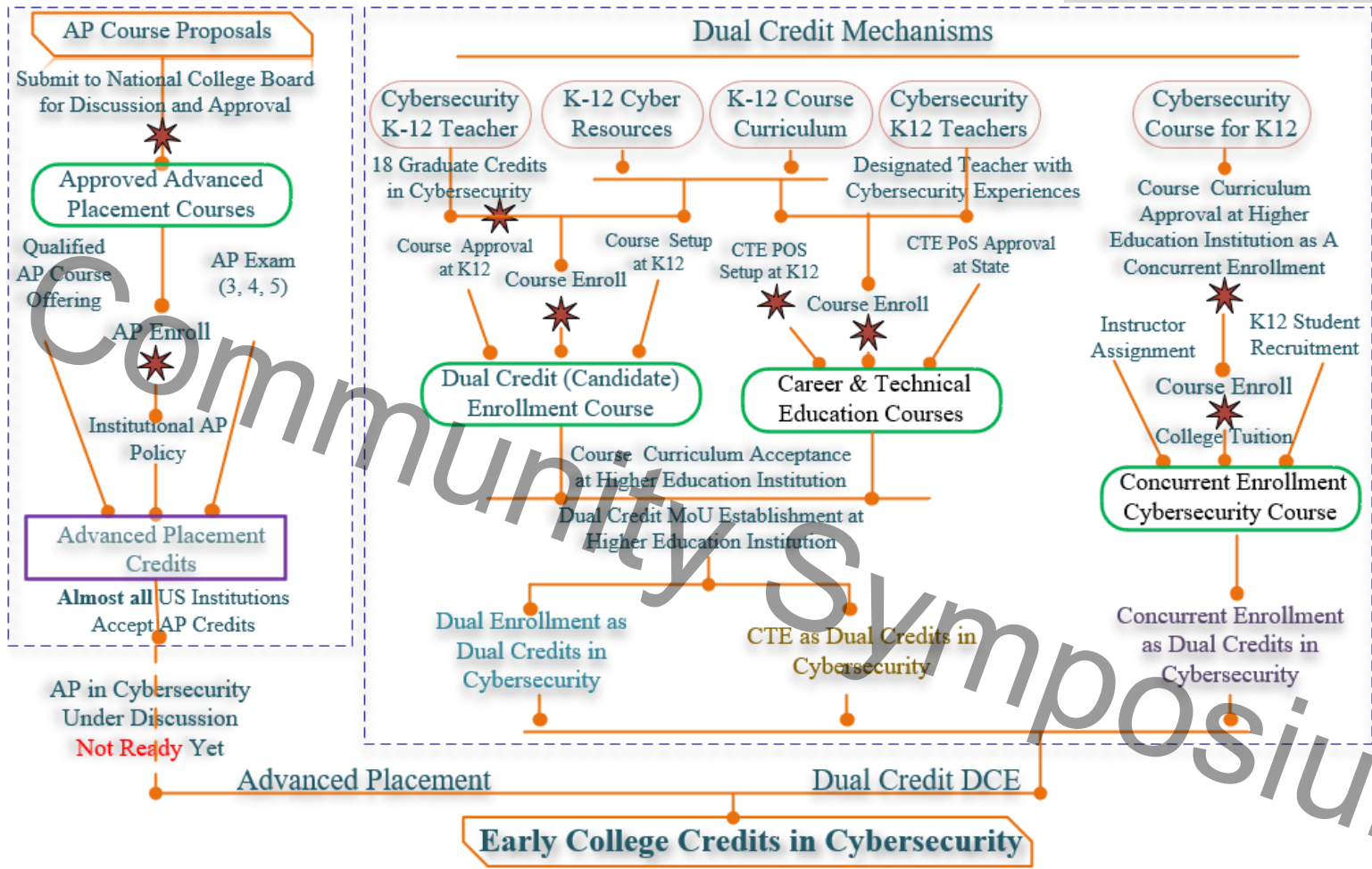
Cybersecurity CTA Status Collection:

Challenges & Opportunities

- Development Trend Observed
 - **228 out of 406** CAE schools responded to CTA status survey
 - Added 5 since last quarter – very slow increase
 - 61 CAEs responded YES with existing K-12 CTAs
 - No new schools since last quarter
 - **34 CAEs** committed on **new** K-12 CTA development
 - New for this Quarter (Sept-Dec 2023)
- Challenges
 - Better response rate to CTA status survey (how often should email be sent)
 - How to engage and motivate MORE CAEs to respond and develop new CTAs
 - Faculty and staff effort with limited incentive: Lots of NCAE-C events **now**
- **Have you Responded?**
- **How to Address these Challenges?**

2024 CAE Symposium

Early College Credits in Cybersecurity : Mechanisms & Challenges



- Challenges for **Concurrent Enrollment**, DCE/CTE
 - Sustainability
 - The low enrollment
 - Enrollment

Summer 2022		Spring 2023		Fall 2023		Spring 2024		Summer 2024/2025	
HS students	PNW	HS students	PNW	HS students	PNW	HS students	PNW	HS students	PNW
6	0	6	12	9	0	3	7	15+	TBD

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Early College Credit Cybersecurity Course Enrollment Challenges

- Concurrent enrollment Usually at college, In person delivery required for dual credit acceptance
 - Attendance challenges – HS schedule, transportation
 - Concurrent enrollment** solved teacher qualification issue, but introduce attendance issue
 - Tuition as an extra cost – same rate as college credits
 - Scheduling issues (extra-curriculum activities conflicts)
- All DCE/CTE enrollment Challenges: many of the cybersecurity DCE/CTE classes are small
 - Student Interests:
 - 0.07%** of HS students (~ 11,000) participated in Cyber Patriot in Fall 2021- **25%** go to cybersecurity^{1,2}
 - 1.5 out of the 7 students who attend GenCyber camps pursuing cybersecurity (major or minor)³
 - 2015-2019: total: 15,545, 46% increased interests

- How to Address?

Thank you!

Any Questions?

Swizzle

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