

AUBURN UNIVERSITY
Standard Biographical Data
for Submission with Promotion/Tenure Review

Name John A. Hamilton, Jr.

Department Computer Science & Software Engineering College Engineering

Present Rank Associate Professor Years Completed in Present Rank 6

Years in Faculty Service at AU 6 Years in Faculty Service Elsewhere 4 (after Ph.D.)

Type of Current Appointment: Tenured Non-Tenured

Pay Basis: 9mo. 12 mo. Graduate Faculty Status: Member None

Date Awarded: June 2006

Education: Institution List most recent first.	Degree	Major	Date Awarded
<u>Texas A&M University</u>	<u>Ph.D.</u>	<u>Computer Science</u>	<u>Aug. 1996</u>
<u>Vanderbilt University</u>	<u>M.S.</u>	<u>Computer Science</u>	<u>May 1990</u>
<u>University of So. California</u>	<u>M.S.S.M.</u>	<u>Sys. Mngt. (MIS)</u>	<u>Aug. 1987</u>

Professional Experience: Institution Include AU Experience. List most recent first.	Rank	Period of Appointment
<u>Auburn University</u>	<u>Associate Professor</u>	<u>Aug. 2001 - Present</u>
<u>US Naval Postgraduate School</u>	<u>Visiting Associate Prof.</u>	<u>Aug. 99 - Aug. 01</u>
<u>Space & Naval Warfare Systems Command</u>	<u>Joint Forces P.O. Director</u>	<u>Sep. 98 - Aug. 01</u>
<u>US Military Academy, West Point</u>	<u>Assistant Professor</u>	<u>Jul. 96 - Sep. 98</u>
<u>Ada Joint Program Office</u>	<u>Director</u>	<u>Jan. 97 - Jul. 97</u>

2. Time and Effort Allocation

Academic Term	Teaching	Research	Service
AY 2006-2007	64.5%	27%	8.5%
Summer 2006	0%	100% (NSF) (NSA) (UAV)	0%
AY 2005-2006	38%	55%	7%
Summer 2005	0%	100% (UAV)	0%
AY 2004-2005	38%	55%	7%
Summer 2004	0%	100% (MDA)	0%
AY 2003-2004	30%	65%	5%
Summer 2003	0%	100% (MDA)	0%
AY 2002-2003	30%	65%	5%
Summer 2002	0%	100% (MDA)	0%
AY 2001-2002	30%	65%	5%

3. Honors and Awards

- a. 2007 Best Paper Award, Richardson*, K. P., Hamilton, J.A., Jr. (30%), Carlisle, M.C., *A Performance Analysis of the SPRiNG Protocol Through Simulation*, 2007 Simulation Software Security Symposium, Spring Simulation Multiconference (SCS-ACM), Norfolk, Va., 25 – 29 March, 2007.
- b. 2007 Elected Senior Member of the ACM
- c. 2006 named to Who's Who in Engineering Education, American Society of Engineering Education
- d. 2006 Curriculum Award, Committee on National Security Systems and the National Security Agency, "Senior System Managers" (for information assurance) CNSS 4012
- e. 2006 Curriculum Award, Committee on National Security Systems and the National Security Agency, "System Administrators" (for information assurance) CNSS 4013, beginning, intermediate and advanced levels
- f. Responsible for Auburn's efforts to be competitively re-designated as a Center of Academic Excellence by the National Security Agency, 2006
- g. 2005 Letter of Appreciation, Colonel M.S. Bohn, USMC, Director, US Marine Corps Operational Test and Evaluation Activity
- h. 2004 Outstanding CSSE Faculty
- i. 2004 Auburn Engineering Senior Research Award for Excellence
- j. 2004 Letter of Appreciation, Ms. Tara Ragan, Director of Software Engineering, Space & Missile Defense Command
- k. Responsible for Auburn's efforts to be competitively designated as a Center of Academic Excellence by the National Security Agency, 2003
- l. 2003 Elected Senior Member of the IEEE
- m. 2002 Curriculum Award, Committee on National Security Systems and the National Security Agency, "Training Standard for Information Systems Security Professionals" NSTISSI 4011
- n. 2002 Curriculum Award, Committee on National Security Systems and the National Security Agency, "Designated Approving Authority" (for information security) NSTISSI 4012

- o. Auburn University Alumni Council, College of Engineering, \$20,000.00 Fellowship, 2002

4. Scholarly Contributions

- a. Teaching
 - 1) Courses Taught

Term	Course (% taught)	Credit	Enrollment
Spring 2007	COMP 7970 Computer Forensics (100%) (1 st time taught)	3	15
	CSCI 0421 Information Assurance Management taught at Tuskegee University as part of NSF Grant (100%) (1 st time taught)	3	4
	CSCI 4911 Information Assurance Management taught at ASU as part of NSF Grant (100%) (1 st time taught)	3	24
Fall 2006	COMP 5370/6370 Computer and Network Security (100%)	3 / 3	11 / 13
	COMP 7700/7706 Software Architecture (100%)	3 / 3	8 / 4
Spring 2006	COMP 7700/7706 Software Architecture (100%)	3 / 3	6 / 3
	COMP 7370 Advanced Computer and Network Security (100%)	3	3
	CS 490 (Alabama State University) Special Topics in Security (100%)	3	11
Fall 2005	COMP 5370/6370 Computer and Network Security (100%)	3 / 3	13 / 10
	COMP 7700/7706 Software Architecture (100%)	3 / 3	11 / 7
Spring 2005	COMP 5370/6370 Computer and Network Security (100%)	3 / 3	15 / 10
	COMP 7700/7706 Software Architecture (100%)	3 / 3	11 / 8
Fall 2004	COMP 4970 Network Quality Assurance and Simulation (100%)	3	2
	COMP 7970 Network Quality Assurance / COMP 8700 Simulation of Computer Networks (100%)	3 / 3	3 / 6
Spring 2004	COMP 8700 Network Simulation (100%)	3	5
	COMP 8970 Adv. Comp. Security (100%)	3	6
Fall	COMP 6370 Computer Security (100%)	3	26

2003	COMP 7700 Software Architecture (100%)	3	17
Spring 2003	COMP 8700 Network Simulation (100%)	3	10
2003	COMP 4970 Network Simulation (100%)	3	3
Fall 2002	COMP 6370 Computer Security (100%)	3	22
Spring 2002	COMP 8700 Network Simulation (100%)	3	9
Fall 2001	COMP 3500 Operating Systems (100%)	3	51

2) Graduate Students: Completed Work

a) Major Professor

Degree	Name	Completion
Ph.D.	Xuan Yu	Spring 2007 Dissertation: A Defense System on DDOS Attacks in Mobile Ad Hoc Networks
M.Swe.	Kevin Richardson	Spring 2007 Project: Safely Redistributing Untrusted Code using .NET
M.Swe.	Alan Hunt	Fall 2005 Project: Synclynk Connectivity
M.Swe.	Adam Hathcock	Fall 2005 Project: Implementation of Secure Overlay Services in Java
M.S.	Brian Eoff	Fall 2005 Thesis: Using Genetic Programming to Quantify the Effectiveness of Similar User Cluster History as a Personalized Search Metric
Ph.D.	Jay-Evan Tevis	Summer 2005 Dissertation: Automatic Detection of Software Security Vulnerabilities in Executable Program Files
M.Swe.	Pamela Sanders	Fall 2004 Project: Computer-Assisted Therapy: A Personal Digital Assistant Application for Generalized Anxiety Disorder
M.S.	Wade Chatam	Summer 2004 Thesis: Strategic Firewall Placement
M.Swe.	Van Norris	Spring 2004 Project: Open Source Parameter Search
M.S.	Eric Imsand	Fall 2003 Thesis: Using Genetic Algorithms to Aid in a Vulnerability Analysis of National Missile

		Defense Simulation Software
M.S.	Mark Peters	Summer 2003 Thesis: Vulnerability of Wireless Position Location Systems to Spoofing

b) Committee Member

Degree	Name	Completion
M.Swe.	Serhat Tekinalp	Spring 2007
M.S.	Win Britt	Spring 2007
M.S.	Avdhoot Saple	Spring 2006
M.S.	Sean Cook	Fall 2006
Ph.D.	Kenneth Knapp	Summer 2005 (Outside Reader)
M.S.	Rahul Shah	Summer 2005
M.S.	Shuo Wang	Summer 2005
M.Swe.	Vince Cross	Spring 2005
M.Swe.	Hugo Troche	Spring 2004
M.Swe.	Han Chen	Spring 2004
M.Swe.	Ye Wu	Spring 2004
M.S.	Yawen Dye	Fall 2002
M.Swe.	Michael Stokes	Fall 2002
Ph.D.	Vince Cross	In Progress
Ph.D.	Yawen Dye	In Progress
M.S.	Lelan Houts	In Progress
Ph.D.	Ambika Seenivasagam	In Progress
Ph.D.	Aaron Garrett	In Progress
Ph.D.	Serhat Tekinalp	In Progress
M.S.	Chiao Ching Huang	In Progress
Ph.D.	Sean Cook	In Progress
Ph.D.	Win Britt	In Progress

3) Graduate Students: Serving as Major Professor

Degree	Name	Completion
Ph.D.	Robert Leithiser	Summer 2008: passed qualifier
Ph.D.	John O'Farrell	Summer 2008: passed qualifier
Ph.D.	Suhair Amer	Summer 2007: passed qualifier
Ph.D.	Eric Imsand	Summer 2007: passed qualifier
Ph.D.	Xuan Yu	Fall 2006: passed qualifier
Ph.D.	Stephen Torri	Summer 2008: NSF Fellowship/GRA
Ph.D.	I. Mkpong-Ruffin	Fall 2007: passed qualifier
M.Swe.	Mark Kuhr	Spring 2008: NSA Scholarship/GRA
M.Swe.	Jonathan MacDonald	Spring 2008: NSA Scholarship/GRA
M.Swe.	Harold Fletcher	Spring 2007

M.Swe.	Chase Taylor	Spring 2008: NSF Fellowship/GRA
M.Swe.	Gerry Hicks	Summer 2008
M.S.	Stephen Hamilton	Spring 2008: Army Fellowship/GRA
M.Swe.	Derek Sanders	Summer 2008 /GRA

4) Courses and Curricula Developed

At Auburn University:

1. COMP 3500 *Operating Systems*. Renovated Course. Objective: Provide upper division undergraduates with a thorough understanding of operating systems. Lecture notes, exams, projects developed and posted on the web.
2. COMP 5340 (first taught as COMP 4970) *Network Quality Assurance and Simulation*. New Course. Objective: Provide an undergraduate learning experience in designing network simulations. Lecture notes, exams, projects developed and posted on the web. Paperwork completed to add course (COMP 5340) to university course catalog.
3. COMP 5370/6370 *Computer and Network Security*. New Course. Objective: Practical experience in the areas of software and network security. Lecture notes, exams, projects developed and posted on the web. Paperwork completed to add course (COMP 5370/6370) to university course catalog.
4. COMP 7370 *Advanced Computer and Network Security*. New Course. Objective: Graduate research in the areas of software and network security. Lecture notes, exams, projects developed and posted on the web. Paperwork completed to add course (COMP 7370) to university course catalog.
5. COMP 7440 *Simulation of Computer Networks*. New Course. Objective: Graduate research experience in designing network simulations. Lecture notes, exams, projects developed and posted on the web. Paperwork completed to add course (COMP 7440) to university course catalog.
6. COMP 7700 *Software Architecture* (COMP 7706 distance learning version). Course listed in the catalog, but not previously offered. Objective: Gain practical experience in several software architecture methodologies, processes and description languages. Gain familiarity in current research trends in software architecture. Learn the capabilities and limitations of current software architecture techniques.
7. COMP 7970 *Computer Forensics* (to be listed in the catalog as: COMP5350/6350). Objective: A course open to non-CS major seniors and graduate students focusing on the technical, analytical and law enforcement issues associated with conducting forensic analysis of computer systems and

networks.

At United States Military Academy:

CS 403 *Advanced Programming in Ada*. Renovated Course. Objective: Implementation of object-oriented designs developed to complement the two-semester capstone software engineering design sequence. Lecture notes, exams, projects developed and posted on the web.

CS 393 *Database Systems*. Renovated Course. Objective: Implementation of web-based database front-ends and design of database back-ends. . Lecture notes, exams, projects developed and posted on the web.

5) Grants Received Related to Teaching

- \$250,000.00 Grant from the US Army Office of the Director, Information Systems for Command, Control, Communications and Computers (DISC4) to incorporate network simulation into the USMA Electrical Engineering and Computer Science curriculum. (1998)
- \$50,000.00 Research Grant from the Defense Information Systems Agency for Faculty Development. (1997)

6) Publications Pertaining to Teaching

See section 4.B.2

7) Other Contributions to Teaching

- Instructor/mentor 1997 Faculty Development Workshop, US Military Academy, West Point
- Instructor, Ada Refresher Course, Naval Postgraduate School 2000

8) Teaching Philosophy

Context: I began my teaching career teaching professional computer science and software engineering courses at the U.S. Army Computer Science School from 1990 - 1993. While at the Computer Science School, the U.S. Military Academy, West Point, selected me to join their faculty and after completing my doctorate in 1996, I taught undergraduate courses in the Department of Electrical Engineering and Computer Science. From the West Point Faculty, I was selected for an operational assignment at the Space and Naval Warfare Systems Command and concurrently appointed as a Visiting Associate Professor at the Naval Postgraduate School.

The engineering disciplines are unforgiving and must be taught to the highest standards. However, the men and women who teach engineers must assist students to achieve those high standards. Diversity is a critical component of engineering education. This goes far

beyond the very important issues of fairness and opportunity. The United States needs more engineers. A major impact of the critical lack of women in engineering, for example, is that engineering schools are missing half of the available talent pool. Given the technical challenges of quality engineering education, every potential barrier to students must be aggressively removed.

I enjoy teaching security, software architecture, computer networks, software engineering, modeling and simulation and operating systems. Therefore my teaching interests are directly applicable to my research areas. I believe that teaching and research are highly interrelated. Putting research into the classroom excites students and ensures that your classroom material is fresh, relevant, and cutting edge. Excellence in the classroom inspires students towards research careers.

I believe strongly that engineering education must have a healthy balance of theory and practice. Appropriately constructed classroom assignments will have a strong design and implementation component that illustrates the underlying theory. For graduate and upper division undergraduates, this type of course design offers the students early publication opportunities.

Philosophically, I believe that every student should have a chance to make an “A” in every course. I absolutely reject the concept of grade curving. A professor should outline the required tasks and grading standards on the first day of class and adhere to those standards. Students should then be graded based on their individual performances measured against those standards.

Practicing engineers do not work by rote memorization; rather, they are problem solvers who use references when needed. Consequently, I believe engineering examinations should be open book and open note exams that evaluate a student’s problem solving ability. Engineers must be more than just technically competent. They must be able to effectively communicate their ideas and designs. Therefore I believe that every course requires a significant writing requirement.

Finally, information technology is the domain of computer scientists and software engineers. It is important that those who teach IT be able to effectively use IT in the delivery of instruction. I use web-based support for all of my classes. This not only facilitates resident instruction but also supports outreach.

Students are why we have universities. There should never be a question of teaching versus research. Excellence in teaching is the prerequisite of a strong research program.

My self-evaluation is that I am teaching to a high standard in accordance with the teaching philosophy outlined above. This is evidenced by my course critiques. More importantly, a review of my on-line classes will show that my class implementation is consistent with my stated teaching philosophy.

B. Research/Creative Work

NB: Student co-authors are noted with an asterisk.

1) Books

1. Editors: Hamilton, J.A., Jr., (70%), MacDonald, R., Chinni, M.J., Proceedings of the 2006 Spring Simulation Multiconference, vol. 1 ISBN 1-56555-304-7, vol. 2 ISBN 1-56555-303-9.
2. Hamilton, J.A., Jr., (80%) et al., *Modeling Command and Control Interoperability: Cutting the Gordian Knot*, SCS Press, San Diego, Calif. 2004. ISBN: 1-56555-281-4.
3. Hamilton, J.A., Jr., (60%) Nash, D.A., Pooch, U.W., *Distributed Simulation*, CRC Press, Boca Raton, Fla., 1997. ISBN: 0-8493-2590-0.

2) Article-length Publications

Refereed Journal Publications Submitted (Not yet accepted)

1. Richardson*, K., Hamilton, J.A., Jr., (10%), Dozier, G., Carlisle, M., "Using Dynamic Sizes in a Class of Estimation of Distribution Algorithms," submitted to: *Simulation: Transactions of The Society for Modeling and Simulation International*.
2. Amer*, S. H., Hamilton, J.A., Jr., (20%), "DSR and TORA in Fixed and Mobile Wireless Networks," submitted to: *The Journal of Simulation*.
3. Amer*, S. H., Hamilton, J.A., Jr., (20%), "Intrusion Detection System Taxonomy-Reviewed and Revised," submitted to: *Information Management & Computer Security*.
4. Amer*, S. H., Hamilton, J.A., Jr., (20%), "Approaches Applied to Implement Intrusion Detection Systems – Review," submitted to: *International Journal of Network Security*.
5. Torri*, S., Sanders*, D., Evans, G. and Hamilton, J.A., Jr., (25%), "Java Obfuscation," submitted to: *Crosstalk, the Journal of Defense Software Engineering* (currently pending Missile Defense Agency clearance.)

Refereed Journal Publications

1. Mkpong-Ruffin*, I.; Hamilton, J.A., Jr., (20%), Carlisle, M., "The New Java Security Architecture," *Crosstalk, the Journal of Defense Software Engineering*, Hill AFB, Utah, July, 2006,

- <http://www.stsc.hill.af.mil/CrossTalk/2006/07/0607RuffinHamiltonCarlisle.html>.
2. Hamilton, J.A., Jr. (100%) *A Conceptual Model for Interoperable Command and Control Acquisition*, Journal of Defense Modeling and Simulation, vol. 3, no. 2, April 2006, pp 125 – 138.
 3. Hamilton, J.A., Jr. (100%) DODAF – Based Information Assurance Architectures, Crosstalk. Crosstalk, The Journal of Defense Software Engineering, vol. 19, No. 2, February 2006, pp 4 – 7.
 4. Imsand*, E.S., Evans, G., Dozier, G., Hamilton, J.A., Jr., (30%) *Using Genetic Algorithms to Aid in a Vulnerability Analysis of National Missile Defense Simulation Software*, Journal of Defense Modeling and Simulation, vol.1, no.4, October 2004, pp 215 – 224.
 5. Hamilton, J.A., Jr., (75%) Greaney, K.J., Evans, G., *Defining a Process for Software Vulnerability Assessments*, Crosstalk, The Journal of Defense Software Engineering, vol. 16, No. 11, November 2003, pp 22 – 25.
 6. Hamilton, J.A., Jr. (45%), Rosen, J.D. and Summers, P.A., *An Interoperability Roadmap for C4ISR Legacy Systems*, Acquisition Review Quarterly, vol. 28, Winter 2002, pp 17 – 31.
 7. Bryan, J.D., Deal, J.C., Hamilton, J.A., Jr. (40%), *Army Enterprise XXI*, Army RD&A, September-October 1998, pp 18 - 20.
 8. Hamilton, J.A., Jr. (100%), *Why Programming Languages Matter*, Crosstalk, The Journal of Defense Software Engineering, vol. 10, no. 12, December 1997, pp 4 - 6.
 9. Arnette, J.P. and Hamilton, J.A., Jr. (75%), *Open Architectures for Diverse Missions: Opening Windows for the Department of Defense*, Crosstalk, The Journal of Defense Software Engineering, vol. 10, no. 11, November 1997, pp 3 - 7.
 10. Hamilton, J.A., Jr., (50%) Ratterree, G.R., Brutch, P.B., Pooch, U.W., *Public Domain Tools for Modeling and Simulating Computer Networks*, Simulation, vol. 67, No. 3, September 1996, pp 161 - 169.
 11. Hamilton, J.A., Jr., (60%) Cook, D.A., Pooch, U.W., *A Software Engineering Perspective on Distributed Simulation*, Crosstalk, The Journal of Defense Software Engineering, vol. 9, no. 2, February 1996, pp 13 - 15.
 12. Hamilton, J.A., Jr., (60%) Ratterree, G.R., Pooch, U.W., *A Toolkit for Monitoring the Utilization and Performance of Computer Networks*, Simulation, vol. 64, No.

5, May 1995, pp 297 - 301.

13. Hamilton, J.A., Jr., (70%) et. al. *Getting Inside Your Local Area Network: Tools, Techniques and Resources*, Crosstalk, The Journal of Defense Software Engineering, vol. 8, no. 1, January 1995, pp 19 - 23.

Refereed Conference Submitted (Not yet accepted)

Paper Submitted.

Refereed Conference Papers

1. Britt*, W., Gopaldaswamy*, S., Hamilton, J.A., Jr. (15%), Dozier, G., Chang, K., *Computer Defense Using Artificial Intelligence*, 2007 Simulation Software Security Symposium, Spring Simulation Multiconference (SCS-ACM), Norfolk, Va., 25 – 29 March, 2007.
2. Richardson*, K. P., Hamilton, J.A., Jr. (30%), Carlisle, M.C., *A Performance Analysis of the SPRiNG Protocol Through Simulation*, 2007 Simulation Software Security Symposium, Spring Simulation Multiconference (SCS-ACM), Norfolk, Va., 25 – 29 March, 2007, *Best Paper Award*.
3. Tevis*, J.E., Hamilton, J.A., Jr. (30%), *A Security-Centric Ring-Based Software Architecture*, 2007 DODAF Architecture Framework Modeling, Spring Simulation Multiconference (SCS-ACM), Norfolk, Va., 25 – 29 March, 2007.
4. Amer*, Suhair H., Hamilton, J.A., Jr. (50%), *Simulation Wireless Routing in a Healthcare Environment*, 2007 International Conference on Health Sciences Simulation, San Diego, Calif., 14 – 18 January 2007, pp 65 – 72.
5. Carlisle, M.C., Hamilton, J.A., Jr. (30%), *Integrating Ada 2005 into Visual Studio 2005*, ACM SIGAda 2006, Albuquerque, NM, 12 – 16 November 2006.
6. Carlisle, M.C., Humphries, J.W., Hamilton, J.A., Jr. (30%), *Safely Redistributing Untrusted Code using .NET*, 7th IEEE Workshop on Information Assurance, US Military Academy, West Point, N.Y., 21 – 23 June 2006.
7. Tevis*, J.E. and Hamilton, J.A., Jr. (30%), *Static Analysis of Anomalies and Security Vulnerabilities in Executable Files*, 43rd Annual ACM Southeast Conference, Kennesaw, Ga., 10 – 12 March 2006.
8. Constance*, S., Umphress, D.A., Chapman, R.O., Hamilton, J.A., Jr. (15%), *Modeling Wireless Communication of UAV Ground Station Components*, 2005 Huntsville Simulation Conference, Huntsville, Ala. 26 – 27 Oct 2005.
9. Hunt*, A.A., Hamilton, J.A., Jr. (30%), *An Evaluation of Wireless Security Issues for UAV Ground System Components*, 2005 Huntsville Simulation Conference,

Huntsville, Ala. 26 – 27 Oct 2005.

10. Amer*, Suhair H., Hamilton, J.A., Jr. (50%) *Source Initiated On-Demand Routing Protocols Performance Evaluation Using OPNET Package*, 17th European Simulation Symposium, Marseille, France, 20 – 22 October 2005.
11. Hamilton, J.A., Jr. (100%) *Network Simulation for Executable Architectures*, International Workshop on Modeling & Applied Simulation, Berggeggi, Italy, 16 – 18 October 2005.
12. Fletcher*, H.W., Richardson*, K., Carlisle, M.C., Hamilton, J.A., Jr. (25%), *Simulation Experimentation with Secure Overlay Services*, Summer Computer Simulation Conference, Philadelphia, Pa., 24 – 28 July 2005.
13. Amer*, Suhair H., Humphries, J.W., Hamilton, J.A., Jr. (30%) *Survey: Security in the System Development Life Cycle*, 6th IEEE Workshop on Information Assurance, US Military Academy, West Point, N.Y., 15 – 17 June 2005.
14. Box*, J.D., Hathcock*, A. Hunt*, A. Humphries. J.W., and Hamilton, J.A., Jr. (25%), *Simulation Strategic Firewall Placement*, SCS Spring Simulation Multiconference, San Diego, CA, 3 – 7 April 2005.
15. Fletcher*, H.W., Richardson*, K., Carlisle, M.C., Hamilton, J.A., Jr. (25%), *Evaluating Secure Overlay Services Through OPNET Simulation*, SCS Spring Simulation Multiconference, San Diego, CA, 3 – 7 April 2005.
16. Eoff*, B., Hunt*, A., Evans, G. and Hamilton, J.A., Jr. (25%), *The Theory and Practice of Vulnerability Analysis of Simulation Software*, Huntsville Simulation Conference, Huntsville, AL, 20 – 21 Oct. 2004.
17. Hamilton, J.A., Jr., (80%) Greaney, K.J., Evans, G., *Simulation Software Vulnerability Assessment for Coalition Interoperability*, European Simulation Interoperability Workshop, Edinburgh, Scotland, June 28 – July 1 2004.
18. Sachitano*, A., Chapman, R.O., Hamilton, J.A., Jr. (40%), *Security in Software Architecture: A Case Study*, IEEE Workshop on Information Assurance, US Military Academy, West Point, N.Y., June 2004.
19. Tevis*, J.E., Hamilton, J.A., Jr., (15%) *Methods For The Prevention, Detection And Removal of Software Security Vulnerabilities*, 42nd Annual ACM Southeast Conference, Huntsville, Ala., April 2-3, 2004.
20. Calagaz*, L.J., Chatam*, J.W., Eoff*, B., Hamilton, J.A., Jr. (10%), *On the Current State of Transport Layer Protocols in Mobile Ad hoc Networks*, 42nd Annual ACM Southeast Conference, Huntsville, Ala., April 2-3, 2004.

21. Hamilton, J.A., Jr., (75%) Yilmaz, L., *Modeling Bilateral Interoperability Through Command and Control Architecture*, Military, Government and Aerospace Simulation, ASTC, Arlington, Va. 18 – 22 April 2004.
22. Chatam*, J. W., Rice*, J. and Hamilton, J.A., Jr. (20%), *Using Simulation to Analyze Denial of Service Attacks*, Applied Telecommunications Symposium, ASTC, Arlington, Va. 18 – 22 April 2004.
23. Yilmaz, L., Hamilton, J.A., Jr. (15%), *Modular Compositional Validation of Protocol Conflicts for Network Interoperability*, Design, Analysis, and Simulation of Distributed Systems, ASTC, Arlington, Va. 18 – 22 April 2004.
24. Norris*, V.A., Hamilton, J.A., Jr., (10%) *Simulation of an Infrastructure Wireless Local Area Network*, 2003 Huntsville Simulation Conference, Huntsville, Ala. 28 – 31 Oct 2003.
25. Hamilton, J.A., Jr. (100%), *Developing Secure Simulation Software For Multinational Use*, 2003 Fall Simulation Interoperability Workshop, Orlando, Fla., 14 – 19 Sept 2003.
26. Hamilton, J.A., Jr. (75%), Catania, G.A., *A Practical Application of Enterprise Architecture for Interoperability*, 2003 International Conference on Information Systems Engineering, SCS Summer Simulation Multionference, Montreal, pp 183 – 188, 20 – 24 July 2003.
27. Hamilton, J.A., Jr. (100%), *Security Vulnerabilities in Command and Control Interoperability*, Proceedings of the 2003 IEEE Workshop on Information Assurance, pp 164 – 169, US Military Academy, West Point, N.Y., 18 – 20 June 2003.
28. Imsand*, E.S., Sachitano*, A.C., Hamilton, J.A., Jr. (15%), *Reverse Engineering Vulnerabilities in Simulation Software*, Advanced Simulation Technologies Conference, Orlando Fla., 30 Mar. – 3 Apr., pp 99-104, 2003.
29. Peters*, M.P., Chatam*, W., Hamilton, J.A., Jr., (20%) *Simulation Exploitation Using Open Source Information*, Advanced Simulation Technologies Conference, Orlando Fla., pp 105-110, 30 Mar. – 3 Apr. 2003.
30. Eoff*, B., Hamilton, J.A., Jr., (15%) *Vulnerability of Simulation Executables*, Advanced Simulation Technologies Conference, Orlando Fla., pp, 111-115, 30 Mar. – 3 Apr. 2003.
31. Hamilton, J.A., Jr. (100%), *Simulation Vulnerability Analysis*, 2002 Huntsville Simulation Conference, Huntsville, Ala., 8 – 10 Oct. 2002.
32. Hamilton, J.A., Jr. (80%), Melear, J., Endicott, G., *C2 Interoperability:*

- Simulation, Architecture and Information Security*, 7th International Command and Control Research and Technology Symposium, Quebec City, QC, Canada, 16 – 20 Sep 2002.
33. Hamilton, J.A., Jr. (100%), *Simulation to Support Security Issues Relating to Interoperability*, 2002 Summer Computer Simulation Conference, San Diego, Calif., 14 – 19 July, 2002.
 34. Umphress, D.A. and Hamilton, J.A., Jr., (15%), *Software Process as a Foundation for Teaching, Learning, and Accrediting*, Computer and Software Engineering Education and Training Conference, Cincinnati, OH, Feb. 25 – 27 February 2002.
 35. Hamilton, J.A., Jr., (100%) *Modeling a Concurrent Theory of Combat: A Parallel Processing Approach*, Advanced Simulation Technologies Conference, San Diego, CA, pp 107 – 113, April 2002.
 36. Hamilton, J.A., Jr., (70%) Ruocco, A.S. and Umphress, D.A. *Problem Solving in the Senior CS Capstone Sequence: Putting Engineering into Software Engineering*, American Society of Engineering Educators (ASEE) Southeast Conference, Gainesville, FL, 7 – 9 April 2002.
 37. Hamilton, J.A., Jr., (70%), Sanders, P., Melear, J.M. and Endicott, G., *C2 Interoperability, A Force Multiplier for Joint/ Combined Operations and Homeland Security*, Command and Control Research Technology Symposium, Naval Postgraduate School, Monterey, Calif., 11 – 13 June 2002.
 38. Hamilton, J.A., Jr., (100%) *Simulation to Support Security Issues Related to System Interoperability*, 2002 Summer Computer Simulation Conference, San Diego, Calif., July 14 – 18 2002.
 39. Hamilton, J.A., Jr., (60%) Murtagh, J.L., *Extending Interoperability Via Software Architecture*, 2000 Command and Control Research and Technology Symposium, June 26-28, 2000, Monterey, CA.
 40. Murtagh*, J.L., Hamilton, J.A., Jr. (30%), *Teaching a Real-World Software Design Approach Within an Academic Environment*, 2000 American Society for Engineering Education Annual Conference, June 18 - 21, 2000, Saint Louis, Mo.
 41. Murtagh*, J.L., Hamilton, J.A., Jr. (30%), *Using Modeling to Explain Parallel Programming Constructs*, 2000 Advanced Simulation Technologies Conference, Washington, D.C., April 16 - 20, 2000, pp 261 - 264.
 42. Hamilton, J.A., Jr. (70%), Deal, J.C., Grobmeier, J.R., *Network Modeling and Simulation with Mixed Traffic Data Sources*, Conference on Communication Networks and Distributed Systems Modeling and Simulation, San Diego, Ca., 23

- 27 Jan., 2000, pp 99 - 104.

43. Hamilton, J.A., Jr. (60%), Murtagh*, J.M., Deal, J.C., *A Basis for Joint Interoperability*, Command and Control Research and Technology Symposium, Naval War College, Newport, R.I., 29 June - 1 July, 1999, pp 1067 - 1076.
44. Hamilton, J.A., Jr. (70%), Murtagh*, J.M., Deal, J.C., *Simulation-Based Requirements Engineering for Army Enterprise XXI*, Advanced Simulation Technologies Conference Proceedings, San Diego, Calif., 11 - 15 April, 1999, pp 11 - 16.
45. Hamilton, J.A., Jr. (75%), Ransbottom, J.S., Davis, N.D., *An Integrated Approach to Network Simulation*, Advanced Simulation Technologies Conference Proceedings, San Diego, Calif., 11 - 15 April, 1999, pp 103 - 108.
46. Murtagh*, J.L., Hamilton, J.A., Jr. (50%), *A Comparison of Ada and Pascal in an Introductory Computer Science Course*, SIGAda '98 Proceedings, Nov 8 - 12, Washington, D.C., pp 75 - 80.
47. Hamilton, J.A., Jr. (65%), Ruocco, A.S, *Implementation Issues for CS Majors and Non-Majors in a Senior CS Capstone Sequence*, Frontiers in Education '98, Nov 4 - 7, 1998, Tucson, Ariz., pp 1012 - 1015.
48. Sobiesk, E., Hamilton, J.A. (20%), Jr., Marin, J.A., Brown D.E., Gini, M., *Tracking Multiple Objects in Terrain*, 1998 IEEE Conference on Systems, Man, and Cybernetics, Oct 11 - 14, La Jolla, Calif., pp 2842-2847.
49. Hamilton, J.A., Jr. (100%), *Achieving HLA Compliance VIA the Joint Technical Architecture - Army*, Summer Computer Simulation Conference, July 19 - 22, 1998, Reno, Nev., pp 509 - 513.
50. Hamilton, J.A., Jr. (75%), Lane, W.D. *Network Simulation: Bridging CS and EE Programs*, Proceedings OPNETWORK '98, May 25 - 30, 1997, Washington, D.C. (Electronic Proceedings: contact <http://www.mil3.com>.)
51. Hamilton, J.A., Jr.,(100%) *Software Interoperability and Distributed Simulation*, 1998 Advanced Simulation Technologies Conference April 5 - 9, 1998, Boston, Mass., pp 151 - 156.
52. Hamilton, J.A., Jr. (70%), Sobiesk, E., Deal, J.C., *Multilevel Simulation of Force XXI Fire Support Operations*, (invited) 1997 IEEE International Conference on Systems, Man and Cybernetics, Oct. 12 - 15, 1997, Orlando, Fla., pp 2601 - 2606.
53. Hamilton, J.A., Jr. (100%), *Enabling Technologies for a Global Combat Support System*, 1997 Summer Computer Simulation Conference, July 13 - 17, 1997,

- Arlington, Va., pp 771 - 775.
54. Deal, J.C., Hamilton, J.A., Jr. (25%), Caudle, J., *Unknown Lands and Uncharted Waters, The Army Enterprise Architecture, 3rd International Symposium on Command and Control Research and Technology*, June 17 - 20, 1997, National Defense University, Fort McNair, Washington, D.C., pp 426 - 449.
 55. Hamilton, J.A., Jr. (100%), *Representing Network Traffic with Mixed Resolution Simulation, Proceedings OPNETWORK '97*, May 28 - 30, 1997, Washington, D.C., pp 588 - 592.
 56. Hamilton, J.A., Jr. (70%), Marti, W.F., Pooch, U.W., *Multilevel Multiresolution Simulation of Local Area Networks, Ninth Annual Software Technology Conference*, April 27 - May 2, 1997, Salt Lake City, Utah.
 57. Hamilton, J.A., Jr. (70%), Deal, J.C., Jansen, B.J., *Tactical Network Simulation in the US Army, 1997 Simulation Multiconference Proceedings*, April 6 - 10, 1997, Atlanta, Ga., pp 51 - 55.
 58. Jansen, B.J., Hamilton, J.A., Jr. (30%), Pooch, U.W. *Modeling & Simulating an Army Information Support Structure, 1997 Simulation Multiconference Proceedings*, April 6 - 10, 1997, Atlanta, Ga., pp 59 - 65.
 59. Hamilton, J.A., Jr. (60%), Ruocco, A.S., *Distributed Simulation Techniques using Conventional Simulation Languages, 1997 Simulation Multiconference Proceedings*, April 6 - 10, 1997, Atlanta, Ga., pp 66- 71.
 60. Brutch, P.B., Hamilton, J.A., Jr. (30%), Nash, D.A., Marti, W.F., Pooch, U.W., *A Formal Approach for the Simulation of Local Area Networks, Conference on Communication Networks and Distributed Systems Modeling and Simulation*, Jan 12 - 15, 1997, Phoenix, Az., pp 3 - 8.
 61. Hamilton, J.A., Jr. (60%), Cook, D.A., *Ada Training and Education in the US Army and US Air Force, Tri-Ada 96 Proceedings*, Dec 3 - 7 1996, Philadelphia, Pa., pp 151 - 155.
 62. Marti, W.F., Hamilton, J.A., Jr. (30%), Pooch, U.W., *Packet Tracing: A New Paradigm for Teaching Computer Network Courses, SIGCSE/SIGCUE Joint Conference on Integrating Technology into Computer Science*, June 2- 6 1996, Barcelona, Spain.
 63. Hamilton, J.A., Jr. (65%), Marti, W.F., Pooch, U.W., *Building Distributed Systems, Eighth Annual Software Technology Conference*, April 21 - 26, 1996, Salt Lake City, Utah.

64. Marti, W.F., Hamilton, J.A., Jr. (30%), *Packet Tracing: A Workshop on Teaching and Understanding Computer Networks*, Proceedings, ACM Special Interest Group in Computer Science Education Conference, Feb. 15 - 17, 1996, Philadelphia, Pa.
65. Hamilton, J.A., Jr. (75%), Bachus, B.D., Pooch, U.W., *Integrating Distributed Simulation into Force XXI Training*, 1996 SCS Simulation Multiconference Proceedings, April 8 - 11, 1996, New Orleans, La., pp 8 - 13.
66. Hamilton, J.A., Jr. (90%), Pooch, U.W., *An Open Simulation Architecture for Force XXI*, 1995 Winter Simulation Conference Proceedings, Dec 3 - 6, 1995, Arlington, Va.
67. Hamilton, J.A., Jr. (80%), Cook, D.A., Pooch, U.W., *Distributed Simulation in Ada 95*, Tri-Ada '95 Proceedings, Nov 5 -10, 1995, Anaheim, Calif., pp 105 - 112.
68. Hamilton, J.A., Jr. (90%), Pooch, U.W., *A Survey of Object-Oriented Methodologies*, Tri-Ada '95 Proceedings, Nov 5 -10, 1995, Anaheim, Calif., pp 226 - 233.

Video

Hamilton, J.A., Jr., 2000 *Joint Technical Architecture*, Air Force Institute of Technology, Wright-Patterson AFB, OH, 30 minutes.

3) Papers or Lectures

Professional Meetings (previous 3 years)

1. Hamilton, J.A., Jr., Invited Lecture: "Security and Missile Defense Software," Mississippi State University, Starkville, Miss., 20 February 2006.
2. Hamilton, J.A., Jr., "The Information Non-War of 2015," Space and Missile Defense Conference, Huntsville, AL, 15 – 18 Aug., 2005
3. Hamilton, J.A., Jr., Umphress, D.A., Conference Presentation: "A Requirements Process for Interoperability," 2003 Software Technology Conference, Salt Lake City, Utah.
4. Hamilton, J.A., Jr., Conference Presentation: "Security Vulnerabilities of Interoperable Military Simulations," 2003 Software Technology Conference, Salt Lake City, Utah.

Keynote Addresses

1. *Simulation Security: Securing the Future of Simulation*, 17th European Simulation Symposium, Oct 20 - 23 2005, Marseille, France.
2. *Defense Interoperability: Software Engineering Comes of Age in the DoD*, interoperability keynote address, Software Technology Conference, April 29 - May 4, 2001, Salt Lake City, Utah.
3. *Programming Languages Do Make a Difference*, keynote address, ACM Tri-Ada '97 Conference, Nov 9 - 13 1997, St. Louis, Mo.
4. *Beyond the Mandate: Ada in the 21st Century*, keynote address, 14th Washington Ada Symposium, June 25 - 26, 1997, Washington, D.C.
5. *Implications of the NRC Report for the Department of Defense*, keynote address, 11th Annual Ada Software Engineering Education Symposium, Monmouth University, N.J., June 12 - 13 1997.

4) Exhibitions

- Organized CSSE Exhibition 2002 DOD Software Technology Conference

5) Performances

6) Patents and Inventions

7) Other Research/Creative Contributions

Grant-in-Kind: Thirty OPNET software licenses renewed semiannually. Estimated value: OPNET Modeler: \$30,000.00 each + Wireless Module: \$10,000.00 each + Terrain Module \$10,000.00 each + Application Characterization Environment \$10,000.00 + Flow Analysis Module \$10,000.00 each x 30 licenses equals \$2,100,000.00 worth of industrial software for Auburn students and faculty to use. Software is hosted on ENS servers and available to all users in the College of Engineering.

Auburn University qualified to conduct Top Secret Research: My research was responsible for Auburn becoming qualified to conduct Top Secret research for the U.S. Government. It required significant effort on my part to get the appropriate contract vehicle to support Auburn's upgrade to Top Secret. This is a university-wide capability and allows other colleagues to process Top Secret-level security clearances through the University and for Auburn to hold and manage those clearances.

8) Grants and Contracts

Research Proposals – FUNDED

1. \$100,000.00 “MDA Vulnerability Analysis,” Grant from Missile Defense Agency to study simulation software vulnerabilities (Oct 2006 – Sept 2007) – (PI Hamilton 100%).
2. \$241,000.00 “Data Dissemination from Small Army UAV’s,” Army AMCOM, (Oct 2006 – Sept 2007) (PI Chapman, Co-PI Hamilton 15%, Co-PI Umphress, Co-PI Crouse).
3. \$105,902.36 “DOD Information Assurance Scholarship Program,” Grant from the National Security Agency. (Sept 2006 – Sept 2008) (PI Hamilton 60%, Co-PI Chang 40%).
4. \$30,000.00 2006 DOD Information Assurance Capacity Building for Auburn University Proposal. Grant from the National Security Agency to conduct outreach to Redstone Arsenal and for new curriculum development. (Sept 2006 – Sept 2007) (PI Hamilton 100%).
5. \$1,500,000.00 NSF #0621307 SFS: Scholarship Partnership with Alabama State University and Tuskegee University. (Sept 2006 – Sept 2009) (PI Hamilton, 50%, Co-PI Chang, 20%, Co-PI Dozier 10%, Co-PI Wang, 10%, Co-PI Gilbert, 10%).
6. \$35,589.72 US Army Space and Missile Defense Command, “Secure Wireless for Future Operational Capability Tactical Operations Center II.” (Feb 2006 – Sept 2006) (PI Hamilton 50%, Co-PI Wu 50%).
7. \$3000.00 British Aerospace Corporate Gift, Sponsorship of Auburn ACM Programming Contest Team, Nov 2005.
8. \$100,000.00 NSF #0516432 Collaborative Research: Building Information Assurance Education Capacity with Alabama State University Proposal. (Sept 2005 – Sept 2006) (PI Hamilton, 50%, Co-PI Chang, 30%, Co-PI Dozier 10%, Co-PI Wang, 10%).
9. \$77,457.54 2005 DOD Information Assurance Capacity Building for Auburn University Proposal. Grant from the National Security Agency to conduct outreach to Redstone Arsenal, Alabama State University, US Air Force Academy and for new curriculum development. (Sept 2005 – Sept 2006) (PI Hamilton 60%, Co-PI Chang 40%).
10. \$3000.00 Scitor Corporate Gift, Sponsorship of Auburn Digital Combat Exercise Team, Mar 2005.
11. \$630,000.00 Army AMCOM “Wireless Network Software for Unmanned Aerial Vehicles”, (Mar 2005 – Sept 2007) (PI Chapman, Co-PI Hamilton 15%, Co-PI Umphress, Co-PI Wu).

12. \$41,352.00 “Distance Learning to Redstone Arsenal,” Grant from the National Security Agency to develop and conduct Information Security (INFOSEC) qualification courses (Jul 2004 – Sept 2005) – PI Hamilton (100%).
13. \$100,000.00 “U.S. Air Force Academy Research, Development, and Education Support,” Grant from the U.S. Air Force Academy to study security architecture and denial of service attacks. (Aug 2004 – Sept 2005) – PI Hamilton (100%).
14. \$270,000.00 “MDA Vulnerability Analysis,” Grant from Missile Defense Agency to study simulation vulnerabilities (Sept 2003 – Sept 2004) - PI Hamilton (100%)
15. \$100,000.00 “MDA Vulnerability Analysis,” Grant from Missile Defense Agency to study simulation vulnerabilities (Sept 2003 – Sept 2005) - PI Hamilton (100%)
16. \$25,935.00 Research Grant from the Space and Naval Warfare Systems Command to study command system interoperability (June 2002 – Sept 2003) - PI Hamilton (100%)
17. \$5000.00 Equipment Grant from the Space and Naval Warfare Systems Command to study command system interoperability (Oct 2001) - PI Hamilton (100%)

Research Proposals – PENDING

1. NSA “Information Assurance Scholarship Program for Auburn University,” \$481,817.94, PI Hamilton (67%), Co-PI Chang (33%), 20 pages.
2. NSF #0723628 “Collaborative Research: Building Information Assurance Education Capacity with Albany State University and Tuskegee University,” \$293,099.00, PI Hamilton (50%), Co-PI Chang (30%), Co-PI Dozier (10%), Co-PI Wang (10%), 15 pages.
3. STTR A07-T002: “Software Anti-Tamper for Matrix based Algorithms,” \$30,000, PI Hamilton (100%), 25 pages.

Research Proposals – NOT FUNDED

1. NSF #0627637 “CT-ER: Collaborative Research - Handcuffing Software

Components for Security,” \$149,816.00 PI Hamilton (33%), Co-PI Chang (33%), Co-PI Umphress (33%) and Co-PI M. Carlisle (0% USAF-funded), 15 pages.

2. NSF #0620632 “Collaborative Research: SFS: Building Information Assurance Education Capacity with Tuskegee University,” \$297,697.00 PI Hamilton (33%), Co-PI Chang (27%), Co-PI Cegielski (27%), Co-PI Dozier (7%), Co-PI Wang (7%) 15 pages.
3. MDA STTR: Cyber-Security. (PI Ram Labs, 70%, Co-PI Hamilton, 30%), 20 pages.
4. MDA SBIR: Software Anti-Tampering Technologies. (PI AEGIS Technologies, Inc. 70%, Co-PI Hamilton, 30%), 20 pages.
5. MDA STTR: Screech Owl Information Assurance Organizational Metrics and Scorecard. (PI ISAC, Inc. 70%, Co-PI Hamilton, 30%), 20 pages.
6. NSF #0627637 CT-ER: Collaborative Research - Handcuffing Software Components for Security. (PI Hamilton, 25%, Co-PI Carlisle, 25%, Co-PI Umphress, 25%, Co-PI Chang, 25%) 15 pages.
7. NSF #0620632 Collaborative Research: SFS: Building Information Assurance Education Capacity with Tuskegee University. (PI Hamilton, 60%, Co-PI Chang, 10%, Co-PI Cegielski, 10%, Co-PI Wang, 10%, Co-PI Dozier, 10%).
8. NSF #0516837 SFS: Scholarship Partnership with Alabama State University and Tuskegee University Proposal. (PI Hamilton, 50%, Chang, 30%, Dozier 10%, Wang, 10%), 15 pages.
9. 2005 EETEAMS Proposal: A Layered Defense for Denial of Service Attacks (PI Hamilton 60%, Co-PI Chapman 20%, Co-PI Wu 20%), 10 pages.
10. Network Defense in Depth, Submitted in response to the Education and Employment for Technology Excellence in Aviation, Missiles and Space (EETEAMS) Grants for Colleges and Universities (PI Hamilton 40%, Co-PI Chapman 30%, Co-PI Wu 30%), 10 pages.
11. #0416580 NSF Expanding Information Assurance Education Across Alabama, (PI Hamilton 100%); 15 pages.
12. #0416602 NSF Scholarship for Service Auburn University, (PI Hamilton 100%); 14 pages.
13. #0426532 NSF ITR Exploratory Conflict, (PI Yilmaz, 60%, Co-PI Hamilton, 20%, Co-PI Oren 20%), 15 pages.

14. #0430236 NSF Cybertrust, Defense in Depth, (PI Hamilton 40%, Co-PI Chapman 30%, Co-PI Wu 30%), 15 pages.
15. #0433638 NSF Cyber Security Education and Research Alliance Center Proposal, (PI Jack Stinson, ATI, 40%, Co-PIs Hamilton, 20%, Chapman 20%, Wu 20%), 15 pages.
16. 2004 DOD Information Assurance Scholarship Program Proposal (PI Hamilton 100%), 10 pages.

9) Research Statement

Research Philosophy:

My major research focus is software and network security. As we use networked software to increase international cooperation, it is vital that we understand fully what we are sharing when we share software and what vulnerabilities occur when we interconnect our systems. This has been the thrust of my research work for the Missile Defense Agency (MDA). Security restrictions limit publication of some of the technical results. However, our research group at Auburn developed a software vulnerability analysis methodology that has been adopted by MDA and used to evaluate software before it is exported. A prototype of our methodology was used to evaluate an MDA software product before it was approved for export to Turkey and our refined model has been used for additional export risk assessment evaluations.

With my research group I have been working on identifying vulnerabilities in executable code without the source code available. Organizations often contract for software without acquiring the rights to the source code and are then faced with trying to evaluate the vulnerabilities of the software. We have made progress in identifying potential buffer overflows, but have not solved the false positive problem. However, our methodology is useful for eliminating some sections of the software program from further consideration since we do not have any false negatives.

We are working to find new ways to defend networks against denial of service attacks. Forward deploying firewalls upstream from the receiver can achieve some protection and we are experimenting with secure overlay services to further safeguard a host. We have just completed the first, unclassified, implementation of secure overlays using the chord protocol. Preliminary results indicate that this implementation will significantly increase the number of attack nodes required to overwhelm the defended router with minimal additional latency. Most importantly, this defensive measure can be implemented without requiring any changes to any non-local routers.

My research in information assurance was evaluated by the National Security Agency in their overall determination to accredit Auburn University as a Center of Academic Excellence in Information Assurance Education.

I strongly believe that publishing security research is very important because so many vulnerabilities are unknown, or worse, known by the software developer and suppressed. I believe many software engineering paradigms will change when consumers become aware of the risks they face using insecure software.

My interest in modeling and simulation computer networks supports my efforts in network security. Simulation is only acceptable as a substitute for testing, when actual testing is infeasible. For example, "What is the effect of destructive worms propagating across the Internet backbone?" Simulation provides a safe and legal way to study the impact of widespread network outages. Information assurance for simulation is a very new field and one that we are on the leading edge of here at Auburn.

C. Outreach

1) Commentary

I have prepared COMP 6370, Computer and Network Security for on-site delivery at the Space and Missile Defense Command at Redstone Arsenal. My outreach has been focused on the Huntsville area. I have extensively coordinated with government and industry organizations there. Additionally, I taught a CS 490 Special Topics in Computer Security Course at Alabama State University in the Spring of 2006.

2) Specific accomplishments:

- Conducted 1 week NSA Senior System Manager Qualification Course in Huntsville, Ala., Jul. 2006.
- Conducted 1 week NSA Information Security (INFOSEC) Qualification Course in Huntsville, Ala., Feb. 2005.
- Chairman, 2004 and 2005 Ph.D. Seminar, Southeast Software Engineering Conference, Huntsville, Ala.
- Coach/Judge, 2004 and 2005 Auburn Digital Combat Exercise Competitive Team, Southeast Software Engineering Conference, Huntsville, Ala. (2004, placed second out of six teams, 2005, placed second and third out of five teams.)
- Coach, 2003, 2004, 2005 and 2006 Auburn ACM programming contest team. (2003 placed twenty-third out of more than ninety teams at the Southeast Regional Competition, 2004 placed eleventh out of more than eighty-five teams at the South Central Regional Competition, 2005 placed thirty-first out of more than eighty-eight teams at the South Central Regional Competition.)

- Program Committee, Huntsville Simulation Conference, 2002 – present.

3) I annually teach COMP 7700 Software Architecture through Auburn’s distance learning program.

D. Service

1) University Service (Auburn University)

Name	Position	Level	Period
Computer Security Team	Coach	Department	Mar 04 - Present
ACM Programming Team	Coach	Department	Sept 03 - Present
ACM/IEEE CS	Sponsor	Department	Dec 02 - Present
E-Day Committee	Member	Department	Aug 01 - Present
Promotion Committee	Member	Department	Aug 01 - Present
Hiring Committee	Member	Department	Aug 03 - Aug 04
Recruitment Committee	Member	Department	Aug 06 – present

University Service (US Military Academy)

Name	Position	Level	Period
Research Committee	Director	Department	Jun 97 - Sep 98
Cadet Chapel Choir	Officer in Charge	University	Jun 97 - Sep 98

2) Professional Service

Professional Associations

1. Society for Modeling & Computer Simulation International (Senior Member)
 - Society President 2006 - 2008
 - Society Senior Vice President 2004 - 2006
 - Society Secretary 2002 - 2004
 - Vice-Chair, 2003-Advanced Simulation Technology Conference
 - Conference Chair, 2004-Advanced Simulation Technology Conference
 - Conference Chair, 2005, 2006-Spring Simulation Multiconference
2. Institute of Electrical and Electronics Engineers (Senior Member)
 - IEEE Computer Society
 - IEEE Communications Society
 - Program Committee, 2001 – 2007 IEEE, Int. Workshop on Rapid System Prototyping
3. Association for Computing Machinery
 - Elected Secretary-Treasurer, 2004 – 2006, Special Interest Group

Simulation (SIGSIM)

4. Conference Committee, Simulation Interoperability Standards Organization (SISO) 2004 – 2006.
5. Vice Chair, Professional Development Committee, Alabama Modeling and Simulation Council 2004 – 2006.
6. Chairman, Auburn University Council of the Modeling and Simulation Network 2003 – present.
7. Elected, Board of Directors, Alabama Modeling and Simulation Council (2006 – 2008).

Editor/Reviewer

- Consulting Editor, *Journal of Defense Modeling and Simulation*, 2003 – present.
- Member, Editorial Board, *Crosstalk: The Journal of Defense Software Engineering*, 2006 – present.
- Referee, *Simulation Journal*, 1999 – 2001.
- Reviewer, Software Technology Conference, 1994-2000.
- Referee, Special Interest Group on Computer Science Education, 1993-1996.

Conference Leadership

- Program Committee, IEEE Rapid Systems Prototyping Workshop, 2000 – present.
- Program Committee, IEEE Information Assurance Workshop, 2006 – present.
- Program Committee, International Conference on Information Warfare, 2006 – present.
- Conference Chairman, 2006 Spring Simulation Multiconference, Huntsville, Ala.
- Conference Chairman, 2005 Spring Simulation Multiconference, San Diego, Calif.
- Conference Chairman, 2004 Advanced Simulation Technologies Conference, Washington, D.C.
- Conference Vice-Chairman, 2003 Advanced Simulation Technologies Conference, Orlando, Fla.
- Vice-Chair 2003 SE Section (Software Engineering) American Society for Engineering Education, Macon, Ga.
- Conference Committee, 2001 Conference on Software Engineering and Training Symposium, Charlotte, N.C.
- Conference Chairman, 1999 Ada Software Engineering Education Team Conference, US Air Force Academy.

- Conference Chairman, 1998 Ada Software Engineering Education Team Conference, US Naval Postgraduate School.
- Conference Committee, 1997 Tri-Ada Conference, St. Louis, Mo.

Miscellaneous

- Life Member, Phi Kappa Phi (National Honor Society)
- Member, Upsilon Pi Epsilon (National Honor Computer Science Fraternity)
- Member, Phi Rho Pi (National Honor Speech Fraternity)
- Alumni, National Society of Scabbard & Blade
- Graduated with Distinction, Naval War College
- Life Member, Naval War College Foundation
- Life Member, Disabled American Veterans
- US Army Forces Command Fourth Estate Award for Outstanding Military Journalism

Military Professional Summary

- 1998 - 2001 Director, Joint Forces Program Office, Space and Naval Warfare Systems Command / Visiting Associate Professor, Naval Postgraduate School
- 1996 - 1998 Research Director & Assistant Professor, U. S. Military Academy
- 1997 (Jan-Jul) Director, Ada Joint Program Office, Defense Information Systems Agency
- 1993 - 1996 Fully-funded graduate studies, Texas A&M University
- 1993 Chief, Officer Training, US Army Computer Science School
- 1992 Chief, Software Engineering Branch, US Army Computer Science School
- 1988 - 1990 Fully-funded graduate studies, Vanderbilt University
- 1987 - 1988 Commanding Officer, Battery F, 7th Field Artillery
- 1987 - Field Artillery Intelligence Officer, 25th Infantry Division (L)
- 1985 - 1986 Commanding Officer, Service Battery, 1st Battalion, 8th Field Artillery
- 1983 - 1984 Commanding Officer, Battery A, 8th Battalion, 8th Field Artillery
- 1982 Commanding Officer, HQ & HQ Battery, 1st Battalion, 5th Field Artillery
- 1981 S1, Battalion Personnel Officer, 1st Battalion, 5th Field Artillery
- 1980 S4, Battalion Supply Officer, 1st Battalion, 5th Field Artillery
- 1979 Fire Support Team Chief, 1st Battalion, 5th Field Artillery