

# Dr. Ronny L. Bull, Ph.D.

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## Education

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- **Clarkson University** **Potsdam, NY**  
○ *Computer Science Ph.D.,* *Graduated: Dec, 2016*  
Dissertation Title: *A Critical Analysis of Layer 2 Network Security in Virtualized Environments.*
- **ITT Exelis/MVCC** **Rome, NY**  
○ *EC-Council Certified Ethical Hacker (C|EH) Training Course,* *May 14-18, 2012*
- **SUNY Institute of Technology** **Utica, NY**  
○ *Computer Science M.S.,* *Graduated: May, 2012*  
Thesis Title: *Design and Implementation of a Computer Science Virtualized Lab Environment at SUNYIT.*
- **SUNY Institute of Technology** **Utica, NY**  
○ *Computer Science B.S.,* *Graduated: Dec, 2010*  
Honors: *President's List, Magna Cum Laude*  
Academic Award: *Outstanding Student Award - B.S. Computer Science*
- **Herkimer County Community College** **Herkimer, NY**  
○ *Computer Network Technician A.A.S.,* *Graduated: May, 2006*  
Honors: *President's List*
- **Northeast Technical Institute** **South Portland, ME**  
○ *Cisco Networking Academy,* *2002*
- **Northeast Technical Institute** **South Portland, ME**  
○ *Microsoft MCSE Training,* *2001*
- **Northeast Technical Institute** **South Portland, ME**  
○ *PC Repair Technician,* *2000*

## Professional Certifications

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- **CompTIA**  
○ *Secure Infrastructure Specialist (CSIS),* *2014*
- **CompTIA**  
○ *IT Operations Specialist (CIOS),* *2014*

- **CompTIA**  
Security+, 2014
- **EC-Council**  
Certified Ethical Hacker (C|EH v7), 2012
- **Cisco**  
Certified Networking Associate (CCNA), 2002
- **Microsoft**  
Certified Systems Administrator (MCSA), 2001
- **Microsoft**  
Certified Professional (MCP), 2001
- **CompTIA**  
Network+, 2001
- **CompTIA**  
iNet+, 2001
- **CompTIA**  
A+, 2000

## Teaching Experience

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- **Utica College** **Utica, NY**  
Assistant Professor - Computer Science Department August 2015–Present  
- Advisor to both the Computer Science and Cybersecurity clubs, and Head Coach for the NECCDC team  
- Designer and Administrator of the Computer Science Linux Research Network and Virtualized Laboratory Environment
- **SUNY Polytechnic Institute** **Utica, NY**  
Lecturer - Computer Science Department August 2013–August 2015  
- Advisor to the Network and Computer Security club, and Coach for the NECCDC team  
- Advisor for Undergraduate and Graduate Capstone Projects  
- Advisor and committee member for multiple Master's theses
- **SUNY Institute of Technology** **Utica, NY**  
Adjunct Professor - Computer Science Department August 2012–June 2013
- **Mohawk Valley Community College** **Utica/Rome, NY**  
Adjunct Professor - Computer Science Department August 2011–August 2013

## Teaching Activities While At Utica College

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*Note: \* indicates courses that I created and developed that were not previously offered at the institution. \*\* indicates courses that I completely revamped upon taking over the course.*

- CSC102: Computer Science II
  - *Description:* Continuation of Computer Science I. Introduction to recursion, sorting, and searching algorithms. Introduction to Object-Oriented programming, abstract data types, linked lists, stacks, queues, and trees. Lecture and laboratory. This course was taught using both lecture and hands-on laboratory exercises each week.
- CSC117: Microcomputers & Application Software
  - *Description:* An introduction to basic terminology and applications of computers including: operating systems, word processing, spreadsheets, and presentation software. This course was taught in a flipped classroom style with classroom engagement consisting of primarily hands-on laboratory exercises with one-on-one interaction between the students and me.
- CSC206: Cybersecurity Scripting\*
  - *Description:* This course presents the student with an understanding of information security programming and script writing utilizing Python and other scripting languages.
- CSC207Z: Linux for Security & Forensics\*
  - *Description:* This course will introduce students to the Linux operating system. The basics of Linux systems administration will be explored with a focus on network services and security.
- CSC225: Introduction to the Unix Operating System\*\*
  - *Description:* Architecture of UNIX: organization, file system, process management, UNIX Shells and Shell programming, networking, security, and the Internet. Lecture and Laboratory.
- CSC300: Topics in Computer Science: Introduction to C/C++\*
  - *Description:* An introduction to the C and C++ programming languages through hands-on programming.
- CSC323: Introduction to Networks\*\*
  - *Description:* Topics include network types and communication models, hardware components, applications, protocols, standards, internetworking and routing concepts, OSI Model, TCP/IP, LAN and WAN technologies. This course was mainly lecture based with in-class and assigned hands-on activities.
- CSC323Z: Introduction to Networks (*Online/Compressed*)\*\*
  - *Description:* Topics include network types and communication models, hardware components, applications, protocols, standards, internetworking and routing concepts, OSI Model, TCP/IP, LAN and WAN technologies. This course was mainly lecture based with in-class and assigned hands-on activities.
- CSC390: Independent Study - Spring 2016
  - *Description:* Computer Science independent study in virtualization network security. Topics included virtualization management, virtual networking, virtual network security, and network protocol vulnerability exploitation. The student worked with me conducting research in

virtualized network security. Tasks included data collection, exploit development, and testing. A white paper was written based on the research and submitted to two major cybersecurity conferences (*Blackhat 2016, and DEF CON 24*) for review. The student presented a portion of the work at the Utica College Student Research Conference and the work was accepted for publication and presentation at the DEF CON 24 computer security conference in Las Vegas, Nevada. (*See publication listing for more details*).

- CSC390: Independent Study - Spring 2017
  - *Description:* Continuation of Computer Science independent study in virtualization network security. Topics included virtualization management, virtual networking, virtual network security, and network protocol vulnerability exploitation. The student worked with me conducting research in virtualized network security. Tasks included data collection, exploit development, and testing. We also had multiple meetings with industry representatives from Amazon AWS, VMWare, Bell Canada, and Huawei about future collaborative research efforts in this area.
- CSC390: Independent Study - Spring 2017
  - *Description:* Computer Science independent study in greenhouse sensing and automation. Two Computer Science students worked with myself and Professor Scanga developing specifications to automate certain tasks in the Utica College greenhouse. The students performed research, acquired hardware, and began development on the core sensing infrastructure. By the end of the semester a working prototype was established for future students to expand upon. Both students entered the work into the 2017 Utica College Student Research Day as a poster presentation, and were presented with the *best poster* award.
- CSC432: Computer & Network Security\*\*
  - *Description:* Fundamentals of securing computers and networks. Topics include security objectives, threats, vulnerabilities, types of attacks, authentication methods, access control methods, encryption, intrusion detection, VPNs, and firewalls. This course consisted of both lecture and intensive hands-on laboratory exercises each week that help to prepare the students for entering a career in network security and administration. Many students stated that the experiences that they had in this course ended up being the main focus of conversation during job interviews with prospective employers.
- CSC432: Computer & Network Security (*Online/Compressed*)\*\*
  - *Description:* Fundamentals of securing computers and networks. Topics include security objectives, threats, vulnerabilities, types of attacks, authentication methods, access control methods, encryption, intrusion detection, VPNs, and firewalls. This course consisted of both lecture and intensive hands-on laboratory exercises each week that help to prepare the students for entering a career in network security and administration. Many students stated that the experiences that they had in this course ended up being the main focus of conversation during job interviews with prospective employers.

## Teaching Activities While At State University of New York Polytechnic Institute

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Note: \* indicates courses that I created and developed that were not previously offered at the institution. \*\* indicates courses that I completely revamped upon taking over the course.

### Summer 2015.....

- NCS490: Network Engineering (*Special Topics*)\*
  - *Description:* An experimental course ran over the summer semester that was completely project based providing students with real life hands-on network administration and engineering experiences.
  
- TEL590W: Research Topics in Virtualization (*Special Topics*)\*
  - *Description:* A completely online course in which students are exposed to current and past research in virtualization. The intention of this course is to take an in-depth look at the area of virtualization. This is accomplished by reading and critiquing relevant conference and journal publications from resources such as the USENIX conference archives, the ACM digital library, and the IEEE Xplore digital library. Topics include Virtualization Concepts, Security, Networking, Performance, and Storage.
  
- TEL599: Telecommunications Master's Thesis Advisor (*1 student*)
  - *Description:* Advised master's students in the Telecommunications program on their thesis research work.

### Spring 2015.....

- NCS430: Penetration Testing\*
  - *Description:* This course provides an in-depth experience in the area of Penetration testing. Students will study the fundamentals and key steps of a penetration test, as well as gain hands-on experience and exposure to the tools and methods utilized by networking security professionals while conducting penetration tests in a controlled lab environment. A large portion of this course will be based on hands-on red team activities that will require the delivery of detailed documentation that outlines the processes employed in order to achieve the goals of each exercise.
  
- NCS450: Network Security
  - *Description:* Detailed coverage of network threats, vulnerabilities and security protocols as countermeasures to advance the student's understanding of computer security, network security, e-mail and Internet security. Focus is on security issues across the entire network protocol stack from the physical to the application layer. Specific topics include physical layer security, secure routing protocols, IPsec, SSH, TLS, Web security, authentication and key management, and network borne malware such as worms and viruses.
  
- NCS495: Network & Computer Security Capstone (*7 students*)
  - *Description:* Advised students on their individual culminating senior projects for their degree.
  
- TEL590W: Advanced Research Topics in Cloud Security (*Special Topics*)\*
  - *Description:* A completely online course in which students are exposed to current and past research in cloud security. The intention of this course is to take an in-depth look at the area of cloud computing security. This will be accomplished by reading and critiquing relevant

conference and journal publications from resources such as the USENIX conference archives, the ACM digital library, and the IEEE Xplore digital library. Topics include the security and exploit-ability of: Cloud Infrastructure, Services, Networking, and Storage.

- TEL599: Telecommunications Master's Thesis Advisor (*2 students*)
  - *Description:* Advised master's students in the Telecommunications program on their thesis research work.

#### Fall 2014.....

- IS310: Hardware and Network Infrastructure
  - *Description:* A conceptual and practical study of the computer hardware, connectivity devices, and other supporting artifacts that comprise enterprise internal information systems and external systems like the public Internet.
- IS310W: Hardware and Network Infrastructure (*Online*)
  - *Description:* A conceptual and practical study of the computer hardware, connectivity devices, and other supporting artifacts that comprise enterprise internal information systems and external systems like the public Internet. (*Cross-listed with IS310*)
- NCS416: Digital & Internet Telephony\*\*
  - *Description:* This course covers a variety of voice communications topics in both lectures and labs. Each session will be divided into lecture and lab portions. The lectures provide layer 1 and 2 coverage of both traditional and modern voice topics, including transport, signaling, and encoding as well as multimedia and quality control services. The second half of each class period will focus on VoIP through a series of lab exercises designed to give students hands on experience with the technology. (*Cross-listed with TEL500*)
- NCS490: Linux Networking (*Special Topics*)\*
  - *Description:* This course will introduce students to the Linux operating system. The basics of Linux systems administration will be explored with a focus on network services and security.
- NCS495: Network & Computer Security Capstone Advisor (*1 student*)
  - *Description:* Advised students on their individual culminating senior projects for their degree.
- IS495: Computer Information Systems Practicum Advisor (*1 student*)
  - *Description:* Advised students on their individual culminating senior projects for their degree.
- CS:498: Computer Science Capstone (*1 student*)
  - *Description:* Advised students on their individual culminating senior projects for their degree.
- TEL500: Voice Communications\*\*
  - *Description:* This course covers a variety of voice communications topics in both lectures and labs. Each session will be divided into lecture and lab portions. The lectures provide layer 1 and 2 coverage of both traditional and modern voice topics, including transport, signaling, and encoding as well as multimedia and quality control services. The second half of each class period will focus on VoIP through a series of lab exercises designed to give students hands on experience with the technology.

- TEL597: Telecommunications Master's Research Project Advisor (*1 student*)
  - *Description:* Advised master's students in the Telecommunications program on their final research project work.

#### Summer 2014.....

- TEL590: Linux Networking (*Special Topics, Online*)\*
  - *Description:* This course will introduce students to the Linux operating system. The basics of Linux systems administration will be explored with a focus on network services and security. (*8 week online version for graduate students*)

#### Spring 2014.....

- NCS315: Networking of Information Systems\*\*
  - *Description:* An integrated study of fundamental principles and representative technologies underlying computer and device networks. Topics include: key networking protocols and relevant implementation stacks; interconnection devices; sample distributed software frameworks; management issues in networked computers and peripherals; deployment requirements for distributed software applications; common tools for the management of networks and distributed software.
- NCS315W: Networking of Information Systems (*Online*)\*
  - *Description:* An integrated study of fundamental principles and representative technologies underlying computer and device networks. Topics include: key networking protocols and relevant implementation stacks; interconnection devices; sample distributed software frameworks; management issues in networked computers and peripherals; deployment requirements for distributed software applications; common tools for the management of networks and distributed software. (*Cross-listed with NCS315*)
- NCS490: Penetration Testing (*Special Topics*)\*
  - *Description:* This course provides an in-depth experience in the area of Penetration testing. Students will study the fundamentals and key steps of a penetration test, as well as gain hands-on experience and exposure to the tools and methods utilized by networking security professionals while conducting penetration tests in a controlled lab environment. A large portion of this course will be based on hands-on red team activities that will require the delivery of detailed documentation that outlines the processes employed in order to achieve the goals of each exercise.
- NCS490: VoIP & Multimedia Security (*Special Topics*)\*
  - *Description:* This is an advanced level course on multimedia traffic security. It reviews the general knowledge and techniques for streaming data traffic, such as VoIP and multimedia. The security challenges unique to such traffic will be covered in detail, including disruption of service, theft of service, and violation of confidentiality. Relevant data encryption and authentication techniques will also be covered in detail. (*Cross-listed with NCS552*)
- NCS495: Network & Computer Security Capstone Advisor (*1 student*)
  - *Description:* Advised students on their individual culminating senior projects for their degree.
- CS498: Computer Science Capstone Advisor (*1 student*)
  - *Description:* Advised students on their individual culminating senior projects for their degree.

- TEL550: Advanced Network Standards & Protocols\*\*
  - *Description:* An integrated study of fundamental principles and representative technologies underlying computer and device networks. Topics include: key networking protocols and relevant implementation stacks; interconnection devices; sample distributed software frameworks; management issues in networked computers and peripherals; deployment requirements for distributed software applications; common tools for the management of networks and distributed software. *(Cross-listed with NCS315)*
- NCS552: VoIP & Multimedia Security\*
  - *Description:* This is an advanced level course on multimedia traffic security. It reviews the general knowledge and techniques for streaming data traffic, such as VoIP and multimedia. The security challenges unique to such traffic will be covered in detail, including disruption of service, theft of service, and violation of confidentiality. Relevant data encryption and authentication techniques will also be covered in detail.
- TEL590: VoIP & Multimedia Security (*Special Topics, Online*)\*
  - *Description:* This is an advanced level course on multimedia traffic security. It reviews the general knowledge and techniques for streaming data traffic, such as VoIP and multimedia. The security challenges unique to such traffic will be covered in detail, including disruption of service, theft of service, and violation of confidentiality. Relevant data encryption and authentication techniques will also be covered in detail. *(Cross-listed with NCS552)*

#### Fall 2013.....

- IS310: Hardware and Network Infrastructure
  - *Description:* A conceptual and practical study of the computer hardware, connectivity devices, and other supporting artifacts that comprise enterprise internal information systems and external systems like the public Internet.
- IS310W: Hardware and Network Infrastructure (*Online*)
  - *Description:* A conceptual and practical study of the computer hardware, connectivity devices, and other supporting artifacts that comprise enterprise internal information systems and external systems like the public Internet. *(Cross-listed with IS310)*
- NCS416: Digital & Internet Telephony\*\*
  - *Description:* This course covers a variety of voice communications topics in both lectures and labs. Each session will be divided into lecture and lab portions. The lectures provide layer 1 and 2 coverage of both traditional and modern voice topics, including transport, signaling, and encoding as well as multimedia and quality control services. The second half of each class period will focus on VoIP through a series of lab exercises designed to give students hands on experience with the technology. *(Cross-listed with TEL500)*
- NCS425: Inter-Networking\*\*
  - *Description:* This course is intended to introduce new content and extend previously learned networking skills which will empower students to enter the workforce and/or further their education in the area of telecommunications networking. A task analysis of current industry standards and occupational analysis is used in the development of content standards. Instruction introduces and extends the student's knowledge and practical experience with switches. Local Area Networks (LAN's) and Virtual Local Area Networks (VLAN's) design, configuration and



maintenance. Students develop practical experience in skills related to configuring LAN's, WAN's, routing protocols and network troubleshooting.

- CS498: Computer Science Capstone (1 student)
  - *Description:* Advised students on their individual culminating senior projects for their degree.
- IS495: Computer Information Systems Practicum (1 student)
  - *Description:* Advised students on their individual culminating senior projects for their degree.
- NCS495: Network & Computer Security Capstone (1 student)
  - *Description:* Advised students on their individual culminating senior projects for their degree.
- TEL500: Voice Communications\*\*
  - *Description:* This course covers a variety of voice communications topics in both lectures and labs. Each session will be divided into lecture and lab portions. The lectures provide layer 1 and 2 coverage of both traditional and modern voice topics, including transport, signaling, and encoding as well as multimedia and quality control services. The second half of each class period will focus on VoIP through a series of lab exercises designed to give students hands on experience with the technology.

#### Spring 2013.....

- CSC317: Computer Systems & C/C++ Programming\*\*
  - *Description:* The basic concepts of computer science and computer programming are covered. Computer hardware and applications programming using C are also introduced. No prior knowledge of computers or computing is required. This course is intended for non-majors. Computer Science or Computer Systems majors will not receive Computer Science credit for this course.
- NCS490: Virtualization (Special Topics)\*
  - *Description:* The intention of this course is to take an in-depth look at the area of virtualization. This will be accomplished by reading and critiquing relevant publications from resources such as ACM and IEEE. Topics include: Virtualization Concepts, Security, Networking, Performance, and Storage

#### Fall 2012.....

- NCS416: Digital & Internet Telephony\*\*
  - *Description:* This course covers a variety of voice communications topics in both lectures and labs. Each session will be divided into lecture and lab portions. The lectures provide layer 1 and 2 coverage of both traditional and modern voice topics, including transport, signaling, and encoding as well as multimedia and quality control services. The second half of each class period will focus on VoIP through a series of lab exercises designed to give students hands on experience with the technology. (Cross-listed with TEL500)
- TEL500: Voice Communications\*\*
  - *Description:* This course covers a variety of voice communications topics in both lectures and labs. Each session will be divided into lecture and lab portions. The lectures provide layer 1 and 2 coverage of both traditional and modern voice topics, including transport, signaling, and encoding as well as multimedia and quality control services. The second half of each class period will focus on VoIP through a series of lab exercises designed to give students hands on

experience with the technology.

## Teaching Activities While At Mohawk Valley Community College

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### Summer 2013.....

- o CompTIA Net+ Certification Preparation Course
  - *Description:* Final run of the CyberJobs version of CI112. The CyberJobs program ended after the Summer of 2013.

### Spring 2013.....

- o CI112: Networking Fundamentals (2 sections)
  - *Description:* This course introduces the basics of computer networking from concepts and terminology to materials and equipment. Topics form the foundation for further networking courses, with a solid grasp of fundamentals that lead to the experience with equipment. The majority of this course deals with theory, with equipment used for demonstration.
- o CompTIA Net+ Certification Preparation Course
  - *Description:* Cross-listed with CI112, students enrolled in this section were non-matriculated students participating in the CyberJobs program.

### Fall 2012.....

- o CI112: Networking Fundamentals
  - *Description:* This course introduces the basics of computer networking from concepts and terminology to materials and equipment. Topics form the foundation for further networking courses, with a solid grasp of fundamentals that lead to the experience with equipment. The majority of this course deals with theory, with equipment used for demonstration.
- o CompTIA Net+ Certification Preparation Course
  - *Description:* Cross-listed with CI112, students enrolled in this section were non-matriculated students participating in the CyberJobs program.

### Spring 2011.....

- o IS101: Computer Applications & Concepts (2 sections + 2 labs)
  - *Description:* This course provides knowledge of relevant computer skills and a solid foundation in the terminology and concepts of computer technology. Experience is provided with a variety of microcomputer software applications, including word processing, electronic spreadsheets, graphics, file management, and integrated software. Concepts and terms focus on preparing for a technologically oriented society and using the computer as a tool for productivity, research, and communication.

### Fall 2011.....

- o IS101: Computer Applications & Concepts (2 sections + 2 labs)
  - *Description:* This course provides knowledge of relevant computer skills and a solid foundation in the terminology and concepts of computer technology. Experience is provided with a variety of microcomputer software applications, including word processing, electronic spreadsheets, graphics, file management, and integrated software. Concepts and terms focus on preparing for a technologically oriented society and using the computer as a tool for productivity, research, and communication.

## Professional Experience

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- Adirondack IT Solutions, LLC** **Frankfort, NY**  
○ *Owner & Principal Consultant* *January 2011–Present*  
Provide IT consulting, networking & security solutions, enterprise VoIP solutions, server virtualization, video surveillance, web design, and application development services for select clientele in Central and Northern NY. Also provide consulting services for multiple high performance computing research projects at the Air Force Research Laboratory in Rome, NY.
- ITT/Exelis Inc.** **Rome, NY**  
○ *Software Engineer II* *July 2012–April 2015*  
Software engineering contractor at AFRL in Rome, NY working in the High Performance Computing group on Neuromorphic Perception and Text Recognition projects. My primary role as a software engineer was to develop highly parallelized and efficient code to perform neuromorphic perception and recognition functions on various types of input media utilizing C++, CUDA, and OpenCV as well as various other internally developed libraries. I also developed and maintained makefiles and bash scripts that automate building, deployment, and execution of our software in a highly parallelized environment that utilized a custom message passing solution developed by our team to send data between each process. I also served as a Linux administration consultant to the AFRL High Performance Computing Area Resource Center.
- M.A. Polce Consulting, Inc.** **Rome, NY**  
○ *Senior Engineer* *March 2012–July 2012*  
Developed and implemented new IT solutions, as well as performed on-site and remote support for clients. VoIP and Linux specialist.
- ESI** **New Hartford, NY**  
○ *IT Consultant* *August 2010–April 2011*  
On-site Consultant and Backup Systems Administrator for the Herkimer County Community College Information Services department. Was responsible for the research and deployment of new technologies. Assisted in the management of the existing network infrastructure consisting of over 1200 network nodes. Assisted in the maintenance of RHEL servers running Oracle 10g and system imaging services. Supported and maintained a Windows Server 2003 server farm providing Active Directory, Exchange, DFS, DHCP, DNS and printing services to Windows XP, Vista, and 7 clients. Assisted in the setup of a new iMac/Xserver lab that was integrated into the current active directory environment. Researched and prototyped a streaming media solution using RHEL and Icecast that allows the Radio and TV department to stream their radio broadcast over the internet from the HCCC website. Assisted in the deployment of a new Citrix based lab. Assisted in the virtualization of all servers to a VMWare environment using vSphere and vConsole. Was also responsible for the deployment and maintenance of Sophos AV & Deepfreeze client installations.
- Ronny L. Bull - IT Consultant** **Glenfield, NY**  
○ *Owner & Principal Consultant* *January 2002–December 2010*  
*Reformed as Adirondack IT Solutions, LLC in 2011*  
Provided IT Consulting, networking solutions, enterprise VoIP solutions, server virtualization, video surveillance, web design, and application development services for businesses in Central and Northern NY.
- SUNY Institute of Technology** **Utica, NY**  
○ *Student Administrator - Computer Science Department Unix Network (DOGNET)* *August 2009–May 2012*  
Responsible for providing end user support to DOGNET users. Developed scripts using bash and ImageMagick for dynamic image re-sizing on the technical help docs provided by the Computer Science department website. Assisted in the maintenance of network computers, servers, and devices. Setup a Xen virtualization cluster for faculty and student use, as well as implemented a new virtualized VoIP laboratory.

○ **Nirvana Natural Spring Water**

**Forestport, NY**

*IT Manager*

*August 2006–August 2009*

Responsible for the administration and maintenance of the computer network infrastructure. Rebuilt the entire network infrastructure from the ground up upon my arrival. Implemented Gentoo Linux servers for the following functions; a custom scripted backup solution using bash, cron and rsync, a network video surveillance system using Zoneminder, a BIND DNS server for the company’s external web domains, multiple Apache Web servers for an intranet web site as well as external web sites, a MySQL Database Server for inventory control and truck tracking, an Asterisk VoiP Server used as an intercom solution in production environments, and an OpenVPN server for remote access. Implemented Windows Server 2003 servers for the following functions; Active Directory, Exchange 2003, IIS Server with Exchange Webmail and ActiveSync, DNS/WINS for internal Windows network name resolution, Remote Installation Services, and Terminal Services. Implemented an Endian Linux Firewall solution to provide a robust firewall with proxy services and intrusion detection (snort). Developed and maintained a company intranet website, as well as multiple websites for Nirvana and Nirvana Transport. Also provided end user support, and installed fiber, and copper runs as well as wireless solutions for laptop users and warehouse scanning.

○ **Herkimer County Community College**

**Herkimer, NY**

*Teacher’s Assistant*

*August 2005–May 2006*

Teacher’s assistant to Professor John Cook of HCCC’s Computer Network Technician program. Assisted in the deployment and maintenance of PCs, servers, and network devices in the department labs. Setup and deployed an Asterisk VolP server for classroom demonstration & labs. Prepped student labs for class use.

○ **Ira D. Conklin and Sons Inc.**

**Utica/Syracuse/Newburgh, NY**

*Information Systems Management Specialist*

*August 2002–August 2005*

Network Administrator for all sites. Responsible for the deployment and maintenance of all network devices, servers, PC’s, and laptops. Maintained a Windows NT active directory environment that was later migrated to a Windows Server 2003 mixed environment. Maintained a Windows NT Exchange mail server with IIS and webmail. Implemented a Cisco VPN Concentrator/Client VPN solution that connected each branch office to the main office in Newburgh as well as provided road warrior support for remote workers. Provided end user support to users in all three offices. Also served as a level 3 technician for C-Store chains all across New York State. Obtained the following industry certifications; Verifone Ruby POS systems installation and maintenance, Gilbarco/VeederRoot TLS Monitoring Systems installation and maintenance, Incon TLS Monitoring Systems installation and maintenance.

## Professional Accomplishment

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### Peer Reviewed Publications.....

*Note: \* indicates undergraduate co-author*

- **Bull, R.** & Matthews, J. Critical Analysis of Layer 2 Network Security in Virtualized Environments. *International Journal of Communication Networks and Distributed Systems*, Volume 17, No. 3. 2016.
- **Bull, R.**, Matthews, J., & Trumbull, K.\* VLAN Hopping, ARP Poisoning and Man-in-the-Middle Attacks in Virtualized Environments. *Defcon '24*, August 7th, 2016.
- Mihevc,J., **Bull, R.**, Merante, N., & Froberg, B. The Central New York Hackathon: A Case Study on the Collaborative Design and Implementation of a Regional Cyber Defense Event. *National Cybersecurity Institute Journal*, Volume 2, No. 2. October 15, 2015.

- Shipman, P.\*, **Bull, R.** Lab on a Stick. *SIGITE '15 Proceedings of the 16th Annual Conference on Information Technology Education*, 2015.
- **Bull, R.**, Matthews, J. Exploring Layer 2 Network Security in Virtualized Environments. *Defcon '23*, August 9th, 2015.
- **Bull, R.** Exploring Layer 2 Network Security in Virtualized Environments. *DerbyCon 4.0 - Family Rootz*, September 27th, 2014.
- **Bull, R.** Migrating a Voice Communications Laboratory to a Virtualized Environment. *SIGITE '13 Proceedings of the 14th annual ACM SIGITE conference on Information Technology education*, 2013.
- Hu, W., Hicks, A., Zhang, L., Dow, E., Soni, V., Jiang, H., **Bull, R.**, Matthews, J. A Quantitative Study of Virtual Machine Live Migration. *CAC '13 Proceedings of the 2013 ACM Cloud and Autonomic Computing Conference*, 2013.

#### Invited Talks.....

Note: \* indicates undergraduate co-author

- **Bull, R.**, Network Security: VLAN hopping, ARP Poisoning and Man-In-The-Middle Attacks in Virtualized Environments. *Utica College Nexus Seminar Series*. Utica, NY. November 10th, 2017.
- **Bull, R.**, Merante, N., Design and Implementation of the CNY Hackathon Competition Platform. *NSA Centers of Academic Excellence Northeast Regional Resource Center Meeting*. Boston, MA. October 20th, 2017.
- Merante, N., **Bull, R.**, Leading a “Black Team”: Systems Engineering for Regional Competitions. *NSA Centers of Academic Excellence Northeast Regional Resource Center Meeting*. Boston, MA. October 20th, 2017.
- **Bull, R.**, VLAN hopping, ARP Poisoning and Man-In-The-Middle Attacks in Virtualized Environments. *ANYCon 2017 - Albany, NY*. June 17th, 2017.
- Drzewiecki, S\*. Gudrian, A\*. **Bull, R.**, The Stuffer. *ANYCon 2017 - Albany, NY*. June 17th, 2017.
- **Bull, R.**, How your virtual machines can be hacked in a cloud environment. *HackCon#12 - Oslo, Norway*. Feb. 15th, 2017.
- **Bull, R.**, Penetration Testing - An Overview. *Fordham University at Lincoln Center - Invited Lecture*. May 29th, 2015.
- **Bull, R.** Exploring Layer 2 Network Security in Virtualized Environments - DHCP Attacks. *B-Sides Roc '15*, April 25th, 2015.
- **Bull, R.**, Merante, N., Vandermaas, J.\* Virtualized Lab Environments for Cost-Effective Hands-On Learning. *SUNY ITEC Wizards '14*, November 18th, 2014.

## Student Research Presentations

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Note: \* indicates undergraduate student presenter

- Luce, S\*. Trumbull, K\*., Greenhouse Sensing and Automation. *Utica College Student Research Day*, April 19th, 2017. **Award: Best Poster**
- Drzewiecki, S\*. Gudrian, A\*., The Stuffer. *Utica College Student Research Day*, April 19th, 2017. **Award: Best Presentation**
- Trumbull, K\*., The Affects of ARP Poisoning Man-in-the-Middle Attacks in Virtualized Networks. *Utica College Student Research Day*, April 27th, 2016.

## Grants

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- **Utica College**  
*Faculty Professional Travel Fund,* Summer 2017
- **Utica College**  
*Faculty Professional Travel Fund,* Spring 2017
- **Utica College**  
*Faculty Travel With Students Fund,* Fall 2016
- **Utica College**  
*Faculty Professional Travel Fund,* Fall 2016
- **Utica College**  
*Faculty Leadership Fund,* Fall 2016
- **Utica College**  
*Faculty Leadership Fund,* Fall 2015
- **Utica College**  
*Faculty Professional Travel Fund,* Fall 2015

## Service

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- **Central New York Hackathon** **Utica, NY**  
*Co-Founder, Organizer, & Member of the Board of Directors* April 2013–Present  
A regional intercollegiate offensive/defensive cybersecurity competition held at the end of each Fall and Spring semester designed to improve the state of cybersecurity education and more closely align academia with Central New York industry partners. Problem scenarios either task each team with penetrating a target to take control or defending their systems from attackers to maintain control. Competition design, experiences, and results recently accepted for publication in the National Cybersecurity Institute Journal.
- **Mohawk Valley Community College** **Utica, NY**  
*Computer Science / Cybersecurity Advisory Board Member* August 2013–Present

I have been serving as an advisory board member for the Computer Science and Cybersecurity programs at Mohawk Valley Community College since 2013.

**Herkimer College**

**Herkimer, NY**

- *Computer Network Technician Program Reviewer*

*August 2016*

I was asked to serve as a program reviewer for the Computer Network Technician A.A.S. degree program at Herkimer College in the Fall of 2016 in order to assist them in fulfilling their five year program review requirements.