

22ND COLLOQUIUM

FOR INFORMATION SYSTEMS SECURITY EDUCATION

June 11, 2018

New Orleans, Louisiana

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
