Center for Information Security and Assurance (CISA) Charter

Mathematical, Computing, and Information Sciences (MCIS) Department

This charter establishes the Center for Information Assurance within the MCIS Department at Jacksonville State University

Dr. Guillermo A. Francia, III

Contents

Vision Statement

The vision of the Center for Information Security and Assurance (CISA) is to provide leadership for information security and assurance (ISA) education, research, and practice, to promote collaborative ISA activities within and outside the JSU boundaries, to prepare the next generation of professionals in embarking on a life-long commitment to ISA based on ethical and professional conduct, and to pursue excellence in ISA technology and practice.

Mission Statement

The Mathematical, Computing, and Information Sciences (MCIS) Department's Center for Information Security and Assurance (CISA) provides an avenue for research and education in computer and network security, digital forensics, cryptography, risk assessment and mitigation, disaster recovery and management, security regulations and compliance, and information security management.

CISA facilitates the partnerships and collaborations across disciplines at Jacksonville State University and community colleges in Northeast Alabama in the areas of critical and national need. CISA represents an exciting and clear vision toward contributing to the national information assurance infrastructure and manpower development.

Organization and Operation

The CISA is composed of a group of scientists and professionals dedicated to promoting and enhancing information security and assurance research and curriculum. A tenured faculty member with at least an Associate Professor rank is designated a senior scientist. A Ph.D member with at least an Assistant Professor rank is designated a scientist. All other members are given the appropriate and specific area specialist designation.

The organization is headed by a Director who is assisted by two Associate Directors who manage the two main areas of ISA: research and education.

The center is in operation throughout the year. Published research activities will be maintained as technical reports and disseminated through the center's website: http://mcis.jsu.edu/cisa. The center's annual report will also be published on the same web site.

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Resources

LABORATORIES

The CISA resources include two laboratories and conference rooms equipped with networked desktop computers that are configured with multiple operating systems, including Windows 2008 Server, Windows 2003 Server, Windows Vista Ultimate/Business, Windows XP SP2, Fedora Linux, Solaris 10, Ubuntu Linux, BSD Linux, Mac OSX, and Debian Linux. Several of these computers are also configured for Virtualization technology which includes VMWare, Xen, and MS Virtual Server. In addition, these laboratories are equipped with wireless devices such as laptop computers, PDAs, Wimax, and GPS receivers. Data gathering and analysis for digital forensics are facilitated by state-of-the art hardware and software tools such as disk jockey forensic kit, Paraben's SIM card seizure kit, and disk imaging kits.

The laboratory equipment and tools are optimized for educational hands-on experimentations, empirical testing, and research. Education and research activities currently supported are:

- Disk and flash-drive forensics
- Network security
- Intrusion detection and prevention
- Wireless security
- Cryptography
- Cell Phone forensics
- Steganography
- Security Visualization
- Security log analysis
- Compliance tools
- Virtualization security

Figure 1. Digital Forensics Equipment

Figure 2. Wireless Stations

Figure 3. Heterogeneous Network

Figure 4. Dedicated Servers

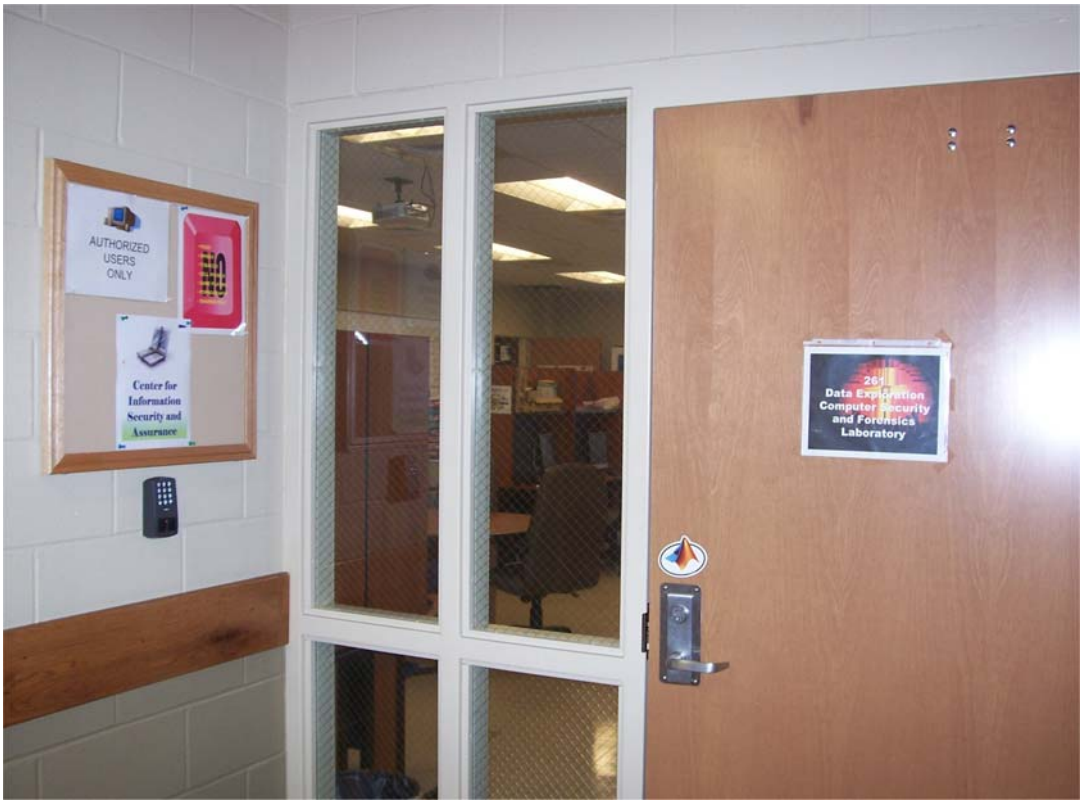

Figure 5. Secured CISA Lab Entry

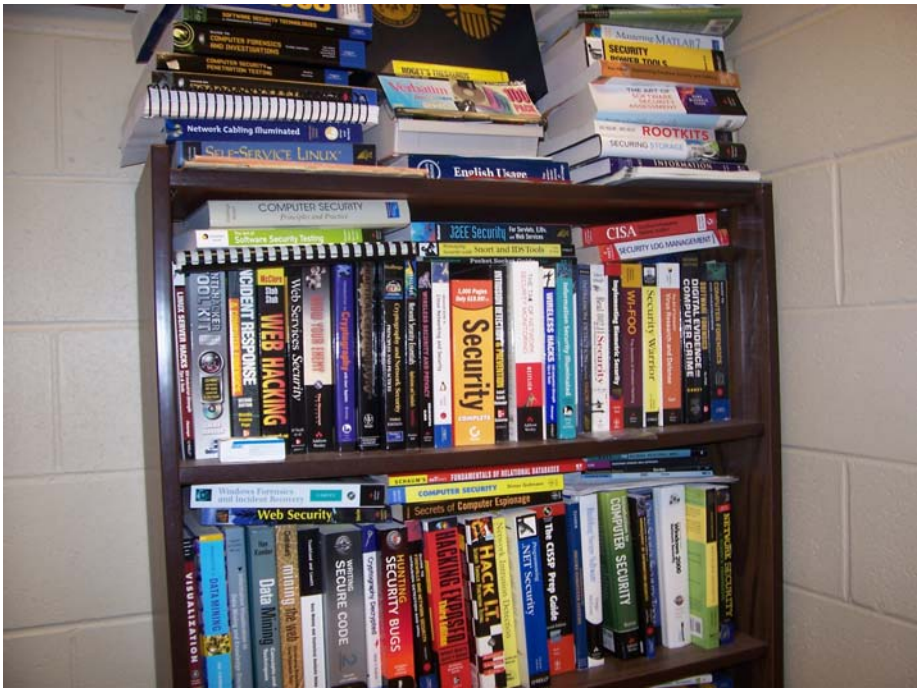

Figure 6. Mini Library

PERIODICALS, BOOKS, JOURNALS and OTHER PUBLISHED MATERIALS

Heterogeneous

Published materials on security and information assurance topics are readily available through JSU Library's print and online collections. JSU's online collections include the entire ACM digital library, IEEE Computer, IEEE Security and Privacy, IEEE Transactions on Software Engineering, IEEE Intelligent Systems, IEEE Transactions on Parallel and Distributed Systems. In addition, several security-related books, monographs, magazines, and journals are available in the CISA's mini-library. Magazine subscriptions include Information Security, TechNet, Visual Studio, Government Computer News, ComputerWorld, NetworkWorld, Systems Management, Network Computing, CSO, SD Times, Embedded Systems Design, CIO, Dr. Dobbs, Better Software, Software Test and Performance, and Communications of the ACM.

Figure 7. Some Lab Subscriptions

Current Projects

Curriculum Development

- Laboratory Projects under development
    - Virtualization using Windows Virtual Server, VMWare, and Xen
    - Virtualization Security
    - Visualization of security log data
    - Forensics analysis of mobile devices
    - Wireless penetration testing
    - Vulnerability analysis
- Course modules under development
    - Secure coding
    - Compliance of security regulation
    - Web services security
    - End user security awareness

Research

- Security of medical images
- Formal model of security regulation compliance
- Compliance metrics and benchmarks
- Data mining of log files
- Resiliency metrics

Funding

The Center evolved using the available resources in personnel and equipment.

Equipment and supplies are funded by numerous external grants and by the Technology Replacement Program at JSU. The grants that facilitated the procurement of equipment and supplies for the two laboratories were received from the National Science Foundation (NSF), Microsoft Corporation, JSU Faculty Research Grant Program, VMware Corporation, and IBM Corporation.

Future plans include the rejuvenation of proposal writing efforts to continue to seek internal and external funding for CISA programs.

Intellectual Property

The CISA approach to intellectual property is in conformance with Jacksonville State University's guidelines and policies as stated in Section 6.7 of JSU's Faculty Handbook. Section 6.7 of the handbook is reproduced below.

6.7 PATENTS, COPYRIGHTS, AND INTELLECTUAL PROPERTY

Consistent with the University's objectives of supporting faculty research and maintaining a reputable academic standing, faculty members are encouraged to engage in scholarly activities that may result in the creation of patents and copyrights. Faculty members shall retain ownership of copyrights and patent rights from individual creative works if no substantial aid from the University or from an outside agency operating through official University channels is received.

Rights pertaining to materials that result from University-assisted efforts, externally sponsored efforts, and University-assigned efforts shall be determined in accordance with the terms of the Jacksonville State University Manual of Policies and Procedures.

Endorsements

[SIGNATURE ON FILE]

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Mathematical, Computing, and Information Sciences (MCIS) Department

[SIGNATURE ON FILE]

Dr. James Earl Wade, Dean
College of Arts and Sciences, JSU