

Preparing Pre-Service and In-Service Teachers with Cybersecurity Concepts

Rob Honomichl

NICE K12 Cybersecurity Education Conference



DAKOTA STATE[®]
UNIVERSITY

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Who am I?

- High School Computer Teacher (7 years)
- District Technology Director (9 years)
- Instructor of Computer & Cyber Sciences (11 years)
- School Board Member (3 years)
- Small Business Owner (2 years)
- GenCyber Teacher Camp Director (4 years – 4 camps)
- GenCyber Student Camp Instructor (6 years – 16 Camps)
- Student – Ph.D. Technology Innovation Management with Cybersecurity specialization



MADISON, SD ↻
as of 8:08 am CST

1°
PARTLY CLOUDY

feels like -18°
H 5° / L -3°
UV Index 0 of 10





Dakota State University

- Over 45 majors
- Normal School
- Mission Change in 1984





DSU Mission

The primary purpose of Dakota State University in Madison in Lake County is to provide instruction in computer management, computer information systems, electronic data processing and other related undergraduate and graduate programs. The secondary purpose is to offer two- year, one-year and short courses for application and operator training in the areas authorized by this section. This authorization includes the preparation of elementary and secondary teachers with emphasis in computer and information processing.





Dakota State University

- Over 45 majors
- Normal School
- Mission Change in 1984
- Beacom College of Computer and Cyber Sciences
 - CAE Cyber Operations
 - CAE Cyber Defense Education
 - CAE Cyber Defense Research
 - CAE Regional Research Center



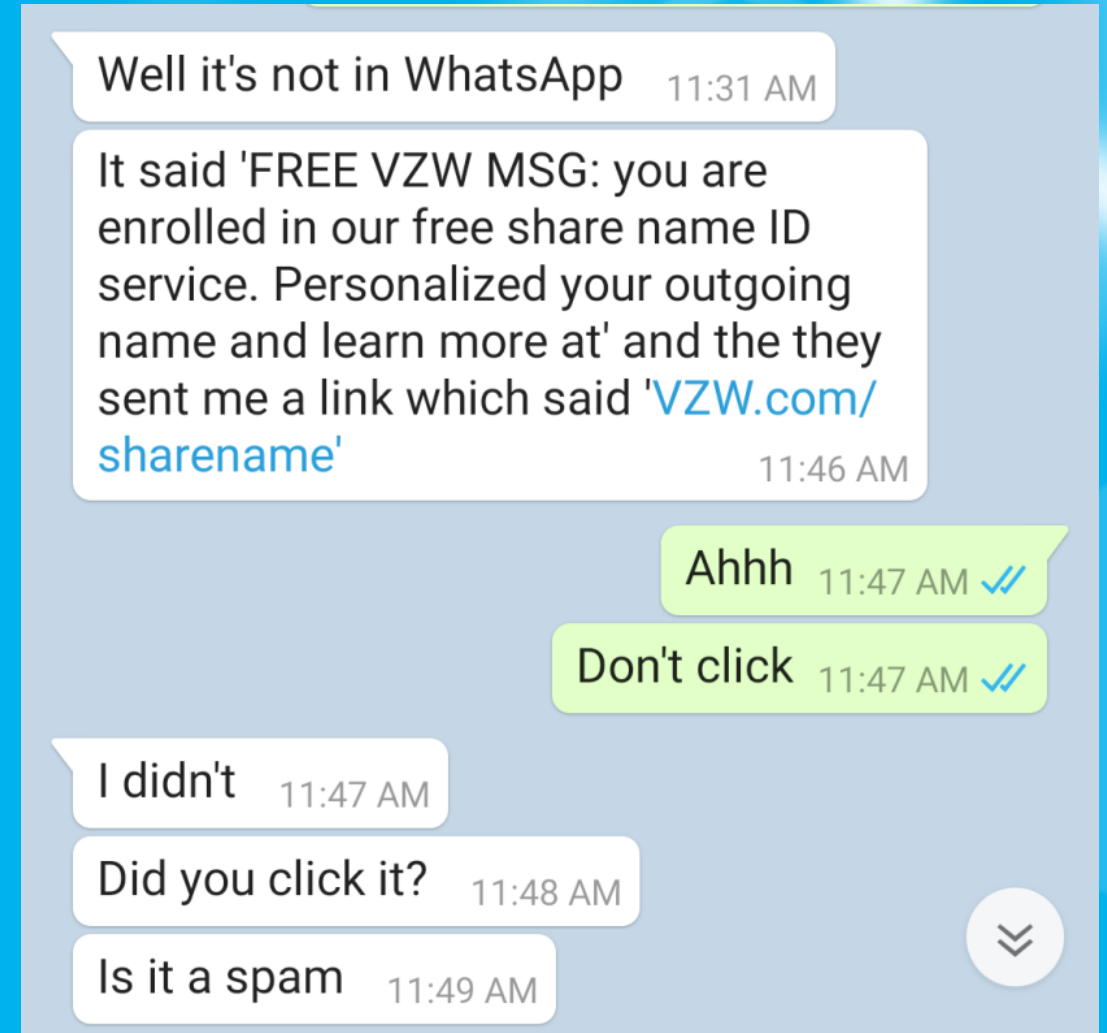
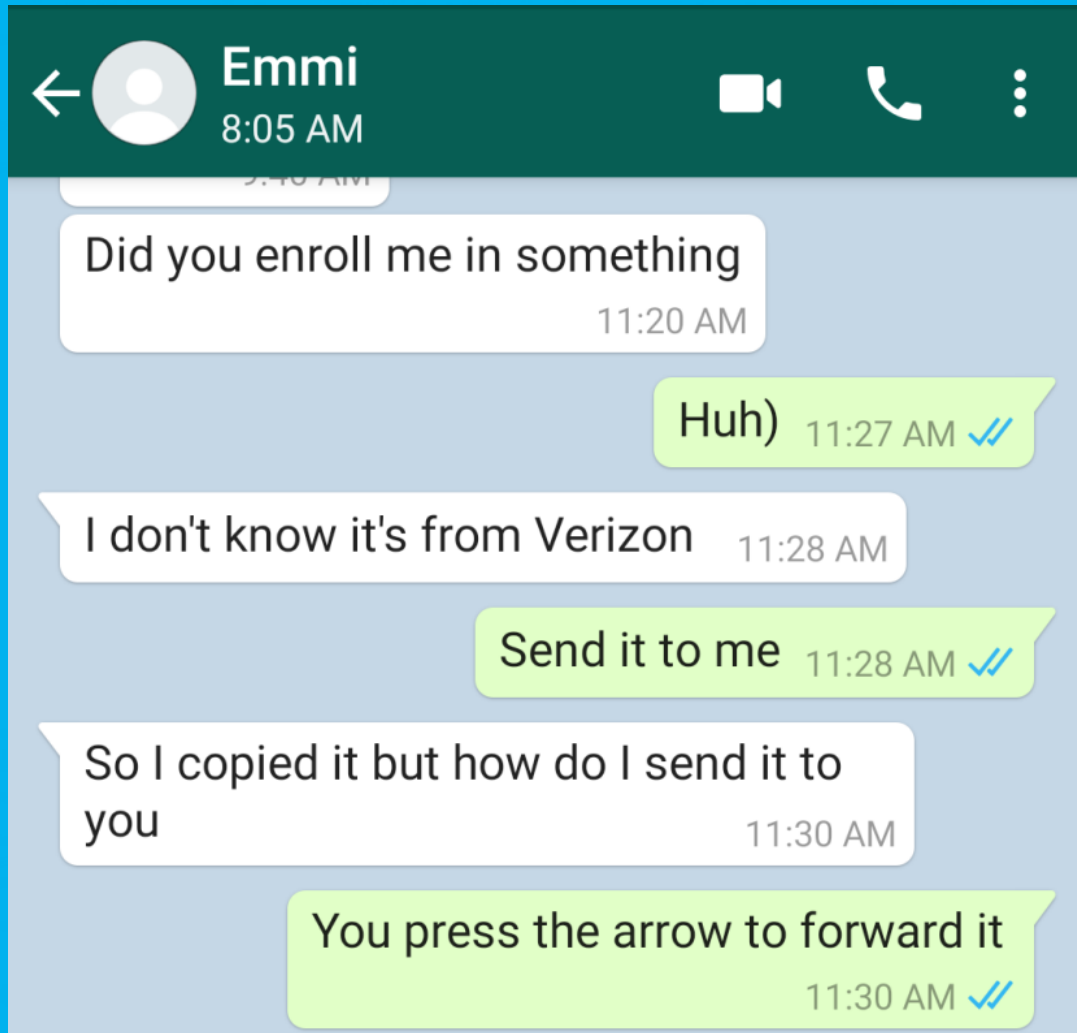


Best of Both Worlds

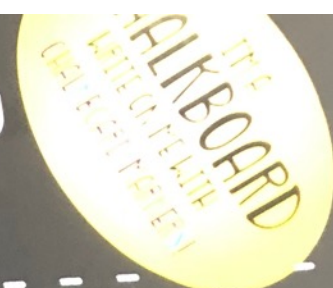


Cybersecurity

- Cybersecurity is everyone's responsibility
- Awareness and Exposure
- Creating a Cybersecurity Culture



ABOUT ME



I am

When I grow up, I want to be a

my birthday

years old

my best friends are

My hobbies are

My favorite food

My favorite
song

My favorite
movie

My favorite
color





Outreach for Teachers

- GenCyber Teacher Camps
<http://www.gencyberteachers.camp>
- CE4A Pilot Project 2017-2018
<https://ce4a.weebly.com>
- School In-services





All Dakota State University teacher education graduates complete coursework leading to the K-12 Educational Technology Endorsement as part of the degree requirements for their program.



How are we preparing
education majors?



Elementary Education

CIS 130 - Visual Basic Programming 3 credits **OR** CIS 123 - Problem Solving and Programming 3 credits **OR** CSC 150 - Computer Science I 3 Credits

CIS 350 - Computer Hardware, Data Communications and Networking 3 credits

CSC 105 - Introduction to Computers 3 credits

EDFN 365 - Computer-Based Technology & Learning 3 credits

EDFN 401 - Methods of Educational Technology 1 credit

EDFN 465 - Multimedia Web Development in Education 2 credits



Elementary Education/Special Education

CIS 130 - Visual Basic Programming 3 credits **OR** CIS 123 - Problem Solving and Programming 3 credits **OR** CSC 150 - Computer Science I 3 credits

CIS 350 - Computer Hardware, Data Communications and Networking 3 credits

CSC 105 - Introduction to Computers 3 credits

EDFN 365 - Computer-Based Technology & Learning 3 credits

SPED 465 - Computer Applications Special Education 3 credits



Secondary/K-12 Core Requirements

CIS 130 - Visual Basic Programming 3 credits **OR** CIS 123 - Problem Solving and Programming 3 credits **OR** CSC 150 - Computer Science I 3 credits

CIS 350 - Computer Hardware, Data Communications and Networking 3 credits

CSC 105 - Introduction to Computers 3 credits

SEED 401 - Methods of Educational Technology 1 credit

Technology specific course based on major 2-3credits



DSU Mission

DSU provides learning that integrates technology and innovation to develop graduates ready to contribute to local, national, and global prosperity.



“Faking security is the path to the dark side. Faking leads to false hope. False hope leads to false security. False security leads to suffering.”

Totally real quote from Star Wars.





What about Cybersecurity?



WHAT IS THIS



CYBER SECURITY YOU SPEAK

OF...

memegenerator.net



What about Cybersecurity Education for All?



How could I make a change?



EDFN/SEED 401 Technology Methods

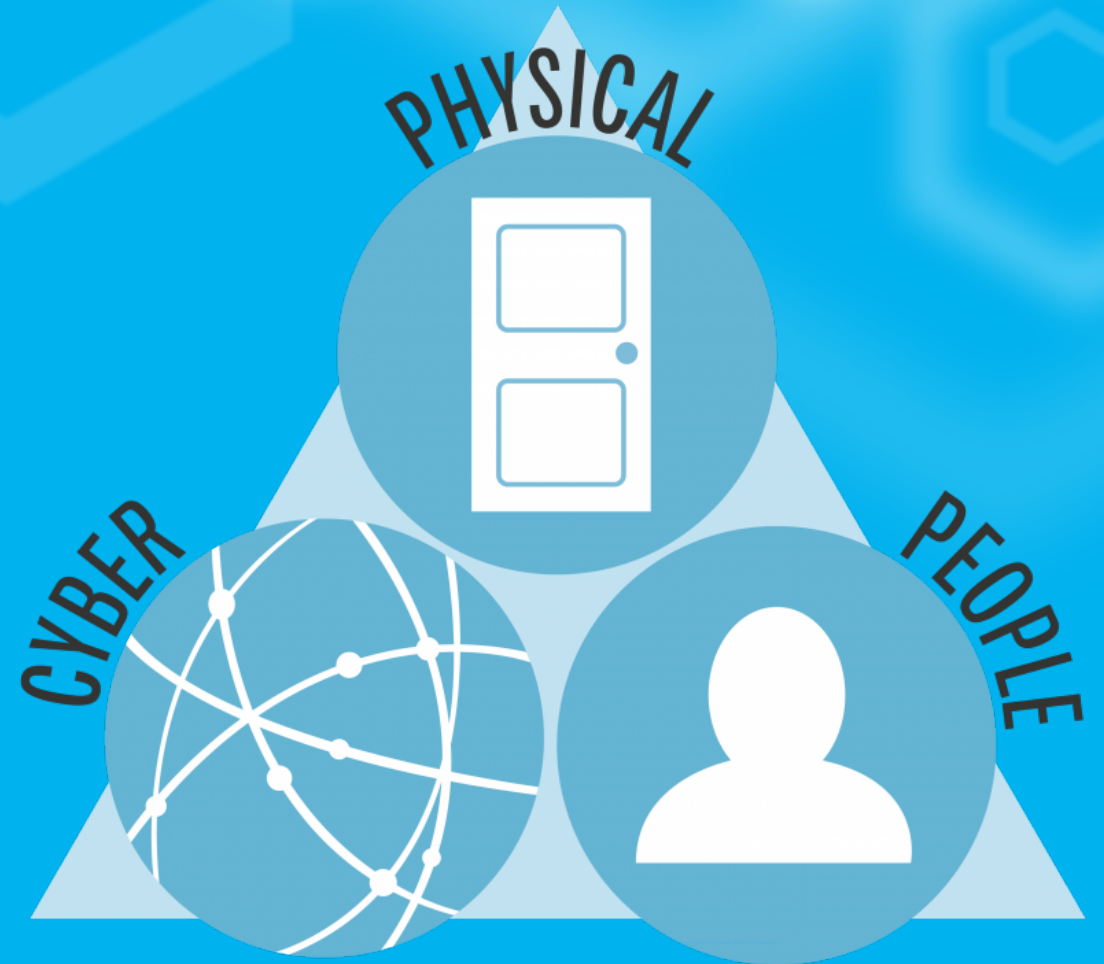
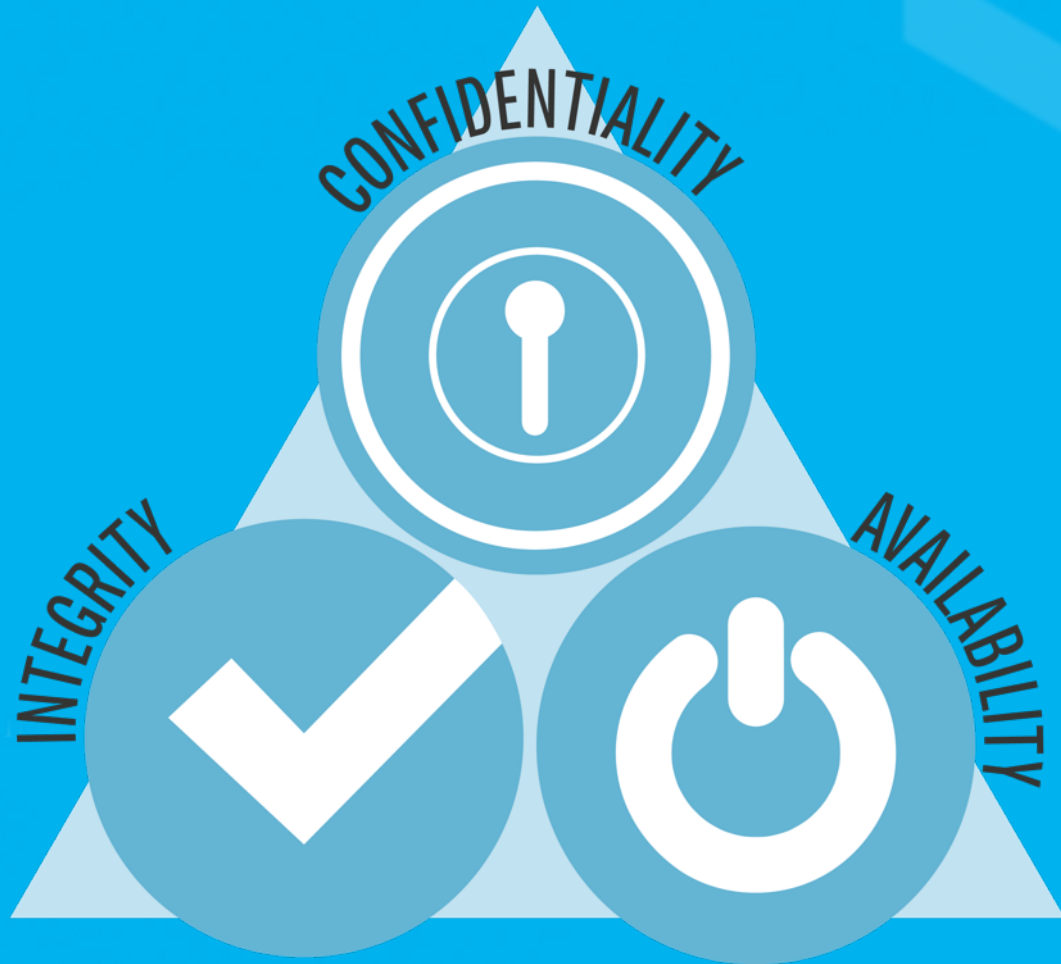
- Children's Online Privacy Protection Act
- Student Data Privacy
- Cybersecurity Presentation for Parents
- Cybersecurity Presentation for Students



CIS 350 Computer Hardware

- Disinformation
- Privacy Policies
- Data Privacy
- Cryptography
- Cyber Espionage
- Social Engineering
- Victims of Cybercrime





Technology

Policy

Education



Building on the Mission



Interdisciplinary Cybersecurity Minor

3 Credits of Introduction to Computers

3 Credits of Programming

3 Credits of Computer Hardware/Networking/Communication

3 Credit Society and Technology (Social Science)

3 Credits of Management, Risk, and Cybersecurity Topics Related to the End User

3 Credits Ethics in Cybersecurity & Technology (Arts & Humanities)

Major Specific Course



Goals

- Create an awareness and culture around cybersecurity in all majors
- Create an understanding that cybersecurity is the responsibility of all individuals
- Increase the understanding of industry legislation and compliance
- Develop skills to help with industry or to educate others regarding cybersecurity
- Help with the development of a K12 Cybersecurity Educators Endorsement
- Potential creation of a Cybersecurity specialization within the MSET Program

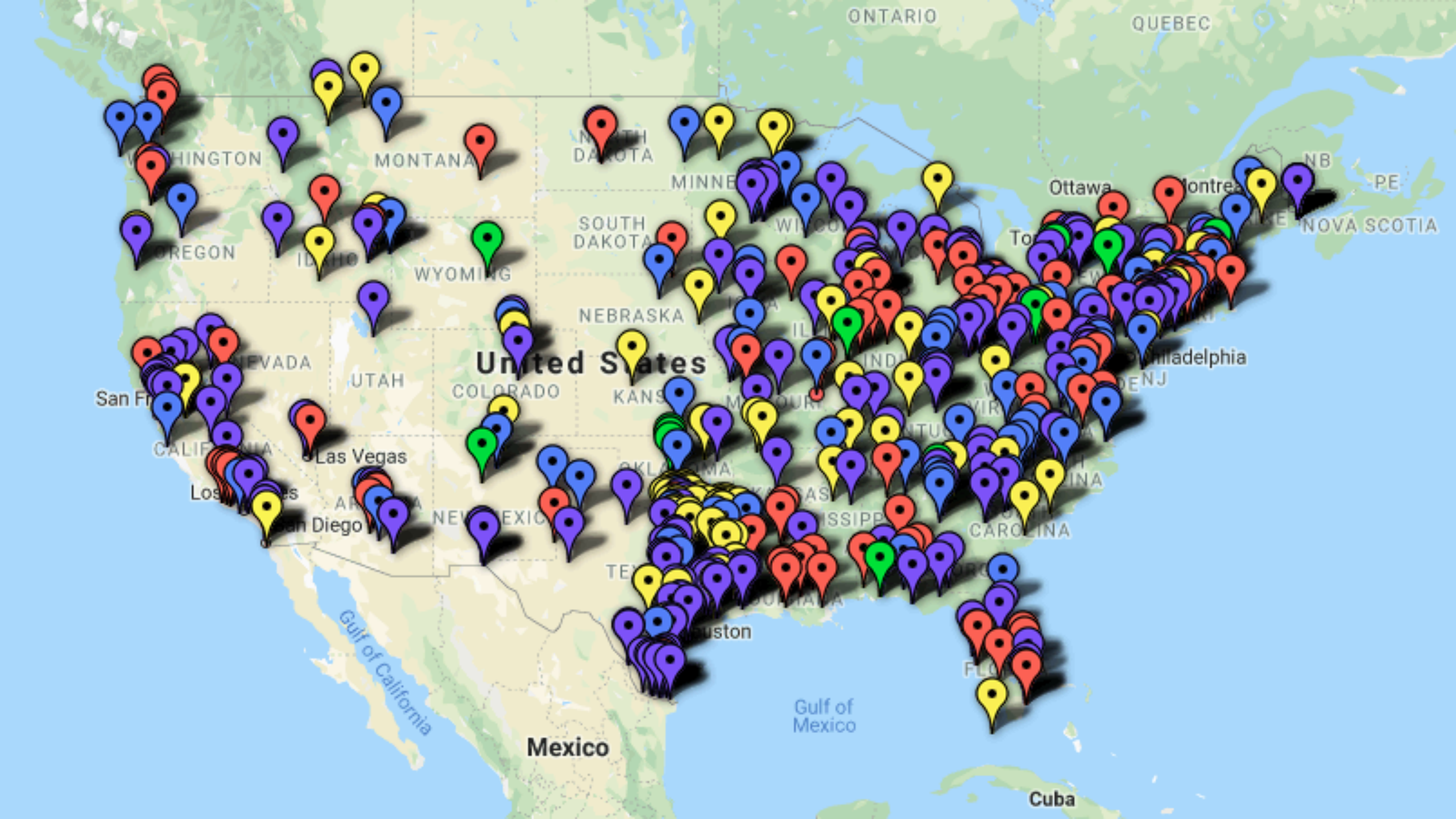


Master of Science in Educational Technology

GenCyber Teachers Camp – 3 Graduate Credits for \$120

Revamp of the curriculum

Cybersecurity Specialization





Oh the places you can go

- <https://haveibeenpwned.com>
- <https://ikeepSAFE.org>
- <https://www.databreaches.net>
- <https://dsu.edu>
- <https://www.dsucyber.com/about>
- <http://robhonomichl.xyz>
- <https://k12cybersecure.com>
- Follow me on twitter: @gencyberteacher

Questions?



Thank you!

