WE ARE CYBER

Center for Forensics, Information Technology, and Security (CFITS) Newsletter

TABLE OF CONTENTS

JANUARY 2023

Cybersecurity Colloquium

Director's Message

Center for Academic Excellence Redesignation

Scholarship for Service Grant Renewal

Partnerships and Engagements

SoC Faculty Profile

Center for Forensics, Information Technology and Security

UNIVERSITY OF SOUTH ALABAMA
SCHOOL OF COMPUTING

CENTER FOR FORENSICS, INFORMATION TECHNOLOGY, AND SECURITY



CFITS Cybersecurity Colloquium
January 18, 2023, 2:00 pm
Marx Library Auditorium

Neal Ziring

Technical Director, National Security Agency Cybersecurity Directorate

Mr. Neal Ziring is the Technical Director for the National Security Agency (NSA)'s Cybersecurity Directorate. In that role, he is responsible for a wide variety of technical assessment, external engagement, workforce developments, and strategic direction issues for NSA's cybersecurity mission. In his past position, he served as the Technical Director of the NSA Capabilities Directorate. In that role, he tracked technical initiatives, promoted the professional health of a diverse technical staff, and served as liaison to various external partners. Prior to the formation of the Capabilities Directorate, Mr. Ziring served as Technical Director for the Information Assurance Directorate five years.

His personal expertise areas include security automation, IPv6, cloud computing, cross domain information exchange, data access control, and cyber defense. Prior to coming to NSA in 1988, Neal worked at AT&T Bell Labs. He has BS degrees in Computer Science and Electrical Engineering, and an MS degree in Computer Science, all from Washington University in St. Louis. Since then, he has also taken classes from Columbia University, the University of Maryland Baltimore County, and George Washington University.

NATIONAL CENTER OF ACADEMIC EXCELLENCE IN CYBER DEFENSE (CAE-CD)

DIRECTOR's MESSAGE



Man's Flight Through Life Is Sustained By The Power Of His Knowledge.

-Inscribed on the
Eagle and Fledglings Statue,
United States Air Force
Academy (USAFA)

With the retirement of the CFITS director in 2022, Mr. Les Barnett leaves behind a decade of hard work and diligence that has positioned CFITS as a premiere center for education, workforce development, industry partnership, and research in the state of Alabama and the Gulf Coast region. Through its many activities and outreach efforts, our outstanding faculty, staff, and students in the School of Computing and University of South Alabama have established a center of academic excellence in cybersecurity, contributed to building a vibrant partner school program, completed dozens of managed internship projects for industry partners, and realized millions of dollars in DoD research partnerships among other accomplishments. As we turn the corner in 2023, Dr. J. Todd McDonald will be assuming the role of CFITS Director and helping to continue the great legacy that Les has left behind. Dr. McDonald is a Professor of Computer Science who has been with School of Computing for 12 years. He earned his B.S. in Computer Science from USAFA in 1990, an M.B.A from University of Phoenix in 1996, an M.S. in Computer Engineering from the A.F. Institute of Technology (AFIT) in 2000, and his Ph.D. in Computer Science from Florida State University in 2006.

Dr. McDonald is a retired Lt. Colonel in the U.S. Air Force, serving over 25 years specializing in cyber operations, research, and education. He served his final year of active duty in Iraq as part of Operations New Dawn and Iraqi Freedom and joined SoC from the faculty of AFIT's Dept of Electrical and Computer Engineering in 2011. Since arriving at South, he has spearheaded several efforts related to cybersecurity education and research. He is the originator and faculty sponsor of the DayZero student organization which develops future cybersecurity professionals through participation in capture the flag and cyber defense competitions. He helped launch NSA GenCyber summer camps in partnership with Davidson High School as part of the CFITS partner school program and was the PI of the first NSF-funded grant for the USA CyberScholars program beginning in 2013, which has placed around 50 graduates in government cybersecurity positions since its inception. He began the Systems Protection and Exploitation Research Group (SPERG) at USA in 2012 and was the originator and general chair for the Software Security, Protection, and Reverse Engineering Workshop (SSPREW) which ran for 9 years. In 2022, he established the McDonald DayZero Scholarship to foster cybersecurity professional development for students who routinely participate in cyber competitions and capture the flag events.

Dr. McDonald has shared in over $15M as a PI, co-PI, and project lead in grants from the National Science Foundation and Department of Interior, and completed work on an NSF Secure and Trustworthy grant that investigated executable steganography as a software protection technique. He has published over 100 peer-reviewed papers and journals related to secure software engineering, software and hardware attack and defense, systems assurance, and anomaly/malware detection. Dr. McDonald has been research advisor and chair for many students in his academic career, graduating 34 Masters and 3 Doctoral students to date. He also works with many undergraduate researchers through USA's SURF and UCUR volunteer internship programs. Dr. McDonald is a senior member of the IEEE and ACM. As the new CFITS director, Dr. McDonald looks forward to continuing the partnerships and collaborative work of the center to help propel USA as the Flagship University of the Gulf Coast.

Center for Academic (CAE) Excellence Redesignation



In July 2022 at the CAE Executive Leadership Forum held in Biloxi MS, the University of South Alabama was redesignated as a national Center of Academic Excellence in Cyber Defense by the National Security Agency (NSA) and Department of Homeland Security (DHS). SoC's BS in Information Technology degree with focus in Network Security has been a validated program of study for over a decade now, since USA and CFITS first gained CAE status in 2011. The CAE-CD program was created to reduce vulnerability in national information infrastructure by promoting higher education and research in Cyber Defense (CD) and to produce a growing number of professionals with expertise in the cybersecurity discipline.

Qualifying institutions are designated as CAE-CD for a period of five academic years, after which they must successfully re-apply in order to retain the designation. The CAE designation is an institutional designation; therefore, the benefits extend beyond the cyber defense program at a school to the entire institution. For more information about CAE, visit the NSA CAE website. Receiving the award for USA (pictured L to R) are Dr. Harold Pardue, Mrs. Angela Clark, and Dr. Todd McDonald.

NSF Scholarship for Service (SFS) Grant Renewal

southalabama.edu/cyberscholars

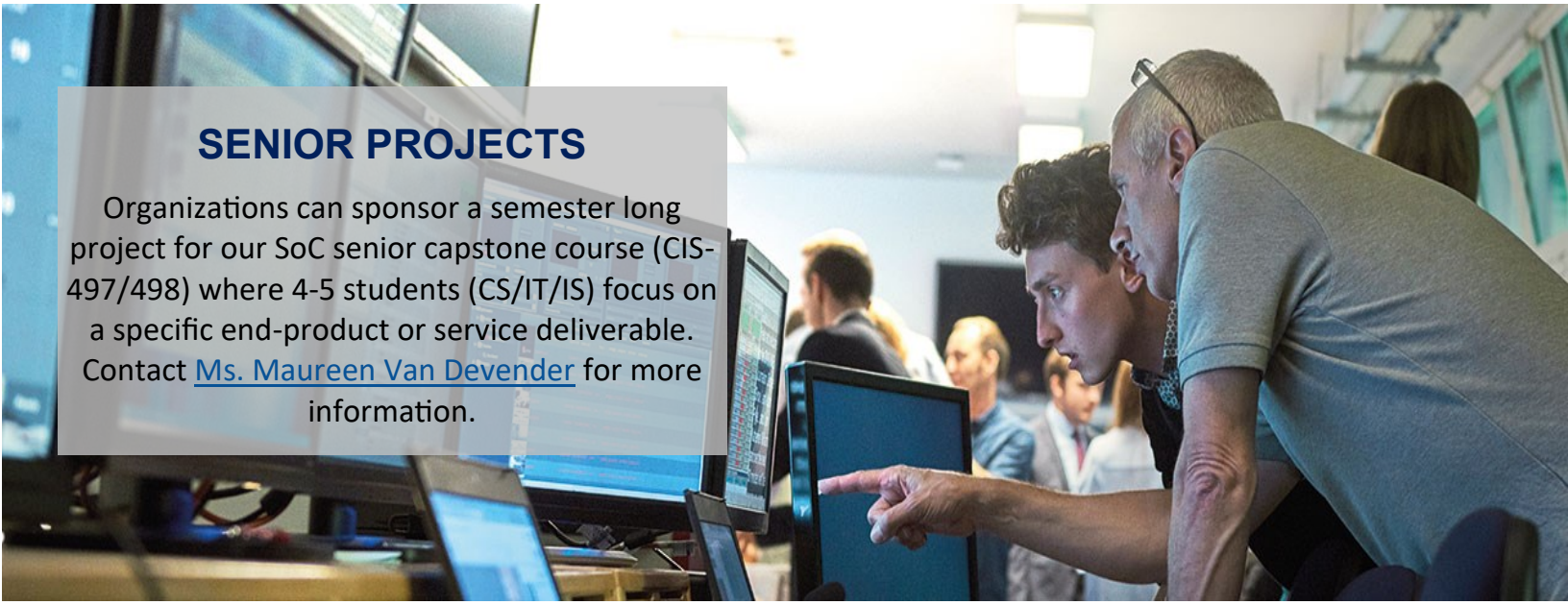
SoC was awarded a renewal grant in 2022 for its CyberScholars SFS program. Since beginning in 2011, the program has awarded over 60 scholarships and placed over 50 students in cybersecurity positions within the government workforce and brought nearly $9.6M in grant money to SoC. The SFS program is co-sponsored by NSF and DHS, providing scholarship funding for students in exchange for service in a government position for a period equal to the length of scholarship funding, typically two or three years. Students awarded an SFS scholarship participate in a paid summer internship at a federal, state, or local government agency and become part of the Federal CyberCorps, whose mission is to ensure the protection of the US Government's information infrastructure. Upon graduation SFS scholars are required to serve in a paid information assurance position in federal, state, or local government. Pictured below (to the left) is the current 2022-2023 CyberScholars cohort and principal investigators for the NSF grant program. We welcome our newest cohort members (pictured to the right): Kevin Hughes, Destin Hinkel, and Chad Callegari (L to R).



CyberCorps®
Defending America's Cyberspace



PARTNERSHIPS AND ENGAGEMENTS



SENIOR PROJECTS

Organizations can sponsor a semester long project for our SoC senior capstone course (CIS-497/498) where 4-5 students (CS/IT/IS) focus on a specific end-product or service deliverable. Contact Ms. Maureen Van Devender for more information.



INTERNSHIP PROGRAMS

For industry partners looking for traditional internships where students work on-site during the school year or summer, or for development-based teams of 4-5 students that can meet short-term project demands under the leadership of an SoC faculty member. Contact Dr. McDonald for more information.



K-12 STEM OUTREACH

Schools can arrange for Hands on Learning Activity (HOLLA) field trips to the USA campus where 30-60 students can learn topic-based, instructor-guided content. For more information see the HOLLA information page. Available topics are posted on the K-12 Resource Repository page.

WE ARE CYBER

FACULTY PROFILE



Dr. Amy Campbell is an Assistant Professor of Health Informatics in the Department of Information Systems and Technology within the School of Computing at the University of South Alabama. She received her BSN in Nursing (2005) from Tennessee Technological University and her MSN (2013) and DNP (2016) from the University of South Alabama. Dr. Campbell taught Nursing Informatics with the College of Nursing for 6 years before joining the School of Computing and is a consultant for the Nursing Honors Society Sigma Theta Tau.

Dr Campbell has published 12 peer reviewed conference and journal papers. While at USA, she has served as the chair for 8 Doctorate of Nursing Practice students, 67 master nursing students, and one master's thesis student. She is currently the co-PI on a three-year grant from the American Nurses Association to improve USA's nurse's stress coping skills, and currently holds a patent with Drs Matt Campbell and Todd Harlan that identifies a process in which nursing workload can be measured and used to increase nurse awareness effectively reducing potential medication errors. Before earning her DNP., Dr. Campbell worked as a hospice nurse in an inpatient facility in North Carolina for 5 years. Her research interests lie in the area of improving the work-environment, reducing medication errors, and improving health and computer literacy for nurses and patients through data analysis, technology creation and implementation, and data mining.



CFITS MISSION

The Center for Forensics, Information Technology and Security is designed to promote the advancement of knowledge related to the study and application of digital forensics, information technology, security and assurance. CFITS is supported by the University of South Alabama and the School of Computing to further the educational, research, and community engagement goals of both.