



Careers
Preparation
National
Center



MONTREAT
COLLEGE

NCAE-C Ethics & Professional Development Toolkit

Ethics and Professionalism for Students
Code of Honor: Embracing Ethical Integrity
in Cybersecurity

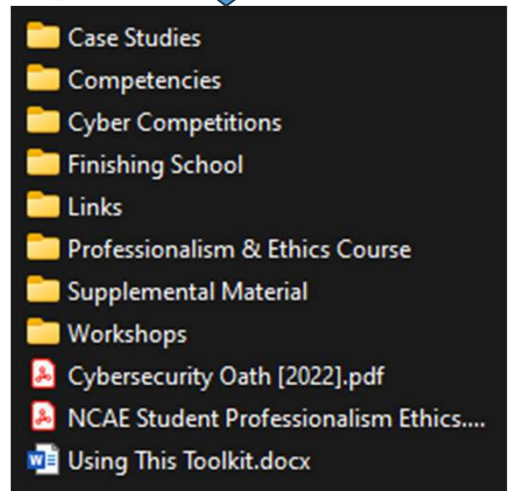
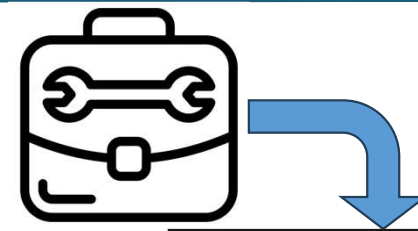
Careers Preparation National Center (CPNC)
Montreat College

A Toolkit?

- The need for ethical professionals in our field is great
 - But we have to work on them
- Makes achieving this goal:
 - Approachable
 - Teachable
 - Applicable
- Regardless of industry or institution
 - A screwdriver is a screwdriver


What's in this Toolkit?

- Cybersecurity Oath & Code of Conduct
- Case Studies
- Cyber Competitions
- Finishing School
- Links
- Professionalism & Ethics Course
- Supplemental Material
- Workshops
- Competencies



Cybersecurity Oath

- The tenets align with the book & case studies
- Students are encouraged to sign the oath
 - To hold themselves to a higher standard



CYBERSECURITY OATH

I _____ solemnly swear to uphold to the best of my ability and judgment, in all my professional duties, personal practices, and future endeavors, the tenets of this pledge:

I will treat all people with value and dignity.

I will seek the best interests of others.

I will strive to recognize, take ownership, and appropriately communicate my mistakes and exercise patience toward others who make errors.

I will be honest, trustworthy, and above reproach in my actions and communications.


I will not be a lone wolf, but will instead work collaboratively with my peers and superiors.

I will endeavor to exercise patience, wisdom, and self-control in all situations.

I will not steal and will do everything within my power to prevent theft in all its forms.

I will protect and respect the privacy of others.

Signed: _____ Date: _____

 The creation of this oath was sponsored by the National Centers of Academic Excellence in Cybersecurity in partnership with Montreat College, a private liberal arts college in North Carolina. Montreat College is recognized by the NSA as a Center of Academic Excellence in Cyber Defense.

NCAE-C Student Code of Ethics and Professional Conduct

- <https://caecommunity.org/community-of-practice/cyber-defense/ncae-c-student-code-ethics-and-professional-conduct-initiative>



NCAE-C Student Code of Ethics and Professional Conduct

- Principles students are expected to uphold:
 - Respect
 - Professionalism
 - Confidentiality
 - Accountability
 - Collaboration
 - Attribution
 - Continuous Learning
 - Reporting



Case Studies

- Provides opportunities for students to work on their critical thinking as well as challenging their own ideas of ethics
 - Events that have happened
- As new studies are developed and released, more will be added

Cano Health and the 2-year E-mail Hack

Mark A. Wells

Cano Health is a healthcare provider in Florida. On April 13, 2020 it was discovered that three employee e-mail accounts had been hacked two years earlier on May 18, 2018. The hackers used an e-mail forwarder to send all e-mails from those accounts to an external address. So, the recipients were receiving the e-mails, but so were the hackers. "All e-mails sent to and from the accounts between May 18, 2018 and April 13, 2020 are believed to have been obtained and have potentially been accessed" (HIPAA Journal, 2). The e-mails contained personal information including patient contact information, dates of birth, healthcare information, social security numbers and/or financial account numbers.

Upon finding the hack, Cano immediately froze the three e-mail accounts and began investigating how the hack happened. They notified law enforcement and an investigation is ongoing into any criminal use of the information. Cano also notified affected individuals of their potential exposure so that they could monitor their accounts for fraudulent activity. Cano Health will also be providing complimentary credit monitoring services to those affected by the hack. Cano IT is also taking steps to bolster their security. "The breach report on the HHS Office of Civil Rights website indicates 28,268 patients have been affected (HIPAA Journal, 3).

Sources:

Jessica Davis, "Cano Health Reports 2-year E-mail Hack Impacting Patient Data," *Health IT Security* (June 15, 2020). <http://healthitsecurity.com/news/cano-health-reports-2-year-hack-impacting-patient-data>. Accessed March 1, 2021.

Steve Alder, "Cano Discovers 2-Year E-mail Account Breach," *HIPAA Journal* (June 16, 2020). <http://www.hipaajournal.com/cano-health-discovers-2-year-email-account-breach/>. Accessed March 1, 2021.

Cyber Competitions

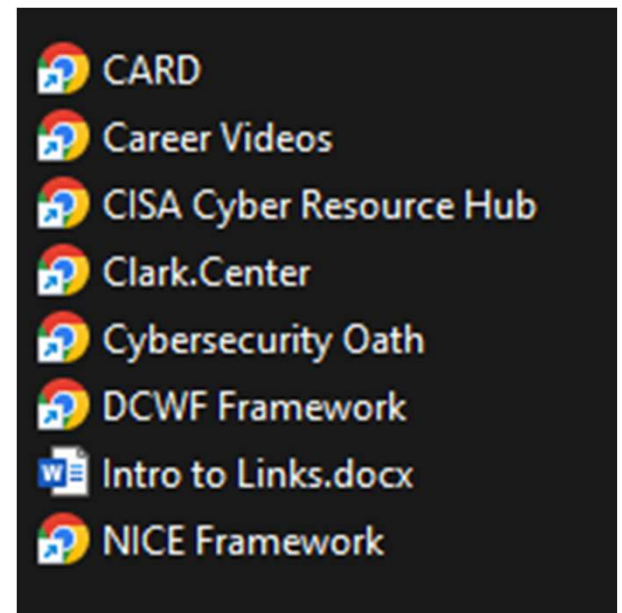
- Often considered just technical – these competitions bring professional & ethical challenges
- Currently being developed:
 - **CTF Ethics** – CTF Style with an ethical challenge
 - **Network Ops Challenge – Level 1** – Intro level competition to build professionalism skills using OSINT tools
 - **Team Ethics & Professionalism** – Defense focused challenge, hardening systems, check and score, business injects, documentation, reports

Finishing School

- 2 Day workshop - Will cover the following:
 - Professionalism
 - Ethics
 - Resumes
 - Interviewing
- Can be modified
- Goal is to ensure students understand the value of professionalism & ethics within their chosen field as well as how to communicate this through their resume and interviewing skills
- Think: Solidifying the Concepts and Applicability

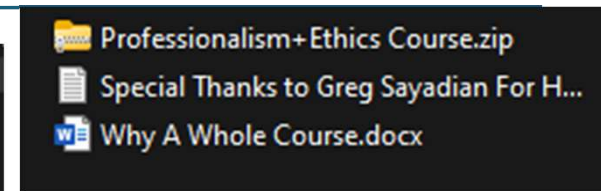
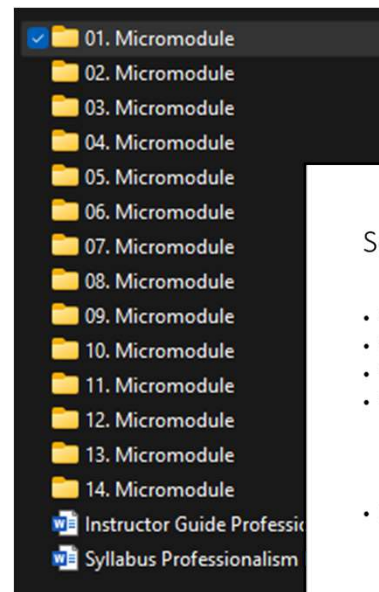
Links & Supplemental

- Shortcuts to other resources
- Supplemental Material is reserved for items that could be used to help meet or fill requirements at an institution or within a class
 - Currently developing a video series to help understand the categories of the NICE framework for students



Professionalism & Ethics Course

- 16 Week Course
 - Meets once a week
- Challenges students to:
 - Find what they would like to do
 - Why they would like to do it
- As well as helping to get them there:
 - Professionalism & Ethics
 - Resume Building
 - Interview Practicing



Seek Purpose

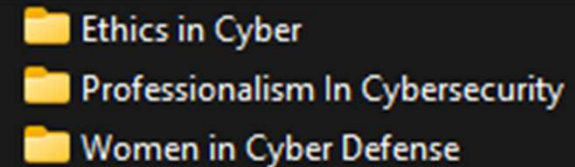
- Your reason for being.
- What fulfills your life?
- The Japanese call it IKIGAI
- The intersection of 4 dimensions
 - Love
 - Talent/Gifted
 - Needed
 - Skill/Profession
- Note relationships
 - Love/Talent : Love/Need
 - Skill/Talent : Skill/Need
- Avoid asking yourself, "what if ... ?"



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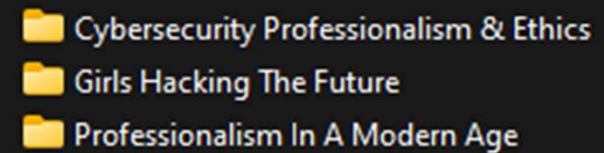
Workshops

- Excellent way to build interest
 - Exposure
 - Extracurricular
- Groundwork for 6 workshops in the current version
 - 3 for College
 - 3 for Highschool
- Great for outreach



Ethics in Cyber
Professionalism In Cybersecurity
Women in Cyber Defense

College



Cybersecurity Professionalism & Ethics
Girls Hacking The Future
Professionalism In A Modern Age

High School

Competencies

Professionalism & Ethics + Competencies

=

Well-Rounded Professional

- What is a competency?

“Competency is the ability for the individual to complete a task or tasks within the context of a work role.”

-Dr. Nestler & Dr. Fowler (be sure to support them as well!)

Not just Technology

- Cybersecurity requires more than technology tools
- Cybersecurity requires great people
- Cybersecurity or the lack of security affects real people

Continuous Learning

- Continue as a life-long learner to ensure competency in the field.
- Share your knowledge with others and promote best practices.

Respect

- Treat others with respect and honesty.
- Act in a legal and moral fashion regarding others.
- Respect the laws and regulations that govern your profession and do not engage in any activities that could be considered illegal or unethical.

Case Study: Respect

Summary of Cyber Incident –
Regional Financial Institution



Respect

1. When a cybersecurity breach occurs, who are the people that are affected?
2. Cyber professionals are tasked with protecting data and systems. How does protecting data and systems work to show respect to others?

Case Study: Respect

3. Outside of Cybersecurity, consider a time when someone showed respect to another person. What does offering value or respect to another human look like?
4. Can you think of times when people did not value other people?

Case Study: Respect

5. Who was affected by the breach in the case study?
6. In what ways was the response adequate/inadequate?

Case Study: Real-world consequences

- Of course, Genevieve's caller would go on to use that information to transfer ten thousand dollars from her retirement account, causing significant financial hardship.
- In just a few short days, Kit, the CISO, would be asked to resign by the bank's leadership and Board of Directors.

Excerpt from Maurer, P., & Skoudis, E. (2023). *Code of Honor: Embracing Ethical Integrity in Cybersecurity*. ms, North Carolina.



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Case Study: Real-world consequences

- The MSSP would lose their contract and be blamed publicly for not identifying the breach early enough.
- Genevieve and hundreds of other consumers: moms, dads, college students, and retirees would lose money (or worse) from the breach.

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Case Study: Real-world consequences

- Thousands of consumers would stop doing business with the bank.
- The breach would make front page headlines in the coming week.

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Case Study: Real-world consequences

- The CEO would address the issue and try to earn back consumer confidence with an expensive public relations campaign. He would only last another quarter before being asked to step down by the company's stakeholders.

Excerpt from Maurer, P., & Skoudis, E. (2023). *Code of Honor: Embracing Ethical Integrity in Cybersecurity*. ms, North Carolina.

Questions? Or Interested in Helping?

- What we need:
 - **Competition Designers & Builders** – come alongside and help us
 - **More case studies** that pertain to ethical and professional challenges within Cybersecurity!
 - **Any supplemental material** that helps students understand concepts and principles within the field
 - **Workshops** that you built and don't mind sharing that builds professional & ethical skills within students.
 - **Suggestions**



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