



UNIVERSITY of HAWAII®
MAUI COLLEGE



NSF supported Cybersecurity and Computer Science Education Projects at UH Maui College

Debasis Bhattacharya, JD, DBA

debasisb@hawaii.edu

<http://maui.hawaii.edu/cybersecurity/> and

<http://maui.hawaii.edu/csp4hi>

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August 30, 2022

Background

- University of Hawaii Maui College
 - Serves Maui County - islands of Maui, Molokai and Lanai
 - 165,000 or so resident population
 - 2 Million or so tourists per year
 - Dropped 95% after March 2020!
 - Currently back to pre-Covid levels
 - 2000+ full-time commuter students
 - 20 or so Associate Degrees
 - 2 Baccalaureate Degrees
 - 60% or so women students
 - Median age of students ~26 years
 - Non-traditional students
 - Commuter island college





National Science Foundation
WHERE DISCOVERIES BEGIN

Partial support for this work was provided by the following National Science Foundation grants:

- *STEM + Computing (STEM+C) program under **Award No. 1738824***
- *Advanced Technological Education (ATE) program under **Award No. 1700562***
- *Scholarship for Service (SFS) program under **Award No. 1437514***
- *Scholarship for Service (SFS) program under **Award No. 1516178***
- *Advanced Technological Education (ATE) program under **Award No. 1204904***

UHMC - Cybersecurity

- CyberSecure: Extended Cybersecurity Education, Curriculum and Workforce Development (**NSF ATE Award # [1700562](#)**, August 2017 to July 2021)
 - Cybersecurity Across the Disciplines - targeting students across various disciplines
- Cyber Security Education, Curriculum, and Workforce Development (**NSF ATE # [1204904](#)**, July 2012 to September 2015)
 - Core Cybersecurity Program Development - creating curriculum, certificates, pathways
- Partners
 - Pacific Disaster Center, HDEP International and many small business on Maui County
- Highlights - Details at project site: maui.hawaii.edu/cybersecurity
 - UHMC was designated a **Center of Academic Excellence in Cybersecurity Education (4/19)**
 - Most ABIT BAS graduates receive a Cybersecurity Certificate of Completion from NSA/DHS
 - UHMC created and has sustained a Certificate of Competence in Cybersecurity since 2015
 - More than a 100 high students from Maui County have taken cybersecurity courses at UHMC

▼ Native Hawaiian Education Association (NHEA) - Hana Lima Cybersecurity Summer Camp 2022

Topic: Introduction to Cybersecurity!

Instructor - Dr. Debasis Bhattacharya (email: debasisb@hawaii.edu, phone: 808.984.3619)

Class Meetings -

July 11-14, 2022 and July 18-21 - Session 1: 830AM - 1200PM, Session 2: 1245PM - 415PM

Agenda

• Day 1 - Cybersecurity and Society

- Intro to Cybersecurity Presentation ([PPT](#))
- Privacy and Security Presentation ([PPT](#))
- PBS NOVA Cybersecurity Game ([Link](#))
- Khan Academy PII ([Link](#))
- Have I Been Pwned ([Link](#))
- Password Strength Meter ([Link](#))
- Colonial Pipeline Ransomware Case Study ([Link](#))

▼ NSA GenCyber - Virtual Camp 2022 for HI DoE Teachers!

UHMC has been awarded a grant to host a GenCyber Virtual Camp for HI DoE Teachers in 2022!

High school teachers from HI DoE schools will be invited to participate in the GenCyber Camp in 2022.

Key Milestones and Dates (all camp activities are online and will be hosted over Zoom) -

- Pre-Camp 1 - 0800 - 1230, April 30, 2022 (4 contact hours)
- Pre-Camp 2 - 0800 - 1230, May 7, 2022 (4 contact hours)
- Main Summer Camp - 0830 - 1530, June 13-17, 2022 (30 contact hours)
- Post-Camp 1 - 0800 - 1230, July 23, 2022 (4 preparation hours + 4 contact hours)
- Post-Camp 2 - 0800 - 1230, September 10, 2022 (4 preparation hours + 4 contact hours)

Agenda for Pre-Camp 1 - Saturday, April 30, 2022 - 8AM - 1230PM

- Introduction to GenCyber Camp, Cybersecurity Industry and Careers (Debasis Bhattacharya)
- Introduction to Cybersecurity Principles and Concepts (Ken Kang)
- Culturally Relevant Pedagogy in CS (Loren Ayresman)

Agenda for Pre-Camp 2 - Saturday, May 7, 2022 - 8AM - 1230PM

- Introduction to GenCyber Camp Curriculum (Loren Ayresman)
- Introduction to Camp Labs, Setup and Installation Support (Ken Kang)

Introduction
to Bitcoins,
Blockchains,
Ethereum,
Smart
Contracts
and NFTs



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Supported by National Convergence Tech Center
and NSF Award # 1700562

July 26, 2022

National Centers for Academic Excellence in Cybersecurity

WATCH AN NCAE STORY

[HOME](#) > [ACADEMICS](#) > [CENTERS OF ACADEMIC EXCELLENCE](#)

The National Centers of Academic Excellence in Cybersecurity (NCAE-C) program is managed by NSA's National Cryptologic School. Federal partners include the Cybersecurity and Infrastructure Security Agency (CISA), the Federal Bureau of Investigation (FBI), the National Institute of Standards and Technology (NIST)/National Initiative on Cybersecurity Education (NICE), the National Science Foundation (NSF), the Department of Defense Office of the Chief Information Officer (DoD-CIO), and U.S. Cyber Command (USCYBERCOM).



Center for Cybersecurity Education and Research (CCER)

The University of Hawaii Maui College (UHMC) has been designated as a National Center of Academic Excellence (CAE) in Cyber Defense Education (CDE) through academic year 2024 for the Bachelor of Applied Science (BAS) in Applied Business and Information Technology (ABIT) Degree. For details about the National Centers of Academic Excellence (CAE) click [here](#).



The **Center for Cybersecurity Education and Research (CCER)** was established at the University of Hawaii Maui College in 2015, to provide the local community and students with cybersecurity education, training and guidance. The mission of CCER is to provide cybersecurity guidance, training and workforce development activities to the local community, K-12 students and teachers, as well as students enrolled at UHMC.

Source: <https://maui.hawaii.edu/cybersecurity/>

#CSP4HI: Advanced Placement (AP) – Computer Science Principles (CSP) for Hawaii

Home > CSP4HI

#CSP4HI: NSF STEM+C Program Award – Deployment of Computer Science Principles within Secondary Schools in Hawaii

A Researcher-Practitioner Partnership (RPP) Project, sponsored by the National Science Foundation (NSF), to support the deployment of AP Computer Science Principles (CSP) within secondary schools in Hawaii.



The University of Hawaii (UH), has been awarded a \$1M grant from the National Science Foundation (NSF) STEM + Computing (STEM+C) program under Award# 1738824. More details of the NSF Award [here!](#) Press release from office of Senator Mazie Hirono (D-HI) is [here!](#)

Source: <https://maui.hawaii.edu/csp4hi/>

UHMC - Computer Science Education

- CSP4HI: Deployment of Computer Science Principles Courses within Secondary Schools in Hawaii (NSF STEM+C Award # [1738824](#), October 2017 to September 2021)
 - Training teachers across the public high schools in Hawaii to teach computer science
 - Research Practitioner Partnership project where teachers collaborate with researchers
- Partners - Hawaii Department of Education
- Highlights - Details at project site: maui.hawaii.edu/csp4hi
 - Cohort 1 - Trained 17 HI DoE teachers, impacted 11 HI DoE high schools
 - Cohort 2 - Trained 19 HI DoE teachers, impacted 14 HI DoE high schools
 - Cohort 3 - Trained 24 HI DoE teachers, impacted 16 HI DoE high schools
 - The CSP4HI project had a dramatic impact on the # of high schools which offered AP CSP between SY 2017 and SY 2021, and the number of female/underrepresented participants

Recent Presentations from the CCER (with support from the NSF and NSA)

High Impact Technology Exchange Conference (HI-TEC) - July 25-28, 2022, Salt Lake City, UT.

New IT Lab Showcase Presentation on Blockchains and Smart Contracts ([PDF Link](#))

Engaging Students with Hands-On Cybersecurity and Crypto Projects: Lockpicking and NFTs ([PDF Link](#))

Working Connections – IT Faculty Development Institute, Colling College, TX. Introduction to Bitcoins, Blockchains, Ethereum and Smart Contracts. December 13-15, 2021. [Details](#)

WiCys 2021 – Women in Cybersecurity 2021. August 2021. Presentation and Mentoring. [Details.](#)

CAE Symposium 2020. In the Covid Era – Teaching Cybersecurity Across Disciplines. November 19-20, 2020. [Presentation](#)

NSF ATE PI Virtual Conference. Resilience & New Frontiers. October 19-23, 2020. [Demo Presentation on Lockpicking](#)

Girl Scouts of Hawaii. Virtual STEM Camp August 15, 2020. [Presentation](#) – [10 Principles Handout](#) – [Lock Picking Primer](#)

Hacking 4 Recovery, August 10-14, 2020. 5 day workshop for local entrepreneurs using the Lean Launchpad Model. Details [here](#).

HI-TEC 2020 Transformed, July 29-30, 2020. Introduction to Bitcoins, Blockchains and Smart Contracts. PDF [here!](#)

HI DoE Teacher Workshop – Cybersecurity Trends & Defenses. July 23, 2020. Google Presentation [PDF Link!](#)

HI DoE Teacher Workshop – 5G, Edge Computing and Quantum Computing. June 18, 2020. Google Presentation [here!](#)

UHMC Faculty Workshop – 5G, Edge Computing and Quantum Computing. May 20, 2020. Google Presentation (requires UH ID) [here!](#)

UHMC Faculty and Staff Presentation – Cybersecurity Trends and Defenses – What You Can Do About It? April 3, 2020. Google Presentation (requires UH ID) [here!](#)

Nifty Assignment – Lockpicking

Brian Leeper

University of Hawai'i Maui College

Submitted for SIGCSE 2019

Malware in Healthcare

Lorraine Osako

University of Hawaii, Maui College

May 2018

Presented at HI-TEC 2018 Conference

HI-TEC Conference 2018 Presentation - Case Study

- Awareness of Malware in Small Medical Practices
- Location of Study - Maui
- Duration of Study - Spring 2018
- Student Researcher - **Lorraine Lopez-Osako**
 - Student in the Applied Business and IT program
 - UH Maui College BAS graduate May 2018
- Visited 15 small medical offices
- Sent out survey to all doctors
- Received 10 complete, valid responses
- Created a CyberSecurity poster for doctor's office

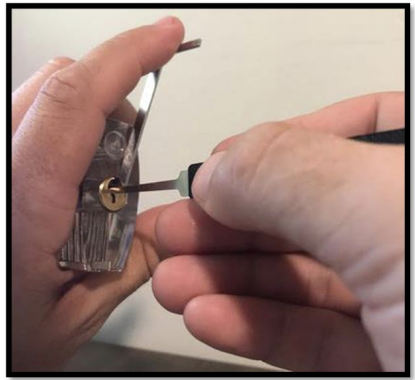


3.3. Hold the lock in a comfortable fashion with the keyhole facing you.

3.3.1. *EXAMPLE:* Right-handed picking—Form an ‘L’ with your left hand and with your right, place the lock into your left hand with the torque wrench towards the top. Wrap your thumb around the bottom of the lock. Place your index finger against the torque wrench and wrap your third, fourth, and fifth digits over the top of the lock. Your index finger will provide tension to the torque wrench.



3.4.1.



3.4.2.

3.4. Hold the pick as you would a dart, grasping it with your index finger and thumb, and insert the pick into the keyhole all the way to the back.

PDC wins prestigious U.N. Sasakawa Award for Disaster Risk Reduction

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Fewer disasters.
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<p>Quake - Colombia WARNING</p>	<p> Earthquake - 5.9 - 170 km WSW of Pariaman, Indonesia 13 hours ago WATCH</p>	<p> Volcano - Semeru, Indonesia 48 minutes ago WARNING</p>	<p> Floods - Pakistan 13 hours ago WARNING</p>
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Preventing hazards from becoming disasters, disasters from becoming catastrophes.