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RESEARCH AREAS

Scholarship of Teaching and Learning, Computer Science Education, Computer Game Design and Gamification, Software Engineering

TEACHING INTERESTS

Software Engineering, Computer Game Design, Mobile Application Development, Capstone Programs

PROFESSIONAL APPOINTMENTS

University of Virginia, Charlottesville, VA — **Department of Computer Science**
Associate Department Chair, Computer Science — *May 2022 – Present*
Professor of Computer Science, Academic General Faculty — *August 2019 – Present*
Associate Professor of Computer Science, Academic General Faculty — *August 2013 – August 2019*
Assistant Professor of Computer Science, Academic General Faculty — *August 2007 – August 2013*

North Carolina State University, Raleigh, NC — **Department of Computer Science**
Adjunct Lecturer — *Summer 2003 – Summer 2006*

EDUCATION

North Carolina State University, Raleigh, NC
Doctor of Philosophy, Computer Science — *August 2002 – August 2007*

Advisor: Dr. Laurie Williams
Topic: Analyzing Software Artifacts through Singular Value Decomposition to Guide Development Decisions

North Carolina State University, Raleigh, NC
Master of Science, Computer Science — *August 2002 – May 2004*

Advisor: Dr. Laurie Williams
Topic: Estimating Software Reliability in a Haskell Programming Environment

Wake Forest University, Winston-Salem, NC
Bachelor of Science, Computer Science with Honors, Cum Laude — *August 1998 – May 2002*

Advisor: Dr. Jennifer Burg
Honors Topic: Unix Tutorials to Move Students from PC/Windows to Unix

AWARDS AND RECOGNITIONS

ACM Senior Member (elevated in 2019)
IEEE Senior Member (elevated in 2019)

- 2021 UVA Association for Computing Machinery Computer Science Professor of the Year
- 2016 IEEE Computer Society Computer Science and Engineering Undergraduate Teaching Award (international teaching award)
    - *Citation: "For outstanding contributions to undergraduate computer science education through innovative teaching and commitment to increasing enrollment and diversity in computer science programs."*
    - *Award Acceptance Video – http://marksherriff.com/ieeeaward*
    - *Award Interview Video – http://marksherriff.com/ieeeinterview*
- 2014 University of Virginia All-University Teaching Award
- 2012 UVA Association for Computing Machinery Computer Science Professor of the Year
- 2011 Trigon Engineering Society Thomas E. Hutchinson Faculty Award Winner
- 2010 Hartfield-Jefferson Scholars Teaching Prize ($12.5K, first year ever awarded)
- 2010 UVA Association for Computing Machinery Computer Science Professor of the Year
- 2010 Trigon Engineering Society Thomas E. Hutchinson Faculty Award Finalist

TEACHING

University of Virginia, Charlottesville, VA **Department of Computer Science**
Professor of Computer Science, Academic General Faculty *August 2019 – Present*
Associate Professor of Computer Science, Academic General Faculty *August 2013 – August 2019*
Assistant Professor of Computer Science, Academic General Faculty *August 2007 – August 2013*

Responsible for the development and teaching of computer science courses at the University of Virginia.

Courses Taught:
CS 1110: Introduction to Programming
(16 sections: Fall 2010 – 150 students; Spring 2011 – 450 students; Fall 2011 – 230 students; Spring 2012 – 484 students; Fall 2012 – 294 students; Spring 2013 – 484 students; Fall 2013 – 154 students; Fall 2014 – 141 students; Spring 2015 – 277 students; Fall 2015 – 275 students; Spring 2016 – 300 students; Fall 2016 – 220 students)

CS 1120: Computing – From Euclid and Ada to Quantum Computing and the WWW
(1 section: Spring 2008 – 65 students)

CS 2110: Software Development Methods
(10 sections: Fall 2007 – 108 students; Spring 2008 – 70 students; Fall 2008 (2 sections) – 152 students; Spring 2009 – 125 students; Summer 2009 – 13 students; Fall 2009 (2 sections) – 190 students; Spring 2010 – 105 students; Summer 2010 – 20 students; Summer 2011 – 24 students; Summer 2012 – 18 students)

CS 2501: Special Topics – Intro to Game Programming and Design
(2 sections: Spring 2015 – 30 students; Spring 2024 – 25 students)

CS 2910: CS Education Practicum
(2 sections: Fall 2013 – 25 students; Spring 2014 – 20 students; Spring 2023 – 111 students)

CS 3240: Software Engineering (formerly Advanced Software Development)
(19 sections: Spring 2009 – 90 students; Spring 2010 – 95 students; Spring 2018 – 145 students; Fall 2018 – 150 students; Spring 2019 – 240 students; Fall 2019 – 130 students; Spring 2020 – 233 students; Fall 2020 – 240 students; Spring 2021 – 300 students; Fall 2021 – 300 students; Fall 2022 – 265 students; Spring 2023 – 300 students; Fall 2023 – 300 students; Spring 2024 – 322 students; Fall 2024 – 260 students; Spring 2025 – 300 students; Fall 2025 – 200 students)

CS 4501: Special Topics – Service Learning Practicum
(1 section: Spring 2012 – 12 students)

CS 4720: Mobile Application Development (formerly Web & Mobile Systems)
(14 sections: Fall 2009 – 55 students; Fall 2010 – 72 students; Fall 2011 – 83 students; Fall 2012 – 66 students; Fall 2013 – 72 students; Spring 2014 – 80 students; Fall 2014 – 141 students; Fall 2015 – 80 students; Spring 2016 – 80 students; Fall 2016 – 80 students; Spring 2017 – 80 students; Fall 2017 – 80 students; Spring 2018 – 80 students; Fall 2018 – 80 students; Fall 2022 – 87 students)

CS 4730: Computer Game Design
(8 sections: Summer 2013 – 25 students; Spring 2014 – 61 students; Summer 2014 – 26 students; Spring 2015 – 60 students; Fall 2017 – 70 students; Summer 2022 – 22 students; Spring 2023 – 73 students; Fall 2024 – 90 students)

CS 4750: Database Systems
(5 sections: Fall 2007 – 44 students; Fall 2008 – 54 students; Spring 2011 – 70 students; Spring 2012 – 71 students; Spring 2013 – 70 students)

CS 4971: Capstone Practicum II
(2 sections: Fall 2025 – 60 students; Spring 2026 – TBD students)

CS 4993: Independent Study
(Multiple sections with individual students and projects)

SLAV 2500: Topics in Slavic Literature & Culture – "Bits & Bytes: Examining Vampires in Video Games"
(1 section: Spring 2025 – 150 students co-taught with Prof. Stanley Stepanic from Dept. of Slavic Languages & Literatures)

North Carolina State University, Raleigh, NC **Department of Computer Science**
Adjunct Lecturer *Summer 2003 – Summer 2006*

Responsible for the development and teaching of a senior-level Computer Science class at NCSU.

CSC 440: Database Management Systems – Summer 2003, 2004, 2005, and 2006
10-Week Summer Course with average class size of 35

ADMINISTRATIVE

University of Virginia, Charlottesville, VA
Department of Computer Science
Associate Department Chair and Director of the BSCS Program *May 2022 – Present*

Responsible for all aspects of the Bachelor of Science program for Computer Science, including requirements, exceptions, major declarations, transfers, re-admitted students, advising, accreditation, and informational materials. As Associate Chair, also responsible for all department course scheduling, including teaching and room assignments.

University of Virginia, Charlottesville, VA
Center for Innovation in Computing Education and Outreach
Director *January 2018 – August 2021*

Served as first director for the CompEdCenter. Responsible for leading the center, working with the steering committee, and ensure the center's success.

RESEARCH

University of Virginia, Charlottesville, VA **Department of Computer Science**
Professor of Computer Science, Academic General Faculty *August 2019 – Present*
Associate Professor of Computer Science, Academic General Faculty *August 2013 – August 2019*
Assistant Professor of Computer Science, Academic General Faculty *August 2007 – August 2013*

Currently performing computer science education, game design, and software engineering research.

Game Design Research Group
Our group of students currently performs research on gamification in education and "games for good." Our ongoing projects include a gamification platform for college courses, educational games for elementary and middle school students, and the creation of an introductory CS course that focuses on game design principles.

Collaborative Research: Transforming Computer Science Education Research Through Use of Appropriate Empirical Research Methods: Mentoring and Tutorials
The goal of this project is to transform empirical CSEd research by building and supporting a community of CSEd researchers through: (1) creation and curation of laboratory packages to facilitate empirical CSEd research, (2) facilitation of cohorts of 10-12 educators who are mentored in developing and executing an empirical CSEd research study and (3) development and presentation of tutorials on empirical research methods at CSEd conferences. Laboratory packages are aids that provide researchers with a driving research question, a methodology for designing and executing a study, tools and resources to replicate the study, and results of previous related studies. The cohorts will have a more-focused interaction during a summer session to develop a study with a follow-up workshop to report and discuss results. Finally, the tutorials allow for broader dissemination of the key concepts of empirical CSEd research to the larger community.

Sponsored by the National Science Foundation (NSF DUE 1525373, 1525173, 1525028) with Dr. Jeff Carver @ The University of Alabama and Dr. Sarah Heckman @ North Carolina State University.

Old Projects

NSF Showcase for DUE Projects at the ACM SIGCSE Conference
Every year, twenty projects that are currently being sponsored by NSF are asked to present their work in an interactive, personal format during the break sessions and open slots at SIGCSE. The SIGCSE Symposium provides a forum for educators from K-12 through college to discuss issues and new ideas related to the development and implementation of computing curricula, along with other elements of teaching and pedagogy. The goal of the showcase is to share information about programs and research opportunities that attendees might not otherwise hear about. Presenters in the showcase report that they enjoy presenting their work in this format and that the attendees that come through the showcase are interested in learning and interacting with the presenters. 1341292

Sponsored by the National Science Foundation (NSF DUE 1341292) with Prof. Aaron Bloomfield

Android Platform for Autonomous Vehicles
Currently, sensors placed in the field can be costly to build and even more costly to integrate, as many of them operate on different platforms. Android phones come with numerous sensors already built in (sound, camera, GPS, accelerometer, gyroscope, etc). We want to leverage the relatively-low cost of phones along with programmable Arduino boards to create sensor networks that can quickly and efficiently deployed.

Teaching Teamwork in Engineering
As instructors, we routinely put students into project teams to simulate "real world" software development. But what sort of preparation do we give them before we actually tell them to work with others? Working with other faculty in the School of Engineering and Applied Science and Curry School of Education, we aim to investigate the most effective ways of not only teaching teamwork techniques to engineers, but also how to equip them with the skills to recognize potentially problematic team situations before they arise. Students who effectively learn how to work together could both improve their in-class grade, but also their prospects for employment in the future.

Transfer of Pair Programming to Other Disciplines
Research has shown that the use of pair programming in industry and low-level CS courses reduces the number of faults introduced into the system. Further research has discussed how the main benefit of pair programming comes mainly out of better understanding requirements and design choices. I am investigating (along with colleagues in other fields) how the concepts we teach about pair programming in CS courses might aid students with group work in other fields. Do the ideas about driver/navigator translate to other activities? If so, does it have an effect on the quality of the work produced? How can we create the "best" pair for paired activities? How can we best evaluate those pairs?

Senior Thesis Research Advisor *Fall 2007 – Present*
Currently performing computer science education research related to intro CS and software engineering courses. Advise senior-level students in independent research projects.

Fall 2024 – Spring 2025
Jacob Conway – AI Tracking in Games
Sebastian Fugle and James Farnsworth – Using Games to Help Recognize Social Cues
Nicholas Gamolin – Addressing Mobile Device Screentime
Mira Khan and Judy Zhao – Visual Novel Storytelling
Breenice Lee – Teaching Math with Gamification
Peter Tessier – Gamifying Music
Eric Weng – Gamification Resources for K-12 Teachers

Fall 2022 – Spring 2023
Sofia Alvarez – CS Curriculum Decisions for K-12 Classrooms
Teddy Walsh – Creating Tutorials for Game Design Courses

Fall 2019 – Spring 2022
Service release from senior thesis advising for chairing SIGCSE Technical Symposium

Fall 2018 – Spring 2019
Courtney Carpenter – Effect of Specification Grading on Software Engineering Courses
Kai Ming Chang – VR Music Creation
Tom Heatwole – Developing a New Software Engineering Course
Mac Sochor – Tool Support for Specification Grading

Fall 2017 – Spring 2018
Lane Spangler – VR Music
Kai Ming Chang – VR Music

Fall 2016 – Spring 2017
Members of Game Design Research Group with Prof. Mark Floryan
Cameron Blanchford – XP Systems for Gamified Courses
Qian Xiang – Competition in Gamification Courses
Isaac Tessler – Teaching with Various Fidelities of Virtual Reality

Fall 2015 – Spring 2016
Members of Game Design Research Group with Prof. Mark Floryan

Fall 2014 – Spring 2015
Jennifer Lu – Gamification in Education
Anna Greene – Gamification in Education
(Also other members of the Game Design Research Group with Prof. Mark Floryan)

Fall 2013 – Spring 2014
Dru Knox – Software Maintenance Lifecycles with Non-Profit Software Systems
Travis Pennetti – Educational Video Games
Connie Xie – Automated Quadcopters with Android Devices

Fall 2012 – Spring 2013
Michael Legore – Software Maintenance Lifecycles with Non-Profit Software Systems
Daniel Miller – Visualizing UVA Enrollment Trends

Amanda Ray – Efficient User Interfaces for Aiding Students with Enrollment
Hunter Williams – Automated Quadcopters with Android Devices
Samuel Wilson – Automated Quadcopters with Android Devices

Fall 2011 – Spring 2012
Alex Johnson and Matt Russell – Software for Non-Profit Organizations
Erik Davis – Java vs. Python in Introductory CS Courses
Harry Bowron – Open-source Software for Teaching Chemistry
Navid Hosseini, Manuel Cordovez, Katie Hempenius, and Reed Wilson – Android Platform for UGVs

Fall 2010 – Spring 2011
Jared Harding – Mobile HCI
Calvin Li and George Washington – Voice Interface for Portable Learning
Bennett Sorbo – CavDaily Advertising
Nikhita Karki – Scheduling System for Student Volunteers at UVA Hospital
Daniel Magnusson – Motion Sickness with Video Games
Kevin Leach – Prescription Databases
Michale Devine and Olex Ponomarenko – Generating Music and Art using Microsoft Kinect
Derrick Brameyer and Alan Kush – Agile Development in Student Projects (Ind. Study)

Fall 2009 – Spring 2010
Matt Beattie – Bluetooth Identification for Vehicles
Ryan Grigsby – Security for Emergency Announcement Systems
Joshua Joyner – Lego Mindstorm NXT Sensor Simulation
Seth Micalizzi – Mobile GPS Social Applications
Charles Plucker – Mobile Virtual Reality
Emma Rosenfeld – Teaching Time Concepts to Early Elementary Students
John Szmuski – Bluetooth Identification for Vehicles
Steven Trombetta – PairEval v2.0
Jessica Vasconcellos – Student timecard system for Newcomb Hall

Fall 2008 – Spring 2009
Jeffery Gaither – Web Software Source Control Management and Users
Michael Miller – An Analysis of Static Metrics in Open-Source Software Projects
Benjamin Plunkett – UVACollab: Compliance with FERPA
Joshua Sennett – Compatibility of Partnered Students in Computer Science Education

Fall 2007 – Spring 2008
Eric Bradbury – A New Paradigm for Tutoring at the School of Engineering and Applied Science
Fred Dysart – PHP Based Automated Fix for SQL Injection Attacks
Maureen Maughn – Web-Based Kennel System in PHP and MySQL
Danny Shih – Integrated Querying in C# using Microsoft LINQ

RESEARCH GRANTS / AWARDS

Collaborative Research: Transforming Computing Education Research through Replication and Mentoring, (NSF DUE IUSE, $225k, 8/25-7/30), Mark Sherriff (Co-PI), Jeffery Carver (Alabama, Co-PI), Sarah Heckman (NC State, Co-PI). We propose to support foundational work towards theory building in computing education research (CER) by generating knowledge through organizing coordinated multi-site equity-enabling replication studies on open CER questions. Our prior CER literature review found gaps in the empirical research reporting norms, with key gaps in highlighting the research questions(s), describing participants, identifying control and treatment (if appropriate), reporting study methods, and reporting threats to validity. An analysis of replications in CER literature found that only 2.38% of over 2,000 papers reported a replication. These inconsistencies in reporting make it challenging for researchers to replicate existing studies. Additional barriers related to publication biases toward novel work, variability between instructional contexts, and difficulties in combining results between studies disincentivize replication. Our two three-year coordinated multi-site equity-enabling replication studies will gather a Research Design Team to create a replication package to address a research goal and question(s) of interest to the community. Members of the community will be invited to run the replications in their classrooms, contributing to the overall investigation into the

topic. We will summarize results across replications to answer the common research question(s) and lay the foundation for computing-specific educational theory.

EN-CS NSF Showcase for DUE Projects at the ACM SIGCSE Symposium, (NSF DUE 1841616, $68k, 9/18-9/22), Mark Sherriff (PI) and Aaron Bloomfield (Co-PI). The NSF Showcase at the ACM SIGCSE Symposium has been an ongoing project for over a decade. The core purpose of the project is to provide an opportunity for grant recipients from the National Science Foundation's Division of Undergraduate Education to present their projects at other times and in different ways than when final results are ready. Specifically, the Showcase allows grant recipients to circulate their ideas, get feedback, recruit collaborators and adopters, and consult with program officers much earlier in the project cycle, providing crucial insights that improve the likelihood of the projects succeeding and the findings being disseminated. The purpose of this proposal is to continue running the NSF Showcase at the next four SIGCSE Symposiums, from 2019-2022. Over the years that the NSF Showcase has been running, it has become a staple in the computer science education community at the SIGCSE Symposium, the largest gathering of CS educators annually, with over 1500 attendees in 2018. Participants in the Showcase routinely report in our evaluations that the Showcase had a significant impact on their work and helped them move their research forward. Attendees to the Showcase enjoy seeing what work is being supported by NSF DUE and often take advantage of the program officer "office hours" that are organized during the symposium. With space set aside for program officers to hold one-on-one meetings, potential grant writers and current PIs can meet and receive feedback from NSF staff. We believe that the Showcase has provided an important service to the CS education community and the SIGCSE Symposium through these opportunities and we are eager to continue offering it into the future.

Collaborative Research: Transforming Computer Science Education Research Through Use of Appropriate Empirical Research Methods: Mentoring and Tutorials, (NSF DUE 1525028, $1.35M Collaborative Grant, 9/15-9/23), Mark Sherriff (Co-PI), Jeffery Carver (Alabama, Co-PI), Sarah Heckman (NC State, Co-PI). The goal of this project is to transform empirical CSEd research by building and supporting a community of CSEd researchers through: (1) creation and curation of laboratory packages to facilitate empirical CSEd research, (2) facilitation of cohorts of 10-12 educators who are mentored in developing and executing an empirical CSEd research study and (3) development and presentation of tutorials on empirical research methods at CSEd conferences. Laboratory packages are aids that provide researchers with a driving research question, a methodology for designing and executing a study, tools and resources to replicate the study, and results of previous related studies. The cohorts will have a more-focused interaction during a summer session to develop a study with a follow-up workshop to report and discuss results. Finally, the tutorials allow for broader dissemination of the key concepts of empirical CSEd research to the larger community.

Showcase for NSF DUE Projects at the ACM SIGCSE Conferences, (NSF CCLI phase I grant 1053524, $289k, 10/13 - 9/17), Mark Sherriff (PI) and Aaron Bloomfield (Co-PI). The purpose of this grant is to disseminate information on current NSF projects on the computer science education at the annual SIGCSE conference, and to help educate potential grant applicants on the process of designing and authoring NSF grant proposals. This is intended to enhance the long-term quality and quantity of computer science education activities.

Showcase for NSF DUE Projects at the ACM SIGCSE Conferences, (NSF CCLI phase I grant 1053524, $178k, 8/10 - 8/13), Aaron Bloomfield (PI) and Mark Sherriff (Co-PI). The purpose of this grant is to disseminate information on current NSF projects on the computer science education at the annual SIGCSE conference, and to help educate potential grant applicants on the process of designing and authoring NSF grant proposals. This is intended to enhance the long-term quality and quantity of computer science education activities.

Motorola Droid Phones for Teaching Web Services, (Google University Relations, $14k, 3/10), Mark Sherriff and Tom Horton. The purpose of this award is to introduce mobile phone technologies at various levels in the UVA CS curriculum.

JOURNALS EDITED

Sherriff, M. and Heckman, S. "Special Issue on Capstones and Large Projects in Computing Education." *ACM Transaction on Computing Education*. Vol 18, Issue 2, July 2018. DOI: 10.1145/3229882

JOURNAL ARTICLES

Heckman, S., Carver, J., **Sherriff, M.**, and Al-Zubidy, A. " A Systematic Literature Review of Empiricism and Norms of Reporting in Computing Education Research Literature." ACM Transactions on Computing Education. Vol. 22, 1, Article 3 (March 2022), 46 pages. DOI: https://doi.org/10.1145/3470652.

REFEREED PUBLICATIONS

Alvarado, C., Derbinsky, N., Heckman, S., Pérez-Quiñones, M., Ramaprasad, H., and **Sherriff, M.** "Addressing Challenges in Teaching-Track Faculty Promotion." Panel. The 56rd ACM Technical Symposium on Computer Science Education, Pittsburgh, PA, Feb 26-Mar 1, 2025.

Carver, J., Heckman, S., **Sherriff, M.** "Training Computing Educators to Become Computing Education Researchers." The 53rd ACM Technical Symposium on Computer Science Education, Providence, RI, Mar 2-5, 2022. (Acceptance Rate: 30%)

Tychonievich, L. and **Sherriff, M.** "Engineering a Complete Curriculum Overhaul." The 53rd ACM Technical Symposium on Computer Science Education, Providence, RI, Mar 2-5, 2022. (Acceptance Rate: 30%)

Sherriff, M. and Floryan, M. "Achievement Unlocked: Investigating Which Gamification Elements Motivate Students." *The 23rd ASEE Annual Conference and Exposition, New Orleans*, LA, June 24-27, 2016. (Acceptance Rate: 60%)

Al-Zubidy, A., Carver, J., Heckman, S., **Sherriff, M.** "A (Updated) Review of Empiricism at the SIGCSE Technical Symposium." *The 47th ACM Technical Symposium on Computer Science Education*, Memphis, TN, Mar 3-6, 2016. pp. 120-125. (Acceptance Rate: 34%)

Bloomfield, A., **Sherriff, M.**, and Williams, K. "A Service Learning Capstone Practicum." *The 45th ACM Technical Symposium on Computer Science Education*, Atlanta, GA, Mar 5-8, 2014. pp. 265-270. (Acceptance Rate: 34%)

Layer, M., **Sherriff, M.**, and Tychonievich, L. "Inform, Experience, Implement–Teaching an Intensive High School Summer Course." *42nd IEEE/ASEE Annual Frontiers in Education (FIE) Conference*, Seattle, WA, Oct 3-6, 2012. pp. 1-6. (Acceptance Rate: 43%)

Sherriff, M. "Teaching Web Services and Service-Oriented Architecture using Mobile Platforms." *40th IEEE/ASEE Annual Frontiers in Education (FIE) Conference*, Washington DC, Oct 27-30, 2010. pp. S2D1-S2D6. (Acceptance Rate: 45%)

Krogius, O., Horton, T., and **Sherriff, M.** "Role of Large Software Artifacts in Introductory Computer Science Courses." *40th IEEE/ASEE Annual Frontiers in Education (FIE) Conference*, Washington DC, Oct 27-30, 2010. pp. T1D1-T1D5. (Acceptance Rate: 45%)

Lew, M., Horton, T., and **Sherriff, M.** "Using LEGO MINDSTORMS NXT and LEJOS in an Advanced Software Engineering Course." *The 23rd Annual IEEE-CS Conference on Software Engineering Education and Training*, Pittsburg, PA, Mar 9-12, 2010. pp. 121-128. (Acceptance Rate: 37%)

Sennett, J. and **Sherriff, M.** "Compatibility of Partnered Students in Computer Science Education." *The 41st ACM Technical Symposium on Computer Science Education*, Milwaukee, WI, Mar 10-13, 2010. pp. 244-248. (Acceptance Rate: 34%)

Dysart, F. and **Sherriff, M.** "Automated Fix Generator for SQL Injection Attacks." Student Paper. *The 19th IEEE International Symposium on Software Reliability Engineering*, Redmond/Seattle, WA, Nov 11-14, 2008. pp. 311-312. (Acceptance Rate: 25%)

Sherriff, M. and Williams, L. "Empirical Software Change Impact Analysis using Singular Value Decomposition." *First IEEE International Conference on Software Testing, Verification, and Validation*, Lillehammer, Norway, April 9-10, 2008. pp. 268-277. (Acceptance Rate: 27%)

Sherriff, M., Lake, J. M., and Williams, L. "Prioritization of Regression Tests using Singular Value Decomposition with Empirical Change Records." *The 18th IEEE International Symposium on Software Reliability Engineering*, Trollhättan, Sweden, Nov 5-9, 2007. pp. 81-90. (Acceptance Rate: 25%)

Sherriff, M., Heckman, S. S., Lake, J. M., and Williams, L. "Identifying Fault-Prone Files Using Static Analysis Alerts Through Singular Value Decomposition." *17th Annual International Conference of the IBM Center for Advanced Studies*, Richmond Hill, Ontario, Oct 22-25, 2007. pp. 276-279. (Acceptance Rate: 27%)

Sherriff, M., Heckman, S. S., Lake, J. M., and Williams, L. "Using Groupings of Static Analysis Alerts to Identify Files Likely to Contain Field Failures." Short Paper. *The 6th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering*, Dubrovnik, Croatia, Sept 3-7, 2007. pp. 365-368. (Acceptance Rate: 22%)

Sherriff, M. and Williams, L. "DevCOP: A Software Certificate Management System for Eclipse." *17th Annual IEEE International Symposium on Software Reliability Engineering*, Raleigh, North Carolina, Nov 6-10, 2006. pp. 375-384. (Acceptance Rate: 25%)

Sherriff, M. and Williams, L. "A Method for Verification and Validation Certificate Management in Eclipse." *Workshop on Software Certificate Management*, Long Beach, California, Nov 8, 2005. pp. 19-22.

Sherriff, M. and Williams, L. "Certification of Code During Development to Provide an Estimate of Defect Density." Fast Abstract. *The 16th IEEE International Symposium on Software Reliability Engineering*, Chicago, Illinois, Nov 8-11, 2005. pp. 447-448. (Acceptance Rate: 25%)

Sherriff, M. "Using Verification and Validation Certificates to Estimate Software Defect Density." Doctoral Symposium. *ACM Symposium on the Foundations of Software Engineering*, Lisbon, Portugal, Sept 6, 2005. pp. 381-384.

Sherriff, M., Nagappan, N., Williams, L., and Vouk, M. "Early Estimation of Defect Density Using an In-Process Haskell Metrics Model." *The First International Workshop on Advances In Model-Based Software Testing, co-located with the IEEE International Conference on Software Engineering*, St. Louis, MO, May 15-16, 2005. pp. 1-6.

Sherriff, M. and Williams, L. "Tool Support for Estimating Software Reliability in Haskell Programs." Student Paper. *The 15th IEEE International Symposium on Software Reliability Engineering*, St-Malo, France, Nov 2-5, 2004. pp. 61-62. (Acceptance Rate: 25%)

Sherriff, M., Williams, L., and Vouk, M. "Using In-Process Metrics to Predict Defect Density in Haskell Programs." Fast Abstract. *The 15th IEEE International Symposium on Software Reliability Engineering*, St-Malo, France, Nov 2-5, 2004. pp. 19-20. (Acceptance Rate: 25%)

Burg, J., and **Sherriff, M**. "Unix Tutorials to Move Students from PC/Windows to Unix." *AACE ED-MEDIA 2002 Conference*, June 30, 2002. pp. 1798-1799. (Acceptance Rate: 30%)

CONFERENCES ORGANIZED

Symposium Co-Chair, 52nd ACM Technical Symposium on Computer Science Education, Virtual in Pathable (http://sigcse2021.sigcse.org), March 8-20, 2021

Symposium Co-Chair, 51st ACM Technical Symposium on Computer Science Education, Portland, OR, March 11-14, 2020 (Event canceled due to COVID-19 and converted to SIGCSE 2020 Online in May 2020 – http://sigcse2020.sigcse.org)

WORKSHOPS ORGANIZED

Carver, J., Heckman, S., and Sherriff, M. 7th Workshop on Designing Empirical Education Research Studies (DEERS). Charlottesville, VA, July 16-18, 2022. 12 participants.

Carver, J., Heckman, S., and Sherriff, M. 6th Workshop on Designing Empirical Education Research Studies (DEERS). Virtual due to COVID-19, July 12-15, 2021. 10 participants.

Carver, J., Heckman, S., and Sherriff, M. 5th Workshop on Designing Empirical Education Research Studies (DEERS). Virtual due to COVID-19, July 13-16, 2020. 10 participants.

Carver, J., Heckman, S., and Sherriff, M. 4th Workshop on Designing Empirical Education Research Studies (DEERS). Charlottesville, VA, July 16-18, 2019. 12 participants.

Wheeler, L. and Sherriff, M. Scholarship of Teaching and Learning Scholars Program. Center for Teaching Excellence, University of Virginia, May 13-15, 2019. 12 participants.

Carver, J., Heckman, S., and Sherriff, M. 3rd Workshop on Designing Empirical Education Research Studies (DEERS). Charlottesville, VA, July 17-19, 2018. 14 participants.

Wheeler, L. and Sherriff, M. Scholarship of Teaching and Learning Scholars Program. Center for Teaching Excellence, University of Virginia, May 31-June 1, 2018. 12 participants.

Carver, J., Heckman, S., and Sherriff, M. "Designing Empirical Education Research Studies (DEERS): Creating an Answerable Research Question." 49th ACM Technical Symposium on Computer Science Education, Baltimore, MD, February 21-24, 2018.

Carver, J., Heckman, S., and Sherriff, M. 2nd Workshop on Designing Empirical Education Research Studies (DEERS). Charlottesville, VA, July 18-20, 2017. 14 participants.

Carver, J., Heckman, S., and Sherriff, M. "Designing Empirical Education Research Studies (DEERS): Creating an Answerable Research Question." 48th ACM Technical Symposium on Computer Science Education, Seattle, WA, March 8-11, 2017.

Carver, J., Heckman, S., and Sherriff, M. 1st Workshop on Designing Empirical Education Research Studies (DEERS). Raleigh, NC, June 14-17, 2016. 12 participants.

Heckman, S., Horton, T., and Sherriff, M. "Teaching Second-Level Java and Software Engineering with Android." 24th IEEE Conference on Software Engineering Education and Training 2010, Honolulu, Hawaii, May 2011.

INVITED KEYNOTES

Carver, J., Heckman, S., and Sherriff, M. "Getting Involved with the SIGCSE Technical Symposium and Education Research." The 53rd ACM Technical Symposium on Computer Science Education, Providence, RI, Mar 2-5, 2022.

Sherriff, M. "Teaching with a Digital Scoreboard: Gamification Strategies in Higher Education." Teaching with Technology Summit, University of Virginia, August 2016.

Sherriff, M. "The Role of Computer Science in Engineering Education." Interdisciplinary Engineering Design Education Conference (IEDEC), Santa Clara, CA, March 3, 2014.

INVITED PRESENTATIONS

Tychonievich, L, Sherriff, M, and Layer, R. "Counting Rooms." Nifty Assignments Panel, SIGCSE 2015, Kansas City, MO, March 2015.

Sherriff, M. "Why are we engineers?" Trigon Engineering Fraternity Thomas E. Hutchinson Faculty Award Dinner, January 2014.

Sherriff, M. "Introductory Computing Across Engineering Disciplines." National Academy of Engineering – Frontiers of Engineering Education. Irvine, CA, Oct 2013.

Sherriff, M. "Teaching Faculty Birds of a Feather." ACM SIGCSE – 2013 symposium through 2020.

Sherriff, M. "Six Strikes." Look Hoo's Talking 2013. Lecture series hosted by UVA Student Council. University of Virginia, March 28, 2013.

Sherriff, M. "The Battle for Your Entertainment – The Internet, SOPA, and Censorship." The Jefferson Literary and Debating Society, University of Virginia, February 3, 2012.

Sherriff, M. "Encryption Chase – Assignment for CS2." Nifty Assignments Panel, SIGCSE 2010, Milwaukee, Wisconsin, March 2010.

Sherriff, M. "DevCOP – A Software Certificate Management System for Eclipse." Portland State University, Portland, OR, May 26, 2006.

Sherriff, M. "Defect Density Estimation Through Verification and Validation." The 6th Annual High Confidence Software and Systems Conference, Lithicum Heights, MD, April 17-19, 2006.

TECHNICAL REPORTS

Sherriff, M., Boehm, B. W., Williams, L., and Nagappan, N. "An Empirical Process for Building and Validating Software Engineering Parametric Models." NCSU Technical Report, TR-2005-45, October 19, 2005.

Nagappan, N., Sherriff, M., Williams, L. "On the Feasibility of Using Operational Profiles to Determine Software Reliability in Extreme Programming." NCSU Technical Report, TR-2003-15, August 19, 2003.

RESEARCH POSTERS

Sherriff, M., Williams, L., and Lake, M. "Utilizing Verification and Validation." Poster. Center for Advanced Computing and Communication and IBM University Days, 2006.

Sherriff, M. and Williams, L. "Utilizing Verification and Validation Certificates to Estimate Software Defect Density." Poster. Center for Advanced Computing and Communication and IBM University Days, 2005.

Sherriff, M. and Williams, L. "Estimating Software Reliability in a Haskell Programming Environment." Poster. International Conference on Functional Programming, Snowbird, UT, Sept. 19, 2004. Also IBM University Day, October 15, 2004.

DOCTORAL COMMITTEES

Paul Turowski, University of Virginia, Department of Music. "The Control Continuum: Modeling Video Games in Music Composition." External Committee Member.

PROFESSIONAL/SERVICE ACTIVITIES

ACM SIGCSE Leadership Service

- Secretary for ACM SIGCSE Board – Elected to 2025-2028 Term
- Member of ACM SIGCSE Technical Symposium Steering Committee – Elected to 2025-2028 Term

University/Department Service

- Committee Member and Presenter, UVA Thriving Youth in a Digital Environment (TYDE) Grand Challenge (2024-present)
- Member, Operations Committee, Computer Science Department (2022-present)
- Member, Provost's Promotion and Tenure Committee, University of Virginia (2023-2024)
- Member, Promotion and Tenure Committee, School of Engineering and Applied Science (2020-2022)
- Member, Promotion and Tenure Committee, Computer Science Department (2020-present)
- Member, APMA Promotion and Tenure Committee (2022-present)
- Chair, New Curriculum Committee (2017-2023)
- Member, Undergraduate Curriculum Committee, Computer Science Department (2007-present)
- Chair, Undergraduate Curriculum Committee, Computer Science Department (2011-2018)
- Chair, Undergraduate Curriculum Committee, School of Engineering and Applied Science (2013-2018)
- Member, Undergraduate Curriculum Committee, School of Engineering and Applied Science (2010-2018)
- Member, UVA SEAS General Faculty Committee (2010-present)
- Member, UVA SEAS Student Affairs Committee (2010-2016)
- Member, eText Pilot Advisory Committee (university-wide committee; 2012-2013)
- CS Undergraduate TA Hiring Coordinator (2007-present)
- Advisor, Student Game Developers Club (2009-present)
- Advisor, Theta Tau Engineering Fraternity (2011-2016)
- SEAS Orientation volunteer (2008-2019)
- CS Department outreach to middle and high school students (Piedmont Futures program, LEAD program) (2008-2016)

Undergraduate Advisor

- 2008-2009 – 28 Advisees (BSCS, BACS, First-Year SEAS)
- 2009-2010 – 42 Advisees (BSCS, BACS, First-Year SEAS)
- 2010-2011 – 40 Advisees (BSCS, BACS, First-Year SEAS)
- 2011-2012 – 32 Advisees (BSCS, BACS, First-Year SEAS)
- 2012-2013 – 46 Advisees (BSCS, BACS, First-Year SEAS)
- 2013-2014 – 50 Advisees (BSCS, BACS, First-Year SEAS)
- 2014-2015 – 52 Advisees (BSCS, BACS, First-Year SEAS)
- 2015-2016 – 45 Advisees (BSCS, BACS, First-Year SEAS)
- 2016-2017 – 51 Advisees (BSCS, BACS, First-Year SEAS)
- 2017-2018 – 45 Advisees (BSCS, BACS, First-Year SEAS)
- 2018-2019 – 43 Advisees (BSCS, BACS, First-Year SEAS)
- 2019-2020 – 40 Advisees (BSCS, BACS, First-Year SEAS)
- 2020-2021 – 42 Advisees (BSCS and BACS)
- 2021-2022 – 55 Advisees (BSCS and BACS)
- 2022-Present – Responsible for BSCS degree program and overall advising

Organizing Committee

- Virtual Event Host, 56th ACM Technical Symposium on Computer Science Education, Pittsburgh, PA, February 2025
- Virtual Event Host, 55th ACM Technical Symposium on Computer Science Education, Portland, OR, March 2024
- Virtual Event Host, 54th ACM Technical Symposium on Computer Science Education, Toronto, ON, March 2023
- Virtual Event Host, 53rd ACM Technical Symposium on Computer Science Education, Providence, RI, March 2022
- Symposium Co-Chair, 52nd ACM Technical Symposium on Computer Science Education, Online, March 2021
- Symposium Co-Chair, 51st ACM Technical Symposium on Computer Science Education, Portland, OR, March 2020
- Birds of a Feather Co-Chair and Databases Co-Chair, 50th ACM Technical Symposium on Computer Science Education, Minneapolis, MN, March 2019
- Webmaster and Databases Co-Chair, 49th ACM Technical Symposium on Computer Science Education, Baltimore, MD, February 20-23, 2018
- Web Chair, IEEE Conference on Software Engineering Education and Training, May 2015
- Web Chair, IEEE Conference on Software Engineering Education and Training, San Francisco, CA, May 2013
- Posters Chair, International Symposium on Empirical Software Engineering and Measurement, Lake Buena-Vista, FL, October 2009
- Web Chair, 19th International Symposium on Software Reliability Engineering, Redmond, WA, November 2008
- Publicity Chair, IEEE Conference on Software Engineering Education and Training, Charleston, SC, April 2008
- Webmaster, Local Arrangements, and Conference Systems Support, 17th International Symposium on Software Reliability Engineering, Raleigh, NC, November 2006

Associate Program Chair

- Associate Program Chair – 30th ACM Annual Conference on Innovation and Technology in Computer Science Education, Nijmegen, The Netherlands, June 2025
- Associate Program Chair – 56th ACM Technical Symposium on Computer Science Education, Pittsburgh, PA, February 2025
- Associate Program Chair – 29th ACM Annual Conference on Innovation and Technology in Computer Science Education, Milan, Italy, July 15-17, 2024
- Associate Program Chair – 55th ACM Technical Symposium on Computer Science Education, Portland, OR, March 20-23, 2024

- Associate Program Chair – 49th ACM Technical Symposium on Computer Science Education, Seattle, WA, February 20-23, 2018
- Associate Program Chair – 22nd ACM Annual Conference on Innovation and Technology in Computer Science Education, Bologna, Italy, July 5-7, 2017
- Associate Program Chair – 48th ACM Technical Symposium on Computer Science Education, Seattle, WA, March 8-11, 2017

Program Committee / Reviewer

- ACM Annual Conference on Innovation and Technology in Computer Science Education, 2023
- IEEE/ASEE Frontiers in Education Conference, Indianapolis, IN, Oct 18-21, 2017
- ASEE Annual Conference and Exhibition, Columbus, OH, June 2017
- IEEE Conference on Software Engineering Education and Training, Savannah, GA, May 2017
- 48th ACM Technical Symposium on Computer Science Education, Seattle, WA, March 8-11, 2017
- IEEE Conference on Software Engineering Education and Training, May 2016
- 47th ACM Technical Symposium on Computer Science Education, Memphis, TN, March 3-6, 2016
- 46th ACM Technical Symposium on Computer Science Education, Kansas City, MO, March 6-9, 2015
- JSEET 2015 (Joint Software Engineering Education and Training - Joint ICSE 2015 and CSSE&T 2015 track)
- IEEE Conference on Software Engineering Education and Training, Klagenfurt, Austria, April 2014
- 45th ACM Technical Symposium on Computer Science Education, Atlanta GA, March 6-9, 2014
- IEEE/ASEE Frontiers in Education Conference, Oklahoma City, OK, Oct 23-26, 2013
- IEEE Conference on Software Engineering Education and Training, San Francisco, CA, May 2013
- ACM/IEEE International Conference on Software Engineering, SE Education Track, San Francisco, CA, May 18-26, 2013
- 18th ACM Annual Conference on Innovation and Technology in Computer Science Education, Canterbury, England, July 1-3, 2013
- 44th ACM Technical Symposium on Computer Science Education, Denver CO, March 6-9, 2013
- IEEE/ASEE Frontiers in Education Conference, Seattle, WA, Oct 3-6, 2012
- IEEE Conference on Software Engineering Education and Training, Nanjing, China, Apr 17-19, 2012
- 43rd ACM Technical Symposium on Computer Science Education, Raleigh, NC, March 1-3, 2012
- 16th ACM Annual Conference on Innovation and Technology in Computer Science Education, Haifa, Israel, July 3-5, 2012
- 42nd ACM Technical Symposium on Computer Science Education, Dallas, Texas, March 9-12, 2011
- IEEE Conference on Software Engineering Education and Training, Honolulu, Hawaii, May 22-24 2011
- IEEE International Symposium on Software Reliability Engineering, San Jose, CA, November 2010
- IEEE International Symposium on Software Reliability Engineering, Seattle/Redmond, WA, November 2008
- IEEE International Symposium on Software Reliability Engineering (Student Papers Track), Seattle/Redmond, WA, November 2008
- IEEE Conference on Software Engineering Education and Training, Charleston, SC, April 2008
- IEEE International Symposium on Software Reliability Engineering (Student Papers Track), Trollhättan, Sweden, November 2007

Conference Booth Organizer

- NSF Showcase, SIGCSE 2018, Baltimore, MD (with Prof. Aaron Bloomfield)
- NSF Showcase, SIGCSE 2017, Seattle, WA (with Prof. Aaron Bloomfield)
- NSF Showcase, SIGCSE 2016, Memphis, TN (with Prof. Aaron Bloomfield)
- NSF Showcase, SIGCSE 2015, Kansas City, MO (with Prof. Aaron Bloomfield)
- NSF Showcase, SIGCSE 2014, Atlanta, GA (with Prof. Aaron Bloomfield)
- NSF Showcase, SIGCSE 2013, Denver, CO (with Prof. Aaron Bloomfield)
- NSF Showcase, SIGCSE 2012, Raleigh, NC (with Prof. Aaron Bloomfield)
- NSF CCLI Showcase, SIGCSE 2011, Dallas, TX (with Prof. Aaron Bloomfield)
- NSF CCLI Showcase, SIGCSE 2010, Milwaukee, WI (with Prof. Aaron Bloomfield)
- NSF CCLI Showcase, SIGCSE 2009, Chattanooga, TN (with Prof. Aaron Bloomfield)
- NSF CCLI Showcase, SIGCSE 2008, Portland, OR (with Prof. Aaron Bloomfield)

Conference/Journal/Grant Peer Reviewer

- Social Sciences and Humanities Research Council of Canada (SSHRC)
- NSF Panelist
- Transactions on Software Engineering
- IEEE Computer
- The Handbook of Technology Management, John Wiley & Sons, Inc.
- International Conference on Software Engineering 2007
- Asia Pacific Software Engineering Conference
- Agile Development Conference 2006
- International Symposium on Software Reliability Engineering 2005
- International Symposium on Empirical Software Engineering 2005
- Foundations of Software Engineering 2004
- International Conference on Software Engineering 2004

Other Professional Service

- CRA Ad-Hoc Committee on Teaching Track Faculty 2017 – worked with committee to create a "best-practices" memo for distribution to CS departments on how working conditions for teaching track faculty.

Professional/Honor Memberships and Awards

- Association for Computing Machinery, Senior Member
- IEEE Computer Society, Senior Member
- ACM SIGSOFT, Member
- ACM SIGCSE, Member
- Outstanding Teaching Assistant Award, NCSU, Spring 2006
- Upsilon Pi Epsilon Computer Science Honor Society
- Omicron Delta Kappa Leadership Honor Society
- Eta Sigma Phi Classics Honor Society

Community Service

- Grant awarded to setup broadcast studio at Mt. Energy Elementary School in Creedmoor, NC, to teach fourth and fifth grade students about digital media.
- Grant awarded to setup broadcast studio at Jackson-Via Elementary School in Charlottesville, VA, to teach students about digital media and broadcasting.

OTHER WORK EXPERIENCE

Appalachia Service Project, Johnson City, TN
Software Engineer *Summer 1999 – Fall 2015*
Developed software that manages mortgages, volunteers, and home repair for non-profit organization.

Consulting, Charlottesville, VA
Software Engineer *Fall 2007 – Present*
Developed web software for local companies and performed consulting on database systems. References and examples available on request.

IBM – Software Group, Research Triangle Park, NC
Software Engineer Co-op *Summer 2006 – Spring 2007*
Performed research with the ABSM Architecture group in Tivoli on examining software development artifacts to guide test and identify emerging areas of risk.

PointDx, Inc., Winston-Salem, NC
Java Systems Engineer Intern *Summer 2002*
Worked with the Java Development Team and Quality Assurance Team in verifying tests and revising and authoring new modules for the REX radiology reporting software.

Knowledge2Work, Winston-Salem, NC
Chief Programmer *Summer 2001 – Spring 2002*
Responsible for designing and developing web sites for profit and non-profit customers as part of a student-run web design company. Member of Executive Board.

Wachovia Bank, Winston-Salem, NC
Systems Development Intern *Summer 2000*
Worked in Systems Development in the Integrated Testing Support team. Implemented first team web site for other teams to use in dealing with ITS and revamped numerous JCL / COBOL programs.

Wake Forest University, Winston-Salem, NC
Student Technology Advisor *Fall 1998-Spring 2002*
Worked with numerous faculty members and departments over four years at Wake Forest University with integrating technology into the classroom and assisting professors with technology needs.