

Sara Sprenkle

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Employment History

Associate Professor of Computer Science *May 2013 – Present*
Washington and Lee University, Lexington, VA.

Assistant Professor of Computer Science *July 2007 – May 2013*
Washington and Lee University, Lexington, VA.

Education

University of Delaware **Newark, DE**
Ph.D. in Computer Science, August 2007. Thesis: *Strategies for Automatically Exposing Faults in Web Applications.*

Duke University **Durham, NC**
Master's Degree in Computer Science, May 2004. Project: "Exploring Availability and Usage Guarantees in Resource Allocation Through Leases."

Gettysburg College **Gettysburg, PA**
Bachelors of Science in Computer Science and Mathematics, May 1999.
Graduated Summa Cum Laude.

Research Interests

Automation in software testing for various domains—focused on web applications; software maintenance, software engineering; empirical methodologies; distributed systems; digital humanities.

Teaching Experience

Associate/Assistant Professor, Washington and Lee University

Fundamentals of Programming I (CSCI111), Fall 2007, Winters 2008–2012, Fall 2012, Winter 2014, Winter 2016. Introductory programming course for majors and non-majors in the Python programming language. Beyond the typical coverage of introductory problem solving techniques and programming, directed weekly discussions about broader issues in computer science, such as bridging the digital divide and challenges and rewards of applying computer science to other fields. A paper about the approach was accepted to the Technical Symposium of Computer Science Education, 2012.

Software Development (CSCI209), Falls 2008, 2009, 2011- 2013, 2015. Third programming course for majors. Students transition from the Python programming language to Java, learn standard software development tools and techniques, and develop larger applications, culminating in a team development project. Topics include static vs dynamic typing, testing, code coverage, JUnit, interfaces, code smells, design patterns, version control, and Eclipse.

Algorithm Analysis (CSCI211), Winters 2009–2014, 2016. Required core course for majors. Focused on applications. Topics covered include algorithm analysis, graphs, greedy algorithms, dynamic programming, divide and conquer, network flow, and computational intractability.

Software Engineering through Web Applications (CSCI335), Springs 2010, 2013, 2016. Elective I developed for majors on designing and implementing Web applications, with a rigorous software engineering focus. Topics include iterative development, requirements gathering, distributed applications, Java servlets, JSPs, JavaScript, JSTL, usability, testing and debugging, security, and use of tools such as Eclipse Web Tools Platform, Subversion, Firefox plugins, and Selenium. Earlier version of the course: Web Applications, CSCI297.

Introduction to Digital Humanities: You Say You Want a Revolution (INTR203), Spring 2014. This project-based course introduces non-STEM majors to the use of digital technologies in humanities research and research presentation. The course is predicated on the fact that the digital turn the world has taken in the last several decades has drastically changed the nature of knowledge production and distribution. The class integrates lectures on DH and computer science with demonstrations of fully developed DH projects. Received funding from ACS R1 Collaboration grant to support instruction by graduate students from UVA's Scholars Lab. Co-taught with Paul Youngman.

Operating Systems (CSCI330), Fall 2015. Elective that combines theory and implementation of operating systems. Topics include processes, system calls (protected vs user functions), resource management, input/output, file structures, security, and threads and synchronization.

Distributed Systems (CSCI325), Spring 2011. New elective I developed for majors on the design and implementation of distributed systems. Topics include communication protocols (TCP, UDP, Http), routing, processes and threads, naming, synchronization, consistency and replication, fault tolerance, security, remote procedure calls, distributed file systems, and wide-area computing. Projects included using MapReduce on Amazon's EC2 resources.

Tools for the Software Life Cycle (CSCI297), Spring 2009. New elective I developed for majors on software tools to give students the tools to improve their productivity—working smarter, not harder. Students read research papers about cutting-edge software development tools. Topics include Unix tools, Bash scripting, version control, FindBugs, search/navigation tools, profiling, Mylyn, issue tracking, and refactoring.

Human-Computer Interaction (CSCI397), Fall 2008. New elective I developed for majors in theories and practices of HCI. Topics include iterative design, discount usability engineering, discovery, user and task analysis, human capabilities, rapid prototyping, and hierarchical evaluation techniques. Course capstone: large development project or research proposal.

Web Applications (CSCI297), Spring 2008. New elective I developed for majors on designing and implementing Web applications. Topics include advanced software engineering concepts, distributed applications, Java servlets, JSPs, JavaScript, JSTL, usability, testing and debugging, security, and use of tools such as Eclipse Web Tools Platform, Subversion, Firefox plugins, and Selenium. Modified to a 4-week course in 2010: CSCI335.

Course Instructor, University of Delaware

Object-Oriented Programming in Java (CISC370), Summer 2006. University of Delaware. Java elective for majors, typically taken during junior year. Augmented curriculum with coverage of JUnit and Eclipse, created and presented lectures, designed weekly assignments, designed and graded two projects and one exam, and supervised a teaching assistant.

General Computer Science Course (CISC105), Summer 2005. University of Delaware. Introductory C course for non-majors and majors without programming experience. Created and presented lectures, designed weekly lab assignments, designed and graded two projects and two exams, and supervised a teaching assistant. My assignments and projects have been used in subsequent instantiations of the course by other instructors.

Journal Publications

R. Benefiel, H. Sypniewski, S. Sprenkle, J. DiBiasie, “The Ancient Graffiti Project”, *Journal of Digital Archaeology*. vol. 1, accepted for publication (anticipated publication 2016).

J. Barry, J. Knudson, S. Sprenkle, and P. Youngman, “Launching the Digital Humanities Movement at Washington and Lee University: A Case Study.” *The Academic Commons*. July 2014.

S. Sprenkle, L. Pollock, and L. Simko. “Configuring Effective Navigation Models and Abstract Test Cases for Web Applications by Analyzing User Behavior.” *Journal of Software Testing, Verification and Reliability*. Volume 23, Issue 6, pages 439-464, September 2013.

S. Sampath, S. Sprenkle, E. Gibson, A. Souter and L. Pollock, “Applying Concept Analysis to User-session-based Testing of Web Applications.” *IEEE Transactions on Software Engineering*, Vol. 33, No. 10, October 2007.

K. Amiri, S. Sprenkle, R. Tewari and S. Padmanabhan, “Scalable consistency maintenance for edge query caches.” *Web Content Caching and Distribution*. F. Douglis and B. Davison (Eds), Kluwer Academic Publishers, 2004.

Conference Publications

S. Sprenkle, C. Cobb, and L. Pollock. “Leveraging User-Privilege Classification to Customize Usage-based Statistical Models of Web Applications.” International Conference on Software Testing, Verification and Validation (ICST), IEEE, Montreal, Canada, April 2012. Acceptance Rate: 27%.

S. Sprenkle and S. Duvall. “Reshaping the Image of Computer Science in Only Fifteen Minutes (of Class) a Week.” SIGCSE Technical Symposium on Computer Science Education, ACM, Raleigh, NC, Feb 2012. Acceptance Rate: 34.6%.

S. Sprenkle, L. Pollock, and L. Simko. “A Study of Usage-Based Navigation Models and Generated Abstract Test Cases for Web Applications.” International Conference on Software Testing, Verification and Validation (ICST), IEEE, Berlin, Germany, March 2011. Acceptance Rate: 21%. **Awarded Best Research Paper.**

S. Sprenkle, H. Esquivel, B. Hazelwood, and L. Pollock. “WEBVIZOR: A Visualization Tool for Applying Automated Oracles and Analyzing Test Results of Web Applications.” In Proceedings of the *Testing: Academic & Industrial Conference, Practice and Research Techniques (TAICPART)*, IEEE, Windsor, UK, August 2008.

S. Sprenkle, L. Pollock, H. Esquivel, B. Hazelwood, and S. Ecott. “Automated Oracle Comparators for Testing Web Applications.” In proceedings of the *18th IEEE International Symposium on Software Reliability Engineering (ISSRE)*, Trollhattan, Sweden, November 2007. Acceptance Rate: 30%.

S. Sampath, S. Sprenkle, E. Gibson, and L. Pollock. “Web Application Testing with Customized Test Requirements—An Experimental Comparison Study.” In proceedings of the *17th IEEE International Symposium on Software Reliability Engineering (ISSRE)*, Raleigh, NC, November 2006. Acceptance Rate: 30%.

S. Sprenkle, E. Gibson, S. Sampath, and L. Pollock. “Automated Replay and Failure Detection for Web Applications.” In proceedings of the *20th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, Long Beach, CA, November 2005. Acceptance Rate: 10%.

S. Sprenkle, S. Sampath, E. Gibson, L. Pollock, and A. Souter. “An Empirical Comparison of Test Suite Reduction Techniques for User-session-based Testing of Web Applications.” In proceedings of the *IEEE International Conference on Software Maintenance (ICSM)*, Budapest, Hungary, September 2005. Acceptance Rate: 30%.

J. Chase, L. Grit, D. Irwin, J. Moore, and S. Sprenkle. “Dynamic Virtual Clusters in a Grid Site Manager.” In proceedings of the *Twelfth International Symposium on High Performance Distributed Computing (HPDC)*, Seattle, WA, June 2003. Acceptance Rate: 20%. **Selected #4 of the Best Papers of HPDC 1992-2012.** <http://hpdc.org/best.php>

M. Chu-Carroll and S. Sprenkle. “Coven: Brewing Better Collaboration through Software Configuration Management.” In proceedings of the *Eighth International Symposium on the Foundations of Software Engineering (FSE)*, San Diego, California, November 2000. Acceptance Rate: 18%.

D. Shires, L. Pollock, and S. Sprenkle. “Program Flow Graph Construction for Static Analysis of MPI Programs.” In *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA)*, Las Vegas, NV, June 1999.

R. Tosten, C. Ferraro, S. Sprenkle, B. Steiner, and P. Tymann. “Using Java Remote Method Invocation in a Parallel and Distributed Processing Course.” In *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA)*, Las Vegas, NV, June 1999.

C. Leinbach, R. Johnsonbaugh, R. Tosten, S. Sprenkle, and P. Tymann. “Investigating JavaRMI for a Computer Science Curriculum.” In *Proceedings of the 14th annual Eastern Small Colleges Computing Conference (ESCCC)*, Marist, NY, October 1998.

Book Chapters

S. Sampath and S. Sprenkle. “Advances in Web Application Testing, 2010-2014,” in *Advances in Computers*, Memon A. (Ed), Elsevier, Vol. 101, pages 155–191, 2016.

Workshop Publications

S. Sprenkle, E. Gibson, and L. Pollock. “Learning Effective Oracle Comparator Combinations for Web Applications.” *First International Workshop on Software Test Evaluation (STEV)*, colocated with *Seventh International Conference on Quality Software (QSIC)*, Portland, OR, October 2007.

S. Sprenkle, E. Gibson, S. Sampath, and L. Pollock. “A Case Study of Automatically Creating Test Suites from Web Application Field Data.” *Workshop on Testing, Analysis and Verification of Web Services and Applications (TAVWEB)*, colocated with *International Symposium on Software Testing and Analysis (ISSTA)*, Portland, ME, July 2006.

S. Sampath, S. Sprenkle, E. Gibson, and L. Pollock. “Integrating Customized Test Requirements with Traditional Requirements in Web Application Testing.” *Workshop on Testing, Analysis and Verification of Web Services and Applications (TAVWEB)*, colocated with *International Symposium on Software Testing and Analysis (ISSTA)*, Portland, ME, July 2006.

S. Sampath, S. Sprenkle, E. Gibson, L. Pollock, and A. Souter. “Analyzing Clusters of Web Application User Sessions.” *The Third International Workshop on Dynamic Analysis (WODA)*, colocated with *27th International Conference on Software Engineering (ICSE)*, St. Louis, MO, May 2005.

K. Amiri, S. Sprenkle, R. Tewari, and S. Padmanabhan. “Exploiting Templates to Scale Consistency Maintenance in Edge Database Caches.” *The Eighth International Workshop on Web Content Caching and Distribution (WCW)*, Hawthorne, NY, September 2003.

M. Chu-Carroll and S. Sprenkle. “Software Configuration Management as a Mechanism for Multidimensional Separation of Concerns.” In the *22nd International Conference on Software Engineering (ICSE2000) Workshop on Multi-dimensional Separation of Concerns*, Limerick, Ireland, June 2000.

Other Publications

R. Benefiel and S. Sprenkle. “The Herculeum Graffiti Project.” as part of *Current Practice in Linked Open Data for the Ancient World*. Editors: Thomas Elliott, Sebastian Heath, John Muccigrosso. Institute for the Study of the Ancient World (ISAW) Papers 7, 7.4, 2014.

Research Mentor

Research mentor for undergraduate projects in web application testing. Designed research projects to be completed within the given timeframe and worked closely with students to guide them through implementation and the research process, including searching for related work, reading and critiquing research papers effectively, brainstorming new strategies to problems, data analysis, setting up evaluation studies, and presenting research in poster and paper formats.

Senior Honors Theses

Johanna Goergen '16, “Leveraging Parameter and Resource Naming Conventions to Improve Test Suite Adherence to Persistent State Conditions.” Participant in ACM Student Research Competition at the Grace Hopper Celebration of Women in Computing 2015.

Bipeen Acharya '15, “Towards an Automated and Customizable Linear Cryptanalysis of a Substitution-Permutation Network Cipher for Use in Embedded Systems.”

Hang Gil (Paul) Jang '15, “Customizable Method of Automatically Detecting Malicious User Activity in Web Applications.”

Richard Marmorstein '14 , “Robot Socrates: Contradiction Identification with Minimum Questioning.”

Camille Cobb '12, “Exploring Text-based Analysis of Test-Case Dependencies for Web Applications.” Finalist in the ACM Student Research Competition at SIGCSE 2012.

Summer Research and Independent Studies

Michael Dick '19, "Tools to Automate Web Application Testing." Summer Research Scholar, Summer 2016.

Alicia Martinez '18, "Visualizing and Searching Graffiti in the Ancient Graffiti Project." NEH Office of Digital Humanities Start-up Grant, Summer 2016.

Azmain Amin '17 and Mina Shnoudah '17, "Exploring challenges and opportunities in automated testing for web services." Summer Research Scholars, Summer 2015.

Jamie White '17, "Mapping and Searching for Graffiti in the Ancient Graffiti Project." Summer Research Scholar, Summer 2015.

Mithra Muthukrishnan '16, "Analyzing Web Accesses for Malicious Bots.", Summer 2015, Academic Year 2015-2016.

Johanna Goergen '16 and M. Maggie Weatherly '15, "Automatically Generating Persistent State-Aware Test Cases for Web Applications", Summer Scholars, Summer 2014.

Olivier Mahame '14 and Jean Paul Mugabe '14, "Exploring technologies for an improved statistical framework for analyzing web application logs", Independent Study, Winter 2014.

Olivier Mahame '14, "Developing a Modern Web Application for Studying Ancient Collegium", Independent Study, Fall 2013.

Samantha O'Dell '15 and Gabrielle Tremo '15, "Exploring Digital Humanities Tools for an Introductory Course", Summer Scholars, Summer 2013.

Paul Jang '15, "Ancient Graffiti Search Engine", Summer Scholar, Summer 2013.

Olivier Mahame '14, "Statistical Analysis of User-Session Data for Improved Test-Case Generation Data Models", Independent Study, Winter 2013.

Haley Archer-McClellan '15 and Deirdre Tobin '15, "Improving Text-based Analysis of Persistent-State Dependencies for Web Applications", R.E. Lee Scholars, Summer 2012.

Jean Paul Mugabe '14, "Learning the Factors that Predict Parameter Data Values for Web Application Testing through Statistical Analysis of User Data", Summer 2012.

Richard Marmorstein '14, "Developing Sentential Logic Functionality for an Online Symbolic Logic Tutorial", R.E. Lee Scholar with Paul Gregory, Summer 2012.

Charles Gould '12, Infrastructure Improvements for Capturing User Accesses and Developing a New Online Publications Repository, Summer 2011.

Camille Cobb '12, Anna Pobleets '12, and Lucy Simko '11, "Dynamic Analysis of Web Application Access Logs for Software Testing." CRA-W/CDC Collaborative Research Experiences for Undergraduates (CREU), 2010-2011. Cobb '12 presented a poster of our work at the National Science Foundation in September 2011.

Kathryn Baldwin (University of Delaware '10), Camille Cobb '12, and Caroline Hopkins '12, "Exploring data models for automatically generating tests for web applications." CRA-W Distributed Research Experiences for Undergraduates (DREU), Summer 2009.

Natallia Robinson (University of Delaware, Masters '09), "A Case Study of Faults in Web Applications." Independent Study, Summer 2009.

Lucy Simko '11, "Automatically Creating Test Cases from User Accesses." R.E. Lee Scholar, Summer 2008.

Holly Esquivel (University of Nebraska-Kearney '07), "A Visualization Tool for Web Application Testing", CRA Distributed Mentor Program, Summer 2006. Honorable Mention in CRA Outstanding Undergraduate Awards 2007.

Barbara Hazelwood (Xavier University '07), "A Visualization Tool for Web Application Testing", CRA Distributed Mentor Program, Summer 2006.

Stacey Ecott (Tufts University '07), "Fault-based Mutation Operators for Web Applications", CRA Distributed Mentor Program, Summer 2005.

Frank Zappaterrini (University of Delaware '05), "Support Tools for a Capture/Replay Framework", Independent Study, January 2005, Summer 2005.

Poster Presentations

S. O'Dell, G. Tremo, and S. Sprenkle. "What are the best resources to introduce students to the digital humanities?" Grace Hopper Celebration of Women in Computing. October 2014.

R. Benefiel, S. Sprenkle, and P. Jang. "The Herculaneum Graffiti Project: Reinvisioning the Ancient City." International Conference on Information Technologies for Epigraphy and Digital Cultural Heritage in the Ancient World. Sept 2014.

L. Simko, A. Pobletts, and S. Sprenkle. "Exploring Potential Data Models to Automatically Generate Tests for Web Applications." Tapia Celebration of Diversity in Computing. April 2011.

C. Cobb and S. Sprenkle. "Toward a User-Session Dependency Model for Automatically Testing Web Applications." Tapia Celebration of Diversity in Computing. April 2011.

K. Baldwin, C. Cobb, C. Hopkins, S. Sprenkle, and L. Pollock, "Exploring Data Models for Automatically Generating Tests for Web Applications." Grace Hopper Celebration of Women in Computing. September 2009.

S. Ecott, S. Sprenkle, and L. Pollock. "Fault Seeding vs. Mutation Operators: An Empirical Comparison of Techniques for Web Applications." The Grace Hopper Celebration, San Diego, CA, October 2006.

S. Sprenkle, S. Sampath, E. Gibson, A. Souter, and L. Pollock. "An Empirical Comparison of Test Suite Reduction Techniques for User-session-based Testing of Web Applications." CRA DMP Reunion, Chicago, Illinois, October 2004.

S. Sprenkle and J. Chase. "Automatic State Management for Dynamic Services Using Ivory." 18th Symposium on Operating Systems Principles (SOSP-18), Chateau Lake Louise, Banff, Canada, October 2001.

Oral Presentations

For presentations not associated with publications listed elsewhere.

"On Solid Ground: Building the Foundation for Women Faculty and Students in Math and Science." Presenter in panel at the Ninth Biennial ACS Women's and Gender Studies Conference, University of Richmond, Richmond, VA, April 2011.

"Statistical, Usage-based Models to Effectively Test Web Applications." Invited talk at Loyola University Maryland, February 2011.

“Getting Off to a Great Start in Academia: Advice from the Other Side of the Tenure Track.” Moderator, writer for panel at the Grace Hopper Celebration of Women in Computing, October 2010. In evaluation survey, panel received a mean score of 4.5 out of 5.

“Customized Oracles to Automatically Detect Faults in Web Applications.” Invited talk at the University of Richmond’s Mathematics & Computer Science Colloquium Series, October 2009.

“Women in Computer Science.” Invited talk for KEWL (Knowledge Empowering Women Leaders) at Washington and Lee University, November 2007.

“Customized Oracles to Automatically Detect Faults in Web Applications.” Invited talk at Mt. Holyoke College, South Hadley, MA, November 2006.

“Strategies for Automatically Exposing Faults in Web Applications.” Ph.D. Forum at the *Grace Hopper Celebration of Women in Computing (GHC2006)*, San Diego, CA, October 2006.

“Strategies for Automatically Exposing Faults in Web Applications.” Doctoral Symposium at the *International Symposium on Software Testing and Analysis (ISSTA 2006)*, Portland, ME, July 2006.

“Towards Automatically Creating Test Suites from Web Application Field Data.” S. Sprenkle, E. Gibson, S. Sampath, and L. Pollock. Presented at the *Mid-Atlantic Student Workshop on Programming Languages and Systems (MASPLAS)*, Rutgers University, April 2006.

Research and Teaching Funding

National Endowment for the Humanities Office of Digital Humanities Start-up Grant for “Ancient Graffiti Project: Tools for Analyzing Personal Communication”, co-PI with PI Rebecca Benefiel, \$74,592, 2016.

Mellon Foundation for “DH Studio: A Digital Humanities Pedagogical Innovation” to pilot DH Studio courses, continuing collaboration with UVAs Scholars Lab, support for other DH courses, and support for faculty and student DH projects. Granted \$800,000 for July 1, 2015–June 30, 2019.

Associated College of the South (ACS)’s R1 Collaboration Program for “Digital Humanities: Theory and Implementation” to continue collaboration with UVAs Scholars Lab for \$4987, 2015.

Associated College of the South (ACS)’s R1 Collaboration Program for “Digital Humanities: Theory and Implementation” to support pilot collaboration with UVAs Scholars Lab for \$4983, 2014.

Washington and Lee University Lenfest Grant, awarded stipends for 8 weeks during summer to support research on exploring text-analysis of web applications and implementation of web-based digital humanities projects (Ancient Graffiti Project, Context Sensitivity), 2013–2016.

Washington and Lee University Lenfest Grant, awarded a stipend for 8 weeks during summer to support research on automatically generating test cases using statistical data models and finding inter-test case dependencies, 2012.

CRA-W/CDC Collaborative Research Experiences for Undergraduates (CREU), awarded funding for 2.5 student stipends during academic year and travel funding, 2010-2011.

Amazon EC2 Teaching Grant, awarded to fund students in the distributed systems course using Amazon's cloud computing resources, 2011.

Washington and Lee University Lenfest Grant, awarded a stipend for 8 weeks during summer on automatically generating abstract test cases using statistical models, 2011.

Washington and Lee University Lenfest Grant, awarded a stipend for 4 weeks during summer on a framework for automatically seeding faults for evaluating web application testing techniques, 2010.

Washington and Lee University Lenfest Grant, awarded a stipend and expenses to work at the University of Delaware for 8 weeks during summer on automated test-case generation for web applications, 2009.

Washington and Lee University Hess Fellow, awarded to two faculty members to fund summer research, 2008. Awarded a stipend and expenses to work at the University of Delaware for 5 weeks on automated test-case generation for web applications.

Non-Research Independent Studies

Azmain Amin '17 and Mina Shnoudah '17: Developing a social event management app. Won third place at the Entrepreneurship Summit, 2015.

David Margolies '12: Towards a Web Interface for Ancient Inscriptions, Winter 2012.

Riley Jordan '13: Automatically Gathering Ancient Inscriptions, Fall 2011.

Si Young Kim '13: Towards a New Social Network, Winter 2011.

Ethan Smith '10: Developing Android applications using Google Maps API, Winter 2010.

Jack Ivy '11: Developing Android applications, Fall 2009.

David Vaught '09: Modeling physics in Java, Spring 2009.

Research Experience

IBM T.J. Watson Research Lab **Hawthorne, NY**
 [June – August 2002] **Co-op Pre-Professional Programmer** supervised by Dr. Khalil Amiri. Designed and implemented consistency policies for DBProxy, an edge-of-network semantic dynamic data cache. Resulted in one journal and one workshop publication.

IBM T.J. Watson Research Lab **Hawthorne, NY**
 [June – August 1999] **Co-op Pre-Professional Programmer** supervised by Dr. Mark Chu-Carroll on the Manitoba (later renamed Stellation) project. Implemented the client side of a distributed programming environment designed to coordinate programmers collaborating on large software projects. Resulted in one conference and one workshop publication.

Industry Experience

IBM Cambridge Lab **Cambridge, MA**
 [June – August 2003] **Software Engineer Intern** worked with a four-person team of Extreme Blue interns on the Mobile Moscow project. Our team designed and implemented a technical and business plan, culminating in a presentation and demonstration to IBM executives.

IBM Tivoli**Research Triangle Park, NC**

[June – August 2000] **Summer Intern** supervised by Dr. James Jennings on Tivoli Device Management team. Designed and implemented a prototype for an online front end to a Tivoli personalized services product. The new front-end primarily used Java servlet technology.

Technical Reports

S. Sampath, E. Gibson, S. Sprenkle, and L. Pollock. “Coverage Criteria for Testing Web Applications.” Technical Report 2005-017, Department of Computer and Information Sciences, University of Delaware, April 2005.

S. Sprenkle, S. Sampath, E. Gibson, A. Souter, L. Pollock. “An Empirical Comparison of Test Suite Reduction Techniques for User-session-based Testing of Web Applications,” Technical Report 2005-009, Computer and Information Sciences, University of Delaware, November 2004.

J. Moore, D. Irwin, L. Grit, S. Sprenkle, and J. Chase. “Managing Mixed-Use Clusters with Cluster-on-Demand.” Department of Computer Science, Duke University Technical Report, January 2003.

S. Sprenkle and J. Chase. “Scaling Java-based Dynamic Web Services.” Department of Computer Science, Duke University Technical Report CS-2001-02, May 2001.

Professional, Institutional, Community Service**University**

Co-coordinator of Washington and Lee’s Women in Math and Science (WIMS) group, 2010–2014. Awarded funding to develop joint program with the University of Richmond through the Associated Colleges of the South (ACS) Andrew W. Mellon Faculty Renewal Program. Awarded Dean Cohort Grant to support lunch workshops for WIMS faculty.

Digital Humanities Committee, 2016-. Previously, Digital Humanities Working Group, Associate Chair, 2014–2016, Member, 2013–2016.

University Committee Member: Student Affairs Committee, 2013–2014, 2015–2016; Women’s and Gender Studies Program Advisory Committee, 2009–2014; Spring Term Coordinating Committee, 2012-2013; Public Functions Committee, 2011–2013; Faculty Committee on Inclusiveness, 2008–2009.

Program Committee Member: Women’s Leadership Summit, 2011–2012, 2013–2014.

Phi Beta Kappa Executive Committee Member, 2013-2014.

Advisor: GRAAC (Generals Raising Awareness of Animal Cruelty), 2012–2016; PLAY, 2012–2015; Pi Beta Phi Sorority, 2011–2014;

Maintainer of Web Presence for Washington and Lee’s Women’s and Gender Studies Program, 2009–2014. <http://wgs.wlu.edu>

Technical

Conference Program Committee Member, International Symposium on Software Testing, Verification, and Validation (ICST), 2012, 2015; IEEE International Symposium on Software Reliability Engineering (ISSRE), 2008, 2009, 2013; International Conference on Quality Software (QSIC), 2012; Testing: Academic and Industrial Conference - Practice and Research Techniques (TAIC PART), 2009.

Review Committee Member, ACM Student Research Competition, Grand Finals, 2015, 2016.

Short Papers Program Committee Member, ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM), 2016.

Ph.D. Symposium Co-Chair, International Symposium on Software Testing, Verification, and Validation (ICST), 2014.

Student Papers Committee Member, IEEE International Symposium on Software Reliability Engineering (ISSRE), 2013.

Workshop Program Committee Member, International Workshop on Regression Testing, 2012; International Workshop on Testing, Analysis, and Verification of Web Software (TAV-WEB), 2010; Automated Software Testing (AST), 2010.

Emerging Research Track Program Committee Member, The 19th Asia-Pacific Software Engineering Conference (APSEC), 2012.

CRA-W Distributed Research Experiences for Undergraduates (DREU) Research Mentor, selected by committee for Summer 2009. Mentored two undergraduates.

Technical Paper Reviewer, Journal on Software Testing, Verification, and Reliability (JSTVR), 2007, 2008, 2015; Transactions on Software Engineering, 2013, 2014; IEEE Transactions on Reliability, 2014; IET Software, 2013; Journal of Systems and Software, 2013, 2016; Information and Software Technology, 2013, 2014; Science of Computer Programming, 2013; Computer, 2013; Experiences and Empirical Studies in Software Modelling (EESMod), 2011; Software Quality Journal, 2010; Encyclopedia of Software Engineering, 2009; International Conference on Software Engineering (ICSE), 2006, and Web Caching and Content Distribution (WCW), 2001.

Conference Poster and Panel Reviewer, Richard Tapia Conference, 2009.

Poster Committee, International Symposium on Empirical Software Engineering and Measurement (ESEM), 2009.

Increasing Diversity in Computing

Faculty Co-Chair, Grace Hopper Celebration of Women in Computing, 2015, 2016.

Poster Co-Chair, Grace Hopper Celebration of Women in Computing, 2013.

Panel and Workshop Selection Committee, Grace Hopper Celebration of Women in Computing, 2010, 2012.

Academic Advisory Committee, Grace Hopper Celebration of Women in Computing, 2010, 2012.

Panelist, National Science Foundation (NSF) Broadening Participation in Computing (BPC), 2008, 2009.

Student Scholarship Reviewer, Grace Hopper Celebration of Women in Computing, 2008–2013.

Lead Organizer for the University of Delaware women in computer science support group, called CISTers. Maintained the group's web presence. 2005-2007.

Community

Director, Rockbridge Animal Alliance, 2014–. Working with a group of like-minded individuals to create a non-profit that focuses on the welfare of animals in the Rockbridge community. Awarded over \$3000 in grants for monthly Pet Food Pantry and low-cost spay/neuter program. <http://rockbridgeanimalalliance.org>

Web Site Consultant, Rockbridge Historical Society, 2011–. Redesigned web site in WordPress to make it easier for any RHS member to edit the site; perform routine maintenance and upgrades. <http://rockhist.org>

Web Site Consultant, Rockbridge SPCA, 2013–2015. Redesigned web site in WordPress to make site easier to maintain; keep site up to date with news, events, adoptable animals, and success stories; perform routine maintenance and upgrades.

IT Consultant, Rockbridge SPCA, 2013. Upgraded the SPCA's computers (donated by W&L) with more recent OS and desktop applications.

Honors and Awards

Lauri Pfeffer Shinn Memorial Award, awarded to one undergraduate and one graduate woman in recognition of academic success and contribution to the department by the University of Delaware Department of Computer and Information Sciences, 2006.

Department of Computer and Information Sciences **Graduate Teaching Assistant Award**, University of Delaware, 2005, a monetary award given to a Computer and Information Sciences graduate teaching assistant in recognition of teaching excellence.

National Science Foundation Graduate Research Fellowship, 2000–2003. Featured in the 60th anniversary retrospective.

Duke Computer Science Department **Service Award**, 2000, 2002, 2003.

Phi Beta Kappa, Gettysburg College, inducted in 1999.

Rev. George N. and M. Naomi Lauffer Scholarship Award, awarded to a rising junior at Gettysburg College for scholarship, character, and ability, 1997.

1996 Benjamin Fine Awards for Outstanding Education Reporting, earned as a correspondent with *The York Daily Record*, from NASSP.

Other

Member of the Association of Computing Machinery (ACM), SIGSOFT, SIGCSE; IEEE, Computer Society

Citizenship: United States.

Interests: pop culture, gardening, ultimate

Please refer to <http://www.cs.wlu.edu/~sprenkle/> for additional information.