Curriculum Vitae of John A. Hamilton, Jr.

Name: John A. Hamilton, Jr. Nickname: Drew Email: <u>drew@drew-hamilton.com</u> Place of Birth: Hawaii Citizenship: US

1. Professional Preparation

a. Education:

1996: Ph.D., Computer Science, Texas A&M University

1990: M.S., Computer Science, Vanderbilt University

1987: M.S., Systems Management, University of Southern California

1979: B.A., Journalism, Texas Tech University

b. Employment History:

2021 – Present: Director, Texas A&M Cybersecurity Center and Professor of Computer Science and Engineering, Texas A&M University.

2016 – 2021: Founding Director, Center for Cyber Innovation and Professor of Computer Science and Engineering, Mississippi State University.

2013 – 2016: Associate Vice President for Research and Professor of Computer Science and Engineering, Mississippi State University.

2010 - 2013: Alumni Professor, Computer Science & Software Engineering & Founding Director, Auburn Cyber Research Center, Samuel Ginn College of Engineering, Auburn University.

2009 – 2010: Professor, Computer Science & Software Engineering & Director, Auburn Information Assurance Center, Samuel Ginn College of Engineering, Auburn University. 2004 – 2009: Associate Professor, Computer Science & Software Engineering & Director, Auburn Information, Assurance Cantar, Samuel Cinn, College of Engineering

Director, Auburn Information Assurance Center, Samuel Ginn College of Engineering, Auburn University.

2001 – 2004: Associate Professor, Computer Science & Software Engineering & Director, Auburn Information Assurance Laboratory, Samuel Ginn College of Engineering, Auburn University.

1998 – 2001: Director, Joint Forces Program Office, US Space and Naval Warfare Systems Command & Visiting Associate Professor of Computer Science, US Naval Postgraduate School.

1996 – 1998: Assistant Professor of Computer Science & Research Director, Electrical Engineering & Computer Science, US Military Academy, West Point.

1997: Special Assignment Director of the Ada Joint Program Office in Washington, DC. 1993 – 1996: Fully funded Computer Science Ph.D. graduate studies at Texas A&M University.

1992 – 1993: Department Head, Officer Training Division, US Army Computer Science School, Fort Gordon, GA.

1991 – 1992: Software Engineering Branch Chief, Officer Training Division, US Army Computer Science School, Fort Gordon, GA.

1990 – 1991: Computer Programming Instructor, Software Engineering Branch, Officer Training Division, US Army Computer Science School, Fort Gordon, GA. 1988 – 1990: Fully funded Computer Science M.S. graduate studies at Vanderbilt

University.

1979 – 1988: US Army Field Artillery command and staff assignments including four battery commands, two assignments as a battalion personnel officer, two assignments as a battalion logistics officer and short assignments in intelligence and 4th and 5th order field surveying.

2. Honors and Awards

- 2020 Joint Appointment, Idaho National Laboratory (19 Nov 20).
- 2018 ACM Special Interest Group Ada Distinguished Service Award
- 2015 Elected a Fellow of the Society for Modeling and Simulation International.
- 2013 Responsible for Auburn's efforts to be competitively designated as an NSA Center of Academic Excellence in Cyber Operations for five years by the National Security Agency, 2013 2018.
- 2013 Letter of Appreciation, Major General Scott Hanson, Commandant, Air War College, 23 Jan 2013.
- 2012 Auburn Outstanding Computer Science & Software Engineering Faculty.
- 2012 Auburn Engineering Senior Research Award for Excellence.
- Joint Appointment Auburn University Industrial and Systems Engineering, 2011 2014.
- Society for Modeling and Simulation Presidential Service Award, 29 October 2010.
- Alumni Professorship, Endowed by the Auburn University Alumni Association, 2010 – 2015.
- 2010 Adjunct Professor, Air Command & Staff College, Maxwell, AFB.
- 2009 Curriculum Award, Committee on National Security Systems and the National Security Agency, "Information Assurance Risk Analysis" CNSS 4016.
- Joint Appointment AU Department of Management, 2009 2013.
- Society for Modeling and Simulation Distinguished Service Award, 16 June 2008.
- Responsible for Auburn's efforts to be competitively designated as a Center of Academic Excellence in Information Assurance Education for five years by the National Security Agency, 2009 2014.
- Responsible for Auburn's efforts to be competitively designated as a Center of Academic Excellence in Information Assurance Research for five years by the National Security Agency, 2008 2013.
- 2008 Best Paper Award, Amer*, S.H., Hamilton, J.A., Jr. (30%), Understanding Security Architecture, <u>2008 SCS/ACM DOD Architecture Framework Modeling</u>, <u>Spring Simulation Multiconference</u>, Ottawa, Ontario, 13 – 17 April, 2008.
- 2008 Outstanding Conference Contribution Award, <u>SCS/ACM Spring Simulation</u> <u>Multiconference</u>, Ottawa, Ontario, 13 – 17 April 2008.
- 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 SCS/ACM Simulation Software Security Symposium, Spring Simulation Multiconference, Norfolk, Va., 25 – 29 March, 2007.

- 2007 Elected Senior Member of the ACM.
- 2006 named to Who's Who in Engineering Education, American Society of Engineering Education.
- 2006 Curriculum Award, Committee on National Security Systems and the National Security Agency, "Senior System Managers" (for information assurance) CNSS 4012.
- 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.
- Responsible for Auburn's efforts to be competitively re-designated as a Center of Academic Excellence in Information Assurance Education by the National Security Agency, 2006, 2009.
- 2005 Present Society for Modeling and Simulation Distinguished Lecturer (http://www.scs.org/DLP.cfm).
- 2005 Letter of Appreciation, Colonel M.S. Bohn, USMC, Director, US Marine Corps Operational Test and Evaluation Activity.
- 2004 Outstanding Computer Science & Software Engineering Faculty.
- 2004 Auburn Engineering Senior Research Award for Excellence.
- 2004 Letter of Appreciation, Ms. Tara Ragan, Director of Software Engineering, Space & Missile Defense Command.
- Responsible for Auburn's efforts to be competitively designated as a Center of Academic Excellence by the National Security Agency, 2003 and re-designated for another three years in 2006.
- 2003 Elected Senior Member of the IEEE.
- 2002 Curriculum Award, Committee on National Security Systems and the National Security Agency, "Training Standard for Information Systems Security Professionals" NSTISSI 4011.
- 2002 Curriculum Award, Committee on National Security Systems and the National Security Agency, "Designated Approving Authority" (for information security) NSTISSI 4012.
- Auburn University Alumni Council, College of Engineering, \$20,000.00 Fellowship, 2002.
- Distinguished Graduate, US Naval War College, 1991
- Eagle Scout, 1974.

3. Extramural Funding

a. Research Proposals – FUNDED

81 funded research grants (70 as PI, 11 as Co-PI) totaling \$31,997,336.34 (2002 – present).

1. \$1,994,153.00 "VICEROY for the NCAE-C Southeast Region," Griffiss Institute, AFRL Rome, PI Hamilton (40%), Co-PI Nowatkowski (40%), Co-PI George (20%) (Aug 21 – Jul 23). *Notification of intent to award the listed amount*.

- \$354,839.00 "Circadence Network Mapper Phase VIII National Cyber Range Automation Framework," US Army Threat Systems Management Office, #W31P4Q-14-F-0013, PI Hamilton (30%), Co-PI Reese (70%), (Jun 21 – Jul 22).
- 3. \$46,851.00 "SCADA Research with Argonne National Laboratory." #DE-ACO2-06CH11357, Argonne National Laboratory, PI Hamilton (100%), (May 21 – Dec 21).
- \$588,192.00 "NCAE-C Cyber Curriculum and Research 2020 Program, Part 2," National Security Agency, H98230-20-1-0386, PI Hamilton (40%), Co-PI Girault (15%), Co-PI Hannis (15%), Co-PI Thomas (15%), Co-PI Vaughn (5%) (Sep 20 – Sep 21).
- \$72,000.00 ONR STTR# N20A-T011, subbed through ObjectSecurity, "Cyber Resilience of Condition Based Monitoring Capabilities Phase 1," PI Hamilton (30%), Co-PI Thomas (35%) and Co-PI Girault (35%) (Aug 20 – Jul 21).
- \$330,000.00 "Circadence Network Mapper Phase VII" US Army Threat Systems Management Office, #W31P4Q-14-F-0013, PI Hamilton (30%), Co-PI Reese (70%), (Jul 20 – Jun 21).
- \$50,000.00 "NSA Center of Excellence in Cyber Operations Community of Practice." National Security Agency through Cal State San Bernardino. PI Hamilton (100%) (Jul 20 – Jun 22).
- \$680,812.94 "DoD Cyber Scholarship Program," National Security Agency, H98230-20-1-0383, (Sep 20 – Dec 21) PI Hamilton (100%).
- \$41,575.78 "Cyber Certification & Virtualization Research," NSF Expedited Funding to provide a virtual internship for students whose Federal internships were cancelled. Supplement to NSF #1565484 "Cyber Corps: Scholarship for Service - A Continuation Program at Mississippi State University" PI Hamilton (100%) (Jul 2017 – Jul 2021).
- \$132,542.00 SBA HQ-20-C-0028, "MSU SBDC Center for Cybersecurity," PI Oswald, Co-PI Hamilton (35%), Co-PI Templeton, Co-PI Thomas, Co-PI Hannis (Apr 20 – Mar 21).
- \$2,858,322.00 OSD W909MY19CC001 "Mississippi State University Open Source Exploitation System (MOSES)," PI May (25%), Co-PI Barranco (15%), Co-PI Potter (20%), Co-PI Hamilton (10%), Co-PI Moffat (15%), Co-PI Sinclair (15%) (Jan 20 – Jan 21).
- \$50,000.00 AFRL STTR# FA9453-19-P-06871, subbed through RAM Labs# 2019-RAM-MSU-002, "Embedded Device Isolation for Trusted High-Assurance (EDITH)," PI Hamilton (30%), Co-PI Thomas (35%) and Co-PI Girault (35%) (Aug

19 – May 20).

- \$350,000.00 W31P4Q-14-F-0013, "Circadence Network Mapper Phase VI," US Army Threat Systems Management Office, # PI Hamilton (30%), Co-PI Reese (70%), (Aug 19 –Feb 20).
- 14. \$411,110.00 NSA #H98230-19-1-0291 "DoD Cyber Security Scholarship Program," National Security Agency, (Aug 19 Dec 20) PI Hamilton (100%).
- \$450,283.00 #W31P4Q-14-F-0013, "Circadence Network Mapper Renewal Phase V" US Army Threat Systems Management Office, PI Hamilton (30%), Co-PI Reese (70%), (Aug 2018 – Aug 2019).
- \$350,000.00 "Mississippi Defense Diversification Initiative," DoD Office of Economic Adjustment, PI Hamilton (60%), Co-PI Thomas (20%), Co-PI Hannis (20%), (Aug 2018 – Jan 2020).
- \$244,812.94 Grant# H98230-18-1-0349 "Commercial Cyber Certifications for Military Reserve Components: A Public-Private Partnership," National Security Agency, (July 2018) PI Hamilton (65%), Co-PI Thomas (35%). (Aug 2018 – Sep 2019).
- \$213,088.00 NSF #1820623 "Engaging the Mississippi Delta in CyberCorps," (July 2018) PI Hamilton (50%), Co-PI Pape (25%), Co-PI Thomas (25%). (Jul 2018 June 2021).
- 19. \$67,500.00 ONR STTR N18A-T027, "Naval Internet of Things (IoT) Effectiveness and Efficiency," with RAM Labs, PI Hamilton (60%), Co-PI Thomas (40%). (Jun 2018 Jun 2019).
- 20. \$124,503.63 #H98230-17-1-0375 "MSU Cyber Scholarship & Cyber Certification," National Security Agency (Sept. 2017) PI Hamilton (50%), Co-PI Pape (25%) and Co-PI Thomas (25%). (Oct 2017 – Oct 2018).
- \$359,000.00 #W31P4Q-14-D-A001 "Circadence Network Mapper," US Army Threat Systems Management Office, PI Reese, Co-PI Hamilton (30%) (Sep 2017 – Jul 2018).
- 22. \$1,312,315.00 #W9I2HZ-17-C-0019 "Dynamic Defense Strategy Planning for Research and Development and Infrastructure Networks," US Army Corps of Engineers PI Hamilton (30%), Co-PI Iannucci, (Apr 2017 – Apr 2020).
- 23. \$3,112,393.00 NSF #1565484 "Cyber Corps: Scholarship for Service A Continuation Program at Mississippi State University" PI Hamilton (70%), Co-PI Oswald. (Jul 2017 – Jul 2021).

- 24. \$626,949.00 Supplement to NSF #1241722 PI Hamilton (100%) "Growth and Enhancement of the Scholarship for Service Program at Mississippi State University," (May 2017 Jul 2018).
- 25. \$268,932.00 DHSST-LRBAA14-02-CSD.04-0018-I "Scalable Distributed Event and Intrusion Detection Systems (DEIDS) for Cyber-physical Power Systems," DHS Science & Technology Division. (July 2016 – Dec 2017) PI Hamilton (70%), Co-PI Abdelwahed (30%).
- 26. \$231,475.80 NSA #H98230-16-1-0355 "Reserve Component IASP Capacity Building," National Security Agency (July 2016) PI Hamilton (70%), Co-PI Dampier (30%).
- 27. \$187,829.00 USN Award# N00189-16-P-Z343 "Implementation of a Cyber Master's Program for the U.S. Navy," PI Hamilton (60%), Co-PI Dampier (40%) (Aug 2016 Aug 2017).
- 28. \$213,433.00 NSA BAA-003-15 "Software Reliability Verification Framework," PI: Pape, Co-PIs Hamilton (30%) and Ivancic (Sept 2015 Sept 2016).
- 29. \$2,704,074.00 NSF #1430364 "The Smart MATerial Design, Analysis, and Processing (SMATDAP) Consortium: Building next-generation polymers and the tools to accelerate cost-effective commercial production," EPSCOR Track 2, State of Mississippi PI: Hamilton (5%), (Aug 2014 – Jul 2017).
- \$527,368.72 "CTTSO Distributed Mobile Computing (DMC) Project, Naval Air Systems Command (FGS Subcontract) PI: Pick, Co-PIs Hamilton (6%), Poss, (Jun 2014 – May 2015).
- 31. \$135,528.00 NSF #1359706 "Collaborative Project SFS CB: Establishing the New Mexico Digital Forensics Academy," PI Hamilton (100%), (Aug 2013 Jul 2016).
- \$299,995.00 NSF #1266036 "I/UCRC: Collaborative Research: Broadband Wireless Access & Applications Center (BWAC)" PI: Mao, Co-PIs: Hamilton (15%), Dai, Niu, Tugnait, (Sept. 2013 – Aug. 2018).
- \$159,020.00 DOD Information Assurance Scholarship Grant from the National Security Agency "Outreach to USAF Air War College" and "Digital Forensics Outreach to WNMU" PI Hamilton (85%), Co-PI Chang (5%), Co-PI Umphress (10%). (Aug 2013 – Aug 2014) \$44, 499.57 transferred from Auburn University to Mississippi State University.
- 34. \$122,451.00 NSF #1254976 Supplement to: "SFS Scholarship: Auburn-Tuskegee-Albany State-Western New Mexico Scholarship Partnership" PI Hamilton (85%), Co-PI Imsand (10%) and Co-PI Chang (5%) (Oct 2011 – Sept 2015). Subcontracted from Auburn University to Mississippi State University.

- 35. \$24,948.00 NSF #1241370 Supplement to: CI-TEAM Implementation Project. Collaborative Project: A Digital Forensics Cyberinfrastructure Workforce Training Initiative for America's Veterans, (Aug 2008 – Aug 2013), PI Hamilton 50%, Co-PI Qin 20%, Co-PI Ku, 20%, Co-PI Chang 10%.
- 36. \$61,000.00 DOD University Affiliated Research Center (UARC) / Stevens Institute of Technology, "Graphical CONOPS Demonstrator for ARDEC," (Sept 2012 – May 2013) PI Hamilton (100%) (Through DOD UARC Contract #: H98230-08-D-0171).
- 37. \$4,122,880.00 NSF #1241722 "Growth and Enhancement of the Scholarship for Service Program at Mississippi State University," PI Hamilton (100%) (Aug 2012 – Jul 2018).
- 38. \$30,000.00 AFRL STTR (Phase 1) Polymorphic Malware Detection Unit (PMDU) with Sentar, Inc. PI Hamilton (100%) (Jan 2012 Dec 2012).
- \$120,935.00 DOD Information Assurance Scholarship Grant from the National Security Agency "HBCU/HSI Outreach and Mentoring," and "DOD Transitions." PI Hamilton (65%), Co-PI Umphress (30%) and Co-PI Chang (5%), (Aug 2012 – Dec 2013).
- 40. \$109,970.00 DOD University Affiliated Research Center (UARC) / Stevens Institute of Technology, "Prototype of a Graphical CONOPS Development Environment for Agile Systems Engineering," (Apr 2012 Dec 2012) PI Hamilton (100%) (Through DOD UARC Contract #: H98230-08-D-0171).
- 41. \$1,376,769.00 NSF #1129477 SFS Scholarship: Auburn-Tuskegee-Albany State-Western New Mexico Scholarship Partnership, PI Hamilton (85%), Co-PI Imsand (10%) and Co-PI Chang (5%) (Oct 2011 Sept 2015).
- 42. \$94,752.35 DOD IASP Capacity Building Grant from the National Security Agency, "Outreach to Minority Institutions" and "Wounded Warrior Updates." PI Hamilton (65%), Co-PI Imsand (30%) and Co-PI Chang (5%). (Sept 2011 Dec 2012).
- 43. \$10,540.10 RAM Labs "Cloud Computing Project," PI Hamilton (100%) (May 2011 July 2011).
- 44. \$154,000.00 DOD University Affiliated Research Center (UARC) / Stevens Institute of Technology, "Integration of M&S (Modeling and Simulation), Software Design and DoDAF (Department of Defense Architecture Framework)" (Aug 2010 – July 2011) PI Hamilton (70%), Co-PI Imsand (30%) (Through DOD UARC Contract #: H98230-08-D-0171).
- 45. \$750,000.00 Joint IED Defeat Organization "Counter-IED Medical Technology Initiative," (Sept 2010 – Sept 2011) PI Hamilton (50%), co-PI Imsand (25%), co-PI

Biaz (10%), co-PI Chapman (10%), co-PI Chang (5%) (DOD Contract # HQ0034-10-C-0031).

- 46. \$120,000.00 2010 MDA Phase II SBIR with RAM Laboratories and Auburn University, "Real-time Application Security Analyzer," (Sept 2011 – March 2013) PI Hamilton (100%).
- 47. \$2,190.00 2010 DOD Information Assurance Partnership with the Information Resource Management College, (August 2010 August 2011) PI Hamilton (100%).
- 48. \$200,000.00 DOD University Affiliated Research Center (UARC) / Stevens Institute of Technology, "Systems Engineering in a Secure Computing Intensive Environment," (June 2010 – June 2011) PI Umphress, Co-PI Smith, Co-PI Hamilton (30%), (Through DOD UARC Contract #: H98230-08-D-0171).
- 49. \$20,348.00 DOD University Affiliated Research Center (UARC) / Stevens Institute of Technology, "Security Engineering," (Nov 2009 – Apr 2010) PI Hamilton 100% (Through DOD UARC Contract #: H98230-08-D-0171).
- 50. \$40,000.00 "MDA Vulnerability Analysis," Grant from Missile Defense Agency to study simulation software vulnerabilities (Oct 2009 Apr 2010) PI Hamilton 60%, Co-PI Imsand 40%, *publication restricted*.
- 51. \$27,000.00 DOD Joint IED Defeat Office / Bodiflo "Individual Blast Tracking System," (Oct 2009 Dec 2009) PI Hamilton 60%, Co-PI Imsand (40%).
- 52. \$10,000.00 DOD Joint IED Defeat Office / ISHPI "Combat Medical Triage Simulation Software Evaluation," (Apr 2009 Oct 2009) PI Hamilton (100%).
- 53. \$84,644.04 "Information Warfare Exercise / Intelligence Analysis and Information Assurance Education," DOD IASP Capacity Building Grant from the National Security Agency. (Aug 2009 – Aug 2010) PI Hamilton 70%, Co-PI Umphress 15%, Co-PI Norton 15% (NSA Contract Number NSA-H98230-09-1-0364).
- 54. \$149,999.00 NSF #0837341 "QoSec: A Novel Middleware-Based Approach to Teaching Computer Security Courses, (Nov 2008 Nov 2011), PI Qin, Co-PI Ku, Co-PI Hamilton (25%), Co-PI Chang.
- 55. \$20,000.00 MDA Phase I SBIR B083-042-0063 "A Real-time Application Security Analyzer," (April 2009 – April 2010) RAM Labs PI McGraw, Auburn PI Hamilton 100% (MDA contract number HQ0006-09-C-7165.
- 56. \$60,000.00 Northrop Grumman #G00004246 "Mission/Business Effects of Technical Risks/DODAF Information Assurance Architecture," (Jan 2009 – Dec 2009) PI Hamilton (100%).

- 57. \$26,280.00 "A Single Hop MAC Layer for Noisy Channels," Grant from RAM Laboratories. (May 2008 May 2009) PI Hamilton 100%.
- 58. \$200,000.00 NSF #0831502 "CyberTrust -ISG: SPEAR: Space Encryption based Query Processing for Privacy-Aware Location-based Services," (Aug 2008 – Aug 2011) PI Ku, Co-PIs Wang, Qin, Hamilton (15%).
- 59. \$325,000.00 (\$175,000.00 to Auburn) NSF #0830831 "Building Information Assurance Capacity with Albany State University," (Sep 2008 – Sep 2010) PI Hamilton (70%) Co-PIs Ku (10%), Qin (10%) and Chang, (10%).
- 60. \$299,636.00 NSF #0753305 "CI-TEAM Implementation Project. Collaborative Project: A Digital Forensics Cyberinfrastructure Workforce Training Initiative for America's Veterans," Collaborative Proposal with Mississippi State University, (Aug 2008 – Aug 2013), PI Hamilton 50%, Co-PI Qin 20%, Co-PI Ku, 20%, Co-PI Chang 10%.
- \$117,914.07 "DOD Information Assurance Scholarship Program," Grant from the National Security Agency. (Aug 2008 – Aug 2009) PI Hamilton 70%, Co-PI Chang 30% (NSA Contract # NSA-H98230-08-1-0212).
- 62. \$150,000.00 "MDA Vulnerability Analysis," Grant from Missile Defense Agency to study simulation software vulnerabilities (Jan 2008 Jan 2009) PI Hamilton 100%, (DOD Contract # HQ0006-02-2-0013), *publication restricted*.
- 63. \$227,945.35 "DOD Information Assurance Scholarship Program," Grant from the National Security Agency. (Aug 2007 – Aug 2008) PI Hamilton 60%, Co-PI Chang 40% (NSA Contract # NSA-H98230-07-1-0224).
- 64. \$21,000.00 "Software Anti-Tamper Testbed," Grant from RAM Laboratories. (Aug 2007 May 2008) PI Hamilton 100%.
- 65. \$100,000.00 "MDA Vulnerability Analysis," Grant from Missile Defense Agency to study simulation software vulnerabilities (Oct 2006 Sept 2007) PI Hamilton 100%, (DOD Contract # HQ0006-02-2-0013), *publication restricted*.
- 66. \$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.
- 67. \$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% (NSA Contract # NSA-H98230-06-1-0115).
- 68. \$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%(NSA Contract # NSA-H98230-06-1-0115).

- 69. \$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%.
- 70. \$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%.
- 71. \$3000.00 British Aerospace Corporate Gift, Sponsorship of Auburn ACM Programming Contest Team, Nov 2005.
- 72. \$100,000.00 NSF #0516432 Collaborative Research: Building Information Assurance Education Capacity with Alabama State University. (Sept 2005 – Sept 2008) PI Hamilton, 50%, Co-PI Chang, 30%, Co-PI Dozier 10%, Co-PI Wang, 10%.
- 73. \$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% (NSA-H98230-05-1-0134).
- 74. \$3000.00 Scitor Corporate Gift, Sponsorship of Auburn Digital Combat Exercise Team, Mar 2005.
- 75. \$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.
- 76. \$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%) (NSA Contract # H98230-04-1-0229).
- 77. \$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%).
- 78. \$270,000.00 "MDA Vulnerability Analysis," Grant from Missile Defense Agency to study simulation vulnerabilities (Sept 2003 – Sept 2004) PI Hamilton (100%), (DOD Contract # HQ0006-02-2-0013), *publication restricted*.
- 79. \$100,000.00 "MDA Vulnerability Analysis," Grant from Missile Defense Agency to study simulation vulnerabilities (Sept 2003 Sept 2005) PI Hamilton (100%), (DOD

Contract # HQ0006-02-2-0013), publication restricted.

- 80. \$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%).
- 81. \$5000.00 Equipment Grant from the Space and Naval Warfare Systems Command to study command system interoperability (Oct 2001) PI Hamilton (100%).

b. Research Proposals – PENDING

1. \$1,996,751.00 OSD "Mississippi State University Open-Source Exploitation System (MOSES) year 3 renewal," PI May (40%), Co-PI Barranco (10%), Co-PI Hamilton (10%), Co-PI Moffat (10%), Co-PI Sinclair (10%), Co-PI Girault (10%) (Aug 21– Jul 23). *In contract negotiations.*

2. \$249,947.69 "NSA Recruitment Bootcamp" National Security Agency, (Aug 20 – Dec 20) PI Hamilton (70%) Co-PI Vaughn. *In contract negotiations*.

3. \$1,105,825.00 "Autonomic Security Management," US Army Corps of Engineers PI Hamilton (30%), Co-PI Iannucci, (Aug 2020 – Aug 2023). *In contract negotiations*.

c. Intergovernmental Personnel Act (IPA) Employees

Manage one MSU employee assigned as a US Federal Government IPA. Total annual payroll exceeds \$200K.

4. Diversity Practice

- Established cyber security programs at 6 HBCUs and 1 HSI via NSF and National Security Agency competitive grants.
 - Tuskegee University
 - Albany State University
 - Alabama State University
 - Western New Mexico University
 - Mississippi Valley State University
 - Florida A&M University
 - Alabama A&M University
- External CyberCorps Reviewer: University of New Mexico (HSI)
- External Program Reviewer: University of Texas El Paso (HSI)
- NSA/DHS Mentor: Mississippi Valley State University (HBCU)

5. Publications

a. Summary:

- 2 Books
- 2 Conference Proceedings (Editor)

- 25 peer-reviewed journal articles
- 133 Conference papers

b. Books and Proceedings Editor:

- 1. Editors: Ades, M.J., Chinni, M.J., Hamilton, J.A., Jr., (20%), Hill, J.M.D., Rajaei, H. and Wu, C., *Proceedings of the 2007 Spring Simulation Multiconference*, vol. 2, ISBN 1-56555-314-4.
- 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.
- 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.
- 4. Hamilton, J.A., Jr., (60%) Nash, D.A., Pooch, U.W., *Distributed Simulation*, CRC Press, Boca Raton, Fla., 1997. ISBN: 0-8493-2590-0.

c. Refereed Journal Publications *indicates student author

- Iannucci, S., Abdelwahed. S., Montemaggio, A., Hannis, M., Leonard, L., King, J. and Hamilton, J.A., Jr., (10%), *A Model-Integrated Approach to Designing Self-Protecting Systems*, <u>IEEE Transactions on Software Engineering</u>, Vol. 46, No. 12, December 2020, pp 1380 – 1392.
- Hamilton, J.A., Jr., (75%), Pape, P., *Ada 20 Years After the Mandate*, <u>Crosstalk, the</u> <u>Journal of Defense Software Engineering</u>, Hill AFB, Utah, vol. 30, no. 1, Jan-Feb 2017, pp 4 - 8.
- Pape, P. and Hamilton, J.A., Jr., (25%), *Better Reliability Verification in Open-Source* Software Using Efficient Test Cases, <u>Crosstalk</u>, the Journal of Defense Software <u>Engineering</u>, Hill AFB, Utah, vol. 29, no. 1, Jan-Feb 2016, pp 31-36.
- Britt*,W., Miller, J., Wagner, P., Bevly, D., Hamilton, J.A., Jr., (15%) An Embedded System for Real-Time Navigation of a Trained Canine, <u>Personal and Ubiquitous</u> <u>Computing</u>, Springer-Verlag Vol.15, Issue 1, January 2011, pp 61-74.
- 5. Garrett*, A. Hamilton, J.A., Jr., (25%), Dozier, G.V., *Generic Algorithm Techniques* for the Cryptanalysis of TEA, International Journal on Intelligent Control and Systems Special Session on Information Assurance. vol. 12, no. 4, Dec. 2007, pp 325 - 330.
- Torri*, S., Sanders*, D., Evans, G. and Hamilton, J.A., Jr., (25%), *Java Obfuscation*, <u>Crosstalk, the Journal of Defense Software Engineering</u>, Hill AFB, Utah, December 2007, pp 19 – 23.

- Mkpong-Ruffin*, I, Hamilton, J.A., Jr., (20%), Carlisle, M., *The New Java Security Architecture*, <u>Crosstalk, the Journal of Defense Software Engineering</u>, Hill AFB, Utah, July, 2006, http://www.stsc.hill.af.mil/CrossTalk/2006/07/0607RuffinHamiltonCarlisle.html.
- 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.
- Hamilton, J.A., Jr. (100%) DODAF Based Information Assurance Architectures, <u>Crosstalk, The Journal of Defense Software Engineering</u>, vol. 19, No. 2, February 2006, pp 4 – 7.
- 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.
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- 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.
- 99. Hamilton, J.A., Jr., (100%) *Modeling a Concurrent Theory of Combat: A Parallel Processing Approach*, <u>Advanced Simulation Technologies Conference Proceedings</u>, San Diego, CA, pp 107 – 113, April 2002.

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- 103. 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.
- 104. 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.
- 105. Murtagh, J.L., Hamilton, J.A., Jr. (30%), Using Modeling to Explain Parallel Programming Constructs, Advanced Simulation Technologies Conference, Washington, D.C., April 16 - 20, 2000, pp 261 - 264.
- 106. 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 (CNDS '00), San Diego, Ca., 23 - 27 Jan., 2000, pp 99 - 104.
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- 113. 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.
- 114. Hamilton, J.A., Jr. (75%), Lane, W.D. *Network Simulation: Bridging CS and EE Programs*, <u>Proceedings of OPNETWORK '98</u>, May 25 - 30, 1997, Washington, D.C. (Electronic Proceedings: contact http://www.opnet.com.)
- 115. Hamilton, J.A., Jr., (90%), Deal, J.C., Software Interoperability and Distributed Simulation, <u>1998 Advanced Simulation Technologies Conference</u> April 5 - 9, 1998, Boston, Mass., pp 151 - 156.
- 116. Hamilton, J.A., Jr. (70%), Sobiesk, E., Deal, J.C., *Multilevel Simulation of Force XXI Fire Support Operations*, (invited) <u>1997 IEEE International Conference on Systems, Man and Cybernetics</u>, Oct. 12 15, 1997, Orlando, Fla., pp 2601 2606.
- 117. Hamilton, J.A., Jr. (100%), Enabling Technologies for a Global Combat Support System, Summer Computer Simulation Conference, July 13 - 17, 1997, Arlington, Va., pp 771 - 775.
- 118. Deal, J.C., Hamilton, J.A., Jr. (25%), Caudle, J., Unknown Lands and Uncharted Waters, The Army Enterprise Architecture, <u>3rd International Symposium on</u> <u>Command and Control Research and Technology</u>, June 17 - 20, 1997, National Defense University, Fort McNair, Washington, D.C., pp 426 - 449.
- 119. 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.
- 120. Hamilton, J.A., Jr. (70%), Marti, W.F., Pooch, U.W., *Multilevel Multiresolution Simulation of Local Area Networks*, <u>Ninth Annual Software Technology Conference</u>, April 27 - May 2, 1997, Salt Lake City, Utah.
- 121. Jansen, B.J., Zoller, R. and Hamilton, J.A., Jr. (30%), *Integrating User-Centered Design into an Introductory Engineering Course*, <u>ASEE Zone 1 Engineering Education: Evolution and Revolution</u>, April 25 26, 1997, West Point, N.Y., pp

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- 122. Hamilton, J.A., Jr. (70%), Deal, J.C., Jansen, B.J., *Tactical Network Simulation in the US Army*, <u>1997 Simulation Multiconference Proceedings</u>, April 6 10, 1997, Atlanta, Ga., pp 51 55.
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- 124. Hamilton, J.A., Jr. (60%), Ruocco, A.S., *Distributed Simulation Techniques using Conventional Simulation Languages*, <u>1997 Simulation Multiconference Proceedings</u>, April 6 - 10, 1997, Atlanta, Ga., pp 66-71.
- 125. 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, <u>Conference on</u> <u>Communication Networks and Distributed Systems Modeling and Simulation</u>, Jan 12 - 15, 1997, Phoenix, Az., pp 3 - 8.
- 126. Hamilton, J.A., Jr. (60%), Cook, D.A., *Ada Training and Education in the US Army and US Air Force*, <u>Tri-Ada 96 Proceedings</u>, Dec 3 7 1996, Philadelphia, Pa., pp 151 155.
- 127. Marti, W.F., Hamilton, J.A., Jr. (30%), Pooch, U.W., Packet Tracing: A New Paradigm for Teaching Computer Network Courses, <u>SIGCSE/SIGCUE Joint</u> <u>Conference on Integrating Technology into Computer Science</u>, June 2- 6 1996, Barcelona, Spain, published in *SIGCSE Bulletin*, vol. 28, pp 162 - 164.
- 128. Hamilton, J.A., Jr. (65%), Marti, W.F., Pooch, U.W., *Building Distributed Systems*, <u>Eighth Annual Software Technology Conference</u>, April 21 - 26, 1996, Salt Lake City, Utah.
- 129. Marti, W.F., Hamilton, J.A., Jr. (30%), Workshop: Packet Tracing: A Paradigm for Teaching and Understanding Computer Networks, Proceedings, ACM Special Interest Group in Computer Science Education Conference, Feb. 15 - 17, 1996, Philadelphia, Pa.
- 130. Hamilton, J.A., Jr. (75%), Bachus, B.D., Pooch, U.W., *Integrating Distributed Simulation into Force XXI Training*, <u>1996 SCS Simulation Multiconference Proceedings</u>, April 8 11, 1996, New Orleans, La., pp 8 13.
- 131. Hamilton, J.A., Jr. (90%), Pooch, U.W., An Open Simulation Architecture for Force XXI, <u>1995 Winter Simulation Conference Proceedings</u>, Dec 3 - 6, 1995, Arlington, Va., pp 1296 – 1303.

- 132. Hamilton, J.A., Jr. (80%), Cook, D.A., Pooch, U.W., *Distributed Simulation in Ada* 95, <u>Tri-Ada '95 Proceedings</u>, Nov 5 -10, 1995, Anaheim, Calif., pp 105 112.
- 133. Hamilton, J.A., Jr. (90%), Pooch, U.W., A Survey of Object-Oriented Methodologies, <u>Tri-Ada '95 Proceedings</u>, Nov 5 -10, 1995, Anaheim, Calif., pp 226 - 233.

5. Graduate Students

a. Major Professor (Completed)

Summary:

- Ph.D. Computer Science: 15
- Ph.D. Industrial & Systems Engineering: 1
- M.S. Computer Science (Thesis): 6 (AU)
- M.S. Computer Science (Project/Coursework): 2 (MSU)
- M.S. Industrial & Systems Engineering: 1
- M. Software Engineering: 27
- M.S. Cyber Security and Operations: 11

Degree	Name	Research Title		
M.S.	Joshua Cohen	Research Summary: MOSES: Open Source		
CYSO-		Intelligence Query System		
CO				
M.S.C.S.	Andrea Montemaggio	Project: Design and Implementation of the		
	Fall 2020	Autonomic Security Management System		
M.S.	William K.	Research Summary: Building ICS Environments in		
CYSO-	Smallwood	Node-Red		
CO	Fall 2020			
M.S.	Daniel Austin	Coursework		
CYSO-	Spring 2020			
CO				
M.S.	Doug Girault	Coursework		
CYSO-	Spring 2019			
CO				
M.S.	William Lee	Coursework		
CYSO-	Spring 2019			
CO				
M.S.C.S.	Kelly Ervin	Coursework		
	Fall 2018			
M.S.	LCDR Alec Thomas.	Research Summary: A Security Evaluation of AIS		
CYSO-	USN	Automated Identification System		
CO	Spring 2018			
M.S.	LT Rachel Sims,	Research Summary: RFID		
CYSO-	USN			
CD	Spring 2018			

M.S.	LCDR Teddy Tan,	Research Summary: Internet-based Crowd-sourced			
CYSO-	USN	(Social Media) Information			
CO	Spring 2018				
M.S.	Jonathan Davis	Research Summary: Blockchain			
CYSO-	Spring 2018				
CD					
M.S.	LT Jason Carroll,	Research Summary: Advanced Persistent Threats			
CYSO-	USN				
СО	Fall 2017				
M.S.	LCDR Michael	Research Summary: Cyber Operations in the US			
CYSO-	Pawluk, USN	Navy			
CO	Fall 2017				
Ph.D.	Jon Hood	Dissertation: Trusted, Third-Party Authenticated,			
	Summer 2016	Quantum Key Distribution			
Ph.D.	Patrick Pape	Dissertation: Efficient Reliability Verification			
	Spring 2015	Testing in Open Source Software Using Priority			
		Prediction			
Ph.D.	Devin Cook	Dissertation: Augmenting Traditional Static Analysis			
	Spring 2015	With Commonly Available Metadata			
Ph.D.	Christopher Perr	Dissertation: Improving Usable Security and Syster			
	Summer 2014	Safety			
Ph.D.	Christopher Harrison	Dissertation: Odinn: An In-Vivo Hypervisor-based			
	Summer 2014	Intrusion Mitigation System for the Cloud			
Ph.D.	Robert Leithiser	Dissertation: A Framework for Universal Problem			
	Spring 2014	Resolution with Continuous Improvement			
M.Swe.	Adam Payne	Project: Extract Local Variable: A method for			
	Fall 2013	Maintenance Refactoring			
M.Swe.	Chase Rushing	Project: Procedural Terrain Generation with			
	Fall 2013	Automated Objective Insertion			
M.Swe.	Richard Alverson	Project: Vulnerability Testing of Outsourced			
	Summer 2013	Software Systems used by Auburn University			
M.S.	Patrick Pape	Thesis: A Methodology for Increasing the			
	Spring 2013	Dependability of Open Source Software Components			
M.S. ISE	CPT Greg Bew, USA	Thesis: Iterative and Incremental System Lifecycle			
	Spring 2013	Development			
M.Swe.	Charles Carter	Project: Planning, Implementation, and			
	Summer 2012	Enhancement of a Turn-Based, Multi-Player,			
		Randomized Board Game with an Artificially			
	I TI	Intelligent Player			
M.Swe.	James Thompson	Project: Cars on Droids			
	Spring 2012				
M.Swe.	Steven A. Hanna	Project: An Intel x86 CPU, IBM BIOS and			
	Fall 2011	Hardware Emulator			
M.Swe.	Jonathan Hood	Project: Intercepting and Blocking Insecure Requests			
	Fall 2011				

M.Swe.	Capt. Steven Payne, USAF	Project: AI Stock Advisor		
	Summer 2011			
M.Swe.	Sriharsha Banavara Spring 2011	Project: Software Architecture for Delta 3D and id Tech 3 Game Engine using DoDAF		
M.Swe.	Radha Kuskuntla Fall 2010	Project: Modern Browsers Losing Security: Browser History is not Really Private		
M.Swe.	Capt. C.W. Perr, USAF Fall 2010	Project: Department of Defense Architecture Framework (DoDAF) Generation from Strongly Formed Programming Language Source Code		
M.Swe.	Mathew Beaubouef Fall 2010	Project: Certification & Accreditation of the Delta 3D Gaming Engine		
Ph.D.	LTC George Trawick, USA Summer 2010	Dissertation: Digital Forensics Detection of JPEG Steganography		
M.S.	Ryan O'Farrell Fall 2009	Thesis: Development of a Software Architecture Method for Software Product Families and its Application to the Aubiesat Satellite Program		
Ph.D.	Winard Britt Summer 2009	(co-chair w/ Dr. Bevly) Dissertation: Autonomous Control and Navigation of a Trained Canine		
Ph.D.	Derek Sanders Summer 2009	Dissertation: A Single-Hop Medium Access Control Layer For Noisy Channels		
Ph.D.	Mark Kuhr Spring 2009	Dissertation: An Adaptive Jam-Resistant Cross- Layer Protocol for Mobile Ad-Hoc Networks In Noisy Environments		
M.Swe.	Tiffanie Jones Spring 2009	Project: The Albany Police Department Mobile Data Unit (AMDU) "Enforcing the law in an Efficient and Secure Manner"		
M.Swe.	William Conkling Spring 2009	Project: Applet Based Visualizer for NS3 Simulations		
Ph.D.	Idongesit Mkpong- Ruffin Spring 2009	(co-chair w/ Dr. Umphress) Dissertation: Quantitative Software Risk Assessment Model in the Design Phase of Software Development		
Ph.D.	Stephen Torri Spring 2009	Dissertation: Generic Reverse Engineering Architecture with Compiler and Compression Classification Components		
Ph.D.	Suhair Amer Spring 2008	Dissertation: Host-Based Intrusion Detection System Enhanced with Danger Theory of Artificial Immune Systems		
Ph.D.	Eric Imsand Spring 2008	Dissertation: Applications of GUI Usage Analysis		
M.Swe.	Gerry Hicks Spring 2008	Project: Cyber Analysis Tool: Collecting Sensitive/Confidential Information Through an Automated Search		
M.Swe.	Daniel Box	Project: Anti-Terrorism Profiling Using Data Mining		

	Spring 2008			
M.Swe.	Jonathan MacDonald	Project: Fraud-ARC: An Investigative Data Mining		
	Spring 2008	Engine For Identity Fraud Analysis		
M.Swe.	Bob Leithiser	Project: Enabling Collaboration in Artifact Modeling		
	Spring 2008	Through the Use of Relational State Tracking		
M.Swe.	Derek Sanders	Project: Investigating a Cryptographic Coprocessor		
	Spring 2008			
M.Swe.	MAJ Stephen	Project: Secure Jam Resistant Key Transfer		
	Hamilton, USA			
	Spring 2008			
M.Swe.	Mark Kuhr	Project: Virtual Privacy Appliance with Geo-		
	Spring 2008	Perspective Access		
M.Swe.	Adam Sachitano	Project: Detecting Abnormal Usage of a Software		
	Spring 2008	Version Control Repository		
		Dissertation: A Defense System on DDOS Attacks in		
	Spring 2007	Mobile Ad Hoc Networks		
M.Swe. Kevin Richardson		Project: Safely Redistributing Untrusted Code using		
	Spring 2007	.NET		
M.Swe.	Alan Hunt	Project: Synclynk Connectivity		
	Fall 2005			
M.Swe.	Adam Hathcock	Project: Implementation of Secure Overlay Services		
	Fall 2005	in Java		
M.S.	Brian Eoff	Thesis: Using Genetic Programming to Quantify the		
	Fall 2005	Effectiveness of Similar User Cluster History as a		
		Personalized Search Metric		
Ph.D.	Jay-Evan Tevis	Dissertation: Automatic Detection of Software		
	Summer 2005	Security Vulnerabilities in Executable Program Files		
M.Swe.	Pamela Sanders	Project: Computer-Assisted Therapy: A Personal		
	Fall 2004	Digital Assistant Application for Generalized		
		Anxiety Disorder		
M.S.	Wade Chatam	Thesis: Strategic Firewall Placement		
	Summer 2004			
M.Swe.	Van Norris	Project: Open Source Parameter Search		
	Spring 2004			
M.S.	Eric Imsand	Thesis: Using Genetic Algorithms to Aid in a		
	Fall 2003	Vulnerability Analysis of National Missile Defense		
		Simulation Software		
M.S.	Mark Peters	Thesis: Vulnerability of Wireless Position Location		
	Summer 2003	Systems to Spoofing		

b. In-Progress: Serving as Major Professor / Committee Member

Serving as Major Professor: Ph.D. in Computer Science

DeMarcus Thomas Chris Lanclos

Doug Girault Kohler Smallwood

Serving as Major Professor: Ph.D. in Computational Engineering Paul Danko

Serving as Major Professor: M.S. in Cyber Security and Operations

David Fulton Joshua Gibbons Justin Leiden Jordan Scruggs RJ Williams

Serving as Major Professor: M.S. in Computer Science

Cait Kleinschmidt Nicholas Lalo Kyanie Waters La 'Andrea Gates

Serving as Major Professor: M.S. in Information Systems Mike Silva

• Summary: Committee member (graduated students)

- Ph.D. Computer Science: 6 (Auburn) 1 (MSU)
- Ph.D. Software Engineering: 1 (Naval Postgraduate School)
- Ph.D. Electrical and Computer Engineering: 1
- M.S. Computer Science: 16 (Auburn) 2 (MSU)
- M.S. Cyber Security & Operations: 2 (MSU)
- M.S. Electrical Engineering: 1 (MSU)
- M.S. Software Engineering: 10
- Ph.D. Management Information Systems: 2 (2 as Outside Reader)
- Ph.D. Industrial & Systems Engineering: 2 (1 as Outside Reader Auburn) (1 at MSU)

6. Scholarly Contributions

a. Courses and Curricula Developed

At Auburn University:

- 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.
- COMP 5340/6340 (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.

- 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.
- COMP 5350/6350 *Digital Forensics*. New Course. Objective: This course will introduce the topics of computer compromises and computer forensics. Students will be required to learn different aspects of computer crime and ways in which to uncover, protect and exploit digital evidence. Paperwork completed to add course (COMP 5350/6350) to university course catalog. Concurrent course ISMN 5350/6350 to be offered to MIS majors.
- 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.
- 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.
- 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.
- COMP 4970/7970 *Special Topics in Computer Forensics* (COMP 7976 distance learning version). 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 twosemester capstone software engineering design sequence. Lecture notes, exams, projects developed and posted on the web.
- CS 393 *Database Systems*. Renovated Course. Objective: Implementation of webbased database front-ends and design of database back-ends. Lecture notes, exams, projects developed and posted on the web.

b. Grants Received Related to Teaching (not counted elsewhere)

- \$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)

c. Other Contributions to Teaching

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

7. Other Creative Work

a. Video

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

b. Papers or Lectures

- Poster: Compton*, D., Hamilton, J.A., Jr. (30%), An Examination of the Techniques and Implications of Crowd-sourced Collection of Forensic Data, <u>2011 3rd IEEE</u> <u>International Conference on Social Computing</u>, Boston, Mass. 9 – 11 October 2011.
- Amer*, S. H., Hamilton, J.A., Jr., (20%), "Intrusion Detection Systems, (IDS) Taxonomy – A Short Review," *DOD Software Tech News*, vol. 13, no. 2, June 2010, DOD Data & Analysis Center for Software, Air Force Research Laboratory, Rome, N.Y., pp 23 - 30.

c. Professional Meetings / Invited Lectures

- 1. Hamilton, J.A., Jr., Invited Lecture: "Navigating the Digital Divide," New Mexico Tech, Socorro, N.M. 1 March 2017.
- Hamilton, J.A., Jr., Invited Lecture: "What if a Simulation is too Good?," University of Memphis, Memphis, Tenn., 17 February 2017 and University of South Alabama, Mobile, Al., 28 April, 2016.

- 3. Hamilton, J.A., Jr., Invited Testimony: "An SCS Perspective on Modeling and Simulation," presented to the National Research Council Committee on Modeling, Simulation and Games, 12 January 2009.
- Hamilton, J.A., Jr., O'Connell, L.H., "The Impact of JCIDS on Software-Intensive Acquisitions, 2008 Systems & Software Technology Conference, Las Vegas, Nev., 2 May 2008.
- 5. Hamilton, J.A., Jr., Invited Lecture: "Security and Missile Defense Software," Mississippi State University, Starkville, Miss., 20 February 2006.
- 6. Hamilton, J.A., Jr., "The Information Non-War of 2015," Space and Missile Defense Conference, Huntsville, AL, 15 18 August 2005.

d. Keynote Addresses

- 1. *Critical Mass in Modeling & Simulation: the Alabama Example,* 2008 Huntsville Simulation Conference, keynote address, 22 23 October 2008, Huntsville, Ala.
- 2. *Advances in DODAF-Based Information Assurance Architectures*, 2008 Systems & Software Technology Conference, keynote address, 1 May 2008, Las Vegas, Nev.
- 3. *Critical Mass: SCS-SISO Cooperative Enterprises*, plenary address, 2007 SISO Fall Simulation Interoperability Workshop, 16-20 September 2007, Orlando Fla.
- 4. *A Brief History of Simulation & an SCS Update*, keynote address, SCS Summer Simulation Multiconference, Aug 15 18 2007, San Diego, Calif.
- 5. *Simulation Security: Securing the Future of Simulation,* keynote address, 17th European Simulation Symposium, Oct 20 23 2005, Marseille, France.
- 6. 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.
- 7. *Programming Languages Do Make a Difference*, keynote address, ACM Tri-Ada '97 Conference, Nov 9 - 13 1997, St. Louis, Mo.
- 8. *Beyond the Mandate: Ada in the 21st Century*, keynote address, 14th Washington Ada Symposium, June 25 26, 1997, Washington, D.C.
- 9. *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.
- 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.
- Invited short paper: Hamilton, J.A., Jr., (100%), SCS: Securing the Future of Simulation, Simulation, Vol. 84, No. 12, Dec. 2008, pp 575-576.

8. Outreach

a. Commentary

I have been very active in outreach activities in three major areas: student competitions, information assurance certifications of federal employees and teaching at neighboring HBCUs. I served as coach of Auburn programming contest teams from 2003 – 2006 and coached two digital combat exercise teams in 2004 and 2005. Under the auspices of the National Security Agency, I conducted Information Assurance certification courses at Redstone Arsenal from 2005 - 2007. The success of this program can be seen by the increasing number of civil servants and uniformed military personnel participating: 9 in 2005, 25 in 2006 and 53 in 2007. I have gained extensive experience in working with HBCUs and HSIs. What makes our partnerships significant is the time I spend on the HBCU/HSI campuses instructing and interacting with the students. I have taught semester courses in information assurance at Alabama State University in spring 2006, at both Tuskegee University and Albany State University in spring 2007 and again at Albany State in spring 2008 and at Western NM University in 2009 and 2014. As this outreach program continued to expand, Auburn colleagues (Xiao Qin and Jeff Ku) joined with me to teach IA courses at Alabama State and Tuskegee in Spring 2008. Using funding received from the National Security Agency, I routinely lectured and conducted lab exercises at Maxwell AFB. Currently, with support from the NSA, I am assisting the National Guard in meeting personnel cyber security certification requirements of DoD Manual 8570.01M.

b. Specific outreach examples:

- Taught CMPS 480/580 Information Assurance Risk Analysis during Summer Semester 2009 at Western New Mexico University (HSI). Thirteen students took or audited the course and ten were certified.
- Team-Taught with an ASU colleague CSCI 4911 Information Assurance Management during Spring Semester 2008 on-site at Albany State University (HBCU). Thirteen students took the course and seven were certified.

- Taught CSCI 4911 Information Assurance Management during Spring Semester 2007 on-site at Albany State University (HBCU). Twenty-four students took the course and seven were certified.
- Taught CSCI 0421 Information Assurance Management during Spring Semester 2007 on-site at Tuskegee University (HBCU). Four students took the course and two were certified.
- Taught CS 490 Special Topics: INFOSEC Professional Certification Course during Spring Semester 2006 on-site at Alabama State University (HBCU). Eleven students took the course and eight were certified.
- Conducted 1 week NSA Senior System Manager Qualification Course in Huntsville, Ala., Jul. 2006 and Jul. 2007.
- 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, 2005, placed second and third.)
- 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.)

9. Service

Name	Position	Level	Period
MSU Cyber Club	Sponsor	University	Aug 19 – Aug 21
Cyber Operations Certificate	Director	University	Sep 17 – Aug 21
Information Assurance Certificate	Director	University	Aug 17 – Aug 21
Information Technology Committee	Member	University	Aug 13 – Mar 21
Southeastern Conference (SEC) Academic	Member	University	Aug 15 – Aug 16
Conference Committee			
Undergraduate Research Committee	Member	University	Aug 13 – Dec 14
Master Development & Planning	Member	University	Jan 14 – Jan 16
Committee			

University Service (Mississippi State University)

University Service (Auburn University)

Name	Position	Level	Period
Auburn Cyber Task Force	Chair	University	Mar 12 – Dec 12
College Promotion & Tenure	Member	College	Aug 10 – Aug 13
Computer Security Team	Coach	Department	Mar 04 – Jan 06
ACM Programming Team	Coach	Department	Sept 03 – Jan 06
ACM/IEEE CS	Sponsor	Department	Dec 02 – Jan 07
E-Day Committee	Member	Department	Aug 01 – Aug 13
Promotion Committee	Member	Department	Aug 1 – Aug 13
Hiring Committee	Member	Department	Aug 03 – Aug 04
			Aug 06 – Aug 13
Recruitment Committee	Member	Department	Aug 06 – Aug 13

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

10. Professional Service

a. Professional Associations

- Society for Modeling & Computer Simulation International (Fellow)
 - Society Immediate Past President 2009 2011
 - Society President 2006 2009
 - Society Senior Vice President 2004 2006
 - Society Secretary 2002 2004
- Institute of Electrical and Electronics Engineers (Senior Member)
 - IEEE Computer Society
- Association for Computing Machinery (Senior Member)
 - Elected member 2017 2021 ACM SIG Governing Board Executive Committee
 - Elected Chair, 2017 2021, Special Interest Group Ada (SIGAda)
 - Elected Chair, 2010 2012, Special Interest Group Simulation (SIGSIM)
 - Elected Vice-Chair, 2008 2010, Special Interest Group Simulation (SIGSIM)
 - Secretary-Treasurer, 2004 2008, Special Interest Group Simulation (SIGSIM)
- Conference Committee, Simulation Interoperability Standards Organization (SISO) 2004 2006.
- Vice Chair, Professional Development Committee, Alabama Modeling and Simulation Council 2004 2006.
- Chairman, Auburn University Council of the Modeling and Simulation Network 2003 – 2013.

- Elected, Board of Directors, Alabama Modeling and Simulation Council 2006 2010.
- American Society for Engineering Education (Senior Member)
 - 2018 Elected chair of the American Society of Engineering Education Veterans Committee of the ASEE Veterans Division.
 - Member, Military and Veterans Division Constituent Committee 2013 present.

b. Editor/Reviewer

- Associate Editor, *Simulation: Transactions of the Society for Modeling and Simulation*, 2008 present.
- Associate Editor, Journal of Defense Modeling and Simulation, 2006 present.
- Consulting Editor, *Journal of Defense Modeling and Simulation*, 2003 2005.
- Member, Editorial Board, Crosstalk: The Journal of Defense Software Engineering, 2006 2013.
- Referee, *Simulation Journal*, 1999 2001.
- Reviewer, Software Technology Conference, 1994-2000.
- Referee, Special Interest Group on Computer Science Education, 1993-1996.

c. Conference Leadership

- Program Chair 2020 Research Track, National Security Agency CAE Executive Leadership Forum.
- Conference Chair 2014 ACM-SIGSIM Principles of Advanced Discrete Simulation Conference.
- Chair Elect 2013 ACM-SIGSIM Principles of Advanced Discrete Simulation Conference.
- Program Committee, SECRYPT 2009 International Conference on Security and Cryptography.
- Program Committee, IEEE Symposium on Computational Intelligence in Cyber Security, 2008 – 2013
- Program Committee, IEEE Rapid Systems Prototyping Workshop, 2000 2014.
- Program Committee, IEEE Information Assurance Workshop, 2006 2007.
- 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.
- Program Committee, Huntsville Simulation Conference, 2002 2010.
- 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.

d. American Board of Engineering Technology (ABET)

- ABET Program Evaluator, Computing Accreditation Commission
- Member, ABET Cyber Security Accreditation Committee
- Member, Joint ABET/NSA Coordination Committee

e. Miscellaneous

- Member, FBI Jackson Field Office Joint Terrorism Task Force
- Member, Federal Bureau of Investigation InfraGard
- Life Member, Auburn University Alumni Association
- Life Member, Disabled American Veterans
- Life Member, Phi Kappa Phi (National Honor Society)
- Life Member, New Mexico Military Institute Alumni Association
- Member, Upsilon Pi Epsilon (National Honor Computer Science Fraternity)
- Member, Phi Rho Pi (National Honor Speech Fraternity)
- Member, Sigma Xi, (Scientific Research Honor Society)
- Alumni, National Society of Scabbard & Blade (ROTC Honor Society)

11. Selected Federal Program Management and Contracting Course Completions

DHS Contracting Officer Workshop, December 2015.

Defense Acquisition University

- Adv. Systems Planning, Research, Development & Engineering (Level III) May 1999
- Software Acquisition Management (Level III) March 1999

Army Logistics Management College

- Information Mission Area Acquisition Strategy Course, September 1992
- Logistics Executive Development, November 1985
- Management of Defense Acquisition Contracts, November 1982