



Welcome to the 2021 General Membership Meeting

October 14, 2021

- Welcome and Memorial Tributes
Laura Nelson – NCF President & CEO
- Opening Remarks
Natalie Laing – NSA Director of Engagement & Policy
- National Cryptologic Museum Update
Vince Houghton-Director National Cryptologic Museum
- National Cryptologic Foundation Update
Laura Nelson – NCF President & CEO
- Education Program Update
Mark Loepker – NCF Director of Education
- Q&A
All
- Closing
Laura Nelson – NCF President & CEO

Memorial Tributes



Lee Hanna



Charles Gandy



Barrie Gordon Sims

Natalie Laing

NSA

Director, Engagement & Policy

**“Progress Through Partnership:
An NCF-NSA Partnership”**

Practical Application:

- NCF as a convening body and NSA as SME
- Create dialogue in joint public/private industry gatherings
- In-depth educational partnership

Joint Activities:

- Myriad of educational activities
- Partner with Cybersecurity Directorate to re-establish parts of the prior Information Assurance Directorate conference
- Implement recommendations from NSAAB Engagement Panel
- Create initial list of topics/issues to convene on
 - Critical Infrastructure
 - IOT
 - Etc

The Need:

- Every aspect of life in the U.S. has a digital/cyber component
- Need increased understanding nation-wide of the cyber/cybersecurity landscape
- Emerging cybersecurity challenges require public/private partnerships

The Vision:

- Create national urgency to advance cybersecurity education, innovation, and awareness in academia, gov't, private industry, general public
- Develop a platform for convening robust dialog and technical exchanges between public entities and private industry
- Further cross-sector cybersecurity and national security collaboration

Vince Houghton

NSA

Director, National Cryptologic Museum

Laura Nelson NCF President & CEO

THANK YOU FOR YOUR VOLUNTEER SERVICE – COVERING A SPAN OF NEARLY 25 YEARS



Ed Jacobs
NCF Volunteer Treasurer
served for 22 years



John 'Bill' Saadi
NCF Volunteer
Served for 22 years

Happy 90th Birthday Bill!

THANK YOU FOR YOUR SERVICE as a FOUNDATION STAFF MEMBER



Mary Faletto
NCF Office Manager
Served for 18 years



Carol Stromberg
NCF Executive Administrator
Served for 11 years

1

12

1

We have a new name!



- Better reflects our mission
Educate, Stimulate, Commemorate
- Eases our ability to raise funds to support our programs
- Lessens confusion about the difference between the “foundation” and the “museum”

New Additions to our Board of Directors



Gregory Fowler, PhD
President UMGC



Sue Gordon
Former PDDNI

Rebecca Diamond – Director of Development

Jackie Sherry – Controller and General Administrator

Jennifer Langdon – Cyber Chats and Nepris Coordinator



- Vacated office at Museum during closure. Return is TBD.
- Moved from Millersville to new location in Glen Burnie - April 28
 - ❑ 808 Landmark Drive, Suite 223
 - ❑ More suitable for future needs



Many thanks to
Christine and Bill
Harding for
equipping the NCF
with a Webcast
Studio!



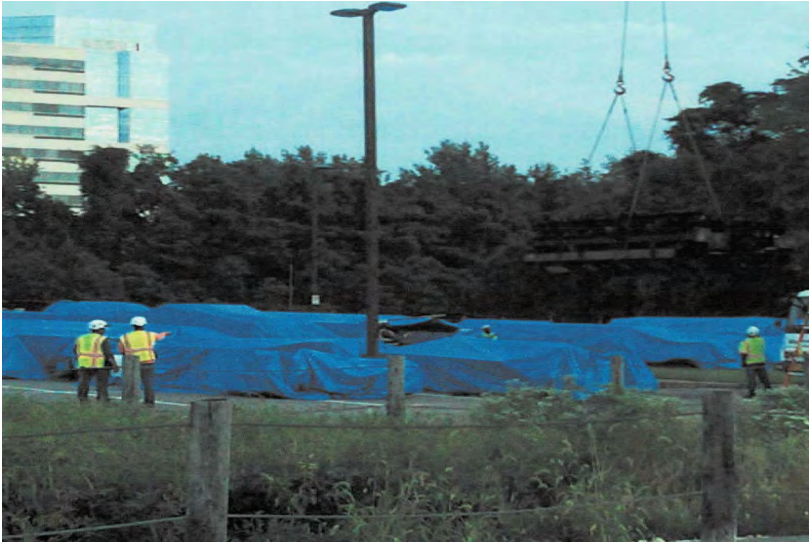
- Signature of key Memorandum of Agreement with NSA expected soon!
- Built on “Progress through Partnership” Vision Statement
- Includes three key tenets:
 - **Educate** - The NSA and NCF recognize the National urgency to **advance cybersecurity education, innovation, and awareness in academia, government, private industry, and the general public.** Together, they will create robust nation-wide education programs and build deeper pipelines for cyber and science, technology, engineering, and mathematics (STEM) skill sets to meet our nation-wide demand for expertise in these fields.
 - **Stimulate** - The NSA and NCF **promote the value and necessity of public-private collaboration on cybersecurity and national security.** Together, they create a platform for convening robust proactive dialog and technical exchanges to further cybersecurity collaboration and innovation and to bridge gaps across the cyber landscape. NSA’s external engagement strategy will continually inform and refresh the “stimulate” goal, and the NCF will ensure continued enrichment through public sector awareness.
 - **Commemorate** - Cryptanalysis and cybersecurity are professions that demand intellect, patience, and imagination, while providing little recognition beyond the confines of the cryptologic community. The NSA and NCF promote **understanding of how cryptologic contributions past and present have protected and preserved U.S. national security and our way of life.** Together, they are committed to educating the public on the value of cryptology to the nation, honoring those who have made landmark contributions, and commemorating the myriad historical achievements little known in the public sphere. The National Cryptologic Museum will rightly serve as the centerpiece for this focus.

- All regulatory approvals remain in place – project is “shovel ready.”
- NCF entered into a contract with Gilbane Construction Company in Fall of 2020
- Project is at a “strategic pause” as we consider changes invoked by DoD for milestones that will allow commencement of construction.
- Included in the contract – procurement of Steel and Pre-cast Concrete
 - ❑ Milling and fabrication of 640 tons of steel completed in January 2021
 - ❑ Steel is currently stored in lot behind the Museum

Steel Storage



Steel Storage



Thank you to our Founders!

- New 5-Star Founders

- Verstandig Family Foundation

- New 4-Star Founders

- FedData
- Robert & Mary M. Looker
Family Trust

- New 3-Star Founders

- ManTech International

- New 2-Star Founders

- Raytheon
- SIXGEN
- Lockheed Martin Corporation

- New 1-Star Founders

- CMSgt Al Gray, USAF (Ret)
- Black Cape
- Carahsoft
- Rand & Holly Griffin
- Peraton
- Stuart Wagner & Family

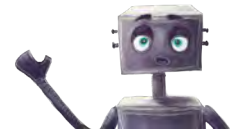
Also thank you **FedEx** for a \$50,000 donation
in honor of Chris Inglis!

Mark Loepker
NCF Director, Education

- High School Cybersecurity Curriculum Guidelines
- High School Cybersecurity Lessons
- High School Cybersecurity Excellence Recognition
- Cybersecurity Labs and Resources Knowledge-base (CLARK)
- CAE Resource Directory
- Delivering Cyber Content Virtually to over 8000 classrooms nationwide
- Middle School Cybersecurity Awareness
- Cybersecurity Escape Room
- Cybersecurity Gaming Kiosk
- High School Partnerships

Why Cybersecurity in High School?

- Cybersecurity touches every aspect of daily life of students, their family, and larger society
- Once cyber was a specialty in graduate school, and is moving downward into undergraduate and now high school
- More teachers are integrating cybersecurity into their classroom, by choice or by policy
- Need: Teachers need to know what to teach via standards and a structured curriculum designed for high school students



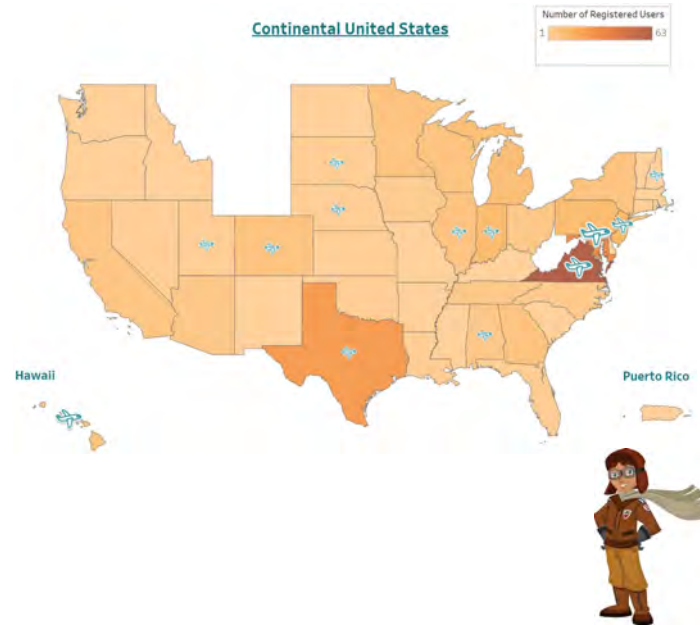
High School Big Ideas



This Introduction to Cybersecurity introduces students to the principles of cybersecurity and invites them to think critically about the need for and responsibility of keeping data and systems safe. Students will gain knowledge and work with existing cybersecurity problems and solutions. It is our belief that providing these Guidelines will inspire curriculum providers, teachers, and industry to create curriculum attractive to high school students, some of whom we hope will pursue a profession in cybersecurity. Perhaps more important than providing qualified individuals for the workforce is the development of thinkers with a cybersecurity mindset that can enhance whichever profession they choose to pursue.

<https://cryptologicfoundation.org/what-we-do/educate/high-school-cybersecurity-curriculum-guidelines.html>

- School year 2020-2021 running year - and semester-long pilot tests in high schools across the US
- Coordinating with other states to pilot the HSCCG and the Teach Cyber Courseware
- Growing into other states
- Growing with new partners



Current pilot testers in:

- Alabama
- Colorado
- Hawaii
- Illinois
- Indiana
- Maryland
- Nebraska
- New Hampshire
- New Jersey
- South Dakota
- Texas
- Utah
- Virginia

516 Users in 47 States

Teach Cyber By The Numbers



1

Year-Long
Course



120

Hours Worth of
Instructional Materials



46

Downloadable
Lessons & Assessments



818

Registered
Users



3677

Downloads of
Course Materials

<https://teachcyber.org/>



★ NATIONAL ★
CRYPTOLOGIC
FOUNDATION

2020 CAE CSUSB - High School Cybersecurity
Program of Excellence Study
Focus Group

2021



- Is Such An Idea Feasible?
 - Acceptable
 - “Integrateable”
 - Useful
 - Sustainable
 - Costs/Benefits
 - How To Implement
- Advisable?
 - If Yes, How Would We Advise It Be Named, Designed, Deployed, Maintained, Etc.



Open

Source
API
Access



Easy In

Bloom's Taxonomy
Mutually Beneficial
Easy Updates



Quality Curriculum

Peer Review
Active Curators
Clear Learning Outcomes



Easy Out

Free Content
No Hooks
Faceted Search



Crowdsourced

Curriculum
Quality Control
Currency



Ownership

Content
Format
Web Presence

CLARK BY THE NUMBERS



797

Released
Learning Objects



10

Quality-Assured
Collections



10,973

Learning Object
Downloads



3,867

Registered
Users



2,456

Affiliated
Organizations



CARD - The CAE Community Resource Directory

Bringing the CAE in Cybersecurity community resources
together in one place



Contribution
by CAE
Community



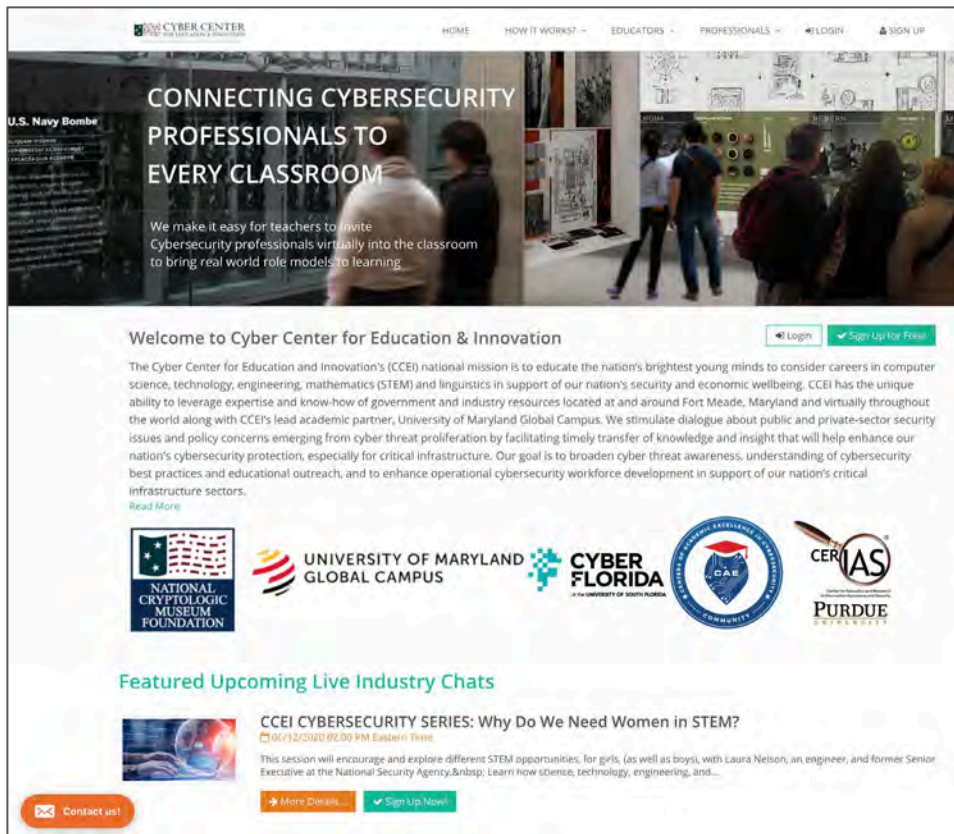
Curation



Publicly Available



WELCOME TO CARD!



The screenshot shows the CCEI website homepage. At the top, there is a navigation bar with links for HOME, HOW IT WORKS, EDUCATORS, PROFESSIONALS, LOGIN, and SIGN UP. The main banner features the headline "CONNECTING CYBERSECURITY PROFESSIONALS TO EVERY CLASSROOM" and a sub-headline "We make it easy for teachers to invite Cybersecurity professionals virtually into the classroom to bring real world role models to learning." Below the banner, there is a "Welcome to Cyber Center for Education & Innovation" section with a "Login" button and a "Sign Up for Free!" button. The text describes the CCEI's mission to educate the nation's brightest young minds in computer science, technology, engineering, mathematics (STEM) and linguistics. Logos for partner organizations like the University of Maryland Global Campus, Cyber Florida, and CERIAS are displayed. A "Featured Upcoming Live Industry Chats" section highlights a session titled "CCEI CYBERSECURITY SERIES: Why Do We Need Women in STEM?" scheduled for October 2, 2020 at 02:00 PM Eastern Time. A "Contact us!" button is located in the bottom left corner.

- Firewalls
- Digital Forensics
- Web Cookies
- Bots Episode 1 & 2
- Two Factor Authentication
- VPNs
- More on Cryptocurrency
- Linux Commands
- Raspberry Pi
- CVEs
- Quantum Computing
- Pearl Harbor - 80 Years Later
- Gaming Kiosk
- Cybersecurity Career Awareness Week
Special Week of Multiple speakers and panels
 - Elizabeth Smith Friedman
 - Encouraging Young Women to STEM fields of Study
 - Red Team/Blue Team
 - young professional panel?
 - Leadership

NCF Education Program Partnership Initiatives

While the demand for highly educated and trained cybersecurity professionals is more than a half-million, the number of individuals ready to fill these positions is severely lacking. The National Cryptologic Foundation (NCF) provides unfettered outreach opportunities for learning and partnerships to advance Cybersecurity education to prepare the next generation to succeed in the cyber workforce of tomorrow. Through NCF programs and partnerships, the richness of our combined cybersecurity expertise engages, excites, and encourages the cybersecurity workforce of tomorrow.

CYBERSECURITY CURRICULUM

Since 2018 the NCF has operated without walls laying the groundwork to develop cybersecurity curriculum guidelines for K-12 students, and professional development for teachers, counselors, and administrators. The [High School Cybersecurity Curriculum Guidelines \(t\) \(CCG\)](#) encourages curriculum providers, teachers, and industry to create curriculum designed to inspire high school students to pursue a profession in cybersecurity, as well as develop thinkers with a cybersecurity mindset that will enhance any profession they pursue.

In partnership with [Teach Cyber](#), a year-long, high school introductory cybersecurity course based on the CCG is now available. The overarching goal of the course is to introduce students to the foundational concepts, principles, and tools of cybersecurity. To date, the class is piloted (2) by teachers across 13 states. As of February 2021, more than 300 educators across 47 states and U.S. territories have registered for Teach Cyber since it launched in Fall 2020. All materials are developed under creative common licensing and free to all 130,000 K-12 institutions.

¹ The Cybersecurity Curriculum Guidelines were developed using the Backward Design Model (Wiggins McTighe 2005) and designed by educators.

² Pilot states: MD, VA, NJ, NH, AL, IN, IL, TX, SD, NE, CO, UT, HI (source: Teach Cyber – Preparing High School Instructors to Deliver Cybersecurity Curricula.)

Join the NCF in the virtual classroom for a #CyberChat

Through a virtual classroom platform, the **National Cryptologic Foundation (NCF)** offers educational courses and cybersecurity chats (#CyberChats) designed to promote cybersecurity education and prepare job seekers for opportunities in the cybersecurity field. We are excited to have a [presence within the Nepris online education community](#), where students and teachers can request a Chat featuring a particular topic. We then partner with experts and organizations to help meet these requests. We also host #CyberChats via Zoom.

SHARE YOUR EXPERTISE - PRESENT A #CYBERCHAT

We welcome cyber professionals and experts who are willing to share their knowledge and expertise with K-12 students, educators, and parents in a virtual setting to join us. Visit the ["SHARE YOUR CYBER EXPERTISE"](#) page to learn more and sign up for this rewarding opportunity!

GUIDE TO NCMF #CYBERCHATS

Below you will find links to Upcoming Chats, as well as prior Chats. The #CyberChats typically focus on particular topics related to the High School Cybersecurity Curriculum Guidelines' ["Big Ideas"](#). However, some are focused on cyber or STEM careers. The prior Chats are organized below by Big Idea or topic area, and a full archive is also included.

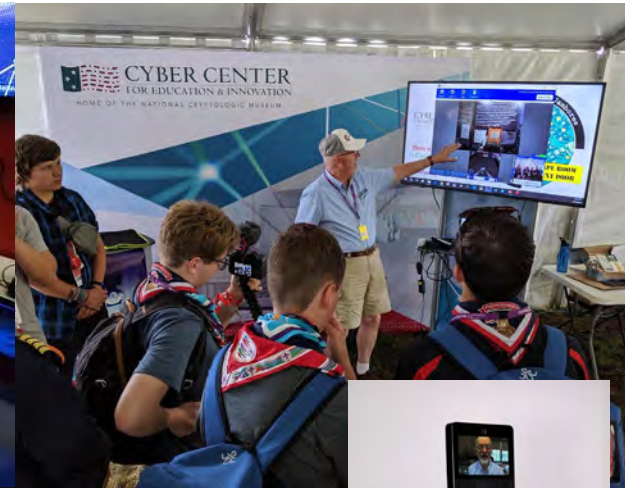
UPCOMING #CYBERCHATS

<https://cryptologicfoundation.org/what-we-do/educate/>



<https://start-engineering.com/>

- \$150,000 – 3rd Place Award
- Data Care Awareness
- Leverage the Middle School effort
- Develop messages and media vehicles calibrated to populations identified as benefitting from amplified awareness and interest regarding “data care” principles and behaviors.
- Overarching vision for a portfolio of audience-specific messages will portray “data care” as a holistic enterprise encompassing individual and institutional responsibilities, technological and behavioral approaches to prevention and protection, and career opportunities for diverse populations across a wide range of roles and functions.



- Upgrades finished
- Enigma simulator is last puzzle
- Fly away kit
- Seeking funding to deploy to schools



Cybersecurity Gaming Kiosk



- Beta version complete
- Testing with Middle School Students
- Seeking funding for next story to take place in a Middle School



High School Partnerships



- Meade Homeland Security Signature Program
- Crofton Safety and Security in the Digital Age Signature Program
 - Providing Cryptography lessons from TeachCyber
- AL School of Cyber Technology and Engineering
 - Teaching throughout September as a guest lecturer on “Field Experiences in Cyber”
 - Collaborating on the development of an American History of Cryptology course

Thanks To Our Education Program Benefactors

- Northrop Grumman
- Lockheed
- Northern Trust
- Hewlett Foundation
- Dark Enterprises
- Raytheon, Intelligence & Space
- Gula Tech Foundation
- Arundel Community Development Services
- Looker Foundation



Mark S Loepker
Director Education Program
mloepker@cryptologicfoundation.org
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Sponsorship packet includes:

- Numerous opportunities to financially support NCF Education Programs
- Multi levels of sponsorship available to cover all budgets both individual and corporate
- Opportunity to create sponsorship on future “wish list” ideas.

Laura Nelson NCF President & CEO