Claude F. Turner, Ph.D.

Professor of Computer Science · Norfolk State University

700 Park Avenue, Norfolk, VA 23504 cturner@nsu.edu (757) 823-8311

Computer scientist and academic leader working at the intersection of cybersecurity, artificial intelligence, data science, and signal processing, with a sustained record of externally funded research and curriculum innovation at Historically Black Colleges and Universities. Principal or co-principal investigator on more than twenty awards from NSF, DOE, NNSA, NSA, DoD, and Microsoft; founding director of a university cybersecurity center; former department chair; and advisor to doctoral, master's, and undergraduate researchers across cybersecurity, machine learning, and quantum computing.

$7.3M	58	20+	30+
AWARDS AS PI / CO-PI	PEER-REVIEWED PAPERS	FUNDED PROJECTS	THESES & PROJECTS ADVISED

RESEARCH INTERESTS

Cybersecurity
Data Science
Signal Processing
Quantum Science and Information
Artificial Intelligence
Computing and Cybersecurity Education

EDUCATION

Ph.D., Electrical Engineering — January 2003
The Graduate Center, City University of New York

M.Phil., Electrical Engineering — February 2002
The Graduate Center, City University of New York

M.S., Electrical Engineering — June 1995
The City College of the City University of New York

B.S., Electrical Engineering — June 1993
The City College of the City University of New York

A.S., Engineering Science — June 1990
Bronx Community College of the City University of New York

ACADEMIC APPOINTMENTS

Professor, Department of Computer Science — Aug 2020 – Present
Norfolk State University, Norfolk, VA — promoted to the rank of Professor, August 2020

Department Chair, Department of Computer Science — Jul 2018 – Jun 2021
Norfolk State University, Norfolk, VA — served as Associate Professor (2018–2020) and as Professor (2020–2021)

Visiting Faculty, Computational Science Initiative — Summer 2022
Brookhaven National Laboratory — research in machine learning, artificial intelligence, and quantum computing

Associate Professor, Department of Computer Science — Aug 2014 – Jul 2020
Norfolk State University, Norfolk, VA

Director, Center for Cybersecurity and Emerging Technologies — Jun 2011 – Aug 2014
Bowie State University, Bowie, MD

Associate Professor, Department of Computer Science — Aug 2011 – Jul 2014
Bowie State University, Bowie, MD

Assistant Professor, Department of Computer Science — Aug 2005 – Jul 2011
Bowie State University, Bowie, MD

Visiting Assistant Professor, Department of Computer and Information Sciences — Sep 2004 – Jun 2005
Fordham University, New York, NY

Adjunct Assistant Professor, Department of Computer and Information Sciences — Sep 2003 – Jun 2004
Fordham University, New York, NY

Adjunct Assistant Professor, Department of Physical, Computer and Environmental Sciences — Sep 1996 – Jun 2005
Medgar Evers College, City University of New York

Adjunct Lecturer, Department of Computer Science and Information Systems — Jan 2000 – Aug 2001
Pace University, New York, NY

GRANTS AND CONTRACTS

≈ $7.3M total awarded · ≈ $3.9M as Principal Investigator

FUNDED — ACTIVE AND RECENT

FLAIR: Preparing Future Leaders in Artificial Intelligence and Machine Learning
PI · Department of Energy, RENEW · Awarded January 2025 · $700,000
With Kingsley Nwosu and Carlene Buchanan Turner.

AI-SECURE: Expanding the Responsible AI and Cybersecurity Nexus at Norfolk State University through Research, Curriculum Development, and Training
PI · National Science Foundation, ExpandAI (CAP) · Awarded October 2024 · $399,999
With Carlene Turner and Isaac Osunmakinde.

Establishing a Research Framework to Foster Digital Capital Among Adolescents for Safe and Secure Online Habitus
Co-PI · National Science Foundation, Excellence in Research · Awarded October 2024 · $516,302
PI: Yuying Chen; with Carlene Buchanan Turner.

FLAME: Preparing Future Leaders and Movers in Engineering and Computer Science
PI · National Science Foundation, S-STEM · Awarded October 2022 · $1,499,883
With Patricia Mead and Carlene Turner.

Fostering an Environment that Produces Developers of Next-Generation Secure Cyber Applications

Co-PI · Microsoft · Awarded October 2020 · $200,000

With Patricia Mead, Michael Keeve, Jonathan Graham, Cheryl Hinds, and Isaac Osunmakinde.

The Impact of Cybersecurity Policies on Employees' Efficiency and Performance Predictability: A Sociology of Organization Analysis

Co-PI · National Science Foundation, Excellence in Research · Awarded June 2020 · $499,919

PI: Carlene Turner; with Yuying Shen.

FUNDED — EARLIER AWARDS

LUCID: A Spectator Targeted Visualization System to Broaden Participation at Cyber Defense Competitions

Original PI · National Science Foundation · Awarded September 2013 · $899,709

Continued as PI on annual sub-awards through Bowie State University: $14,627 (2019–20), $21,350 (2017–18), $20,678 (2016–17), $19,495 (2015–16), and $20,723 (2014–15).

Security Pedagogy Across the Curriculum: A Model to Integrate Cybersecurity into the Social Sciences

Co-PI · National Science Foundation, HBCU-UP Targeted Infusion · Awarded August 2016 · $399,974

PI: Carlene Turner; with Yuying Shen. Invited supplement awarded January 2018.

Addressing the Shortage of Cybersecurity Workers through Relevant and Dynamic Training

Co-PI · DOE National Nuclear Security Administration · Awarded September 2012 · $453,000

Building Security In: Injecting Security throughout Undergraduate Computing Curricula

Co-PI · National Science Foundation, CCLI Type 2 / S-STEM · Awarded September 2008 · $399,511

Integrating Usability and Accessibility in Information Assurance Education

Co-PI · National Science Foundation, CyberCorps SFS · Awarded September 2008 · $299,832

A Second Generation Faculty Development Program

Co-PI · National Science Foundation, S-STEM / CyberCorps SFS · Awarded 2007 · $299,963

Cyber Service Training and Education at Norfolk State University

Co-PI · National Science Foundation, CyberCorps SFS (Award 1129247, supplement) · Awarded July 2017 · $209,443

Targeted Virtual Machine Laboratories

Co-PI · National Security Agency, CAE-C Program Expansion · 2017–2018 · $163,353

Integrating Malware Reverse Engineering into the Computer Science Curriculum

PI · National Nuclear Security Administration · Awarded October 2016 · $133,378

Bridge to a Higher Education in Information Assurance

PI · DoD Information Assurance Scholarship Program · Awarded August 2012 · $72,063

DoD Information Assurance Scholarship Program

PI · Department of Defense · Awarded September 2013 · $50,231

Courseware Sharing with Bowie State University

Co-PI · DoD Information Assurance Scholarship Program · Awarded August 2011 · $20,192

Mobile Computing, Wireless Networks and The Internet

PI · Bowie State University, BETTER Faculty Grants · 2005 · $15,000

PENDING

Targeted Infusion Project: Infusing Digital Forensics and Artificial Intelligence into the Sociology and Criminal Justice Undergraduate Curriculum
Co-PI · National Science Foundation · Submitted November 2025

PROPOSALS SUBMITTED — NOT FUNDED

MAN-MTE: Mid-Atlantic & Northeast Microelectronics Talent Engine — Developing an AI-Enabled, Secure-by-Design Microelectronics and Computer Architecture Workforce
PI · The SEMI Foundation, NNME · Submitted December 2025
With Kingsley Nwosu, Isaac Osunmakinde, Renny Fernandez, and others.

RESEARCH PROGRAMS

LUCID: A Spectator Targeted Visualization System for Cyber Defense Competitions 2012 – Present
A real-time network security visualization and broadcast system that engages spectators at cyber defense competitions through live network monitoring, video and audio, animation, and commentary. Continuously funded since 2013 through NSF and sub-awards administered via Bowie State University; published in *ACM Inroads*, IEEE proceedings, and CISSE and CSEIT proceedings, with numerous graduate and undergraduate research assistants.

Socio-Cybersecurity Project and the SocioCyber App 2016 – Present
An interdisciplinary research and curriculum initiative, developed with Carlene Buchanan Turner, integrating cybersecurity into sociology and criminal justice courses. Funded through NSF HBCU-UP Targeted Infusion awards and an NSF Excellence in Research award; produced cybersecurity laboratory modules in active use at Norfolk State University and a substantial body of peer-reviewed publications.

AI-SECURE: Responsible AI and Cybersecurity Nexus NSF CAP, 2024 – Present
Expanding research, curriculum development, and training at the intersection of responsible artificial intelligence and cybersecurity at Norfolk State University.

FLAIR: Future Leaders in Artificial Intelligence and Machine Learning DOE RENEW, 2025 – Present
A workforce development initiative preparing students as future leaders in artificial intelligence and machine learning.

FLAME: Future Leaders and Movers in Engineering and Computer Science NSF S-STEM, 2022 – Present
A scholarship and mentoring program in engineering and computer science, including a Distinguished Lecture Series and a Leadership Seminar; outcomes presented at EDULEARN25 and related conferences.

Smart City and Smart Tourism Initiative, Antigua and Barbuda
Research examining smart city and smart tourism applications for St. John's, Antigua and Barbuda, presented at the UWI FIC 5IR Artificial Intelligence Annual Research Conference and the Antigua and Barbuda Annual Country Conference.

PUBLICATIONS 28 journal articles · 29 conference papers · 1 book

BOOK

Turner, C. (2009). *Multiresolution Analysis for Effective Dynamic Bandwidth Management*. Lambert Academic Publishing, Köln, Germany.

PEER-REVIEWED JOURNAL ARTICLES

1. Ayensu, F., Turner, C., & Osunmakinde, I. (2025). Enhancing federated learning security with a defense framework against adversarial attacks in privacy-sensitive healthcare applications. *International Journal of Advanced Computer Science & Applications*, 16(5).
2. Turner, C. F., & Turner, C. M. (2025). FLAME: Preparing future leaders in engineering and computer science. *EDULEARN25 Proceedings*, 5586–5590. IATED.
3. Turner, C., Richards, D., Agada, R., Yan, J., Jeremiah, R., & Chapman, T. (2022). LUCID network monitoring and visualization application. *Journal of The Colloquium for Information Systems Security Education*, 9(1).
4. Buchanan Turner, C., Turner, C., & Shen, Y. (2020). Cybersecurity concerns and teleworking in the COVID-19 era: A socio-cybersecurity analysis of organizational behavior. *Journal of Advanced Research in Social Sciences*, 2(2), 22–30.
5. Yan, J., Turner, C., & Richards, D. (2020). Animated commentator enhanced network monitoring and visualization application for cyber security competition. *2020 IEEE 14th International Conference on Big Data Science and Engineering (BigDataSE)*, 57–64.
6. Buchanan Turner, C., & Turner, C. (2019). Effectively integrating cybersecurity into the teaching of sociology and criminal justice with experiential pedagogy. *Annual Review of CyberTherapy and Telemedicine*, 17.
7. Turner, C. M., Turner, C. F., & Ashe, A. (2019). Establishing the sociology and cybersecurity nexus through experiential learning. *Journal of Negro Education* (Cybersecurity Innovation on an HBCU Campus).
8. Buchanan Turner, C., & Turner, C. (2019). Analyzing the impact of experiential pedagogy in teaching socio-cybersecurity: Cybersecurity across the curriculum. *Journal of Computing Sciences in Colleges*, 34(5), 12–22.
9. Turner, C., & Joseph, A. (2017). A statistical and cluster analysis exploratory study of Snort rules. *Procedia Computer Science*, 114, 106–115.
10. Turner, C., Jeremiah, R., Richards, D., & Joseph, A. (2016). A rule status monitoring algorithm for rule-based intrusion detection and prevention systems. *Procedia Computer Science*, 95, 361–368.
11. Joseph, A., Turner, C., & Jeremiah, R. (2016). Comparative analyses of stock returns properties and predictability. *Procedia Computer Science*, 95, 272–280.
12. Turner, C., & Joseph, A. (2015). A wavelet and mel-frequency cepstral coefficients-based feature extraction method for speaker identification. *Procedia Computer Science*, 61, 416–421.
13. Turner, C., Yan, J., Richards, D., Odubiyi, J., O'Brien, P., & Brown, Q. (2015). LUCID: A visualization and broadcast system for cyber defense competitions. *ACM Inroads*, 6(2).

14. Mivule, K., & Turner, C. (2014). Applying moving average filtering for differential privacy settings. *Procedia Computer Science*, 36, 409–414.
15. Joseph, A., Larrain, M., & Turner, C. (2014). The treasury bill rate, the Great Recession, and neural networks estimates of real business sales. *Procedia Computer Science*, 36, 227–233.
16. Ogburn, M., Turner, C., & Dahal, P. (2013). Homomorphic encryption. *Procedia Computer Science*, 20, 502–509.
17. Mivule, K., Turner, C., & Ji, S.-Y. (2012). Towards a differential privacy and utility preserving machine learning classifier. *Procedia Computer Science*, 176–181.
18. Mivule, K., & Turner, C. (2012). A comparative analysis of data privacy and utility parameter adjustment, using machine learning classification as a gauge. *Procedia Computer Science*, 20, 414–419.
19. Turner, C., Joseph, A., Aksu, M., & Langdon, H. (2011). The wavelet and Fourier transforms in feature extraction for text-dependent, filterbank-based speaker recognition. *Procedia Computer Science*, 6, 124–129.
20. Joseph, A., Larrain, M., & Turner, C. (2011). Forecasting purchasing managers' index with compressed interest rates and past values. *Procedia Computer Science*, 6, 213–218.
21. Turner, C., Joseph, A., & Richards, D. (2010). An empirical study of a wavelet-neural network based approach for forensic speaker recognition with cross channel data. *Intelligent Engineering Systems Through Artificial Neural Networks*, 20.
22. Turner, C., & Joseph, A. (2010). Relative forecasting of aggregate inventory to sales ratios. *Intelligent Engineering Systems Through Artificial Neural Networks*, 20.
23. Turner, C., & Joseph, A. (2009). Extending sales forecast from compressed interest rates with wavelets and neural networks. *Intelligent Engineering Systems Through Artificial Neural Networks*, 19.
24. Joseph, A., & Turner, C. (2009). Variable compression of interest rates in the forecasting of aggregate sales. *Intelligent Engineering Systems Through Artificial Neural Networks*, 19.
25. Turner, C., & Joseph, A. (2008). Forecasting sales from discrete wavelet transformed compressed interest rates. *Intelligent Engineering Systems Through Artificial Neural Networks*, 18.
26. Joseph, A., & Turner, C. (2008). Sales, compressed interest rates, and neural network predictions. *Intelligent Engineering Systems Through Artificial Neural Networks*, 18.
27. Turner, C., David, D., & Lewis, M. (2008). Just say anything and I will know who you are: A method to improve speaker recognition. *Business Research Yearbook*, XV.
28. Turner, C., & Joseph, A. (2007). An adaptive methodology for predicting the upper bound in WWW traffic. *Intelligent Engineering Systems Through Artificial Neural Networks*, 17.

PEER-REVIEWED CONFERENCE PROCEEDINGS

1. Ayensu, F., & Turner, C. F. (2025). Fortifying federated learning: A defense framework against adversarial attacks for privacy-sensitive healthcare applications. *ICECET '25*, Paris, France, July 3–6, 2025.
2. Agboada, T., Osunmakinde, I., Turner, C., & Nwosu, K. (2024). Developing facial recognition-based reconnaissance to enhance stadium security and detect banned fans at soccer stadiums. *IEEE ICCA 2024*.

3. Joseph, A., & Turner, C. (2024). An investigative analysis of STEM subjects inclusion and outcomes in the English-speaking Caribbean nations and the United Kingdom secondary education system. *International STEM Education Conference 2024*, Singapore, June 26–28, 2024.
4. Turner, C., Turner, C. M., & Joseph, A. (2024). Imagining smart city and smart tourism: The case of St. John's, Antigua and Barbuda. *UWI FIC 5IR Artificial Intelligence Annual Research Conference*, Five Islands Campus, Antigua, July 8–10, 2024.
5. Chapman, T., Turner, C., Richards, D., Jeremiah, R., Yan, J., Agada, R., Abdulai, M., & Camaya, T. (2023). Design and development of a comprehensive cyber security competition visualization system. *Intelligent Computing: Proceedings of the 2023 Computing Conference*, 1, 1240–1249. Springer.
6. Apeko, J., & Turner, C. (2023). Stack-based buffer overflow implementation using Python 3. *Intelligent Computing: Proceedings of the 2023 Computing Conference*, 1, 1227–1239. Springer.
7. Buchanan Turner, C., Turner, C., & Ashe, A. (2023). Teaching cybersecurity with experiential learning: The case of the phishing and deviance module in social science courses. *Intelligent Computing: Proceedings of the 2023 Computing Conference*, 1, 1250–1262. Springer.
8. Buchanan Turner, C., Turner, C., Shen, Y., & Thomas, K. (2022). Mentoring HBCU students through research assistantship in socio-cybersecurity: Teambuilding with sociology and computer science students. *6th International Conference on Research in Social Sciences*, Vienna, Austria, November 3–5, 2022.
9. Turner, C. M., Turner, C., & Shen, Y. (2021). Socio-cybersecurity: Exploring cybersecurity norms through a social organizational lens. *NVivo Virtual Conference: Transcending Boundaries in Qualitative Research*, September 22, 2021.
10. Buchanan Turner, C., & Turner, C. (2019). Analyzing the impact of experiential pedagogy in teaching socio-cybersecurity: Cybersecurity across the curriculum. *Proceedings of the Consortium for Computing Sciences in Colleges, South Central (CCSC:SC)*, Dallas, TX, April 2019.
11. Turner, C., Richards, D., Jeremiah, R., Yan, J., & Agada, R. (2018). LUCID network monitoring and visualization application. *Proceedings of the 8th Annual International Conference on Computer Science Education: Innovation and Technology (CSEIT 2018)*.
12. Payne, M., Turner, C., & Joseph, A. (2017). An exploratory study of cybersecurity awareness: Mobile phone use in Antigua and Barbuda. *Proceedings of CSEIT 2017*, 163–169.
13. Turner, C. M., & Turner, C. F. (2017). Infusing cybersecurity into core sociology courses: Results from a social problem class and an elementary statistics class. *Proceedings of CSEIT 2017*, 84–90.
14. Turner, C. F., & Turner, C. M. (2017). Integrating cybersecurity into the sociology curriculum: The case of the password module. *Journal of Computing Sciences in Colleges*, 33(1), 109–117.
15. Joseph, A., Turner, C., & Larrain, M. (2017). Daily stock returns characteristics and forecastability. *Procedia Computer Science*, 114, 481–490.
16. Shumba, R., Ferguson-Boucher, K., Sweedyk, E., Taylor, C., Franklin, G., Turner, C., Sande, C., Acholonu, G., Bace, R., & Hall, L. (2013). Cybersecurity, women and minorities: Findings and recommendations from a preliminary investigation. *ITiCSE Working Group Reports (ITiCSE-WGR '13)*, 1–14. ACM.
17. Mivule, K., & Turner, C. (2013). An investigation of data privacy and utility preservation using KNN classification as a gauge. *International Conference on Information and Knowledge Engineering (IKE 2013)*, 203–204, Las Vegas, NV.

18. Mivule, K., Josyula, D., & Turner, C. (2013). Data privacy preservation in multi-agent learning systems. *COGNITIVE 2013*, Valencia, Spain.
19. Mivule, K., & Turner, C. (2013). A review of privacy essentials for confidential mobile data transactions. *International Journal of Computer Science and Mobile Computing (ICMIC13)*, 36–43, Kerala, India.
20. Mivule, K., & Turner, C. (2012). Applying data privacy techniques on published data in Uganda. *Proceedings of EEE 2012*, 110–115.
21. Turner, C. F., Taylor, B., & Kaza, S. (2011). Security in computer literacy. *Proceedings of the 42nd ACM Technical Symposium on Computer Science Education (SIGCSE '11)*.
22. Turner, C. (2010). Efficiency in computing correlation matrix of wavelet coefficients by exploiting index structure. *Proceedings of WORLDCOMP 2010*, Las Vegas, NV, July 12–15, 2010.
23. Turner, C., Odubiyi, J., & O'Leary, M. (2010). A cross-institutional faculty research mentorship program in information security and assurance. *Proceedings of the 14th Colloquium for Information Systems Security Education*, Baltimore, MD, June 7–9, 2010.
24. Kaza, S., Taylor, B., Hochheiser, H., Azadegan, S., O'Leary, M., & Turner, C. F. (2010). Security across the curriculum: Experiences in effective dissemination and assessment design. *Proceedings of the 14th Colloquium for Information Systems Security Education*, Baltimore, MD.
25. Turner, C., Hochheiser, H., Feng, J., Taylor, B., Lazar, J., Zenebe, A., Azadegan, S., & O'Leary, M. (2009). Cooperative information assurance capacity building. *Proceedings of the 13th Colloquium for Information Systems Security Education*, Seattle, WA, June 1–3, 2009.
26. Turner, C. (2009). A steganographic computational paradigm for wireless sensor networks. *Proceedings of the 6th International Conference on Innovations in Information Technology*, Al Ain, UAE, December 15–17, 2009.
27. Joseph, A., & Turner, C. (2007). A method to secure more reliable online business transactions. *Proceedings of the International Conference on Computing & e-Systems*.
28. Jeremiah, R. M., & Turner, C. (2004). A DCT-based multiresolution analysis. *Proceedings of the International Conference on Signal and Image Processing (IASTED)*, Kauai, HI.
29. Turner, C. F., & Jeremiah, R. M. (2002). The independent wavelet bandwidth allocation algorithm. *Proceedings of IEEE GLOBECOM 2002*, Taipei, Taiwan.

SELECTED TALKS AND PRESENTATIONS

Turner, C. F., & Turner, C. M. FLAME: Preparing future leaders in engineering and computer science. *17th International Conference on Education and New Learning Technologies*, Palma, Spain, June 30 – July 2, 2025.

Turner, C. Imagining smart city and smart tourism: The case of St. John's, Antigua and Barbuda. *UWI FIC 5IR Artificial Intelligence Annual Research Conference*, Antigua, July 8–10, 2024.

Turner, C. The SocioCyber App. *Sociology & Cybersecurity Interdisciplinary Seminar: NSU in Jamaica*, Mona, Jamaica, June 27, 2024.

Turner, C. LUCID: An in-depth visualization and broadcast system for cybersecurity competitions. *IEEE GEM 2023*, Bridgetown, Barbados.

Turner, C. Exploring the notion of a smart city for St. John's. *Antigua and Barbuda 17th Annual Country Conference*, November 17–18, 2023.

Apeko, J. D., & Turner, C. Stack-based buffer overflow implementation using Python 3. *Computing Conference 2023*, London, June 22–23, 2023.

Chapman, T., Turner, C., Richards, D., Jeremiah, R., Yan, J., Agada, R., Abdulai, M., & Camaya, T. Design and development of a comprehensive cyber security competition visualization system. *Computing Conference 2023*, London, June 22–23, 2023.

Turner, C. M., Turner, C. F., & Shen, Y. Excellence in Research: The impact of cybersecurity policies on employees' efficiency and performance predictability. *2022 Secure and Trustworthy Cyberspace PI Meeting*, 2022.

Buchanan Turner, C., Turner, C., Shen, Y., & Thomas, K. Mentoring HBCU students through research assistantship in socio-cybersecurity. *6th International Conference on Research in Social Sciences*, Vienna, Austria, November 3–5, 2022.

Turner, C., & Turner, C. M. Cybersecurity and teleworking during the COVID-19 era. *Cybersecurity Education Workshop (CyberEd 2021)*, Portland, ME, October 27–28, 2021.

Turner, C., & Turner, C. M. Cybersecurity and teleworking in Antigua and Barbuda during the COVID-19 era. *15th Annual Country Conference: Antigua and Barbuda Before and After COVID-19*, October 14–15, 2021.

Turner, C., Richards, D., Jeremiah, R., Yan, J., & Agada, R. LUCID network monitoring and visualization application. *25th Colloquium on Information Systems Security Education (CISSE 2021)*, October 4–6, 2021.

Buchanan Turner, C., Turner, C., & Shen, Y. Socio-cybersecurity: Exploring cybersecurity norms through a social organizational lens. *NVivo Virtual Conference 2021*, September 22, 2021.

Buchanan Turner, C., & Turner, C. Cybersecurity concerns and teleworking in the COVID-19 era: A socio-cybersecurity analysis of organizational behavior. November 27–29, 2020.

Buchanan Turner, C., & Turner, C. Did we do it right? A tracer study of experiential pedagogy in the Socio-Cybersecurity Project. *Eastern Sociological Society*, Philadelphia, PA, March 2020.

Turner, C. F. Teaching cybersecurity to non-computer science students using experiential pedagogy: Digital forensics in the American court systems curriculum. 2019.

Turner, C. How to identify appropriate funding programs and prepare competitive NSF engineering education proposals. *ASEE 2019*, Tampa, FL, June 2019.

Turner, C., & Turner, C. M. Interdisciplinary cybersecurity @ Norfolk State University. *CyberEd Workshop*, Santa Fe, NM, April 15–16, 2019.

Turner, C. M., & Turner, C. The impact of the Socio-Cybersecurity Project: HBCU-UP TIP award 2016–2019. Poster, *HBCU-UP PI Conference* (NSF / AAAS), Washington, DC, February 2019.

Turner, C. M., & Turner, C. Analyzing the impact of experiential pedagogy in teaching socio-cybersecurity. *29th Annual CCSC South Central Conference*, April 5, 2019.

Turner, C. How do we get there? A model for the Caribbean. *IDPAD Summit*, Georgetown, Guyana, March 2018.

Turner, C. M., & Turner, C. An experiential learning approach to infusing cybersecurity into core sociology courses. *AAC&U Transforming STEM Higher Education*, Atlanta, GA, November 2018.

Turner, C. M., Turner, C., & Manson, E. Infusing cybersecurity into sociology and criminal justice: An experiential learning approach. *2018 HBCU-UP/CREST PI/PD Meeting*, Washington, DC, February 2018.

Buchanan Turner, C., & Turner, C. Integrating cybersecurity into core sociology courses: An experiential learning approach. *Eastern Sociological Society*, Baltimore, MD, February 2018.

Turner, C. F., Jeremiah, R., Richards, D., & Yan, J. LVA: A network monitoring and visualization system for cyber defense competitions. *22nd Colloquium for Information Systems Security Education (CISSE 2018)*, June 11–13, 2018.

Turner, C. F., & Joseph, A. A statistical and cluster analysis exploratory study of Snort rules. *Complex Adaptive Systems Conference*, Chicago, IL, October 30 – November 1, 2017.

Turner, C. F., & Turner, C. M. Integrating cybersecurity into the sociology curriculum: The case of the password module. *Consortium for Computing Sciences in Colleges*, Richland, WA, October 6–7, 2017.

Turner, C. F. A rule status monitoring algorithm for rule-based intrusion detection and prevention systems. *Complex Adaptive Systems Conference*, Los Angeles, CA, November 2–4, 2016.

Turner, C. F. A wavelet and mel-frequency cepstral coefficients-based feature extraction method for speaker identification. *Complex Adaptive Systems Conference*, San Jose, CA, November 2–4, 2015.

Turner, C. F. A view of the Antigua and Barbuda knowledge economy, 2020. *UWI/ABSA 2015 Conference*, St. John's, Antigua, August 6–7, 2015.

Turner, C. F., & Turner, C. M. A model to integrate cybersecurity into K–12 summer camps through experiential learning. *19th Annual Colloquium for Information Systems Security Education*, Las Vegas, NV, June 15–17, 2015.

Turner, C. F. *Cyber Security Business Round Table II*, Virginia Beach, VA, October 13, 2015.

Shumba, R., et al. (incl. Turner, C.). Cybersecurity, women and minorities: Findings and recommendations from a preliminary investigation. *ITiCSE 2013*, University of Kent, Canterbury, UK, July 1–3, 2013.

Mivule, K., & Turner, C. An investigation of data privacy and utility preservation using KNN classification as a gauge. *IKE 2013*, Las Vegas, NV, July 22–25, 2013.

Mivule, K., Turner, C., & Ji, S.-Y. Towards a differential privacy and utility preserving machine learning classifier. *Complex Adaptive Systems Conference*, 2012.

Turner, C., & Joseph, A. The wavelet and Fourier transforms in feature extraction for text-dependent, filterbank-based speaker recognition. *Complex Adaptive Systems Conference*, Chicago, IL, October 31 – November 2, 2011.

Turner, C., Taylor, B., & Kaza, S. Security in computer literacy: A model for design, dissemination, and assessment. *SIGCSE '11*, Dallas, TX, March 9–12, 2011.

Turner, C., Joseph, A., & Richards, D. An empirical study of a wavelet-neural network based approach for forensic speaker recognition with cross channel data. *ANNIE 2010*, November 1–3, 2010.

Turner, C., Odubiyi, J., & O'Leary, M. A cross-institutional faculty research mentorship program in information security and assurance. *CISSE 2010*, June 7–9, 2010.

Turner, C., et al. Cooperative information assurance capacity building. *CISSE 2009*, Seattle, WA, June 1–3, 2009.

Turner, C., & Zenebe, A. Integrating usability and accessibility in information assurance education. Poster, *Symposium on Usable Privacy and Security*, Mountain View, CA, July 15–17, 2009.

Turner, C., & Joseph, A. Forecasting sales from discrete wavelet transformed compressed interest rates. *ANNIE 2008,* May 9–12, 2008.

Joseph, A., & Turner, C. Sales, compressed interest rates, and neural network predictions. *ANNIE 2008,* May 9–12, 2008.

Turner, C. An adaptive methodology for predicting the upper bound in WWW traffic. *ANNIE 2007,* St. Louis, MO, November 12–14, 2007.

Joseph, A., & Turner, C. A method to secure more reliable online business transactions. *TIGERA 2007,* Hammamet Beach, Tunisia, March 12–15, 2007.

TEACHING

GRADUATE COURSES TAUGHT

CYS 697 Ethical Hacking and Penetration Testing

COSC 735 Wireless Security

COSC 545 Software Security

COSC 522 Discrete Structures

CSGA 6375 Object-Oriented Software Design

CYS 564 Secure Operating Systems

COSC 645 Applied Cryptography

COSC 535 Information Privacy and Security

CSC 668 Advanced Computer Architecture

CSGA 6100 Software System Design

UNDERGRADUATE COURSES TAUGHT

COSC 445 Fundamentals of Cryptography and Applications

COSC 352 Intrusion Detection and Prevention Systems

COSC 208 Discrete Structures

COSC 110 Computer Literacy and Applications

CSC 468 Computer Architecture

CSC 169 Foundations of Computer Science

CSRU 3700 Applied Database Systems

CIT 356 Operating Systems Concepts

CTEC 293/393 Internet Programming I & II

CTEC 214 Client Operating Systems

CS 151 Introduction to Computing

COSC 402 Software and Operating Systems Security

COSC 345 Foundations of Computer and Network Security

COSC 112 Computer Science I

CSC 498/499 Senior Seminar I & II

CSC 268 Computer Organization

CSC 101 Introduction to the Computer Science Profession

CIS 1100 Structures of Computer Science

CTEC 302 Computer Networking

CTEC 226 Introduction to Database Development

CTEC 114 Computer Tools and Environment

PHS 101 Introduction to Physical Science

COURSES DEVELOPED

CSC 479 — Deep Learning Fall 2025, approved at all levels

CSC 679 — Advanced Deep Learning Fall 2025; approved by all relevant committees, University approval Spring 2026

CSC 487 — Engineering Secure Software Systems Fall 2020

CSC 3XX — Cloud Computing Fall 2021

CSC 697 — Ethical Hacking and Penetration Testing. Proficiency with the core hands-on elements of computer security.

CTEC/COSC 450 — Cybersecurity Applications. In-depth study of the practical aspects of computer security, including common vulnerabilities in a laboratory setting.

COSC 535 — Information Privacy and Security. Introduction to security and privacy issues in information systems.

COSC 545 — Software Security. Principles and practice of secure coding.

COSC 645 — Applied Cryptography. Basic paradigms and principles of modern cryptography and their applications.

CSC 901 / 902 / 903 — Dissertation. Ph.D. research credits in Computer Science for students working on thesis research.

PROGRAMS AND CURRICULUM DEVELOPMENT

- Established a Minor in Data Science and AI, Fall 2025.
- Established a concentration in Data Science and AI, Fall 2025.
- Chair, Ph.D. Curriculum Committee — developed the proposal for a new Ph.D. program in Computer Science, approved by the relevant departmental, college, and university committees.
- Led the renaming of the B.S. Computer Science Information Assurance Track (BS.CSC.IAT) to the B.S. Computer Science – Cybersecurity Track (BS.CSC.CYBT).
- Assisted in developing the B.S. Computer Science – Software Engineering Track (BS.CSC.SET), Fall 2020.
- Assisted in developing the M.S. Computer Science – Data Science and Machine Learning track, Fall 2020.
- Assisted in enhancing the B.S. in Computer Science and its related tracks: BS.CSC.CYBT, BS.CSC.CET, BS.CSC.SET, BS.CSC.DNIMAS, BS.CSC.CYB.DNIMAS, and BS.CSC.CET.DNIMAS.

INSTRUCTIONAL MATERIALS DEVELOPED

Socio-Cybersecurity laboratory modules (co-developed)
Creating Strong Passwords: A Simple National Security Tool (SOC-230, Social Problems); Sociology of Deviance and Phishing: A Scam to Steal Private Information (SOC-230); Digital Evidence and the Court System — The Role of Governmentality (CJS-313, American Court Systems); Digital Forensics: Chain of Custody.

Malware reverse engineering laboratory modules
Authored and integrated into CSC 468 and CSC 668: Building and Configuring a Testing Environment (March 2017); x86 Assembly Programming with Visual Studio 2015 (March 2017); Cryptology and Data Hiding (April 2017).

LUCID Visualization System User Guide
Co-author with Rolston Jeremiah and Dwight Richards, December 2017.

STUDENT RESEARCH SUPERVISION

DOCTORAL DISSERTATIONS ADVISED

Kato Mivule, "Machine Learning Classification to Gauge Privacy and Utility Preservation," Bowie State University, May 2014.

Haydar Teymourlouei, "An Effective Methodology for Processing and Analyzing Large, Complex Spacecraft Data Streams," Bowie State University, May 2013.

MASTER'S THESES ADVISED

In progress — "A Unified Hybrid Quantum-Classical Architecture for Distributed Computation and Secure Networking," Fall 2025 – present.

In progress — "Adaptive Defense Mechanisms for Reliable Federated Learning in Health Care Environments," Fall 2025 – present.

Joseph Quansah, "Prostate Cancer High-Grade Risk Classification Using a Hybrid Variational Quantum–Classical Classifier on Whole-Slide Histopathology Data (PANDA)," Fall 2025 – Spring 2026.

Gideon Assafuah, "Bias Detection and Mitigation in Hiring and Recruitment AI Systems," Fall 2024 – Spring 2026.

In progress — "Building an Explainable AI (XAI) Intrusion Detection System Architecture," Fall 2024 – present.

Frederick Ayensu, "Developing a Defense Framework for Secure and Robust Federated Learning," Fall 2024 – Spring 2025.

Aaron Smith, "Development, Implementation, and Evaluation of a Testing Infrastructure and an Experiential Learning Module to Encourage the Study of Denial-of-Service Attacks," December 2017.

MASTER'S PROJECTS ADVISED

In progress — "Traceability in Federated Machine Learning," Fall 2025 – present.

Peter Fenton, "Analysis of Nessus Vulnerability Results Across Windows, Linux, and macOS," 2019.

Sharon Clarke, "A Comparative Study of Vulnerabilities in Windows and macOS Using Nessus," December 2018.

La'tonia Greene, "A Study of the Poison Ivy Malware with a Cybersecurity Awareness Module for Middle Schoolers," December 2018.

Kamilah Brown, "Cyber Crime Among Youth: How to Avoid Creating a Cyber Criminal," May 2018.

Antoinette Alleyne-Warren, "Privacy and Security Risk for BYOD — Bring Your Own Device," May 2018.

Arlisa Hardy, "Rising Cybersecurity Issues in Electronic Health Records," May 2018.

Wayne Thomas, "E-commerce Password Policies and Security," December 2017.

Brandon Walston, "A Study of Network Visualization Tools," May 2015.

UNDERGRADUATE CAPSTONE PROJECTS ADVISED

In progress — "Public Perception of Ransomware," 2020 – present.

Johnny Mayer and Walker Cherry, "Phishing and Phriends," 2019–2020.

Marvin Darnel Ellis, "Evolution in Forex Algorithms with Machine Learning," May 2018.

Niesha Wallace and Tenesha Hicks, "Barcode Scanning Technology for Electronic Document Management," May 2017.

Michal Bogacki and Ryan Dearing, "Computer-assisted Matching and Analytics for Real Estate Investment Trusts," May 2017 — Best Presentation Award.

Charity Gidney-Burns, Ericka Wilson, and Gregory Henderson, "Improving the Usability and Security of a Web Application," May 2016.

Lateshia Shoulders, Roshawnda Fuller, and Olumuyiwa Kuku, "Hacktivity: Monitoring and Visualizing Cyber Defense Competitions," May 2016.

Kevin Brodie, "Automating Vulnerability Analysis and Mitigation Techniques," December 2015.

Ryan Elliott, "Cloud Based Cybersecurity: Analyzing Attacks and Mitigation Strategies Using Metasploit/Armitage," December 2015.

Jinelle Charles, "Biometric Authentication for Online Database Access," December 2015.

STUDENT PRESENTATIONS SUPERVISED

Somto Azike, "Best Practices in Merging Cybersecurity Organizations," RISE 2021, Norfolk State University, April 2021 (poster).

Kwesi Elliot, "Socio-Cybersecurity App Database Development," RISE 2021 (poster).

Muhammad Abdulai, Tricia Camaya, and Deyana Holley, "SocioCyber: A Cybersecurity Awareness in Organizations Application," RISE 2021 (poster).

Thomas Chapman III, Mohammed Abdulai, and Tricia Camaya, "LUCID: A Cybersecurity Competition Monitoring and Visualization Tool," RISE 2021 (poster).

Liquitha Rogers, "Examining Experiential Learning Outcomes: Cybersecurity Content in Social Problems Classes," 2019 Emerging Researcher Conference in STEM, Washington, DC (poster).

Ajari McCaster, "Deconstructing Law and Order Digital Forensics Process @ Norfolk State: A Socio-Cybersecurity Analysis," NSU Undergraduate Research Symposium, 2019 (poster).

RESEARCH ASSISTANTS AND ADVISEMENT

Graduate research assistants, NSF Socio-Cybersecurity App (Excellence in Research), 2020 – present: Juli Dutta, Tricia Camaya, Somtochukwu Azike, Mohammad Abdulai, Deyana Holley, Kwesi Eliot.

Graduate research assistants, LUCID, 2019–2020: Donn Shannon, Thomas Chapman, Mohammed Abdulai, Tricia Camaya.

Research assistants, Attack Visualization, 2015–2019: Jewel Ossom, Yvonne Kamegne, Kwame Martin, Aliyah Carter, Igor Braga, Justin Lee, Emmanuel Carter.

Independent study: Christian McFall, "Integrating Reverse Malware Engineering into Computer Architecture," 2016–2017.

Faculty advisor, Norfolk State University Cyber Defense Team, August 2014 – present; academic advisor to undergraduates in Computer Science and Computer Technology.

PROFESSIONAL DEVELOPMENT AND LEADERSHIP

PROGRAM AND WORKSHOP LEADERSHIP

- Organized grant activities for the FLAME NSF S-STEM program, 2025: recruitment of FLAME scholars, the FLAME Distinguished Lecture Series, and the FLAME Leadership Seminar.
- Organized program activities for FLAIR (DOE RENEW) and AI-SECURE (NSF), 2025.
- Trainer, Interdisciplinary Curriculum Development in Socio-Cybersecurity, Socio-Cybersecurity Faculty Training Workshop, Norfolk State University, May 2018.

- Lead organizer and chair, Second Workshop on Integrating Usability and Accessibility into Information Assurance Education, Bowie State University, August 2010.
- Lead organizer and chair, NSF-funded workshop on faculty research mentorship in Information Assurance, Towson University, April 2010.
- Lead organizer and chair, First Workshop on Integrating Usability and Accessibility into Information Assurance Education, Bowie State University, March 2009.
- Lead organizer and chair, Maryland Alliance for Information Security and Assurance (MAISA) workshop on faculty research mentorship, Towson University, March 2009.
- Session chair, Artificial Neural Networks in Engineering (ANNIE) conference, Missouri, November 2009.
- Organized a workshop for faculty, students, and NSA cybersecurity experts on research, cybersecurity education, and collaboration, AY 2012–2013.

REVIEW SERVICE AND CONVENINGS

- NSF grant proposal reviewer, 2017 and 2020; trained as an NSF reviewer, March 2017; served on an NSF virtual review panel for computer science education proposals.
- Summit for AI Institutes Leadership (SAIL), Reston, VA, October 21–23, 2025.
- AI-EDU Summit, George Mason University, Fairfax, May 20–21, 2025.
- Leadership Training, American Council on Education, 101st Annual Meeting, Philadelphia, PA, March 2019.
- Externship, Sandia National Laboratories, New Mexico, October 24–27, 2016.
- Alternate representative, Virginia Cyber Range meetings.
- Grant writing workshops, Quality Education for Minorities (QEM) Network: Washington, DC, September 2017; Baltimore, MD, July 2018.
- Assessment and evaluation training, DOE MSIPP/CECOR workshop, January 2017.
- U.S. Immigration and Customs Enforcement (ICE) meeting on cybersecurity education and application development, 2017.

TECHNICAL TRAINING AND CERTIFICATION

- SANS SEC503: Intrusion Detection In-Depth, April 2019.
- SANS FOR610: Reverse-Engineering Malware — Malware Analysis Tools and Techniques, Orlando, FL, April 2017.
- SANS FOR408: Windows Forensic Analysis, Orlando, FL, March 2016.
- SANS Advanced Penetration Testing, Exploit Writing, and Ethical Hacking, July 2015.
- SANS Penetration Testing and Ethical Hacking, December 2015.
- Faculty Certification Program for Teaching Distance Education Courses, Norfolk State University, 2015.
- Ongoing self-directed coursework in web development and GitHub, 2025; MOAT training, 2020 and 2025; Blackboard training, 2020.

SERVICE

UNIVERSITY

- Member, Faculty Senate Handbook Committee, AY 2024–2025, AY 2025–2026.
- Member, Faculty Senate AI Advisory Committee, AY 2024–2025.
- Faculty Senate, August 2023 – June 2024.
- Member, Library Services Committee, 2018–2020.
- Member, Building, Facilities and Aesthetics Committee, AY 2015–2016; Commencement and Convocation Committee, AY 2015–2016.
- Chair, Doctoral Program Committee — established and documented doctoral program requirements, including SACSCOC and SCHEV applications, August 2016 – May 2018.
- Member, Center of Academic Excellence in Information Assurance Education / Cyber Defense (CAE-IAE/CD) Committee — successfully renewed NSU's CAE-IAE/CD designation for 2015–2020.
- Member, NSU IT search committee for Cyber Security Engineer, April – May 2017.
- Judge, Undergraduate Research Symposium, Norfolk State University, March 2018; participation in One-Stop registration and advisement activities, 2025.
- Member, University Curriculum Committee, Bowie State University, AY 2011–2013; University Council on Information Technology, BSU, AY 2008–2010.
- Chair, CAE-IAE Committee and Course Mapping, Bowie State University — led the effort that earned BSU its NSA/DHS CAE-IAE designation, June 2011.
- Member, University System of Maryland Cybersecurity Articulation Committee — established cybersecurity articulation agreements for Maryland institutions.
- Member, organizing committee, USA Science and Engineering Festival exhibit, Washington, DC, April 2012.

COLLEGE AND DEPARTMENT

- Member, Tenure and Promotion Committee (and Peer Review), AY 2024–2025, AY 2025–2026.
- Member, Department Curriculum Committee, August 2014 – present.
- Member, MS Cybersecurity Graduate Program Committee, AY 2024–2026; Graduate Program Committee, August 2014 – May 2018.
- Member, BS Information Technology (ITE) Programs Committee, AY 2024–2025.
- Member, New Faculty Search Committee, AY 2024–2026; Department of Computer Science Search Committee, 2015–2017; Chair, Department Search Committee, Bowie State University, 2012–2013.
- Member, Recruitment, Retention, and Special Committee, AY 2024–2026; Recruitment Committee, 2014–2016.
- Member, ABET Assessment and Continuous Improvement Committee, August 2018 – present.
- Chair, Alignment Committee — reviewed the CS curriculum to ensure critical topics are covered across core and prerequisite courses.
- Member, Evaluation Committee — conducted annual faculty review and developed evaluation criteria, 2016.
- Member, Assessment Committee (Undergraduate Program), AY 2014–2016.
- Member, CSET Curriculum Committee, August 2018 – May 2021.

- Advisor, Information Assurance, Research, Education and Development Institute (IA-REDI) Committee, 2014–2018.
- Regular participation in departmental, CSET, and University meetings.

HONORS AND AWARDS

Outstanding Researcher of the Year, Norfolk State University 2024–2025

Outstanding Teacher of the Year, Norfolk State University 2024–2025

Exemplary Paper Award, CCSC South Central Conference — "Analyzing the Impact of Experiential Pedagogy in Teaching Socio-Cybersecurity" 2019

Outstanding Service to One Stop Registration and **Outstanding Service to Interdisciplinary Innovation**, NSU 2018

Best Research Paper Award, CSEIT, Singapore — "Infusing Cybersecurity into Core Sociology Courses" 2017

Grant Submission Award, Norfolk State University 2016

CSET Advisement Award, Norfolk State University 2015

Researcher of the Year, Dean's Award Ceremony 2014

University VIP Grants Award, Bowie State University 2008, 2009

PROFESSIONAL MEMBERSHIPS

Institute of Electrical and Electronics Engineers (IEEE) · Association for Computing Machinery (ACM)

REFERENCES

Available upon request.