2021 CYBERSECURITY EDUCATION INITIATIVES

National Centers of Academic Excellence in Cybersecurity Program

Missions

NSA: The National Security Agency/Central Security Service (NSA/CSS) leads the U.S. Government in both signals intelligence (SIGINT) and Cybersecurity (previously IA) products and services and enables computer network operations (CNO) in order to gain a decision advantage for the Nation and our allies under all circumstances. **NICE**: Prepare, grow and sustain a cybersecurity workforce that safeguards and promotes America's national security and prosperity.

CISA: Combatting Cyber Crime and Cyber Incident Response; securing Federal Networks, Protecting Critical Infrastructure, and providing Cybersecurity Governance; Promoting Information Sharing, Training and Exercises, and Cyber Safety information.
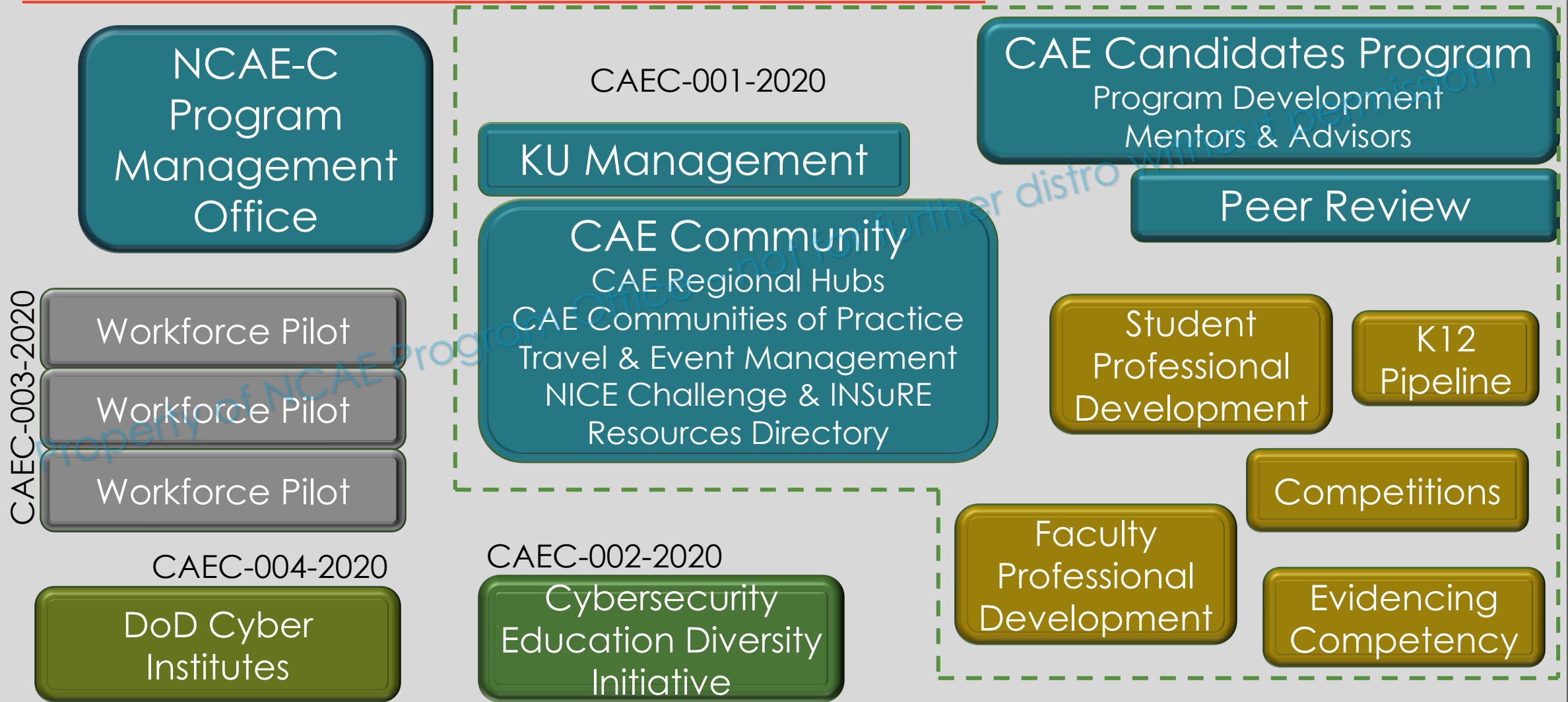
National Centers of Academic Excellence in Cybersecurity

- **NCAE-C**: The NCAE-C program seeks to build a strong, diverse, and adaptable cybersecurity workforce pipeline through applied partnerships with academia, government, and industry.

- Thinking about strategy
  - Solarium Commission and similar reporting, NICE Strategic Plan, Legislation
  - NCAE-C Program objectives
    - Align as much as possible with Federal partners and Legislative efforts
    - Clearly state goals and measures of success
    - Lead implementation of quality education programs in support of workforce development

- Strategy Development
  - Draft strategy document distributed to schools early December
  - Designated institutions participate in webinar 15 December
  - Final plan 15 January

2020 NCAE-C Program Evolution

- ## Name change: National Centers of Academic Excellence in Cybersecurity
  - ✓ 3 Designations: CAE-CD, CAE-CO, CAE-R
  - ✓ Federal partners: CISA, NICE, FBI, NSF

- ## New staff
  - ✓ Val Hansel, CAE-CO Summer Program
  - ✓ Jason Smith, CAE-CO Program Manager
  - ✓ Emily Vogel, CySP & Grants
  - ✓ Lauren Scott, CAE-R Program Manager

- ## New application process
  - ✓ https://www.ncyte.net/ncyte-news/news/fast-track-cae-designation-workshop

- ## New tool: 13 Nov webinar, 1400-1530 – Review panels scheduling now

- ## GenCyber collaboration
  - ✓ Aligning curriculum, concepts – contributing to the pipeline

2021 NCAE-C PROGRAM & INITIATIVES

NCAE-C Program Management Office

CAEC-001-2020

KU Management

CAE Community
CAE Regional Hubs
CAE Communities of Practice
Travel & Event Management
NICE Challenge & INSuRE
Resources Directory

CAE Candidates Program
Program Development
Mentors & Advisors

Peer Review

CAEC-003-2020

Workforce Pilot

Workforce Pilot

Workforce Pilot

Student Professional Development

K12 Pipeline

Competitions

CAEC-004-2020

DoD Cyber Institutes

CAEC-002-2020

Cybersecurity Education Diversity Initiative

Faculty Professional Development

Evidencing Competency

CAE Community National Center

https://CAEcommunity.org
https://cyberedwiki.org/

- Communities of Practice
  - CDE: Dr Yair Levy
  - CO: Dr Drew Hamilton
  - R: Dr Susanne Wetzel & Dr Agnes Chan

- Regional Hubs

- Graphics Support: Moraine Valley Community College

- K12 CAE Feasibility Study, 10 Nov, 1330-1415] Center for Cybersecurity Education & Innovation (CCEI)

- CAE Resource Directory

- Overall infrastructure support (conferencing, travel, events, systems)

CAE Community
CAE Regional Hubs
CAE Communities of Practice
Travel & Event Management
NICE Challenge & INSuRE
Resources Directory

KU Management
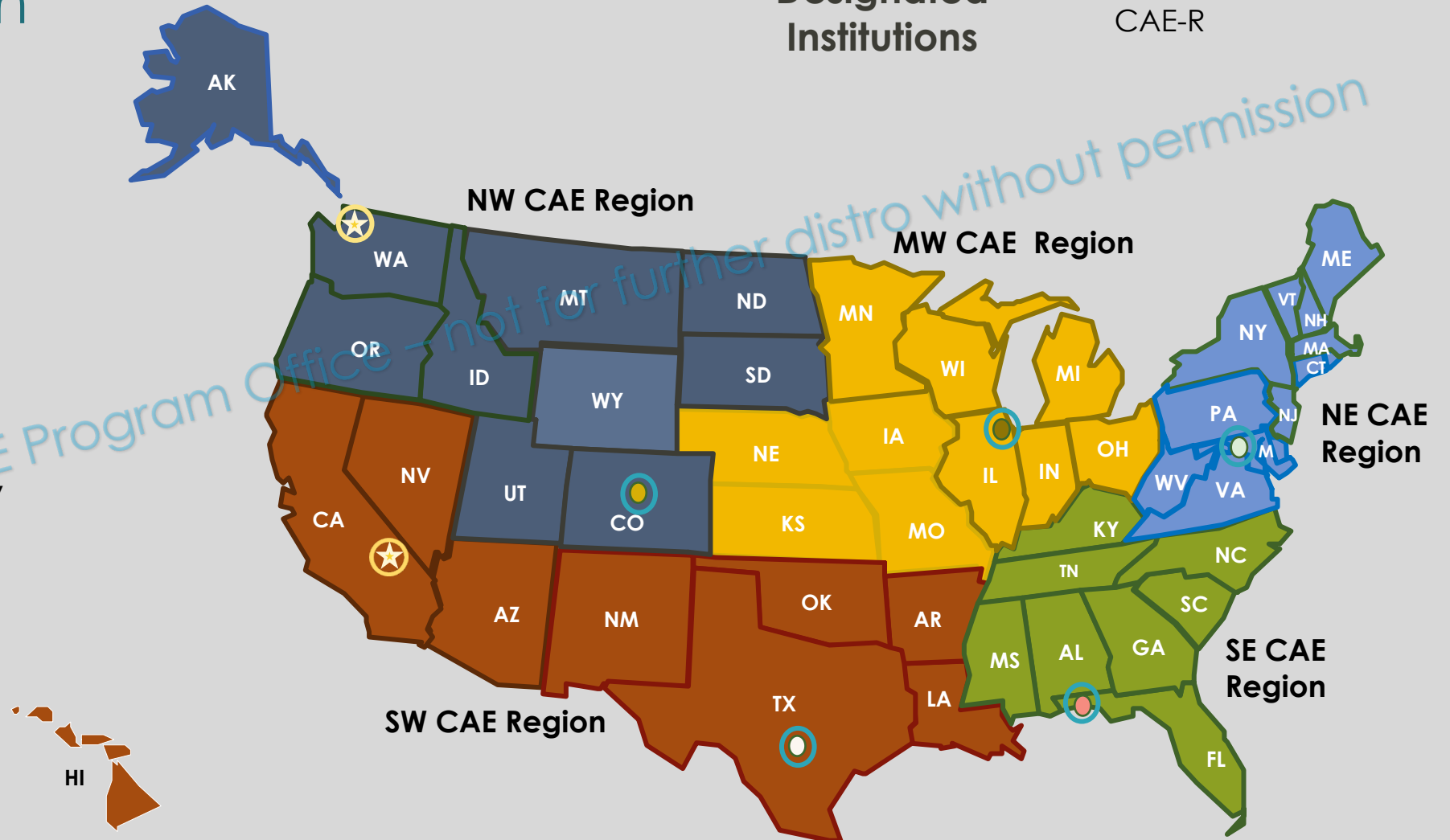
Cybersecurity Education Diversity Initiative

Dr Thaier Hayadneh (thayajneh@fordham.edu) & Dr Amelia Estwick (AEstwick@excelsior.edu)

- Partnership with DoD Small Business Office & Maryland Innovation & Security Institute
- Primary Sub-Awards
  - Polytechnic University of Puerto Rico
  - Metropolitan State University of Denver
  - Bluegrass Community and Technical College
  - North Carolina Agricultural & Technical State University
  - New Jersey City University
  - University of North Florida
  - Tennessee Tech University
  - University of North Texas
  - University of Tennessee at Chattanooga
- 35 Partners
  - Faculty time (mentors & advisors)
  - Shared curriculum
  - Range time
  - Labs and exercises
  - Regional assistance
  - Faculty development

CEDI Leads:
Fordham University
and
Excelsior College

DoD Small Business
Office & MISI/Dreamport

- ✓ Focus on NCAE-C designated institutions' support to cybersecurity education development at HBCUs and MSIs
- ✓ Academic program development based on NCAE-C academic requirements, but designation not a requirement for MSI participation

Cybersecurity Workforce Development Pilots

Dr Sharon Kerrick (sharon.kerrick@louisville.edu))

- University of Louisville
  - University of Arkansas
  - University of North Florida
  - Bluegrass Community and Technical College
  - City University of Seattle
  - Owensboro Community and Technical College

Workforce Pilot
University of Louisville

Workforce Pilot
Purdue University NW

Workforce Pilot
University of West Florida

- ✓ Target audience transitioning military and first responders
- ✓ Certificate programs in emerging technologies
- ✓ No/low cost to participants
- ✓ **Focused on Health Industry sector**

Cybersecurity Workforce Development Pilots

Dr Michael Tu (Michael.Tu@pnw.edu)

- Purdue University Northwest
  - Ivy Tech Community College
  - University of North Carolina at Charlotte
  - University of Tennessee at Chattanooga

Workforce Pilot
University of Louisville

Workforce Pilot
Purdue University NW

Workforce Pilot
University of West Florida

✓ Target audience transitioning military and first responders
✓ Certificate programs in emerging technologies
✓ No/low cost to participants
✓ **Focused on IT Industry sector**

Cybersecurity Workforce Development Pilots

Dr Eman El-Sheikh (eelsheikh@uwf.edu)

- University of West Florida
  - Univ of South Florida
  - Florida International Univ
  - San Antonio College
  - Dakota State Univ
  - Metropolitan State Univ
  - Eastern NM Univ – Ruidoso
  - Univ of Texas San Antonio
  - Augusta Univ
  - Univ of Houston

Workforce Pilot
University of Louisville
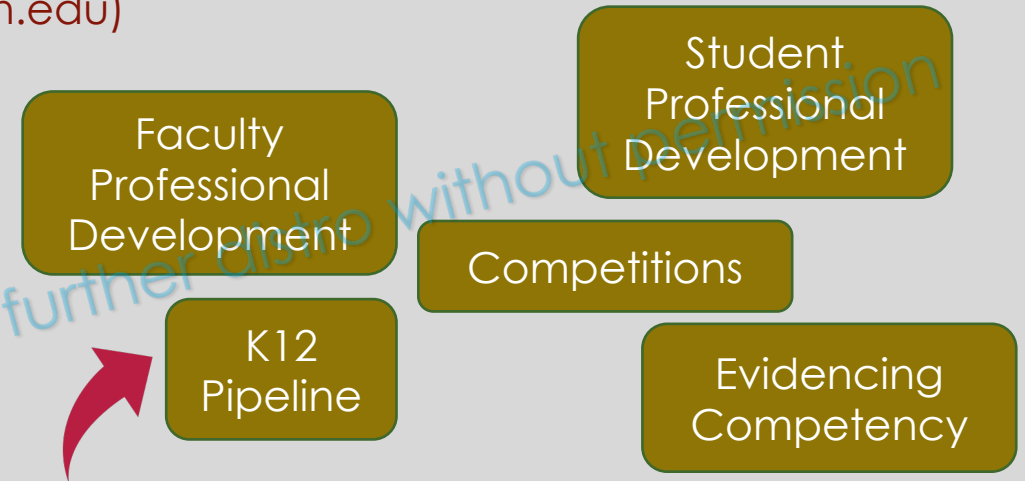
Workforce Pilot
Purdue University NW

Workforce Pilot
University of West Florida

- ✓ Target audience transitioning military and first responders
- ✓ Certificate programs in emerging technologies
- ✓ No/low cost to participants
- ✓ **Focused on Finance and Defense Industry sectors**

CAE K12 Pipeline: Partner Coalitions

MVCC: (sands@morainevalley.edu); UAH: (tommy.morris@uah.edu)

- Moraine Valley Community College
  - Brookdale Community College
  - Forsyth Technical Community College
  - California State Polytechnic University of Pomona
  - Eastern New Mexico University – Ruidoso
  - Florida State College Jacksonville

- University of Alabama in Huntsville
  - Dakota State University
  - Purdue University Northwest
  - Coastline Community College
  - Alabama Connections Academy and Niswonger Online
  - Pace University
  - Dark Enterprises

Faculty Professional Development

Student Professional Development

K12 Pipeline

Competitions

Evidencing Competency

✓ Target audience is K12 home school programs, rural areas, and underprivileged school systems

✓ Online, year-round academic and interest-development activities & game-based curriculum

✓ Opportunities for K12 teachers

✓ Opportunities for dual credit (high school/college)

✓ Articulation agreements among CAEs

Faculty Professional Development: Partner Coalitions

DSU: Dr Wayne Pauli (wayne.pauli@dsu.edu); UCCS: Dr.Gurvirender Tejay (gtejay@uccs.edu)

- Dakota State University
  - University of West Florida
  - University of Texas at San Antonio
  - Moraine Valley Community College
  - San Antonio College
  - University of Alabama in Huntsville
  - University of North Texas
  - Metropolitan State University
- University of Colorado, Colorado Springs
  - University of Cincinnati
  - Florida International University
  - University at Albany, SUNY
  - University of New Mexico
  - Arizona State University
  - Whatcom Community College
  - US Air Force Academy
  - Robert Morris University
  - National Cyberwatch Center

Faculty Professional Development

Student Professional Development

Competitions

K12 Pipeline

Evidencing Competency

- ✓ Workshops and seminars for current faculty
- ✓ Summer experience with exposure to federal and industry cybersecurity missions for PhD candidates
- ✓ Programs encouraging students to pursue PhD
- ✓ Assist transitioning military members to prepare for credentialing and place in teaching positions at post-secondary institutions

National CAE-C Competitions

Mohawk Valley: Jake Mihevc (jmihevc@mvcc.edu)

- Mohawk Valley Community College and partner University of South Florida
  - Competition Committee:
    - California State University San Bernardino
    - University of Central Florida
    - Griffiss Institute
    - University of Houston
    - Whatcom Community College

Faculty Professional Development

Student Professional Development

Competitions

K12 Pipeline

Evidencing Competency

✓ Expand the HACKATHON competition to every NCAE-C geographic region for education and competency development

✓ Provide resources to help educators prepare students for HACKATHON competitions

✓ Conduct a national NCAE-C HACKATHON event with teams representing each region at the 2022 Executive Leadership Forum

National Student Professional Development

Kelli Burgin: kelli.burgin@montreat.edu

- Montreat College
  - Prepare students to take responsibility for their own professional development
  - Experience portfolio
  - Ethics
  - Video interviews

Faculty Professional Development

Student Professional Development

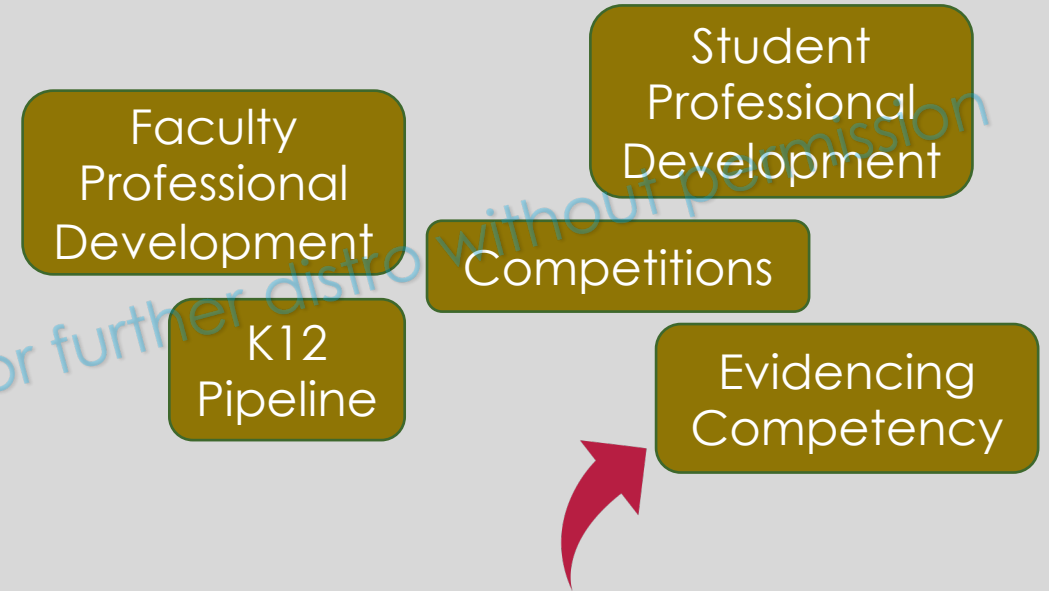Competitions

K12 Pipeline

Evidencing Competency

- ✓ Provide resources for NCAE-C programs to help students develop themselves as cybersecurity professionals
- ✓ Develop resources to help K-20 students visualize and understand cybersecurity work roles and necessary knowledge and skills
- ✓ Provide academic materials for ethics and critical thinking skills development

NCAE-C Evidencing Competency

Dr Sharon Hamilton: shamilto@norwich.edu

- Norwich University/Norwich University Applied Research Institute (NUARI)
  - CSUSB
    - Definitions, metrics
  - Stevens Institute
    - Competency development tools
  - California State Polytechnic University Pomona
    - Competitions for competency development

Faculty Professional Development

K12 Pipeline

Student Professional Development

Competitions

Evidencing Competency

✓ Provide resources for NCAE-C programs to help students develop themselves as cybersecurity professionals

✓ Develop resources to help K-20 students visualize and understand cybersecurity work roles and necessary knowledge and skills

✓ Provide academic materials for ethics and critical thinking skills development

Contact Info and Upcoming Events

- NCAE-C Program Office
  - ✓ caepmo@nsa.gov
  - ✓ Iad.gov/NIETP
  - ✓ https://www.caecommunity.org/content/cae-institution-map
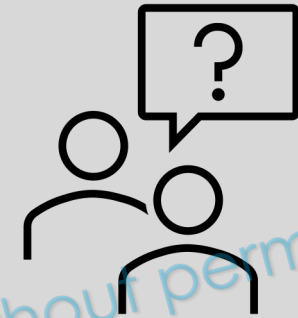
Questions???

WATCH FOR:

Mentor/Reviewer Training (Recurring)

NCAE-C Strategic Planning Webinar (15 December 2020)

2021 Grants Solicitation (December/January 2020)

DoD/NCAE-C Partnership Webinar (January 2020)

Monterey Phoenix Webinar (February 2021)

2021 ELF Webinar (Spring 2021)