

150 Student Services Drive
University of South Alabama
Mobile, AL 36688-0002

A. Professional Information

A.1 Professional Education

Florida State University (USA)	Computer Science	Ph.D., 2007
Air Force Institute of Technology (USA)	Computer Engineering	M.S.C.E., 2002
University of Central Florida (USA)	Computer Engineering	B.S.C.E., 1998

A.2 Full-Time Academic Positions

Dean	School of Computing University of South Alabama	May 14, 2023 - present
Chair	Department of Computer Science University of South Alabama	Aug 15, 2019 – May 14, 2023
Professor	University of South Alabama	Aug 15, 2015 – present
Associate Professor	University of South Alabama	Aug 15, 2012 – Aug 14, 2015
Assistant Professor	Air Force Institute of Technology	Dec 15, 2007 – Aug 14, 2012

A.3 Other Professional Positions

Provost Faculty Fellow	Office of Academic Affairs University of South Alabama	Aug 15, 2018 – May 15, 2019
Officer	United States Air Force	Sep 1998 – Aug 2012 (retired, Maj, USAF)
Enlisted	United States Air Force	Jul 1989 – Sep 1998

B. Research Activities

B.1 Research Grants and Awards

1. T.R. Anandel, J.T. McDonald, A. Clark, H.L. Barnett, 2021 Renewal for USA Cyber Scholars Program – Preparing Gulf Coast Cyber Scholars, NSF, DGE-2142948, 1 Jun 2022 – 31 May 2021: **\$3,320,319**
2. Todd R. Anandel, H. Les Barnett, Microcontroller Root of Security Evaluation, Dynetics, Contract DI-SC-21-30, Jan -Dec 2021: **\$217,051**
3. William Reichert, Todd R. Anandel, Scott Sittig, Michael Black, Project Night Fury – SoC, Department of Interior, Contract, Jan 2019 – Feb 2021, **\$339,652**
4. Todd R. Anandel, J. Todd McDonald, Ryan Benton, P7: On Device Detection via Anomalous Environmental Factors (phase-2), NSF-I/UCRC-Center for Advanced Research in Forensic Science (1740434), Sep 2018-Aug 2019: **\$25,000**
5. Todd R. Anandel, J. Todd McDonald, Ryan Benton, P17: On Device Detection via Anomalous Environmental Factors, NSF-I/UCRC-Center for Advanced Research in Forensic Science (1740434), Sep 2017-Aug 2018: **\$25,000**
6. J.T. McDonald, T.R. Anandel, GenCyber - Cybersecurity and Information Assurance Summer Camps, NSA-DoD, H98230-17-1-0284, 14 Apr 2017 – 13 Apr 2018: **\$ 57,870**
7. T.R. Anandel, J.T. McDonald, A. Clark, H.L. Barnett, Renewal for USA Cyber Scholars Program, NSF, DGE-1564518, 1 Oct 2016 – 30 Sep 2021: **\$4,097,801**
8. T.R. Anandel, J.T. McDonald, S. Russ, MRI: Acquisition of Side-Channel Measurement and Analysis System, NSF, CNS-1624944, Aug 2016 – Jul 2019: **\$393,288**
9. T.R. Anandel, J.T. McDonald, GenCyber - Cybersecurity and Information Assurance Summer Camps, NSA-DoD, H98230-16-1-0273, 28 Apr 2016 – 27 Apr 2017: **\$47,722**
10. J.T. McDonald, T.R. Anandel, R.G. Bace, H.L. Barnett, Capacity Building for Information Assurance and Cyber Security, NSF, DGE-1303384, Sep 2014 – Aug 2017: **\$322,410**
11. J.T. McDonald, T.R. Anandel, H.L. Barnett, II-NEW: RUMCID 30oc-14.2 (F)68.2 ()--0.4u eWance

B.2 Research Publications

B.2.1 Refereed Journal Publications

1. George W. Clark, Todd R. Andel, J. Todd McDonald, Tom Johnsten, Thomas G. Thomas, “Detection and Defense of Cyber Attacks on the Machine Learning Control of Robotic Systems,” *Journal of Defense Modeling and Simulation Special Issue: Cyber Defense Tools and Techniques to Minimize Attack Surfaces*, November 2021, 23 pages.
2. Adam J. Brown and Todd R. Andel, “A Systematic Approach to the Design and Implementation of Cyber Defense Tools and Techniques,” *Journal of Defense Modeling and Simulation Special Issue: Cyber Defense Tools and Techniques to Minimize Attack Surfaces*, November 2021, 23 pages.

14. Todd R. Anel and A. Yasinsac, "Surveying Security Analysis Techniques in MANET Routing Protocols," *IEEE Communications Surveys & Tutorials*, 4th Quarter 2007, vol. 9, pp. 70-84.
15. Todd R. Anel and Alec Yasinsac, "On the Credibility of MANET Simulations," *IEEE Computer*, vol. 39, no. 7, July 2006, pp. 48-54.

B.2.2 Refereed Conference Publications

1. Anthony J. Monge, Todd Anel, "Use of Intrusion Detection Systems in Vehicular Controller Area Networks to Preclude Remote Attacks", *18th International Conference on Cyber Warfare and Security (ICCWS 2023)*, Towson University, Maryland, 9-10 March 2023, pp.

25. Joel A. Dawson, J. Todd McDonald, Jordan Shropshire, Todd R. Andel, Patrick Lockett, and Lee Hively, "Rootkit Detection through Phase-Space Analysis of Power Voltage Measurements

37. Christos Kynigos, William B. Glisson, Todd R. Anandel, and Jeffrey T. McDonald, "Utilizing the Cloud to Store Camera Hijacked Images," *In Proceedings Hawaii International Conference on System Sciences (HICSS-49)*, Kauai, Hawaii, 5-8 January, 2016, pp. 5497-5506.
38. Cordell C. Davidson, Joel Dawson, Paul Carsten, Mark Yampolskiy, and Todd R. Anandel, "Investigating the Applicability of a Moving Target Defense for SCADA Systems," *In Proceedings of 3rd International Symposium for ICS & SCADA Cyber Security Research (ICS-CSR 2015)*, Ingolstadt, Germany, 17-18 September, 2015, pp. 107-110.
39. Paul Carsten, Todd R. Anandel, Mark Yampolskiy, Jeffrey T. McDonald, and Samuel Russ, "A System to Recognize Intruders in Controller Area Network (CAN)," *In Proceedings of 3rd International Symposium for ICS & SCADA Cyber Security Research (ICS-CSR 2015)*, Ingolstadt, Germany, 17-18 September, 2015, pp. 111-114.
40. William B. Glisson, Todd Anandel, Todd McDonald, Mike Jacobs, Matt Campbell, and Johnny Mayr, "Compromising a Medical Mannequin," *In Proceedings of 21st Americas Conference on Information Systems (AMCIS 2015)*

Information Systems, Technology, and Management (ICISTM 2012), Grenoble, France, 28-30 March 2012, pp. 325-335.

50. John Barron, Todd R. Andel, and Yong Kim, "Dynamic Architectural Countermeasure To Protect RSA Against Side Channel Power Analysis Attacks," *In Proceedings of 6th International Conference on Information Systems, Technology, and Management (ICISTM 2012)*, Grenoble, France, 28-30 March 2012, pp. 372-383.
51. Matthew F. Steele and Todd R. Andel, "Modeling the Optimized Link-State Routing Protocol for Verification," *Spring Simulation Multi-conference (SpringSim12)*, Orlando, FL, 26-29 March 2012, 8 pages.
52. Kyle E. Stewart, Todd R. Andel, and Jeffrey W. Humphries, "Measuring the Performance of Network Virtualization Tool N2N in the Design of a Cyber Warfare Training and Education Platform," *In Proceedings of 2011 Spring Simulation Multi-conference (SpringSim11)*, Boston, MA, 4-7 April 2011, pp. 28-35.
53. Jose Fadul, Kenneth Hopkinson, Christopher Sheffield, James Moore, and Todd Andel, "Trust Management and Security in the Future Communication-Based "Smart" Electric Power Grid", *in 44th Hawaii International Conference on System Sciences (HICSS 2011)*, Kauai, Hawaii, 4-7 Jan 2011, pp. 1-10.
54. J. E. Fadul, K. M. Hopkinson, T. R. Andel, J. T. Moore, and S. H. Kurkowski, "SCADA Trust Management System," *in 2010 International Conference on Security and Management (SAM'10) (under The 2010 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP'2010))*, Las Vegas, Nevada USA, July 2010, pp. 548 - 554.
55. Todd R. Andel, Kyle E. Stewart, and Jeffrey W. Humphries, "Using Virtualization for Cyber Security Education and Experimentation," *In Proceedings of the 14th The Colloquium for Information Systems Security Education (CISSE 2010)*, Baltimore, MD, 7-9 June 2010, 6 pages.
56. J. E. Fadul, K. M. Hopkinson, T. R. Andel, J. T. Moore, and S. H. Kurkowski, "Simple Trust Protocol for Wired and Wireless SCADA Networks," *in 5th International Conference on Information Warfare and Security*, Dayton, OH, April 2010, pp. 89-97.
57. C.M. Durham, T.R. Andel, K.M. Hopkinson, and S.H. Kurkowski, "Evaluation of an OPNET Model for Unmanned Aerial Vehicle (UAV) Networks," *In Proceedings of 2009 Spring Simulation Multi-conference (SpringSim09)*, San Diego, CA, 22-27 March 2009, 8 pages.
58. K.E. Stewart, J.W. Humphries, and T.R. Andel, "Developing a Virtualization Platform for Courses in Networking, Systems Administration and Cyber Security Education," *In Proceedings of 2009 Spring Simulation Multi-conference (SpringSim09)*, San Diego, CA, 22-27 March 2009, 7 pages.
59. M.G. Wabiszewski, Jr, T.R. Andel, B.E. Mullins, and R.W. Thomas, "Enhancing Realistic Hands-on Network Training in a Virtual Environment," *In Proceedings of 2009 Spring Simulation Multi-conference (SpringSim09)*, San Diego, CA, 22-27 March 2009, 8 pages.
60. B.W. Ramsey, B.E. Mullins, R.W. Thomas, and T.R. Andel, "Subjective Audio Quality over Secure IEEE 802.11 Wireless Local Area Networks," *in IEEE International Performance, Computing and Communications Conference, 2008. IPCCC 2008*, Austin, TX, 7-9

62. Todd R. Andel and A. Yasinsac, "Adaptive Threat Modeling for Secure Ad Hoc Routing Protocols," *In Proceedings of the 3rd International Workshop on Security and Trust Management (STM 07)*, Dresden, Germany Sep 27, 2007, vol. 197: ENTCS, pp. 3-14.

63. Todd R. Andel and Alec Yasinsac, "Automated Security Analysis of Ad Hoc Routing Protocols," *In Proceedings of the Foundations of Computer Security and Automated Reasoning for Security Protocol Analysis (FCS-ARSPA'07)*, Wroclaw, Poland, July 8, 2007, pp. 9-26.

64. Td (as1.7 (l))03 0 0022 Tc 0b0.03 Tw 13t1.4 (od)Nu8nalnal.4 (A)-17.4 (l)-26.6 (e)9as1.7 (l)17.4 (l (a)L[49

3. "Computer Fraud: Intellectual Property Protections," Association of Certified Fraud Examiners - Gulf Coast Chapter, Gulfport, MS, Dec. 2, 2014.
4. "Cyber Security Vulnerabilities in Critical Infrastructure and Medical Devices," Gulf Coast Technology Council, Mobile, AL, Jun. 18, 2014
5. "Educating the Future IA Professional Workforce," IEEE Chapter Meeting, University of South Alabama, Mobile, AL, Apr. 25, 2013.
6. "Educating the Future IA Professional Workforce," CFITS Information Assurance Speaker Series, School of Computing, University of South Alabama, Mobile, AL, Mar. 20, 2013.
7. "Computer Security Research," ACM Chapter Meeting, University of South Alabama, Mobile, AL, Sep. 25, 2012.

B.3 Student Research Advising

- Graduated Masters (Thesis Research Advisor)

Air Force Institute of Technology:

1. Durham, Clifton M., Grad: March 2009.
2. Stewart, Kyle E., Grad: June 2010. (CoAdvised)
3. Huber, Derek J., Grad: June 2010. (CoAdvised)
4. Barron, John W., Grad: March 2012.
5. Brown, Brandon A., Grad: March 2012.
6. Fritzke, Austin W., Grad: March 2012.
7. Steele, Matthew F., Grad: March 2012.

University of South Alabama:

8. Whitehurst, Lindsey, Grad: May 2015
9. Gamble, Tracy, (MS Project) Grad: May 2015
10. Carsten, Paul, Grad: May 2016
11. Trigg, Tyler, Grad: May 2017
12. Dombrowski, John (MS Project), Grad: May 2018
13. Gautier, Adam, Grad: May 2020
14. Davis, Sydney, Grad: May 2022

- Graduated Doctoral Students (Dissertation Research Advisor)

1. Brown, Adam J., University of South Alabama, Grad: May 2018
Employment: The Boeing Company
2. Davidson, Cordell C., University of South Alabama, Grad: Dec 2018
Employment: Assistant Professor- University of South Alabama
3. Clark, George W., University of South Alabama, Grad: Dec 2019
Employment: Assistant Professor- University of South Alabama
4. Mullins, Tristen H., University of South Alabama, Grad: May 2022
Employment: Oak Ridge National Laboratory
5. Peterson, Matthew, University of South Alabama, Grad: Dec 2022
Employment: SSI Group

- **Masters Committee Membership:**

Air Force Institute of Technology:

1. Roberts, G., Grad: Mar 08
2. Carroll, S., Grad: Mar 08
3. Savage, K., Grad: Mar 08
4. Pagel, B., Grad: Mar 09
5. Ramsey, B., Grad: Mar 09
6. Oquendo Class, L., Grad: Mar 09
7. Stanton, William E., Grad: Mar 2011
- 8.

C. Teaching Activities

C.1 Courses Taught (indicates # of students)

Air Force Institute of Technology:

29.			FA 18 (12)
30.	CSC 320	Computer Organization	SP 15 (22)
31.			SP 16 (30)
32.			SP 17 (34)
33.			SP 18 (27)
34.	CSC 612		

- 2014 CSC 520, *Computer Architecture*– Integrated new course project utilizing the SimpleScaler toolkit. This project allows the students to apply advanced class concepts to determine overall effect on system performance against standardized benchmark suites. The project is focused on cost/performance for design concepts in modern processors.
- 2014 CSC 490/590, *Special Topics-Intro to Network Security* – Developed and taught

Last Updated:

- 4th Workshop on Program Protection and Reverse Engineering (PPREW-2014)
- 5th International Workshop on Privacy, Security and Trust in Mobile and Wireless Systems (MobiPST 2015)
- 10th Annual Cyber and Information Security Research Conference (CISRC 2015)
- 10th International Conference on Cyber Security and Security (ICCWS 2015)
- 10th International Conference on Availability, Reliability and Security (ARES 2015)
- 18th International Conference on Computer Information Technology (CIT 2015)
- 5th Workshop on Program Protection and Reverse Engineering (PPREW-2015)
- 11th International Conference on Cyber Security and Security (ICCWS 2016)
- 11th Annual Cyber and Information Security Research Conference (CISRC 2016)
- 11th International Conference on Availability, Reliability and Security (ARES 2016)
- 6th Software Security, Protection, and Reverse Engineering Workshop (SPPREW-2016)
- 12th International Conference on Cyber Security and Security (ICCWS 2017)
- 12th Annual Cyber and Information Security Research Conference (CISRC 2017)
- 12th International Conference on Availability, Reliability and Security (ARES 2017)
- 7th Software Security, Protection, and Reverse Engineering Workshop (SPPREW-2017)
- 13th International Conference on Cyber Security and Security (ICCWS 2018)
- 13th Annual Cyber and Information Security Research Conference (CISRC 2018)
- 13th International Conference on Availability, Reliability and Security (ARES 2018)
- 8th Software Security, Protection, and Reverse Engineering Workshop (SPPREW-2018)
- 14th International Conference on Availability, Reliability and Security (ARES 2019)
- 15th International Conference on Cyber Security and Security (ICCWS 2020)
- 15th International Conference on Availability, Reliability and Security (ARES 2020)
- 16th International Conference on Cyber Security and Security (ICCWS 2021)
- 16th International Conference on Availability, Reliability and Security (ARES 2021)
- 17th International Conference on Cyber Security and Security (ICCWS 2022)
- IEEE International Conference on Cyber Security and Security (ICCWS 2022)
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Consulting (non-paid):

2010 – 2012 Appointed to the Federal Voting Assistance Program (FVAP) Cyber Security Review Group to provide recommendations as they develop electronic voting options for overseas voters as directed by the 2002/2005 NDAA. This group is comprised of 20 top federal employees with leadership/influence within the information technology security / cyber security and voting systdegy sgy s 5(18)Tj-0.022 Tc 0.033 intderhesteds4-26.6 (c)-12.k4 (e)9.h6 (o)21.l(vi)-4.6 (de)31 (r)-14.9 (s)-2.3 (6)30.9 (l)-4.6 (e)9.v

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