

SUMMER CYBER SECURITY WORKSHOP



Summer 2014



A COLLABORATIVE PROJECT BETWEEN
TEXAS TECH AND ANGELO STATE UNIVERSITIES
FOR COMMUNITY COLLEGES FACULTY

Welcome

to the Summer Workshop on
Cybersecurity for Faculty of Community
Colleges in Texas



The Program

July 14-18, 2014
Computer Science Department
Texas Tech University





Welcome To Texas Tech University



- It is our great pleasure to have you here

Help in ...****...

(It is encrypted, will be decrypted in the end)



The Goals



- Promote Cybersecurity research, practice, and education in the Texas
- Build a cybersecurity capacity
- Introduce more cybersecurity related courses into the curricula offered at community colleges
- Transfer students from community colleges to four-year higher education institutes



The Goals

Building a Community



- West Texas Cybersecurity Consortium
- Facebook Page
- <https://www.facebook.com/pages/West-Texas-Cyber-Security-Consortium/179971908805946>
- The Web Site
- <http://cybersec.orglearn.com>



The Organizers



Texas Tech University

- Dr. Rattikorn Hewett
 - Software Security, Network Security
- Dr. Akbar Siami Namin
 - Information and Data Security, Software Security

Angelo State University

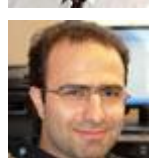
- Dr. James Phelps
 - Cyber evidence and Forensic
- Dr. Fred Wilson
 - An Introduction to cybersecurity

University of California, Riverside

- Dr. Hamed Rad
 - Smart Grid Security

Evaluator

- Dr. Fethi Inan, Texas Tech University





The Graduate Students (Ph.Ds



- Running Hands-on Experience Sessions
 - Alaa Darabseh
 - Elham Hojati
 - Sara Sartoli
 - Xiaozhen Xue



The Keynote Speakers



- Fatih Ari and Raymond Flores
 - College of Education, Texas Tech University
- Jeffrey Zhang
 - Moving Target Defense Research
 - Texas Tech Application Development Section



The Lab Work



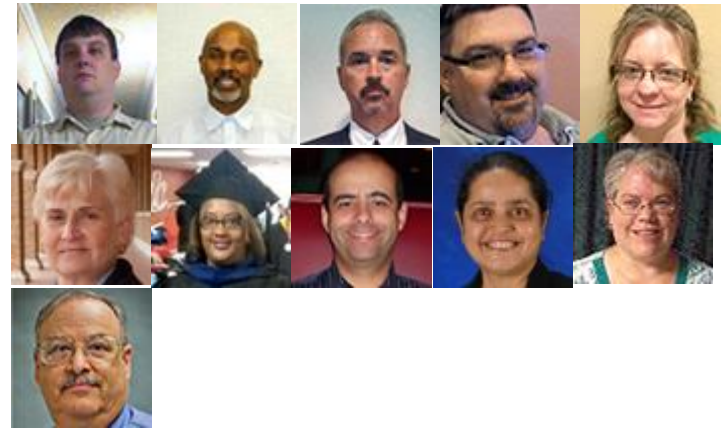
- A group from the Sandia National Lab
 - Malware Analysis



The Participants



1. Jason Brown, Texas A & M University
2. Trevor Chandler, *Houston Community College*
3. Abel Danny Dominguez, *El Paso Community College*
4. Ervin Frenzel, *Amarillo College*
5. Misty Frenzel, *Amarillo College*
6. Gregg Greer, *Lubbock Christian University*
7. Debbie Lamprecht, *Rangers College*
8. Rajiv Malkan, *Lone Star College – Montgomery*
9. Nicole Mitchell, *Lamar Institute of Technology*
10. Delfina Najera, *El Paso Community College*
11. Yu-Pa Ng, *San Antonio College*
12. Alexey Petrenko, *Austin Community College*
13. Lopa Roychoudhuri, *Angelo State University*
14. Diane Underwood, *Southwest Texas Junior College*
15. Ben Walton, *South Plains College*
16. Ira Wilsker, *Lamar Institute of Technology*





The Schedule



Date	8:00-9:15	9:30-10:45	11:00-12:15	Lunch	1:30-2:45	3:00-4:15	4:30-6:00
7/14/2014 Monday	Welcoming Session Check In	Topic II (Namin)	Topic II (Namin)		Hands-on Experience	Topic IV (Hewett & Namin)	Topic IV (Hewett & Namin)
7/15/2014 Tuesday	Keynote	Topic III (Hewett&Rad)	Topic III (Hewett&Rad)		Hands-on Experience	Topic V (Rad)	Topic V (Rad)
7/16/2014 Wednesday	Lab Work	Lab Work	Lab Work		Lab Work	Lab Work	Lab Work
7/17/2014 Thursday	Keynote	Hands-on Experience	Hands-on Experience		Participants Presentation	Participants Presentation	Participants Presentation
7/18/2014 Friday	Panel Discussion	Topic I (Wilson&Phelps)	Topic I (Wilson&Phelps)		Topic VI (Phelps)	Topic VI (Phelps)	PI's Meeting (Post)

Topic Description (Instructors)

- I Cybersecurity Fundamentals, (Leaders: Wilson and Phelps)
- II Information and Data Security, (Leaders: Siami Namin)
- III Network Security, (Leaders: Hewett and Mohsenian-Rad)
- IV Software Security, (Leaders: Hewett and Siami Namin)
- V Smart Grid Security, (Leaders: Mohsenian-Rad)
- VI Cyber Evidence and Forensics, (Leaders: Phelps)

Notes:

- 1) Each Session is 1:15 of length
- 2) Two sessions are allocated for each topic
- 3) There are welcoming and closing sessions
- 4) 3 other sessions are allocated for invited talk and panel discussion
- 5) 4 sessions are allocated for "hands-on Experience"
- 6) 3 sessions are allocated for "participants Presentations"

The locations:

- All lectures will be held in the Advanced Technology Learning Center (ATLC), PC Lab 1 (in the basement of the Texas Tech Library)
- The Welcoming, Closing, and Invited sessions will be held in the Advanced Technology Learning Center (ATLC), PC Lab 1 (in the basement of the Texas Tech Library)
- The PI's Meeting will be held in the Computer Science Department, the main Conference Room (206 2nd Floor) or at the Workshop place (to be decided)



The Workshop History



- 2013
 - For the first time offered
 - 16 faculty from community colleges participated
 - For one week
 - Six topics were covered
 - The participants were mentored with the purpose of
 - Building a community of cybersecurity
 - Encouraging the participants to introduce a new course or a new module in cybersecurity into their curricula



Topics to be Covered and Discussed



- Six technical topics to give the participants a holistic view of cybersecurity including:
 1. Computer Science,
 2. Smart Grids and Power Plans,
 3. and Cyber Crime and Forensics



Topic I – Cybersecurity Fundamental



- Basic concepts in computer security, threat analysis, and security development life cycle
 - Topics:
 - Introduction to Security
 - Security Technology
 - Operational and Physical Security
 - Sample Course Modules and Syllabus



Topic II – Information and Data Security



- An overview of the principles and approaches to information and data security
 - Topics:
 - Data Security Principles
 - Security Attacks
 - Security Services
 - Model of Network Security
 - Cryptography.
 - Symmetric Encryption
 - Asymmetric Encryption.
 - Authentication.
 - Digital Signature



Topic III – Network Security



- Basic concepts in network security and cyber attack and defense mechanisms
 - Topics:
 - Introduction to Network Security
 - Network Defense and Technical Operational Security
 - Network Layer Security
 - Network Denial of Service



Topic IV – Software Security



- Basic security issues in software system designs, and techniques for holistic approaches to verification and assessment of security properties of software systems
 - Topics:
 - Secure Software Development Life Cycle
 - Web Security
 - Vulnerability Case Studies



Topic V – Smart Grid Security



- An overview of basic concepts in smart grid and smart grid security and privacy
 - Topics:
 - Introduction to Smart Grid
 - Smart Grid Security and Privacy Challenges
 - Case Studies
 - Defense Mechanism



Topic VI – Cyber Evidence and Forensics



- Basic concepts in evidence identification, collection, storage, and forensic analysis under current U.S. law
 - Topics:
 - Introduction of cybercrime law
 - Cyber evidence collection
 - Cyber Evidence Analysis
 - Sample Courses and Syllabus



Topic VII – Hands-On Experiences



- Damn Vulnerable Web Applications
- WebGoat and OWASP
- Backtrack Environment



The Procedure and Expectations Pre Workshop



- Fill out and sign the participation agreement
- Fill out the pre-workshop evaluation form
- Build a team of 1 or 2
 - Work together and develop the syllabus of a new course or module that you think you can introduce/integrate into your curriculum
 - Give a short technical presentation of your selected topic that will be part of your course module
 - Give a short description of your syllabus



The Procedure and Expectations During the Workshop



- Fill out pre/post session evaluation forms
- Be in time
 - 8:00 to 6:00 for one week
- Give us feedback on how to improve the workshop



The Procedure and Expectations

Post Workshop



- Fill out the post workshop evaluation
- Fill out the application plan form and participate in mentorship activities
- Present your course module and a summary of technical part (Thursday afternoon)
 - Depending on the number of teams, the time will be allocated
 - 20 – 30 presentation time minutes each team



The Help Needed



Help in Building a Capacity and a Community of Cybersecurity Research and Education In Texas

(The decrypted message)