

22ND COLLOQUIUM

FOR INFORMATION SYSTEMS SECURITY EDUCATION

June 9th to 13th, 2018

New Orleans, Louisiana

Saturday, June 9th

1:00 PM

[New Approaches to Cybersecurity Education \(NACE\) Workshop \(Day 1\)](#)

5:00 PM

Here is your chance to help formulate an agenda for cyber security education and workforce development over the next decade or two, and get it in front of policy makers.

 Pelican I & II  Eugene Spafford

workshop

Sunday, June 10th

8:00 AM

[STORM Mobile Security Toolkit Ethical Hacking Workshop](#)

5:00 PM

CISSE has partnered with EC-Council to bring the STORM Mobile Security Toolkit to the 22nd Colloquium at a discounted rate.

 Acadian I & II  Kevin Cardwell

workshop

9:00 AM

[New Approaches to Cybersecurity Education \(NACE\) Workshop \(Day 2\)](#)

5:00 PM

Here is your chance to help formulate an agenda for cyber security education and workforce development over the next decade or two, and get it in front of policy makers.

 Pelican I & II  Eugene Spafford

workshop

12:00 PM

Registration

6:00 PM

 La Salle A

12:30 PM

#IBMCyberDay4Girls

4:30 PM

Build your knowledge of cybersecurity and hear about exciting opportunities in STEM with a fun day of learning, games, and giveaways.

 Poydras  Michelle Rivers

workshop

6:00 PM

Welcome Party

8:00 PM

 Treme

Monday, June 11th

8:00 AM

Breakfast

9:00 AM

 La Salle A

9:00 AM

CIC Welcome to LA

9:05 AM

 La Salle A  Chuck Gardner

9:05 AM

Chairman's Welcome

9:30 AM

 La Salle A  William Maconachy

9:30 AM

[The Joint Task Force on Cybersecurity Education](#)

10:00 AM

The JTF develops comprehensive curricular guidance in cybersecurity education to support future program development and associated educational efforts.

 La Salle A  Matthew Bishop

keynote

10:15 AM

[IBM: Addressing the Cybersecurity Skills Gap with a New Collar Approach](#)

11:00 AM

Many cybersecurity jobs can be filled through a 'new collar' approach that involves tapping professionals who may not have a traditional college degree but do have the needed technical skills and aptitudes.

 La Salle A  Valinda Kennedy

keynote

11:00 AM

Break

11:15 AM

11:15 AM
11:45 AM

SANS: Surprises On The Path To Building a World Class Cybersecurity Workforce

How can you determine, in advance, which students will excel in advanced cybersecurity education and subsequent performance?

 La Salle A  Alan Pallar

keynote

12:00 PM
12:30 PM

(NICE) | NIST: Growing and Sustaining the Nation's Cybersecurity Workforce

The Nation's vision of a cybersecurity workforce that safeguards and promotes America's national security and economic prosperity requires collective action from the public and private sectors.

 La Salle A  Rodney Petersen

briefing

1:00 PM
2:00 PM

Lunch

 Frenchman Ballroom

2:00 PM
2:40 PM

Behavioral, Policy & Management

This presentation argues for the enhanced participation of educators in college and university cyber security programs, based on the recent study *Foundational Cybersecurity Research*.

 Pelican I  Seymour Goodman

breakout

2:00 PM
3:00 PM

CompTia: Success in the Tech Economy

In this session, learn about the trends in cybersecurity and the critical role that academic institutions play in preparing the next generation of cyber workers for Success in the Tech Economy.

 Poydras  Kirk Smallwood

breakout

2:00 PM
3:00 PM

Joint Task Force (JTF) on Cybersecurity Education Overview of CSEC 2017

This session will provide an overview of the CSEC2017 curricular guidelines and engage session participants in a discussion of the curricular framework and body of knowledge.

 Pelican II  Daniel Ragsdale, Matthew Bishop, Diana Burley

briefing

2:00 PM
3:00 PM

Sec Ops into 4 year

Learn how operational experience will better prepare our graduates to protect and defend networks by integrating the required tools and technologies into a CONOPS.

 Acadian I & II  William Butler

breakout

2:45 PM
4:00 PM

IBM: Qradar Advisor with Watson - A cognitive solution for SIEM Analyst

In this breakout session, we will demonstrate how Qradar advisor facilitates security analysts in their daily tasks, talk about the underlying machine learning and cognitive infrastructure, and discuss the importance of introducing cognitive capabilities into cybersecurity education.

 Pelican I  Moazzam Khan

breakout

3:00 PM
4:00 PM

CyBOK: Developing and Using a Guide to the Body of Knowledge in Cyber Security

We continue the discussion with the UK National Cyber Security Centre sponsored, Body of Knowledge in Cyber Security (CyBOK).

 Pelican II  Daniel Ragsdale, Andrew Martin

Breakout

3:00 PM

Publishing and Brand Development

4:00 PM

We invite Educators, Industry and Governmental representatives to propose presentations that discuss relevant and useful knowledge, trends, tips and tools; that cyber security educators use to publish and to do personal and institutional brand development.

 Acadian I & II  Loyce Best Pailen, Mansur Hasib

breakout

3:30 PM

Break

4:00 PM

3:15 PM

Ethical Thinking in Cyber Space

6:00 PM

Our goals for the workshop are to inspire ethical inquiry in cybersecurity that can foster a culture of dialogue and ethical engagement for the field of cybersecurity and to get your feedback on a graduate level cybersecurity ethics curriculum developed and piloted at the University of Illinois.

 Poydras  Matthew Bishop, Melissa Dark, Scott Shackelford

workshop

4:00 PM

Decisions and Disruption Tabletop Role Playing Game

5:00 PM

Decisions & Disruptions is a tabletop / role-playing game about security in industrial control systems.

 Pelican I  Chris E., Catherine H.

workshop

4:05 PM

Cybersecurity Career Profiling

4:35 PM

Professionalization of cybersecurity with distinctive pathways accelerates the need for cybersecurity career profiling.

 Pelican II  Morgan Zantua, Martha Crosby

breakout

4:15 PM

Breakout Puzzle Games: Strengthen Cyber Awareness

6:00 PM

In this session participants will learn how to create immersive puzzle games using breakout concepts to add to any course.

 Acadian I & II  Deanne Cranford-Wesley, Marcci Connor

workshop

5:00 PM

Women & Minorities

7:00 PM

 Pelican I  Denise Pheils, Marri Galloway, Tonia Sans Nicolas-Rocca

breakout

Academic Papers - Monday, June 11th

2:00 PM

Faculty and Staff Information Security Awareness and Behaviors

2:35 PM

The purpose of this study was to determine the information security awareness and behaviors that faculty and staff report. Given these findings, comprehensive security awareness training will be essential for institutions of higher education as a means of minimizing threats to information technology resources.

 La Salle A  Johnathan M. Yerby, Kevin S. Floyd

2:30 PM

Example Security Injections for Hardware Courses

3:00 PM

This paper gives examples of security injections in computer engineering courses, including courses on hardware design.

 La Salle B  Chenyang (Nick) Li, Sohun Sohoni, John Acken

2:35 PM

Examining the Level of Education Factors on Reducing Data Security Breaches

3:05 PM

The purpose of this quantitative correlational research study was to examine the relationship between the levels of educational factors possessed by information security managers (ISMs) and the number data security breaches in their organizations.

 La Salle A  Steven Brown, Oscar Ukpere

3:05 PM

IoTCP: A Novel Trusted Computing Protocol for IoT

3:35 PM

We propose a trusted computing protocol that employs discrete Trusted Platform Modules and Hardware Security Modules for key management, a blockchain-based package verification algorithm for over-the-air security, and a secure authentication mechanism for data communication.

 La Salle A  Paul Wang, Amjad Ali, Ujjwal Guin, Anthony Skjellum

3:35 PM
4:05 PM

NICERC's Cyber Interstate: The Next Generation of Cyber Worker can be Found at the Intersection for Classroom Content and Teacher Support

This paper will investigate a variety of research studies that support the organization's mission as well as particular studies that identify the organization's offerings as a critical need to education in the 21st century.

 La Salle A  Chuck Gardner

4:05 PM
4:35 PM

A Study of the Evolution of Secure Software Development Architectures

This paper explores the evolution of software development architectures and consequent implications on security, to better understand the technology landscape driving this change and its impacts on application development.

 La Salle A  Leah Winkfield, Yen-Hung Hu, Mary Ann Hoppa

4:35 PM
5:05 PM

All About SQL Injection Attacks

This paper presents a detailed study of most recent SQL injection attacks on web applications, SQL injection prevention and detection mechanisms.

 La Salle A  Vinitha Subburaj, Daniel Thomas Loughran, Mayar Kefah Salih

5:05 PM
5:35 PM

Quantum Key Exchange Simulator

In this paper, we describe the background of quantum key exchange (QKE) theory, modern implementations of QKE, and the role it plays in classical, symmetric key cryptography.

 La Salle A  Michael McGregor

5:35 PM
6:00 PM

QUSAIM: A Multi-dimensional Quantum Cryptography Game for Cyber Security

In this paper, we provide an overview of QuaSim, and our approach to analyzing students' performance and gameplay behavior based on activity sequence modelling and clustering.

 La Salle A  Abhishek Parakh

Presentations - Monday, June 11th

2:00 PM

RESCUE: A Cloud-based System for Cybersecurity Ed & Training

2:30 PM

In this paper, we describe a free framework, namely ReScuE (Range for Security Education), which is a cloud-based networked virtual environment dedicated for cybersecurity education. We leverage the state-of-the-art technologies of SDN and NFV and elaborate the solutions to tackle the technical challenges of deploying ReScuE upon the underlying cloud infrastructure.

 La Salle B  Anyi Liu, Dong Han, Huirong Fu

3:00 PM

Inter-Disciplinary Capacity Building in Cybersecurity

3:30 PM

Recent literature recognizes that cybersecurity education should include skills outside of the traditional computing space. To address this need, a team from the University of Nevada, Reno and Truckee Meadows Community College created and pilot tested libraries of interdisciplinary modules that integrate cybersecurity concepts from Information System, Justice, Political Science and Computer Science.

 La Salle B  Shamik Sengupta, William Doherty

3:30 PM

A GenCyber Camp Case-Study: Teaching Defensive Programming at the Pre-University Level Using A Novel Data-Tampering Theme

4:00 PM

This paper describes our creative pre-university educational module on software security, which has been successfully used to conduct several hands-on workshop sessions with middle school students (grades 6-9) as part of our NSA/NSF GenCyber camp-program.

 La Salle B  Ankur Chattopadhyay, Elizabeth Quigley, Sallie Petty

4:00 PM

LVA: A Network Monitoring and Visualization System for Cyber Defense Competitions

4:30 PM


This work presents the network monitoring and visualization application, LUCID Network Monitoring and Visualization Application (LVA); a Node.js app that uses D3 for dynamic generation of graphical units.

 La Salle B  Claude Turner, Rolston Jeremiah, Dwight Richards, Jie Yan

4:30 PM
5:00 PM

Teaching Cyber Security Concept through IOT application based on Raspberry Pi

It has become important to teach students both about the internet-of-things applications, and their accompanying cybersecurity risks. In this paper, we discuss the introduction of cybersecurity concepts in an embedded systems course.

 La Salle B  Ravi Rao

5:00 PM
5:30 PM

Discovering Patterns and Sentiments about Hacking from Tweets

This paper used analytics using twitter data as the main source and IBM's Watson Analytics software - an advanced cognitive and analytic solution, to identify different insights including trends and sentiments on the hacking subject.

 La Salle B  Azene Zenebe, Jessica C. Alcindor

5:30 PM
6:00 PM

Preserving Cell Phone Privacy

Operators of international mobile subscriber identity (IMSI) catcher technology are compromising consumer cellphone privacy within the United States. These compromises of consumer cellphone privacy are illegal intercepts and man-in-the-middle attacks.

 La Salle B  William Butler

Lightning Talks - Monday, June 11th

2:00 PM **New Approaches to Cyber Security Education (NACE)**

2:15 PM

Cybersecurity has become a prevalent topic in many colleges, but how it should fit into the overall educational process is still not fully understood. A cybersecurity project at the University of Hawaii Maui College (UHMC) spans multiple disciplines and targets women and minorities.

 La Salle C  Debasis Bhattacharya

2:20 PM

2:35 PM

Chief Information Security Officers (CISOs) as Endangered Species: Is the CISO high turnover problem a Mirage?

CISOs average job tenure is about 18 months in the USA. Although we know that such high turnover is a problem, it keeps happening. The impact of such turnovers has not been ascertained. The purpose of this panel is to explore the cost of CISO turnovers and strategies that may be used to increase their tenure.

 La Salle C  Frank Lin, Conrad Shayo

2:40 PM

3:05 PM

We Are Fighting A Cyber War Right Now

There is no denying it, we are fighting a cyber war right now. The responsibility undoubtedly lies with humans. Cybersecurity experts, such as the FBI and others have confirmed that the biggest weakness in in cybersecurity is human error.

 La Salle C  Humayun Zafar

3:10 PM

3:25 PM

Designing and Delivering a Cybersecurity Curriculum for Middle Schools

The need for highly trained computing professionals continues to grow in our nation and throughout the world. In this presentation we share our curriculum and resources as well as challenges we have encountered as we deliver the curriculum.

 La Salle C  Yesem Kurt Peker, Hillary Fleenor

3:30 PM
3:45 PM

Cyber Criminology, Criminology and Cyber-crime Towards an Academic Discipline

The purpose of this paper is to synthesize current research literature on cybercrime to highlight the scope of the problem; and to suggest a notional concept of criminological theories that can be applied to enhance cybercrime investigation and enforcement efforts.

 La Salle C  Greg Laidlaw, Charles Wilson

4:10 PM
4:25 PM

A Proposed Model to Unify Cybersecurity Frameworks and Certification Programs using NICE Framework Structure

This paper will outline the relationships between existing workforce frameworks and propose a single comprehensive and unified model for career progression using the NICE KSA structure.

 La Salle C  Justin Smith, Kevin Kim, Dan Kim

4:30 PM
4:45 PM

Cyber Education Outside the Cyberspace

The purpose of this paper is to extend the growing body of research on cyber education, by reporting the experiences of a cyber security department cut-off from Internet access.

 La Salle C  Ngatchu Damen, Leonnel Kwedeu, Divine Anye

4:50 PM
5:05 PM

Diffusion Metrics of the AES Symmetric Cryptosystem

In this paper we study the diffusion of the AES block modes. When the plaintext is encrypted, the diffusion obscures the redundant arrangements. Therefore, those repeated configurations can be hidden in the cipher text.

 La Salle C  Abdinur Ali, Yen-Hung Hu, Cheryl Hinds, Jonathan Graham

5:10 PM
5:25 PM

The REACH Model: Reinforcing Student Learning Through Abstraction and Distraction

Some educators believe it was easier to teach students before the Internet because today, students cannot pay attention to anything longer than a 140-character Tweet. A student's failure to learn has more to do with how they were taught to learn, than their capacity to learn or how distracted they are.


 La Salle C  Henry Collier

5:30 PM

A Gaming Platform for Cyber Security Education

5:45 PM

This paper highlights an interactive game to teach cryptography concepts and approaches through a gaming platform.

 La Salle C  Dipankar Dasgupta, Thomas L. Pigg

Tuesday, June 12th

8:00 AM

Breakfast

9:00 AM

 La Salle A

9:00 AM

Welcome

9:30 AM

Welcome / Conference Updates

 La Salle A

9:30 AM

EC-Council: STORM Mobile Security Toolkit

10:00 AM

Kevin Cardwell will take you through the basics of setting up pre-configured Raspberry Pi devices, custom tool-kits and STORM kits to introduce what most classrooms are lacking.

 La Salle A  Kevin Cardwell

keynote

10:05 AM

NSA: Not-so-secret Things NSA is Doing in Cybersecurity Education

11:05 AM

This panel will outline the NSA designation programs, cybersecurity resources, describe funding opportunities for various cybersecurity and cybersecurity curriculum development.

 La Salle A  Blair Taylor, Steve LaFountain, Maureen Turney, Lori Pfannenstein

panel

11:05 AM

Break

11:15 AM

11:15 AM
11:45 AM

Envisioning Alternate Futures Will Change Our Thinking About Cybersecurity

The world is changing in profound ways. These changes will significantly alter how the cybersecurity workforce will do its job in the future and will require creative, collaborative thinking and action.

 La Salle A  Deep Kakkar, Lori Gordon

keynote

12:00 PM
12:30 PM

DHS: Developing Cybersecurity Talent through Education, Training, and Workforce Development

The demand for experienced cybersecurity professionals is at an all-time high. How can the Nation address the growing need for a knowledgeable and skilled cybersecurity workforce?

 La Salle A  Benjamin Scribner

briefing

1:00 PM
2:00 PM

Lunch

 Frenchman Ballroom

1:30 PM
1:45 PM

Author's Corner

Dr. Loyce Pailen will describe our 2nd annual Author's Corner during lunch.

 Frenchman Ballroom  Loyce Best Pailen

briefing

2:00 PM
2:45 PM

ABET: Toward a New Era of Undergraduate Cybersecurity Education

In this presentation, we present the ABET accreditation criteria and provide an opportunity for the audience to provide a critique and suggestions for continuous improvement.

 Poydras  Allen Parrish, Rajendra K. Raj, Lawrence Jones

breakout

2:00 PM
2:45 PM

Learn & Earn Dual Model Apprenticeships in Cybersecurity Education

In this presentation, I make the case that the *time is now* for rapid national expansion of an innovative government / industry / academic collaboration to launch *Learn and Earn* dual model apprenticeships in cybersecurity education.

 Acadian I & II  Girish Seshagiri

breakout

2:00 PM
3:00 PM

NIST: District-wide / State Implementation of Cybersecurity in the K12 Setting

The session organizers will share how school districts and states in several locations have taken different approaches to implementation, each with its own set of benefits and challenges.

 Pelican I  Davina Pruitt-Mentle

breakout

2:00 PM
3:15 PM

Reverse Engineer Cybersecurity Professionals

Participants in this workshop will use backward mapping techniques to *reverse engineer* how we develop future cybersecurity professionals in a community school setting.

 Pelican II  Jim Smith

workshop

3:00 PM
3:30 PM

Establishing Partnerships for Workforce Development

Discuss opportunities for developing local, regional or national collaborations that focus on cybersecurity education and career pipeline.

 Acadian I & II  Larry Wilson

breakout

3:00 PM
4:00 PM

ABET, NSA/DHS CAEs and CSEC Collaboration

Making Sense of the Alphabet Soup of Cybersecurity Education Standards.

 Poydras  Art Conklin, Lori Pfannenstien, Lawrence Jones, Allen Parrish

panel


3:00 PM

K-12 and Outreach at the State Level

4:30 PM

This session focuses on several ways states can reach down into the K-12 space and encourage awareness and help seed the education and career pipeline with a diverse student population.

 Pelican I

 Yenny Yi, Tom Hendricks, David Raymond, Tamara Shoemaker, Thomas Kaczmarek, Chuck Gardner, Marrci Conner

panel

3:15 PM

Circadence: Creating a Culture of Cybersecurity - Strategies for Awareness and Development

4:30 PM

In our session we look forward to sharing insights around solving the *security is everyone's problem* problem by unpacking two main threads.

 Pelican II  Fred Wright, Ric Messier

breakout

3:30 PM

Break

4:00 PM

POGIL Teaching Methods

5:30 PM

A demonstration of Process Oriented Guided Inquiry Learning (POGIL) method, applied to materials that teach both cybersecurity domain knowledge and soft skills.

 Acadian I & II  Xiaohong Yuan, Li Yang, Wu He

workshop

4:15 PM

AI to Develop Curriculum

4:45 PM

Gain knowledge of innovative approaches in developing cybersecurity curriculum, working with industry partners, and designing innovative cybersecurity programs.

 Poydras  Paul Wang, Wayne Summers, Shamim Khan, Rania Hodhod

breakout

4:30 PM

CIAS: CyberSec Card Game

5:30 PM

Cyber Threat Defender teaches students digital concepts using a collectible card game. It provides a turnkey solution for teachers introducing cybersecurity concepts to students.

 Pelican II  Larry Sjelin

workshop

4:30 PM

Community College Collaborative Discussion

5:30 PM

This informal discussion provides community college administrators and faculty and opportunity to discuss what's working and what's not at their own institution.

 Pelican I  Ken Sigler

panel

6:00 PM

Awards Dinner

8:00 PM

 La Salle A

Academic Papers - Tuesday, June 12th

2:00 PM
2:35 PM

Unplugged Robotics as a Platform for Cybersecurity Education in the Elementary Classroom

Robotics may be an ideal way to teach cybersecurity concepts to young students in the elementary classroom. Research shows robots can be an engaging experience and benefit learning in ways useful in other areas of education.

 La Salle A  Keith Rand, Shamik Sengupta, David Feil-Seifer

2:35 PM
3:05 PM

Cyber Security Education for Liberal Arts Institutions

In this paper we describe a set of labs that have been implemented using the Global Environment for Network Innovations (GENI) cloud infrastructure as a solution to teaching experientially with low overhead.


 La Salle A  Xenia Mountrouidou, Xiangyang Li

3:05 PM
3:35 PM

Modules for Teaching Secure in Android Application Development

The goal of this project is to develop teaching modules that highlight the need for security in app development. These modules are based on CERT Java secure coding rules applicable to developing Android applications published by the Software Engineering Institute at Carnegie Mellon University.

 La Salle A

 Christopher C. Doss, Xiaohong Yuan, Varshar Chennakeshva, Aakiel Abernath, Kenneth Ford

3:35 PM
4:05 PM

Cybersecurity Education with POGIL: Experiences with Access Control Instruction

In this paper, we introduced cybersecurity education materials we developed with Process-Oriented Guided Inquiry Learning (POGIL) which provides a promising educational framework for re-envisioning a holistic methodology for technical studies, specifically for the discipline of cybersecurity.

 La Salle A  Li Yang, Xiaohong Yuan, Wu He, Jennifer Ellis, Jonathan Land

4:05 PM

Engaging Airmen with Cyber Education and Training: Designing a Platform Using Gamification

4:35 PM

This paper proposes several ideas of implementing gamification and human-focused design concepts on the platform and includes an analysis of how this can affect Airmen at different tiers of cyber development.

 La Salle A  Landon Tomcho, Lt. Col. Mark Reith

Presentations - Tuesday, June 12th

2:00 PM

The Cyber Cube: A Multifaceted Approach for a Living Cybersecurity Curriculum Library

2:30 PM

The global cybersecurity crisis has forced academic institutions to build and grow cybersecurity programs. This paper focuses on the need for a living digital library, surveys current cybersecurity repositories, and discusses factors that determine the success of a digital library.

 La Salle B  Blair Taylor, Siddharth Kaza, Melissa Dark, Steven LaFountain


2:30 PM

Power and Responsibility in CS

3:00 PM

Cybersecurity education cultivates powerful capabilities in students. We maintain that the immense reach of cyber, cyber-physical, and cyber-social systems now requires cybersecurity education to develop its own distinct focus on ethics.

 La Salle B

 Jane Heather Blanken-Webb, Nicholas C. Burbules, Roy Campbell, Imani Palmer, Masooda N. Bashir

3:00 PM

A Bluetooth LE Security Investigation

3:30 PM

Bluetooth LE (Low Energy), otherwise known as Bluetooth Smart, has seen widespread adoption in various technological fields since its release in 2010. We discuss the impact on users that a security-absent manufacturing practice has. As the technology stands, Bluetooth Low Energy (LE) severely falters with regards to security in commercial implementations, and private user data is at risk.

 La Salle B  Gabriel Bello, Yesem Kurt Peker

3:30 PM
4:00 PM

Evaluating Prevalence, Perceptions, and Effectiveness of Cyber Security and Privacy Education, Training and Awareness Programs

Cyber security and privacy issues continue to mount, particularly for non-experts. This has largely been the catalyst for several different types of cyber security and privacy education, training, and awareness programs. We discuss these various programs, followed by a discussion on a large-scale survey that was conducted to learn more about the perceived effectiveness of these programs.

 La Salle B  Marc Dupuis

4:00 PM
4:30 PM

Cybersecurity is like Medicine, Users are Patients, Let's Communicate That Way

Compliance comes from trust, which is built on a foundation of competence and caring. Cybersecurity experts can utilize the same formula to engender the trust of their users, leading to superior outcomes in compliance with network policies to achieve the goal of robust cybersecurity defense.

 La Salle B  Seth Martin, Lt. Col. Mark Reith

4:30 PM
5:00 PM

Implementing Lightweight Intrusion Detection Systems Based on Network Function Virtualization

This paper introduces a method of implementing intrusion detection systems (IDS) based on the concept of NFV by using ClickOS, an open source NFV project.


 La Salle B  Young Park, Nikhil Vijayakumar Kengalahalli, Suhas Janardhan

5:00 PM
5:30 PM

The Evolution of Cybersecurity Education in Four-Year Undergraduate Programs

To meet enormous workforce demand, cybersecurity is being rapidly integrated into undergraduate computing curricula in baccalaureate programs across the world. This paper discusses the existing and potential impacts of such curriculum recommendations, designations and accreditations on baccalaureate cybersecurity education.

 La Salle B

 Allen Parrish, Rajendra Raj, Edward Sobiesk, Andrew Hall, J.J. Ekstrom, Shannon Gorman

Lightning Talks - Tuesday, June 12th

2:00 PM

Anatomy of Attack

2:20 PM

This presentation provides an overview of frequent and straightforward Level 1 and 2 IoT attack vectors that challenge most organizations, equipped with Building Internet of Things (BIoT).

 La Salle C  Mangaya Sivagnanam

2:25 PM

Creating an Anchor Hands-on Cyber Sec Course using Raspberry Pi

2:40 PM

We propose the creation of an anchor course, called the Core Hands-on Raspberry Pi Based Lab that is designed to satisfy multiple objectives including cybersecurity needs as well as basic engineering needs such as understanding sensing and control.

 La Salle C  Ravi Rao

2:45 PM

Professionalization of Cyber Security Education Experience: Creating a Dynamic Highly Nimble Cyber Workforce

3:00 PM

In order to provide our students needed experience and knowledge in cyber security, the educational curriculum must be updated. The authors are proposing that cyber based degrees at the Masters level should incorporate a program similar in nature in what doctors and lawyers complete prior to their beginning their practices.

 La Salle C  Steven Fulton

3:05 PM

Challenge-Based Education: Bringing Cybersecurity to K-12

3:20 PM

We identify a variety of challenges to the introduction of cybersecurity topics in high school including lack of qualified teachers, limited number of students motivated to study IT topics, large number of prerequisite topics and scarcity of computing resources required for such topics.

 La Salle C  Joe Chase, Premchand Uppuluri

3:25 PM
3:40 PM

Identity Theft Education: Engaging Students in the Age of Cybercrime

The tidal wave of financial losses due to identity theft is staggering. The focus of this paper is to discuss methods to integrate identity theft education into the curriculum at the post-secondary level across disciplines.

 La Salle C  Susan Helser

3:45 PM
4:00 PM

Guiding Healthcare Adoption Implementation via the Consolidated Framework Approach

Implementation science continues to emerge as a valuable tool for providing benchmarks and metrics for the successful deployment of healthcare technology adoption. This paper presents the results of a tool-based evaluation administered to key stakeholders of a large-scale hospital information system.

 La Salle C  Subrata Acharya

4:05 PM
4:20 PM

The Security Risk and Protection on Social Media

Over the last two decades, there has been a great evolvement and growth in technology. With this emergence comes the knowledge of Social Media. The author will focus on the different security threats of the social media and how these threats can be curbed or reduced.

 La Salle C

 Abidemi Lawal,  Vinitha Subburaj,  Daniel Thomas Loughran,  Mayar Kefah Salih

4:25 PM
4:40 PM

Big Data Technology for Cybersecurity Lab Design

This work illustrates application of big data software systems for distributed scalable computing in several settings pursuing design and subsequent distribution of lab exercises aim in the development of data analysis skills for tracing attacks and forensics.

 La Salle C  Alex Rudniy

4:45 PM

Augmented Reality Mobile Forensic Laboratory (AMFL)

5:00 PM

In this paper, we describe ongoing research which explores the potential of augmented reality technology-based teaching and learning approach to enhance cybersecurity and forensics education.

 La Salle C  Nikitha Reddy, Faisal Kaleem

5:05 PM

Programming Projects for Undergraduate Information Security Education

5:20 PM

In this paper, I discuss the design and implementation of a set of pedagogical programming projects that supplement an undergraduate semester-long introductory course on information security, which I helped design at my institution.

 La Salle C  Mohamed Said Aboutabl

5:25 PM

Cloud-based Environments for Cybersecurity Education

5:40 PM

The supply of qualified cybersecurity professionals has not kept pace with increased demand in government and industry. To address this shortfall, Virginia and other states have worked to increase educational opportunities in cybersecurity, requiring a corresponding increase in infrastructure for hands-on student experiences.

 La Salle C  David Raymond, Sandra Schiavo

Wednesday, June 13th

8:00 AM

Breakfast

9:00 AM

 La Salle A

9:15 AM

[United Kingdom's Body of Knowledge for Cyber Security Education](#)

9:45 AM

This presentation will describe the process so far, and the Knowledge Areas being defined, as well as soliciting input for a later phase of the project when Learning Pathways based on the CyBOK will be defined.

 La Salle A  Andrew Martin

keynote

10:00 AM

[Cyber Center For Education & Innovation](#)

10:45 AM

This presentation will summarize CCEI-NCM's unique national value proposition to bring together cybersecurity education and invite collaboration.

 La Salle A  Mark Loepker

keynote

10:45 AM

Break

11:00 AM

11:00 AM

Paper of the Year: *Industry Priorities for Cybersecurity Competencies*

11:30 PM

With the projected global shortfall of almost 2 million Cybersecurity professionals, it become increasingly critical to promote the development of new Cybersecurity degree programs across the U.S. This raises the question of exactly what should these degree programs prepare students to do? In order to examine this question, this study seeks to identify industry priorities for Cybersecurity competencies based on the Department of Labor's Cybersecurity Industry Model.

 La Salle A  Michael Whittman

11:30 AM
12:00 PM

Student Paper of the Year: *Predicting Cyber-Attacks Using Publicly Available Data*

Cyber-attacks are often detected too late. According to reports on reported cyber-attack incidents, most victim organizations do not know that their systems have been breached until they are informed by organizations or individuals external to the victim organization's physical or logical network.

 La Salle A  George Onoh

12:00 PM
2:00 PM

Townhall Meeting
Lunch and Townhall Meeting

 La Salle A

2:00 PM
4:00 PM

Board Meeting
By invitation only
