Vita
Lori L. Pollock

Computer and Information Sciences
University of Delaware
Newark, DE 19716
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Research Interests

Data mining, program analysis and tool development to support software evolution and testing, and computer science education.

Education

Ph.D. Computer Science, April 1986, University of Pittsburgh, Pittsburgh, PA
Dissertation: *An approach to incremental compilation of optimized code*
Advisor: Mary Lou Soffa

M.S. Computer Science, August 1983, University of Pittsburgh

B.S. Computer Science, magna cum laude, June 1981, Allegheny College, Meadville, PA

B.S. Economics, magna cum laude, June 1981, Allegheny College, Meadville, PA

Professional Experience

January 2024 to present:
Professor Emeritus and Senior Researcher, Computer and Information Sciences, University of Delaware.

September 2016 to January 2024:
Alumni Distinguished Professor, Computer and Information Sciences, University of Delaware.

January 2022 to present:
Program Manager, Center for Inclusive Computing, Northeastern University .

January 2021 to January 2022:
Technical Advisor, Center for Inclusive Computing, Northeastern University .

September 2004 to Aug 2016:
Professor, Department of Computer and Information Sciences, University of Delaware.

September 2012 to 2018:

Research Consultant, ABB Inc.

September 1998 to 2003:
    Associate Professor, Department of Computer and Information
Sciences, University of Delaware.

September 1998 to May 1999, September 2012 to August 2013:
    Research Consultant, Army Research Laboratory, Aberdeen, MD.

September 1992 to September 1998:
    Assistant Professor, Department of Computer and Information Sciences,
University of Delaware.

June-August, 1993 and 1994:
    Research Scientist, Supercomputing Research Center, Bowie, MD.

September 1991 to August 1992:
    Visiting Assistant Professor, Department of Computer and Information Sciences,
University of Delaware.

January 1986 to May 1990:
    Assistant Professor, Department of Computer Science, Rice University.

September 1982 to September 1984:
    Teaching assistant and Instructor, Department of Computer Science, U of Pittsburgh.

June-August 1982:
    Programmer, Hagerstown Cash Register, Inc., Hagerstown, MD.

Honors and Awards

ICPC 2023 Most Influential Paper Award for papers published in 2013.
ASE 2022 Most Influential Paper Award for papers published 2008-2010.
ACM Distinguished Scientist, as of 2010.
Distinguished Reviewer, Foundations of Software Engineering, 2020.
IEEE Senior Member, as of 2019.
American Educational Research Association, SIG Technology as an Agent of Change in Teaching
    and Learning: Nominated for Best Paper Award (2021)
2021 Fellow, First cohort of faculty in Cultural Competence in Computing (3C) Fellows Program
2019 ACM SIGSOFT Distinguished Paper Award at ESEC/FSE
2018 NCWIT Undergraduate Research Mentoring Award.
2017 UD College of Engineering Dean's Award for Excellence in Service and
        Community Engagement Award, 2017.
Most Influential Paper Award from Sixth International Conference on Aspect-Oriented
        Software Development, 2017.

Best Paper Award, AERA (American Educatonal Research Assoc) Annual Conf SIG
      Technology as an Agent of Change in Teaching & Learning, 2017.
Association for Computing Machinery SIGSOFT Influential Educator Award 2016
Alumni Distinguished Professor, University of Delaware, beginning Sept 2016
Invited Keynote Speaker, 3rd International Workshop on Software Engineering
      Research and Industrial Practice (SER&IP 2016) at ICSE, 2016.
Best Paper Award, AERA (American Educatonal Research Assoc) Annual Conf
      SIG Instructional Technology 2016.
Best Research Paper Award, Intl Conf on Program Comprehension (ICPC), 2013.
Best Research Paper Award, Intl Conf on Mining Software Repositories, (MSR), 2013
Keynote Speaker, International Conference on Software Maintenance, 2012.
University of Delaware E. Arthur Trabant Award for Diversity, as faculty on
      UD ADVANCE team, 2012.
Best Research Paper, International Conference on Software Testing (ICST) 2011.
ACM SIGSOFT Best Paper Award, Automated Software Engineering (ASE) 2010.
Best Paper Award, International Conf on Mining Software Repositories (MSR) 2009.
CRA-W awarded US Public Service Award by National Science Board, 2005.
CRA-W awarded US Presidential Award for Mentoring in Science, Engineering, and
      Mathematics, 2004.
University of Delaware E. Arthur Trabant Award for Women's Equity, 2004.
University of Delaware Faculty Excellence in Teaching Award; May 2001
Mellon Predoctoral Fellowship; January 1985 - August 1985
Gulf Oil Foundation Scholarship; September 1981 - May 1982
Member of Phi Beta Kappa
Member of Pi Gamma Mu Honorary Social Science Fraternity
Doane Scholar, Allegheny College, 1979-1980
Alden Scholar, Allegheny College, 1977-1979, 1981

Journal Publications and Book Chapters

Mouza, C., Sheridan, S., Lavigne, N., Pollock, L. "Preparing undergraduate students to support K-12 computer science teaching through school-university partnerships: reflections from the field" **Computers and Education.** 33, 1, p 3-28, .2023

Chrystalla Mouza, Diane Codding, Lori Pollock, "Investigating the Impact of Research-Based Professional Development on Teacher Learning and Classroom Practice: Findings from Computer Science Education", **Computers and Education.**, Volume 186, September 2022, https://doi.org/10.1016/j.compedu.2022.104530.

Chrystalla Mouza; Hilary Mead; Bataul Alkhateeb; Lori Pollock, "A Virtual Professional Development Program for Computer Science Education During COVID-19", **TechTrends,**, 66, pages 436–449 (2022).

Yang, H., Codding, D., Mouza, C., and Pollock, L. "Broadening participation in computing: Promoting affective and cognitive learning in informal spaces." **TechTrends,** 65, 196-212., 2021.

Codding, D., Alkhateeb, B*., Mouza, C., and Pollock, L. "From professional development to pedagogy: An examination of computer science teachers' culturally responsive instructional practices." **Journal of Technology and Teacher Education**, 29(4), 497-532, 2021.

Codding, D*., Yang, H., Mouza, C., and Pollock, L. "Computing for communities: Designing culturally responsive informal learning environments for broadening participation in computing." **Journal of Applied Instructional Design,** 10(4), 2021.

Chatterjee, Preetha; Damevski, Kostadin; Kraft, Nicholas; Pollock, Lori, "Automatically Identifying the Quality of Developer Chats for Post Hoc Use," **ACM Transactions on Software Engineering and Methodology (TOSEM)**, 2021.

Mouza, C., Pan, Y., Yang, H., Pollock, L. "A multiyear investigation of student computational thinking, practices, and perspectives in an after school computing program." **Journal of Educational Computing Research, 2020.**

Preetha Chatterjee, Minji Kong, Lori Pollock, "Finding Help with Programming Errors: An Exploratory Study of Novice Software Engineers' Focus in Stack Overflow Posts," **Journal of Systems and Software (JSS)**, 2019.

Cagri Sahin, Lori Pollock, James Clause,"Supporting Software Evolution Through Feedback on Executing/Skipping Energy Tests for Proposed Source Code Changes," **Journal of Software: Evolution and Process**, February 2019.

Kostadin Damevski, Hui Chen, David Shepherd, Nicholas Kraft, Lori Pollock, "Predicting Future Developer Behavior in the IDE Using Topic Models," **IEEE Transaction on Software Engineering**, Volume 1, No. 1, Sept, 2017.

Mouza, C., Yang, H., Pan, C., Yilmaz Ozden, S., and Pollock, L. "Resetting educational technology coursework for pre-service teachers: A computational thinking approach to TPACK development." **Australian Journal of Teacher Education.** Volume 33, Number 3, 2017.

Kostadin Damevski, David Shepherd, Johannes Schneider, Lori Pollock, "Mining Sequences of Developer Interactions in Visual Studio for Usage Smells," **IEEE Transactions on Software Engineering**, Issue 99, 2016.

Cagri Sahin, Lori Pollock, James Clause, "From Benchmarks to Real Apps: Exploring the Energy Impacts of Performance-directed Changes," **Journal of Systems and Software**, March 2016.

Chrystalla Mouza, Alison Marzocchi, Yi-Cheng Pan, Lori Pollock, "Development, Implementation and Outcomes of an Equitable Computer Science After-School Program: Findings from Middle-School Students," **Journal of Research on Technology in Education (JRTE)**, 48 (2), pages 84-104, 2016.

Kostadin Damevski, David Shepherd, Lori Pollock, "A Field Study of How Developers Locate Features in Source Code", **Empirical Software Engineering**, Springer January 2015, pages 1-24.

Emily Hill, David Binkley, Dawn Lawrie, Lori Pollock, K. Vijay-Shanker, "An Empirical Study of Identifier Splitting Techniques," **Empirical Software Engineering**, Springer Link, August 2013.

Sara E. Sprenkle, Lori L. Pollock, Lucy M. Simko, "Configuring Effective Navigation Models and Abstract Test Cases for Web Applications by Analyzing User Behavior," **Journal of Software Testing, Verification**, and Reliability, 2013.

Xiaoran Wang, Lori Pollock, K. Vijay-Shanker, "Automatic Segmentation of Method Code into Meaningful Blocks: Design and Evaluation," **Journal of Software: Evolution and Process**, Wiley, 2013.

Lori Pollock, K. Vijay-Shanker, Emily Hill, Giriprasad Sridhara, David Shepherd, "Natural Language-based Software Analyses and Tools for Software Maintenance," Book chapter in **Lecture Notes in Computer Science**, Springer Verlag, 2012.

Zachary P. Fry, David Shepherd, Emily Hill, Lori Pollock, K. Vijay-Shanker, "Analyzing Source Code: Looking for Useful Verb-Direct Object Pairs in All the Right Places," **IET Software Special Issue on Natural Language in Software Development,** Vol. 2, No. 1, pages 27-36, February 2008.

Sreedevi Sampath, Sara Sprenkle, Emily Gibson, Lori Pollock, Amie Souter Greenwald, "Applying Concept Analysis to User-Session-Based Testing of Web Applications," **IEEE Transactions on Software Engineering, (TSE)**, Vol. 33, No. 10, October 2007.

Amie Souter and Lori Pollock, "Construction of Contextual Def-Use Associations for Object-oriented Software," **IEEE Transactions on Software Engineering, (TSE)**, Vol. 29, No. 11, November 2003.

Cheer-Sun D. Yang and Lori L. Pollock, "All-Uses Testing of Shared Memory Parallel Programs," **Software Testing, Verification, and Reliability Journal**, 13, pp. 3-24, John Wiley and Sons, 2003.

Amie L. Souter and Lori L. Pollock, "Characterization and Automatic Identification of Type Infeasible Call Chains," **Information and Software Technology**, 44 (13), pp. 721-732, Elsevier Science, 2002.

Dixie Hisley, Punyam Satya-narayana, Gagan Agrawal, Lori Pollock, "Porting and Performance Evaluation of Irregular Codes using OpenMP," **Concurrency: Practice and Experience**, Volume 12, pages 1241-1259, 2000.

James B. Fenwick, Jr. and Lori L. Pollock, "Efficient Tuple Space Programming Environment," invited book chapter in **High Performance Cluster Computing: Programming and Applications**, Volume 2, pp. 175-196, ed., Rajkumar Buyya, Prentice Hall, 1999.

Cindy Norris and Lori Pollock, "Experiences with Cooperating Register Allocation and Instruction Scheduling," in **International Journal on Parallel Programming**, Vol. 26, No. 3, pp. 241-284, September 1998.

Cindy Norris and Lori Pollock, "Design and Implementation of RAP: A PDG-based Register Allocator," **Software Practice and Experience**, Vol. 28, (4), pp. 401-424, April 1998.

James B. Fenwick and Lori Pollock, "Issues and Experiences of Implementing a Distributed Tuplespace," **Software Practice and Experience**, Vol. 27, No. 10, pp. 1199-1232, 1997.

Mark Chu-Carroll and Lori Pollock, "Composite Tree Parallelism: Language Support for General Purpose Parallel Programming", **Journal of Programming Languages**, Vol. 5, Issue 1, pp. 1-36, 1997.

Alan Carle and Lori Pollock, "On the Optimality of Incremental Evaluators for Hierarchical Attribute Grammars," in **ACM Transactions on Programming Languages and Systems**, pp. 16-29, January 1996.

Alan Carle and Lori Pollock, "A Context-Based Incremental Evaluator for Hierarchical Attribute Grammars," **Journal of Programming Languages**, pp. 1-30, March 1995.

Alan Carle and Lori Pollock, "Matching-Based Incremental Evaluators for Hierarchical Attribute Grammar Dialects," **ACM Transactions on Programming Languages and Systems**, pp. 394-429, March 1995.

Lori Pollock and Mary Lou Soffa, "Incremental Global Reoptimization of Programs," **ACM Transactions on Programming Languages and Systems**, pp. 173-200, April 1992.

Lori Pollock and Mary Lou Soffa, "An Incremental Version of Iterative Data Flow Analysis," **IEEE Transactions on Software Engineering**, pp. 1537-1549, December 1989.

Highly Refereed Conference Publications

Ospina Tabares, Santiago; Mathayas, Nitasha; Mead, Hilary; Mouza, Chrystalla; and Pollock, Lori. Exploring elementary educators' perceptions of AI in the Context of a professional development program, Proceedings of Society for Information Technology and Teacher Education International Conference (SITE) 2025.

Mathayas, Nitasha; Nolte, Amand; Mead, Hilary; Mouza, Chrystalla; Pollock, Lori; Rolon-Dow, Roosalie; Alkhateeb, Bataul; Tabares, Santiago Ospina; Baker, Faith,

Lessons in Adaptation: A Five-Year Design Analysis of Culturally Responsive Computer Science PD for Elementary Teachers, Proceedings of Society for Information Technology and Teacher Education International Conference (SITE) 2025.

Minji Kong, Owen He, Matthew Louis Mauriello and Lori Pollock, Anything That Can Be Streamlined Would Be Great": Validating Elementary School Teachers' Preferences for a Block-Based Programming Teaching Augmentation System, Koli Calling Conference 2024.

Mead, H., Nolte, A., Mouza, C., Rolon-Dow, R., Pollock, L. (2024). The design of integrated computer science instruction in the context of teacher professional development. Annual meeting of the American Educational Research Association, April 12-15, Philadelphia, PA, USA.

Nolte, A., Rolon-Dow, R., Mouza, C., Pollock, L. (2024). The role of student characterization in teachers' approaches to culturally responsive computer science instruction. Annual meeting of the American Educational Research Association, April 12-15, Philadelphia, PA, USA.

Sheridan, S., Mouza, C., Pollock, L. (2024). A multi-case study exploration of teachers' choices of computer science tools following professional development. Annual meeting of the American Educational Research Association, April 12-15, Philadelphia, PA, USA.

Veng, S., Mouza, C. Pollock, L., Mar 2024, Micro:bit vs. Python: Students' Perceptions and Attitudes Toward Computing, Proceedings of Society for Information Technology and Teacher Education International Conference (SITE) 2024. Cohen, J. and Solano, G. (eds.). Las Vegas: Association for the Advancement of Computing in Education (AACE), p. 2320-2327

Krug, D.L., Zhang, Y., Mouza, C., Barnett, T., Pollock, L., and Shepherd, D.C. Using domain-specific, immediate feedback to support students learning computer programming to make music. **Innovation and Technology in Computer Science Education (ITiCSE)**, July 10-12, 2023.

Nolte, A., Mead, H., Mouza, C., Rolon-Dow, R., and Pollock, L. (2023). Examining instructional planning and implementation in the context of an integrated computer science professional development program for elementary teachers. **Annual meeting of the American Educational Research Association**, April 13-16, 2023, Chicago, IL.

Nolte, A., Mead, H., Mouza, C., Rolon-Dow, R., and Pollock, L. Integrating computational thinking within and across disciplines in the context of teacher professional development. **Society for Information Technology and Teacher Education**, March 13-17, 2023, New Orleans, LA.

Veng, S., Mouza, C., and Pollock, L. Examining the design and outcomes of an after-school physical computing program in middle school. **Society for Information Technology and Teacher Education**, March 13-17, 2023, New Orleans, LA.

Minji Kong and Lori Pollock, "Experiences Piloting a Diversity and Inclusion in Computing Innovations Course, "**ACM SIGCSE Technical Symposium**, March 2023.

Minji Kong, Matthew Louis Mauriello and Lori Pollock, "Exploring K-8 Teachers' Preferences in a Teaching Augmentation System for Block-Based Programming Environments,", **International Conference on Computer Education Research, Koli Calling**, 2022.

Chatterjee, Preetha; Damevski, Kostadin; Kraft, Nicholas; Pollock, Lori, "Automatically Identifying the Quality of Developer Chats for Post Hoc Use, Journal First Paper, **Automated Software Engineering (ASE)**, 2022.

Yifan Zhang, Douglas Lusa Krug, Chrystalla Mouza, David C. Shepherd, Lori Pollock, "A Case Study of Middle Schoolers' Use of Computational Thinking Concepts and Practices during Coded Music Composition," **27th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE)**, 2022.

Matthew Frazier, Lori Pollock, Kostadin Damevski, and Shaayal Kumar, "Investigating User Perceptions of Conversational Agents for Software-related Exploratory Web Search," **IEEE/ACM 44th International Conference on Software Engineering: New Ideas and Emerging Results (ICSE-NIER)**, 2022.

Mouza, C., Garvin, M., O'Grady-Cunniff, D., and Pollock, L. Developing computationally literate teacher educators. In E. Langran and L. Archambault (Eds.), **Proceedings of Society for Information Technology and Teacher Education International Conference** (pp. 1282-1287). Online, United States: AACE, 2021.

Preetha Chatterjee, Kostadin Damevski, and Lori Pollock, "Automatic Extraction of Opinion-based Q&A from Online Developer Chats," **International Conference on Software Engineering (ICSE)**, May 2021.

Douglas Lusa Krug, Edtwuan Bowman, Taylor Barnett, Lori Pollock and David Shepherd, "A Virtual Camp for Middle Schoolers Coding Hip Hop," **ACM SIGCSE Technical Symposium**, March, 2021.

Minji Kong and Lori Pollock, "Semi-Automatically Mining Students' Common Scratch Programming Behaviors ," **Koli Calling International Conference on Computing Education Research**, Nov, 2020.

Eeshita Biswas, Mehmet Efruz Karabulut, Lori Pollock and K. Vijay-Shanker. "Achieving Reliable Sentiment Analysis in the Software Engineering Domain using BERT," **International Conf on Software Maintenance and Evolution**, September, 2020.

Yang, H., Codding, D., Mouza, C., Pollock, L. " Broadening participation in computing: The infusion of culturally responsive pedagogy into informal learning environment design." **International Conference of the Learning Sciences**, June 19-22, Nashville, TN, 2020.

Preetha Chatterjee, Kostadin Damevski, Nicholas A. Kraft, and Lori Pollock, "Software-related Slack Chats with Disentangled Conversations," **The 17th International Conference on Mining Software Repositories (MSR)**, Data Paper, May, 2020.

Codding, D., Alkhateeb, B., Mouza, C., and Pollock, L. "Building equitable computing classrooms through culturally responsive professional development [Paper presentation". **Society for Information Technology and Teacher Education Conference**, New Orleans, LA., April 2020.

Sen He, Glenna Manns, John Saunders, Wei Wang, Lori Pollock, and Mary Lou Soffa, "A Statistics-based Performance Testing Methodology for Cloud Applications ," **27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), (ACM Distinguished Paper Award)** (awarded 'ACM 'Reusable" and "Available" artifact badges), 2019.

Preetha Chatterjee, Kostadin Damevski, Lori Pollock, Vinay Augustine, Nicholas A. Kraft, "Exploratory Study of Slack Q&A Chats as a Mining Source for Software Engineering Tools, '' **International Conference on Mining Repositories**, 2019.

Eeshita Biswas, K. Vijay-Shanker, Lori Pollock, "Exploring Word Embedding Techniques to Improve Sentiment Analysis of Software Engineering Texts," **International Conference on Mining Repositories**, 2019.

Codding, D., Mouza, C., Pollock, L., Sheridan, S. "Culturally responsive and equity-focused computer science professional development." **Society for Information Technology and Teacher Education**, March 18-22, Las Vegas, Nevada, 2019.

Sheridan, S., Mouza, C., and Pollock, L. "Professional development for computer science education: Design and outcomes from a case study teacher." **Society for Information Technology and Teacher Education**, March 18-22, Las Vegas, Nevada, 2019.

Lori Pollock, "A Collaborative Practicum Targeting Communication Skills for Computer Science Researchers," **ACM SIGCSE Computer Science Education,** SIGCSE 2019.

Lori Pollock, Chrystalla Mouza, Kevin R. Guidry, Kathleen Pusecker, "Infusing Computational Thinking Across Disciplines: Reflections and Lessons Learned," **ACM SIGCSE Computer Science Education,** SIGCSE 2019.

Kostadin Damevski, Hui Chen, David Shepherd, Nicholas Kraft, Lori Pollock, "Predicting Future Developer Behavior in the IDE Using Topic Models," **IEEE Transactions on Software Engineering**, **IEEE Transactions on Software Engineering**, selected as Journal First presentation at **International Conference on Software Engineering (ICSE)**, 2018.

Wei Wang, Ningjing Tian, Sunzhou Huang, Sen He, Abhijeet Srivastava, Mary Lou Soffa and Lori Pollock, "Testing Cloud Applications under Cloud-Uncertainty Performance Effect," **International Conference on Software Testing**, April 2018.

Lori Pollock, James Atlas, Tim Bell, Tracy Henderson, "A Computer Science Study Abroad with Service Learning: Design and Reflections," **ACM SIGCSE Computer Science Education,** 2018.

Zack Coker, Kostadin Damevski, Claire Le Goues, Nicholas A. Kraft, David Shepherd and Lori Pollock, "Behavior Metrics for Prioritizing Investigations of Exceptions," **International Conference for Software Maintenance and Evolution**, Industry Track, 2017.

Preetha Chatterjee, Benjamin Gause, Hunter Hedinger and Lori Pollock , "Extracting Code Segments and Their Descriptions from Research Articles," **International Conference on Mining Software Repositories**, 2017.

Kostadin Damevski, David Shepherd, Johannes Schneider, Lori Pollock, "Mining Sequences of Developer Interactions in Visual Studio for Usage Smells," **IEEE Transactions on Software Engineering**, selected as 1 of 7 Journal First presentations at **International Conference on Software Engineering (ICSE)**, 2017.

Mouza, C., and Pollock, L. "Professional development for computer science principles: Design considerations and teacher learning outcomes." **Society for Information Technology and Teacher Education**, March 5-8, Austin, TX. AACE Society for Information Technology and Teacher Education, March 2017.

X. Wang, L. Pollock, and K. Vijay-Shanker. "Automatically Generating Natural Language Descriptions for Object-related Statement Sequences." In **IEEE 24th International Conference on Software Analysis, Evolution and Reengineering (SANER)**, 2017.

Lori Pollock, Chrystalla Mouza, Amanda Czik, Alexis Little, Debra Coffey and Joan Buttram,"From Professional Development to the Classroom: Findings from CS K-12 Teachers," **ACM SIGCSE Computer Science Education,** 2017.

Vallary Singh, Lori L. Pollock, Will Snipes, Nicholas A. Kraft, "A Case Study of Program Comprehension Effort and Technical Debt Estimations", **International Conference on Program Comprehension (ICPC)**, 2016.

Kostadin Damevski, Hui Chen, David Shepherd, Lori Pollock, "Interactive Exploration of Developer Interaction Traces using a Hidden Markov Model," **13th International Conference on Mining Software Repositories (MSR 2016)**.

Kostadin Damevski, David Shepherd, Lori Pollock,"A Field Study of How Developers Locate Features in Source Code," selected as 1 of 7 Journal First presentations at **International Conference on Software Engineering (ICSE)**, 2016.

Irene Manotas, Christian Bird, Rui Zhang, David Shepherd, Will Snipes, Ciera Jaspan, Caitlin Sadowski, Lori Pollock, James Clause, "An Empirical Study of Practitioners' Perspectives on Green Software Engineering," **International Conference on Software Engineering (ICSE)**, May 2016.

Chrystalla Mouza, Lori Pollock, Kathleen Pusecker, Kevin Guidry, Ching-Yi Yeh, James Atlas, Terry Harvey, "Evaluation and Reflection on a Three-Pronged Approach to Professional development for CS Principles," **ACM SIGCSE Computer Science Education,** 2016.

Xiaoran Wang, Lori Pollock, and K. Vijay-Shanker, "Developing a Model of Loop Actions by Mining Loop Characteristics from a Large Code Corpus," **International Conference on Software Maintenance and Evolution (ICSME)**, September 2015.

C. Mouza, Y. Pan, L. Pollock, J. Atlas, T. Harvey, "Bringing Computational Thinking to Middle School: A School-University Partnership," **European Association for Research in Learning and Instruction (EARLI),** August 2015.

Emily Hill, David Shepherd, Lori Pollock, "Exploring the Use of Concern Element Role Information in Feature Location Evaluation,", **International Conference on Program Comprehension (ICPC)**, May 2015.

Lori Pollock, Chrystalla Mouza, James Atlas, Terry Harvey,"Field Experiences in Teaching Computer Science: Course Organization and Reflections," **ACM SIGCSE Computer Science Education Conference (SIGCSE)**, March 2015.

Kostadin Damevski, David Shepherd, Lori Pollock, "Scaling Up Evaluation of Code Search Tools Through Developer Usage Metrics," **22nd IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER)**, March 2015.

Chrystalla Mouza, Yi-Cheng Pan, Lori Pollock, James Atlas and Terry Harvey., "Partner4CS: Bringing Computational Thinking to Middle School Through Game Design," **FabLearn Conference on Creativity and Fabrication in Education**, Oct 2014.

Cagri Sahin, Lori Pollock and James Clause, "How Do Code Refactorings Affect Energy Usage?" **International Symp on Empirical Software Engineering and Measurement (ESEM)**, Sept 2014.

James A. Ross, David A. Richie, Song J. Park, Dale R. Shires, and Lori L. Pollock, "A Case Study of OpenCL on an Android Mobile GPU," **IEEE High Performance Extreme Computing Conference (HPEC)**, Sept 2014.

Irene Manotas, Lori Pollock, James Clause, "SEEDS: A Software Engineer's Energy-optimization Decision Support Framework," **International Conference on Software Engineering (ICSE)**, June 2014.

Kostadin Damevski, David Shepherd, Lori Pollock, "A Case Study of Paired Interleaving for Evaluating Code Search Techniques," **European Conference on Software Maintenance and Reengineering (CSMR/WCRE)**, Feb 2014.

Samir Gupta, Sana Malik, Lori Pollock, K. Vijay-Shanker, "Part-of-Speech Tagging of Program Identifiers for Improved Text-based Software Engineering," **International Conference on Program Comprehension (ICPC), Conference Best Research Paper Award**, May 2013.

Laura Moreno, Andrian Marcus, Lori Pollock, K. Vijay-Shanker, "JSummarizer: An Automatic Generator of Natural Language Summaries for Java Classes," **International Conference on Program Comprehension (ICPC) (Demo Paper)**, May 2013.

Laura Moreno, Jairo Aponte, Giriprasad Sridhara, Andrian Marcus, Lori Pollock, K. Vijay-Shanker, "Automatic Generation of Natural Language Summaries for Java Classes," **International Conference on Program Comprehension (ICPC)**, May 2013.

Sara Sprenkle, Camille Cobb and Lori Pollock, "Leveraging User-Privilege Classification to Customize Usage-based Statistical Models of Web Applications," **International Conference on Software Testing, Verification and Validation (ICST)**, IEEE, April 2012.

Richard Burns, Lori Pollock, and Terry Harvey, "Integrating Hard and Soft Skills: Software Engineers Serving Middle School Teachers," **ACM SIGCSE Computer Science Education**, (SIGCSE), February 2012.

Emily Hill, Lori Pollock, and K. Vijay-Shanker, "Improving Source Code Search with Natural Language Phrasal Representations of Method Signatures", **Automated Software Engineering (ASE)** (short paper), November 2011.

Xiaoran Wang, Lori Pollock, and K Vijay-Shanker. "Automatic Segmentation of Method Code into Meaningful Blocks to Improve Readability." **Working Conference on Reverse Engineering (WCRE 2011)** , October 2011.

Giriprasad Sridhara, Lori Pollock, and K Vijay-Shanker. "Generating Parameter Comments and Integrating with Method Summaries." **International Conference on Program Comprehension (ICPC)**, IEEE, June 2011.

Giriprasad Sridhara, Lori Pollock, and K Vijay-Shanker. "Automatically Detecting and Describing High Level Actions within Methods." **International Conference on Software Engineering (ICSE)**, ACM, May 2011.

Sara Sprenkle, Lori Pollock, and Lucy 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, March 2011. Best Research Paper Award.

Giriprasad Sridhara, Emily Hill, Divya Muppaneni, Lori Pollock, and K. Vijay-Shanker, "Towards Automatically Generating Summary Comments for Java Methods," **International Conference on Automated Software Engineering (ASE)**, September 2010. ACM SIGSOFT Best Paper Award.

Antony Danalis, Lori Pollock, Martin Swany, John Cavazos, "MPI-aware Compiler)ptimizations for Improving Communication-computation Overlap," **International Conference on Supercomputing (ICS'09)**, June 2009.

Eric Enslen, Emily Hill, Lori Pollock, K. Vijay-Shanker, "Mining Source Code to Automatically Split Identifiers for Software Analysis," **6th IEEE Working Conference on Mining Software Repositories (MSR)**, May 2009. Best Paper Award

Emily Hill, Lori Pollock, K. Vijay-Shanker, "Automatically Capturing Source Code Context for Software Maintenance and Reuse," **Intl Conf on Software Engineering (ICSE)**, May 2009.

Ben Breech, Lori Pollock, and John Cavazos, "RUGRAT: Runtime Test Case Generation using Dynamic Compilers," **International Symposium on Software Reliability Engineering (ISSRE)**, November 2008.

Giriprasad Sridhara, Emily Hill, Lori Pollock and K. Vijay-Shanker, "Identifying Word Relations in Software: A Comparative Study of Semantic Similarity Tools," **International Conference on Program Comprehension (ICPC)**, June 2008.

Sara Sprenkle, Lori Pollock, Holly Esquivel, Barbara Hazelwood, Stacey Ecott, "Automated Oracle Comparators for Testing Web Applications," **IEEE International Symposium on Software Reliability Engineering (ISSRE)**, November 2007.

Emily Hill, Lori Pollock, K. Vijay-Shanker, "Exploring the Neighborhood with Dora to Expedite Software Maintenance", **Automated Software Engineering (ASE)**, November 2007.

David Shepherd, Lori Pollock, K. Vijay-Shanker, "Case Study: Supplementing Program Analysis with Natural Language Analysis to Improve a Reverse Engineering Task," **ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering**, June 2007.

David Shepherd, Zachary P. Fry, Emily Gibson, Lori Pollock, and K. Vijay-Shanker, "Using Natural Language Program Analysis to Locate and Understand Action-Oriented Concerns", **International Conference on Aspect Oriented Software Development (AOSD 2007)**, March 2007.

Ben Breech and Lori Pollock, "An Attack Simulator for Systematically Testing Program-based Security Mechanisms," **International Symposium on Software Reliability Engineering, (ISSRE)** November 2006.

Sreedevi Sampath, Sara Sprenkle, Emily Gibson and Lori Pollock, "Web Application Testing with Customized Test Requirements—An Experimental Comparison Study," **International Symposium on Software Reliability Engineering, (ISSRE)**, November 2006.

Ben Breech, Mike Tegtmeyer, and Lori Pollock, "Integrating Influence Mechanisms into Impact Analysis for Increased Precision," **International Conference on Software Maintenance (ICSM)**, September 2006.

David Shepherd, Lori Pollock, K. Vijay-Shanker, "Towards Supporting On-Demand Virtual Remodularization Using Program Graphs," **International Conference on Aspect-Oriented Software Development (AOSD)**, March 2006.

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James B. Fenwick and Lori Pollock, "Identifying Tuple Usage Patterns in an Optimizing Linda Compiler," **Mid-Atlantic Student Workshop on Programming Languages and Systems (MASPLAS '96)**, pp. 6.1-6.11, April 1996, 10 pages.

James B. Fenwick and Lori Pollock, "Implementing an Optimizing Linda Compiler using SUIF," **The First SUIF Workshop**, pp. 90-105, January 1996, 16 pages.

Mark Carroll and Lori Pollock, "Parallelism for the Masses: Compiler and Language Support for General Purpose Parallel Programming," **Mid-Atlantic Student Workshop on Programming Languages and Systems (MASPLAS'95)**, April 1995, 10 pages.

Lori Pollock, Rajiv Gupta, and Mary Lou Soffa, "Parallelizing Data Flow Analysis," **Workshop on Parallel Compilation**, Kingston, Ontario, pp. 6.1-6.12, May 1990, 10 pages.

Technical Reports not published elsewhere

Camille Cobb, Haley Archer-McClellan, Deirdre Tobin, Sara Sprenkle, and Lori Pollock, "Naming Analysis in the Web Application Domain," Technical Report 2013-001, January 2013.

David Shepherd and Lori L. Pollock, "Ophir: A Framework for Automatic Mining and Refactoring of Aspects," Technical Report 2004-03, October 2003.

Tom Way, Cheer-Sun Yang, and Lori Pollock, "Implications for Parallelizing MIL-STD188-220A," Technical Report 9707, University of Delaware, December 1996.

Amie Souter, James B. Fenwick, and Lori Pollock, "A Visualization Tool for Intermediate Program Representations," Technical Report 9708, University of Delaware, January 1997.

"An Approach to Incremental Compilation of Optimized Code," Ph.D. Dissertation, Technical Report 86-3, Dept. of Computer Science, University of Pittsburgh, April 1986.

Software Engineering and Compiler Optimization Research Grants

PI, "2155097 SHF: SMALL: Collaborative Research: SHF: Small: Exploiting Performance Correlations for Accurate and Low-cost Performance Testing for Serverless Computing," **NSF**, $600,000. ($252,958 to Delaware) 6/15/2022 - 5/31/2025. Co-PI: Wei Wang at UT San Antonio.

PI, "1813253 SHF: SMALL: Collaborative Research: Automatically Enhancing Quality of Social Communication Channels to Support Software Developers and Improve Tool Reliability," **NSF**, $500,00, $265,927 to Delaware, including $16K REU Supplement, 10/1/2018-9/30/2021. Co-PI: Kostadin Damevski at Virginia Commonwealth University.

PI, "SHF: SMALL: Collaborative Research: Cloud-Mentor: Guiding Cloud-Mentor: Guiding Cloud Users for Cost Performance through Testing and Recommendation," **NSF**, $500,000, ($257,524 to Delaware, including $8000 REU Supplement), 6/1/2016-5/31/2019, Co-PIs: Mary Lou Soffa, University of Virginia, and Wei Wang, UT San Antonio.

Co-PI, "SHF: SMALL:Enabling and Supporting the Development of Energy-Efficient Software," **NSF**, $515,999, 6/1/2016–5/31/2019, PI: James Clause.

PI, "SHF: SMALL: Automatically Supporting Developer Learning in Context," **NSF**, $515,726, 9/1/2014–8/31/2017, Co-PI: Vijay Shanker.

PI, "CI-P: Collaborative Research: Advanced Text Analysis Infrastructure for Software Engineering," **NSF**, $100,000, 6/1/2011–5/31/2013, Co-PIs: Vijay Shanker, Emily Hill, Andrian Marcus.

Faculty Mentor Co-PI, "Measuring Power Usage from a Software Engineer's Perspective: Toward Power Awareness and Management at the Development Level," **University of Delaware Research Foundation**, Strategic Initiatives Award, $55,000, 12/1/2011-6/30/2013. Co-PIs: James Clause, Kristina Winbladh, Fouad Kiamilev.

Co-PI, "SHF: EAGER: Exploring Relations between Power Consumption and Software Engineering," **NSF**, EAGER Program, $96,462, 6/1/2012-5/31/2013, PI: Kristina Winbladh and Co-PIs James Clause and Fouad Kiamilev. Award CCF-1216488.

Co-PI, "Cybersecurity in Tactical Environments," **DECI/Army CERDEC**, $706,999, (my part $72,467), 05/1/2011-05/24/2012, PI C. Cotton, Co-PIs Gonzalo Arce, S. Bohacek, C. Boncelet, J. Cavazos, F. Kiamilev.

Co-PI, **University of Delaware International Research Award**, International Workshop on the Development of the Breeder's Toolbox: Novel Software for Plant improvement in Developing Countries," $10,000, 5/2010-5/2011, Co-PIs: Randy Wisser, Blake Meyers, Jong Soo Lee.

PI, "SHF: Small: Analyzing and Modeling Natural Language Usage in Software to Improve Maintenance Tools," **NSF**, Computer and Communication Foundations, Computing Processes and Artifacts, $496,913, 9/1/09-8/31/12, Co-PI: Vijay K. Shanker. Award CCF–0915803.

PI, "Applying and Integrating Natural Language Processing Analysis of Programs to Aid in Software Maintenance and Evolution," **NSF** Computer and Communication Foundations, Computing Processes and Artifacts, $400,000, 7/15/07-6/30/10, Co-PI: Vijay K. Shanker. Award CCF-0702401.

Co-PI, "Collaborative: CSR-AES: System Support for Auto-tuning MPI Applications," **NSF** Computer and Network Systems, Computer Systems, $260,000, 09/1/07 - 08/31/10. PI: Martin Swany. Award 0720712.

Co-PI, "An Integrated Approach to Improving Communication Performance in Clusters," **NSF** CSR ASE, $350,000, 07/28/05 - 08/01/08. PI: Martin Swany. Award 0509170.

Co-PI, "A Novel Approach to Software Pipelining of Multi-Dimensional Loops," **NSF** Computing Processes and Artifacts, $300,000, 12/01/04-11/31/07, PI: Guang Gao. Award 0429781.

Principal Investigator, "ITR: Bandwidth Efficient Techniques for Ensuring Mobile Code Integrity and Authentication," **NSF** ITR, $328,173, 9/01/02-8/31/06.

Principal Investigator with Co-PI Guang Gao, "Increasing Parallel Program Performance with the LC memory Consistency Model," **NSF** Compilers and Operating Systems, $270,000, 6/01/01-5/31/04.
REU Supplement: $11,750.

Faculty Participant, "Collaborative Technology Alliance in Communications and Networking," **Army Research Laboratory**, $3,500,000, 5/31/01-5/30/08.

Principal Investigator, "Validation of Mobile Code Integrity," **Army Research Laboratory,** $25,000, 10/1/00 - 9/30/01.

Co-PI, "Acquisition of an Avalon-Beowulf Cluster and Development of Discipline-Specific Parallel Research Tools," **NSF** Major Research Infrastructure Program, $500,000 from NSF, with additional $338,881 matching funds from UD, 10/1/99 - 10/1/02, Co-PIs: William H. Matthaeus, David Seckel, Gary Zank, Kryzstof Szalewicz.

Co-PI, "Experimental Evaluation of Scalable Optimization Techniques," **NSF** Experimental Software Systems, $400,000, 9/1/98 - 9/1/01, Co-PIs: Mary Lou Soffa, Rajiv Gupta, David Whalley.

Principal Investigator, "POWRE: Visiting Professorship: Program Based Testing of Parallel Programs," **NSF** Professional Opportunities for Women in Research and Education, 6/1/98 - 9/1/99, $57,457.
NSF REU Supplement to POWRE grant, 8/00-2/01, $5,000.

Co-PI, "Compiling Irregular Applications on a Multi-threaded Architecture,", **NSF**, $320,000, 8/1/98 - 7/31/01, Co-PIs: Gagan Agrawal and Guang Gao.

Principal Investigator, "Parallel and Distributed Computing: Systems and Application Development Infrastructure," **NSF** CISE Research Infrastructure Award, 5 years starting September 1, 1997, $633,513, with matching funds of $273,400 from U. of Delaware, Co-PIs: Sandra Carberry, Guang Gao, Errol Lloyd, Gagan Agrawal, Ashfaq Khokhar.
REU Supplements: 1/99, $10,000; 8/00: $10,000; 7/01: $12,000; 6/02: $17,000.

Faculty Participant with 11 other EE/CIS faculty, **Telecommunications/Information Distribution Federated Research Laboratory** with the Army Research Laboratory, Aberdeen, my portion: $43,500 per year, 1/1996-2000.

CRA Mentor, Distributed Mentor Project for undergraduate summer research (sponsored by **CRA**, funded by NSF), Funded $6000 to 2 undergraduate students (summer 06) and 1 undergraduate (summer 07) for 10 weeks of research under my supervision.

CRA Mentor, Distributed Mentor Project for undergraduate summer research (sponsored by **CRA**, funded by NSF), Funded $2000 to PI and $5000 to 1 undergraduate student for 10 weeks of research under my supervision, summer 2003, 2004, 2005.

CRA Mentor, Distributed Mentor Project for undergraduate summer research (sponsored by **CRA**, funded by NSF), Funded $2000 to PI and $5000 to 1 undergraduate student for 10 weeks of research under my supervision, summer 2002.

CRA Mentor, Distributed Mentor Project for undergraduate summer research (sponsored by **CRA**, funded by NSF), Funded $5000 to 2 undergraduate students for 10 weeks of research under my supervision, summer 2001.

CRA Mentor, Distributed Mentor Project for undergraduate summer research (sponsored by **CRA**, funded by NSF), Funded $5000 to 2 undergraduate students for 10 weeks of research under my supervision, summer 2000.

CRA Mentor, Distributed Mentor Project for undergraduate summer research (sponsored by **CRA**, funded by NSF), Funded $5000 to one undergraduate student for 10 weeks of research under my supervision, summer 1998.

Principal Investigator, "Automatic Tunable Compiler Optimization for ILP Architectures," Arts and Science Research Award, **University of Delaware**, $2,000, February 1997-98.

Principal Investigator, "Cooperative Register Allocation and Instruction Scheduling," Career Advancement Award, **NSF**, $59,993, September 1, 1993 - February 28, 1995. REU Supplement: $5000.

Principal Investigator, "Experimental Investigation of Parallelism in Register Allocation," **University of Delaware Research Foundation Grant**, $20,000, January 1, 1993 - June 30, 1994.

Principal Investigator, "Incremental Optimization in a Programming Environment," **NSF**, $116,780, June 1987 - December 1989.

Co-PI, "Parallelism in Language Translation," with Willy Zwaenepoel and Hans Boehm, **NSF**, $119,903, May 1988 - May 1990.

Principal Investigator, "Incremental Data Flow Analysis: A Performance Study," **Rice University Research Grant**, $975, 1986-1987.

CRA Mentor, Distributed Mentor Project for undergraduate summer research (sponsored by **CRA**, funded by NSF), Funded $5000 to one undergraduate student from Bucknell University for 10 weeks of research under my supervision, summer 1995.

CRA Mentor, Distributed Mentor Project for undergraduate summer research (sponsored by **CRA**, funded by NSF), Funded $5000 each to 2 undergraduate students, one from Bucknell University, and one from Carnegie Mellon University, to come to U. of Delaware to spend the summer doing research under my supervision, summer 1994.

CS Education and Broadening Participation Research Grants

Co-PI, "The CSGrad4US Fellowship Program, " **NSF CNS 2313998,** Computing Research Association; PI:Erik Russell; Co-Ps:Lori Pollock, Russell Joseph, Susanne Hambrusch, Kelly Shaw; 07/15/2023; $12,500,436.00, with subcontract to UD for Co-PI leadership.

Co-PI, "CSGrad4US Mentoring Program - Phase Two," **NSF CNS 2231962**; Computing Research Association, PI:Erik Russell; Co-PIs:Lori Pollock, Russell Joseph, Susanne Hambrusch, Kelly Shaw; :08/01/2022; Award Amount:$1,351,347.00; with subcontract to UD for Co-PI leadership.

Co-PI, "CSGrad4US Mentoring Program," **NSF CNS 2123180**; Computing Research Association, PI:Erik Russell; Co-PIs:Lori Pollock, Russell Joseph, Susanne Hambrusch, Maria Gini; 04/15/2021; Award Amount:$999,565.00; with Subcontract to UD for Co-PI leadership.

Co-PI, "UR2PhD: An Undergraduate Research to PhD National Mentoring Program," Computing Research Association, Co-PIs: Christine Alvarado, Lori Pollock, Monique Ross, Kelly Shaw. $5,000,000, with Subcontract to UD for Co-PI leadership, 2/2023 - 2/2026.

Co-PI, "Collaborative Research: Minoritized Youth Computer Science Learning, Belonging and Career Interest: Coding and Creating with Beats," **NSF ITEST**, 5/1/2021 - 4/30/2025. PI: Chrystalla Mouza. Collaborative with David Shepherd, Virginia Commonwealth University. $637,239.

Co-PI, "Preparing Computationally Literate Pre-Service Teachers through Professional Development for Teacher Educators," **Google Computer Science Education Research (CS-ER)**, 6/1/2020-5/31/2021, $100,000, PI: Chrystalla Mouza, UD College of Education, Co-PIs: Dianne O'Grady-Cunniff, Megean Garvin, Maryland Center for Computing Education.

CoPI, "Teacher-Driven Development, Implementation, and Assessment of Integrated Computational Thinking in Grades 3-5," **NSF Research-Practice Partnership (RPP)**, 9/1/19 -8/31/22, $1,000,000, PI: Chrystalla Mouza, UD College of Education, Co-PI: Rosalie Rolon-Dow.

PI, "Infusing Computational Thinking into General Education," **NSF IUSE**, $299,969, 9/1/2016-8/302018, CoPIs: Chrystalla Mouza, Kevin Guidry, and Kathleen Pusecker.

PI, "CS10K: Leveraging Partner4CS to Build Sustainable capacity for Teacher Preparation and Support," **NSF STEM-C**, 10/01/16-9/30/19, $997,348, Co-PIs Terry Harvey, James Atlas, Chrystalla Mouza.

PI, "WeC4Communites (We Compute for our Communities): Community-Focused Computing for Minoritized Youth," **NSF INCLUDES**, 10/1/2016-9/30/2018, $299,655, Co-PIs Chrystalla Mouza, John A. Pelesko, Rosalie Rolon-Dow.

Co-PI, "Partner4CS: Building Sustainable Networks for Supporting the Teaching of Computer Science," **State of Delaware Federal Research and Development Grant**, $85,000, (matching for NSF grant) 9/2015-9/2017. PI: Chrystalla Mouza, UD College of Education.

Co-PI, "Bringing Computational Thinking to GenEd," **University of Delaware Center for Teaching and Assessment of Learning Transformation Grant**, $16,500, 7/1/2015-6/30/2017. Collaborative with PI Chrystalla Mouza and Co-PI Zoubeida Dagher, UD College of Education.

PI, "Exploring Virtual Interactive Models for Large Scale Research Mentoring of Undergraduate Women in Computing," $182,279, awarded 6/2015 to Computing Research Association with PI Pollock. Co-PIs: Erik Russell, Jane Stout, CRA.

PI, "Collaborative Research: Exploring Partnered Teaching of Interdisciplinary CS+X Courses," **NSF DUE IUSE**, $144,000, (Pollock: $31,854), 02/09/2015-8/31/2017. Collaborative with Paul Ruvolo, Olin College; Darakhshan J. Mir, Wellesley College; Sumita Mishra, RIT.

Co-PI, "Spatial Training in Preschool: Identifying the Malleable Factors," **Institute of Education Sciences**, $1,559,434, (Pollock: $27,622)), 09/1/2014—08/31/2018, PI: Roberta Golinkoff.

Faculty Participant, "5A00070 High Quality Professional Development for High Need Schools: Supporting Teachers to Improve Student Learning ," **Delaware Department of Education**, $200,00 (Pollock $2168), 0/1/2014-8/31/2018. PI: Carol Vukelich, UD College of Education.

PI, "CS 10K: Developing and Supporting Computer Science Teachers Via Strategic Partnering," **NSF**, $853,814, 9/1/2012–8/31/2015, Co-PIs: James Atlas, Alfinio Flores, Terry Harvey, Chrystalla Mouza.

Co-PI, "Curriculum Development: CISC 415/615/CPEG 615: Software Testing and Maintenance," JP Morgan Chase, PI: James Clause, $54,000, 06/01/2012-12/20/2012.

Key Organizer, UDoCS Workshop for High School Teachers, held July 2012, funding secured from University of Virginia's NSF Grant for Tapestry Workshops, $37,000.

PI, "BPC-DP: Partnering Middle School Teachers with Undergraduate Computer Science Teams to Bring Computing to Underrepresented Youth," **NSF**, Broadening Participation in Computing, $586,395, 11/15/2009-12/31/12, Co-PI: Terry Harvey, Award CNS-0940501.

Co-PI, "Systems Mentoring Workshop," **NSF**, $25,000, 2008-2009.

Co-PI, "Computing Museum Research Project," **University of Delaware College of Arts and Sciences Transformational Grant**, $25,000, 2006-2007.

Principal Investigator, "Workshop: Support for the CRA-W Career Mentoring Workshop for Women in Research Careers in Computer Science and Engineering," **NSF**, $63,650, 4/15/2005-4/14/06.

Co–PI, "Travel Grant: Women's Grant Cohort Project," **NSF**, $25,000, 2/20/04 - 3/01/05.

Principal Investigator, "Support for CRA-W FCRC Career Mentoring Workshop for Women in Research Careers in Computer Science and Engineering," **NSF**, $85,634, 4/15/03-5/15/04.

Principal Investigator, "SEP - An Experiment in Engaging High School and Undergraduate Women in Computer Science," **NSF**, $99,992, 1/1/01 - 7/1/02, with Co-PIs Sandee Carberry and Kathy McCoy.

Principal Investigator, "Problem-based Learning in CIS: Prototype," University of Delaware CTE Instructional Improvement Grant, $4250, 9/1/99 - 9/1/00.

Principal Investigator, "An Undergraduate Laboratory for Teaching Parallel Computing," **NSF**, $52,400, June 1, 1995 - June 1, 1997, Co-PI: Errol Lloyd, matching funds of $52,400 provided by the U. of Delaware.

Principal Investigator, "Introduction to Parallel Computing," **Pittsburgh Supercomputing Center**, supercomputing resources for new course, February 11, 1993 - June 15, 1993, and September 1, 1994 - February 1, 1995. Supercomputing resources at **NCSA**, September 1, 1994 - January 1, 1995.

Invited Presentations

"Infrastructure in Mining Software Repositories," MSR'17 Plenary Discussion Leader, 2017.

"Increasing Access to Computer Science and Computational Thinking In Delaware K-16," UD ISE Speaker Series, 2017.

"Teaching and Classroom Management," CRA-W SIGCSE Mentoring Workshop, 2017.

"Presentation and Other Verbal Comunication Skills," CRA-W Grad Cohort, 2017.

"Undergraduates in K-12 Service," invited to present at Snowbird Chair's Conference, 2016.

"Infusing Computational Thinking Across the Curriculum," Co-led Workshop at Univ of Delaware Summer Faculty Institute, 2016.

"Experiences in Scaling Field Studies of Developer Behavior", SER&IP Keynote Talk, 2016.

"Building Power Tools for Software Engineers through Natural Language Analysis of Software and Related Artifacts," University of North Texas, 2016.

"SEEDS: A Software Engineer's Energy-optimization Decision Support Framework," CREST Workshop, London, 2015.

"Mentoring 101," CRA-W Career Mentoring Workshop, SIGCSE 2015.

"Recruiting and Mentoring Students," New Faculty Symposium, ICSE 2015.

"Leadership and Taking Risks/Starting a New Initiative," Grace Hopper Conference CRA-W Senior Faculty Track, 2014.

"Publishing your Research," UD College of Engineering, 2014.

"Extracting and Representing Knowledge from Source Code as Action Units," Bellairs 2014 Workshop on Representing Programming Knowledge, 2014.

"Mentoring and Managing Students," CRA Mentoring Workshop, 2014.

"Service Learning," NSF PI Meeting Invited Flash Talk, 2013.

"Automatically Generating Descriptive Summary Comments for Java Methods," University of Alabama, 2012

" Women in Computing," West Chester Awards Banquet, April 2011

Senior Technical Woman Profile, Anita Borg Institute, 2010

"Broadening Participation in Computing through Service Learning," Invited Talk at UD Scholarship of Engagement Seminar, 2010.

"Skip the Lecture: Learning More Through Collaborative Activities", Invited 90-minute Workshop in UD ITUE Seminar Series, 2010.

"Dealing with Paper Rejections," UD WISE Presentation, 2009

"How to Write a PhD Proposal," The CRA-W Graduate Cohort Workshop, February 2009

"Natural Language Program Analysis," Italy International Summer School in Software Engineering, September 2009. (3 hour tutorial)

"Developing Natural Language-based Software Analyses and Tools to Expedite Software Maintenance," Wayne State University, 2008.

"Applying Natural Language Processing Analysis of Programs to Aid in Software Maintenance and Evolution," Swarthmore College, 2007.

"Applying Natural Language Processing Analysis of Programs to Aid in Software Maintenance and Evolution," Penn State University, November 2006.

"An Integrated Approach to Improving Communication Performance in Clusters," **Computational Science Day**, University of Delaware, February 2006.

"Getting Promoted from Associate to Full Professor, CRA-W Distinguished Professor, Workshop for the Cohort of Associate Professors Project (CAPP), June 2005.

"Academic Career Paths", CRA-W Workshop for the Grad Cohort for Women Program, February 2005.

Keynote Speaker, University of Delaware Women of Promise Dinner, November 2004.

"Being a Good Mentor," Women's Lecture Series, University of Delaware, September 2004.

"Tamper Detection for Mobile Codes," Collaborative Technology Alliance Televised Distinguished Lecture, December 2002.

"Girls in computer science: Why so Few?," UD Research on Women Lecture Series, September 2002.

"Gender and Technology: History, Status, and Strategies," Goldey Beacom College, November 2001.

"Interprocedural Region Formation Analysis with Demand-driven Inlining for Region-based Optimization," Army Research Laboratory, January 2001.

"Program-based Testing of Object-Oriented Systems," CRAW/Lucent Distinguished Lecture Series, Duke University, April 2000.

"Inter-class Def-Use Analysis with Partial Class Representations," Rutgers University, July 1999.

"Program-based Testing of Parallel Programs," Michigan Technological University, February 1999.

"Parallel Programs: Maybe fast, but how do we test them?", Gettysburg College, November 1997; Haverford College, January 1998.

"Bringing Parallelism to the Casual Programmer," Army Research Laboratory, Aberdeen, Maryland, May 1994.

"Tutorial 1 - Parallel Architectures and Parallel Programming Paradigms," Pennsylvania Association of Computer and Information Science Educators, Fall Conference, October 1993.

"Tutorial 2 - Languages, Compilers, and Environments for Parallel Processing," Pennsylvania Association of Computer and Information Science Educators, Fall Conference, October 1993.

"Using FORGE to Generate Distributed Memory Node Programs for the CM-5," Supercomputer Research Center, September 1993.

"A Scheduler-Sensitive Global Register Allocator," Supercomputing Research Center, Bowie, MD, April, 1993.

"Building Incremental Transformation Systems for Producing Highly Optimized Code," University of Delaware, March 1992.

"Parallelizing Data Flow Analysis," University of Delaware, Oct. 1991

"Compilers," CISC 105, University of Delaware, Oct 1991.

"Building Incremental Transformation Systems for Producing Highly Optimized Code," University of Delaware, March 1992.

"Programming Environments for Highly Optimized Programs"

  University of Houston, Houston, TX, October 1988
  Houston Chapter of the ACM, Houston, TX, February 1989
  University of Alabama, Tuscaloosa, Alabama, February 1989
  Virginia Polytechnic Institute and State University, Blacksburg, VA, April 1989
  Texas Tech University, Lubbock, TX, March 1989

"Attribute Grammars in Incremental and Parallel Environments"

  University of Alabama, Birmingham, Alabama, February 1989
  Louisiana State University, Baton Rouge, LA, April 1989
  University of Central Florida, Orlando, Florida, May 1989
  Allegheny College, Meadville, PA, May 1989

"Enabling Optimization in a Fine-grained Incremental Compiler," University of Virginia, Charlottsville, VA, April 1989

"Building Incremental and Parallel Environments," Austin Alumni of Rice University, Austin, TX, September 1989

Student Research Supervision

Ph.D. Dissertation Advisor (Students Completed):

Matthew Frazier, 2024, Co-advisor: Kostadin Damevski, Virginia Commonwealth U..

Eric Yifan Zhang, 2024, Co-advisor: Chrystalla Mouza, U of Illinois.

Preetha Chatterjee, 2021, Co-advisor: Kostadin Damevski, Virginia Commonwealth U., (Assistant Prof, Drexel U).

Irene Manotas Gutierrez, 2017, Developing a Software Engineer's Energy-Optimization Decision Support Framework, (Co-advisor: James Clause), (IBM Research).

Cagri Sahin, August 2017, Empirically Investigating Energy Impacts of Software Engineering Decisions, (Co-advisor: James Clause).

Xiaoran Wang, May 2017, Exploring Action Unit Granularity of Source Code for Supporting Software Maintenance, (Co-advisor: Vijay Shanker), (Samsung).

Antonios Danalis, May 2013, A Vertically Integrated Approach to Improving Communication Performance in Clusters, (Co-advisor with Martin Swany), (Univ of Tennessee).

Giriprasad Sridhara, January 2012, Automatic Generation of Descriptive Summary Comments for Methods in Object-oriented Programs (IBM Research, India).

Emily Gibson Hill, August 2010, Integrating Natural Language and Program Structure Information to Improve Software Search and Exploration (Assistant Professor, Drew U.).

Ben Breech, August 2008, Testing Security Mechanisms for Program-based Attacks via Dynamic Compilers (Army Research Lab).

Mike Jochen, May 2008, Mobile Code Security through Static Program Analysis, Steganography, and Program Fingerprinting, (Assoc Professor, East Stroudsburg U.)

Sara Sprenkle, August 2007, Strategies for Automating Exposing Faults in Web Applications, (Associate Professor, Washington and Lee University).

David Shepherd, August 2007, Natural Language Program Analysis: Combining Natural Language Processing with Program Analysis to Improve Sofware Maintenance Tools, (Co-advisor with K. Vijay-Shanker), (ABB Corporate Research).

Sreedevi Sampath, May 2006, Cost-effective Techniques for User-session-based Testing of Web Applications, (Associate Professor, University of Maryland at Baltimore County).

Alban Douillet, May 2006, Loop Nest Software-Pipelined Multithreaded Cellular Architectures, (Co-advisor with Guang Gao, Nvidia).

Dixie Hisley, December 2003, Program Analysis and Optimization of Explicitly Parallel OpenMP Programs, (Army Research Laboratory).

Tom Way, May 2002, Scalable Procedure Restructuring for Ambitious Optimization, (Assoc Professor, Villanova University).

Amie Souter, May 2002, Context-driven Testing of Object-Oriented Software Systems. (Audible).

Cheer-Sun Yang, May 1999, "Program-based, Structural Testing of Shared Memory Parallel Programs," (Associate Professor, West Chester University).

James B. Fenwick, Jr., May 1998, "Compiler Analysis and Optimization of Linda Parallel Programs," (Associate Professor, Appalachian State University).

Mark Chu-Carroll, May 1997, "Programming Language and Compiler Support for General Purpose Parallelism," (Research Scientist at Twitter).

Cindy Norris, May 1995, "Cooperative Register Allocation and Instruction Scheduling," (Associate Professor, Appalachian State University, recipient of NSF CAREER award, 1996).

Alan Carle, April 1992, "A Class of Hierarchical Attribute Grammars: Incremental Evaluation and Applications," Dept. of Computer Science, Rice University.

Ph.D. Dissertation Advisor (Students In Progress):

Eeshita Biswas, passed proposal August 2021. Co-advisor: Vijay Shanker

Ph.D. Committees (member):

Bataul Alkhateeb, present.

Scott Sheridan, U of Delaware, Education, 2024.

Douglas Krug, Virginia Commonwealth U, 2023.

Jianwei Wu, U of Delaware, 2022.

Ronald Perrella, UMBC, 2018.

Hui Yang, U of Delaware, Education, 2018.

Katja Kevic, U of Zurich, 2017.

Paul Burney, Notre Dame, 2016.

Amir Reza Yazdanshenas, University of Oslo, 2015.

Ethan Pan, UD Dept of Edu, 2014.

Venera Amaoudova, Ecole Polytechnique Montreal, 2014.

Linda Grusenmeyer, UD Department of Edu, 2013.

Surafel Lemma Abebe, Fondazione Bruno Kessler, Trento, 2013.

Sonia Haiduc, Wayne State University, May 2013.

E.J. Parks, University of Delaware, in progress.

Elinar Host, University of Oslo, 2010-2011.

Artour Stouchinin, ECE, University of Delaware, "A Code Generation Scheme for Irregular Loops", proposal September 1999.

Andres Marquez, ECE, University of Delaware, "The Multistrand Architecture," January 2004.

Hongbo Yang, ECE, University of Delaware, "Power-Aware Compilation Strategies," December 2003.

Atif M. Memon, University of Pittsburgh, "A Framework for Testing Graphical User Interfaces using Planning," July 2001.

Jyh-Shiarn Yur, Rutgers University, "Incremental Analysis for Flow- and Context-sensitive Data-Flow Problems, July 1999.

Andrew Wack, University of Delaware, "Partitioning Dependency Graphs for Concurrent Execution: A Parallel Spreadsheet on a Realistically Modeled Message Passing Environment," Dept. of Computer and Information Sciences, University of Delaware, August 1995.

Mike Berman, "Lower and Upper Bounds for Incremental Algorithms," Dept. of Computer Science, Rutgers University, May 1992.

Carl Rosene, "Incremental Dependence Analysis," Dept. of Computer Science, Rice University, May 1990.

Vasanth Balasundaram, "Interactive Parallelization of Numerical Scientific Programs, Dept. of Computer Science, Rice University, May 1989.

Allan Porterfield, "Software Methods for Improvement of Cache Performance on Supercomputer Applications," Dept. of Computer Science, Rice University, May 1989.

Richard Marty, "Stratigraphy and Chemical Sedimentology of Cenozoic Biogenic Sediments from the Pisco and Sechura Basins," Dept. of Geology and Geophysics, Rice University, May 1989.

Master's Research Advisement:

Tedis Agolli, 2018. Co-advisor: James Clause.

Ningjing Tian, 2017.

Abhijeet Srivastava, 2016.

Shiyi Chen, 2016.

Vallary Singh, 2015.

Rithika Gogineni, 2014.

Aditi Garg, 2014.

Divya Muppaneni, 2013.

Samir Gupta, coadvised with Shanker, 2012-2013.

Amrutha Thotakura, 2012.

Harish Tungaturthi, coadvised with Shanker, 2012.

Suparna Gundagathi Manjunath, 2010-1011.

Poonam Chawla, 2010-2011.

Divya Muppaneni, 2009-1/2011.

Kishen Maloor, "Exploring Novel Natural Language Clues in Source Code," 2007-2008.

Undergraduate Research Supervised:

William Hart, 2023.

Shaayal Kumar, 2021-2022.

Humpher Owusu, 2019-2020.

Brian Phillips, 2019-present.

Minji Kong, 2018-2020. (Honors Thesis)

Crystal Conroy, 2018-2019.

Qilin Ma, 2017-2018.

James Skripchuk, 2017-2018.

Ben Gause, 2016-2017.

Hunter Hedinger, 2016-2017.

Zachary Senzer, 2013-2017, Senior Honor's Thesis completed 2017.

Michael Dillon, 2015-2016.

Rachel Kraft, 2015.

Danielle Wegrzyn, 2014-2015.

Rebecca Kowalski, 2014-2015.

Ryan Serva, 2014-present.

Brittany Gradel, 2013-2014.

Matthew Howard, 2012-2013.

Casey Casalnuovo, 2011-12; Senior Thesis, 2013.

Austin Cory Bart, Seniors Thesis, 2011-12.

Michelle Allen, REU, 2010, 2011.

Sana Malik, Science and Eng Scholar, 2009-10, Honors Thesis 2010-11.

Camille Cobb, CRA-W DREU, 2009.

Carrie Hopkins, CRA-W DREU, 2009.

Katie Baldwin, CRA-W DREU, 2009.

Jonathan Schall, Science and Eng Scholar, 2009-10.

Eric Enslen, Science and Eng Scholar, REU 2009-10.

Lucy Simko, Washington and Lee University, summer 2008.

Haley Boyd, Science and Eng Scholar, REU 2008.

Yana Novikova, "Integrating Information Retrieval with NLP for a Program Navigation Tool, 2007, Indpt study 07.

Meilani Williams, CRA DMP summer 2007.

Holly Esquivel, Visor, "A Visualization Tool for Web Application Testing," summer 2006, CRA Distributed Mentor Project.

Barbara Hazelwood, "A Visualization Tool for Web Application Testing," summer 2006, CRA Distributed Mentor Project.

Zachary Fry, "Investigating the Use of Verbs in Programs Using Dynamic Program Analysis," 2007-2008, Honor's Thesis.

Magnus Johan Jonsson, "Extending Open64 for Optimizing Computation-Communication Overlap," 2006.

Sue Lister, "Investigating Natural Language Pattens in Source Code," 2006.

Stacey Ecott, "Fault-based Mutation Operators for Web Applications," summer 2005, CRA Distributed Mentor Project.

Lewis Fishgold, "An Automated Approach to Improving Communication-Computation Overlap in Clusters," Senior Honors Thesis, 2005.

Anteneh Addis Anteneh, "Adding Security Controls to Dynamically Optimized Mobile Programs," Senior Thesis, 2005.

Ki-Yong Kim, "Exploring Applicability of a Vertically Integrated Approach to Optimizing Cluster Parallel Programs, Senior Thesis, 2005.

Mike Tegtmeyer, "Novel Impact Analysis Algorithms," independent study, 2005.

Frank Zappaterrini, "Logging Web Application Usage," independent study, 2005.

Lewis Fishgold, "Program Fingerprint Comparison Algorithms," Science and Engineering Scholar, summer 2003-spring 2004.

Anteneh Anteneh, "Constructing a Canonical Form of a Program Fingerprint," Science and Engineering Scholar, summer 2003-spring 2004.

Carol Reiley, "A Program Slicing Tool for Parallel Programs," summer 2003, CRA Distributed Mentor Project.

Michael Brennan, "Building a Program Representation for Mobile Code Fingerprinting," 1/2002-present.

Emily Gibson, "Building a Model of Frame Structure and Interaction for Web Sites, summer 2002, CRA Distributed Mentor Project.

Michael Tegtmeyer, "Building an OpenMP Compiler," Independent Study, spring 2002, summer 2002-present.

Margarita Golod, "Characterization Study of Web Programs," Independent Study, winter 2002.

Matt Bridges, "Program Slicing of Parallel Programs," Honor's Thesis, 2001-2002.

Veselin Stoyanov, "Investigating Partial Redundancy Elimination for Explicitly Parallel Programs," Honor's Thesis, 2001-2002.

Jean Mohammadi-Aragh, "A Tool for Evaluating Testing Coverage", summer 2001, CRA Distributed Mentor Project.

Laura McGlade, "Testing of Web Applications," summer 2001, CRA Distributed Mentor Project and University Science and Engineering Scholar.

Nina Bawa, "A Preprocessor for a Software Testing Tool for Object-oriented Programs," spring 2001.

Tiffany Wong and Stacey Shindo, "Software Testing for Object-oriented Programs," CRA Distributed Mentor Project, summer 2000.

Matthew Bridges, "Graphical Tool for Region Graphs," 2000, University Science and Engineering Scholar.

Veselin Stoyanov, "From Region Profiling to Path Profiling," 2000, University Science and Engineering Scholar.

Will Lowe, "Profiling Irregular Applications on a Multithreaded Architecture," Honor's Thesis, University of Delaware, 1998-99.

Sara Sprenkle, "Static Analysis of MPI Parallel Programs," CRA Distributed Mentor Project, summer 1998.

Amie Souter, "Design and implementation of a graphical display tool for intermediate program representations," Honor's thesis, Bucknell University, and summer 1995 research project.

Amy McGovern, Design and implementation of an instruction scheduler with reverse IF conversion, mentee as part of CRA Distributed Mentor Project, summer 1994.

Amie Souter, Design and implementation of an intermediate code translator, mentee as part of CRA Distributed Mentor Project, summer 1994.

Greg Tietgen, senior at the University of Delaware, Implementation and experimental study of effective register allocation-sensitive software pipelining, NSF REU Supplement, Fall 1994 - January 1995.

Undergraduate Research Participation:

Second Reader for honor's thesis, Megan Englert, 2023.

Second Reader for honor's thesis, Philip Soponaro, 2009-10.

Second Reader for honor's thesis, Andrew Gearhart, 2007-08.

Second Reader for honor's thesis, Mark Butala, 2001-02.

Second Reader for honor's thesis, Rishi Khan, 1999-2000.

Summary of Teaching Activities

ACM SIGSOFT Influential Educator Award, 2016.
Recipient, University of Delaware Excellence in Teaching Award, May 2001
Cocreated study abroad program for CISC majors, Hawaii, winter 2023
Lead Teacher, Partner4CS Professional Development Workshop CS Principles Module Track, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021.
Co-created study abroad program for CISC majors, Hawaii, winter 2023.
Co-created study abroad program for CISC majors, New Zealand, winter 2017, winter 2019; Highlighted on The Forum's Curriculum Toolbox.
Co-created and taught Equity and Inclusion in Computing Innovations (with Minji Kong), fall 2021.
Created and taught Introduction to Undergraduate Research course, fall 2018, 2020, 2021.
Co-created and teach field experiences in teaching computer science course, 2013-present
Co-created and teach the first service learning course in CISC at UD, 2009-present
Created and led study abroad program for CISC majors, London, summer 2008
Co-created and led the first study abroad program for CISC majors, Switzerland, 2007
Undergraduate Courses:
    University of Delaware
        CISC 105 General Computer Science (Spring '95, Fall '95)
        UNIV 101 First Year Experience (Fall '09, Fall '10)
        CISC 106 Introduction to Computer Science (Fall '11)
        CISC 260 Microcomputers and Assembly Language (Fall '91)
        CISC 355 Computer Ethics (winter 2018, 2019, 2023)

CISC 366 Independent Study - Python for Robots and XO Laptops (Winter '09)

CISC367 Equity and Inclusion in Computing Innovations, (fall 21, fall 22)

CISC 367/374 Learning Game Development (Fall '10,12, Spring 14, Spring 15, Spring 21, Spri

CISC 367 Introduction to Parallel Programming (Spring '97, Spring '98)

CISC 367 Software Tools for the Software Life Cycle (study abroad)(Summer '07)

CISC 367 Service Learning with XO Laptops (Fall '09, Spring '10)

CISC 357/367 Field Studies in Teaching Computer Science
(Spring '13, Fall '13, Spring '14, Fall '14, Spring 15, Fall 15, Fall 16, Fall 17, Fall 18, Spring 22

CISC 367 Introduction to CS Research, Fall'18, '20, '22

CISC 372 Parallel Programming (Spring '00, Fall '03, Fall '04, Fall '06, Fall '07)

CISC 470 Programming Languages (Fall '00)

CISC 471 Compiler Construction (Spring '08), Fall '13, Fall '14, Fall 15, Fall 16

EGGG 101 Introduction to Engineering (Fall 15, Fall 16)

Rice University

Introduction to Computer Science for non-majors (Spring '86).

Intermediate Programming (Spring '87, Fall '87, Fall'89)

Compiler Construction (Spring '88, Spring '89)

University of Pittsburgh (while a graduate student)

Intermediate Programming (3 semesters)

Introduction to Computer Science (2 semesters)

Introduction to Programming (1 semester)

Graduate Courses:

University of Delaware

CISC 615 Software Testing and Maintenance, Spring '12

CISC 667 Communication Skills for CS Researchers, Spring 17, Spring 18, Spring 21

CISC 670 Programming Languages (Fall '91, Fall '92, Fall '00)

CISC 672 Compiler Construction (Spring '92, Spring '93, Spring '94, Spring '95,
Spring '96, Spring '97,
Spring '98, Spring '00, Spring '01, Spring '02, Spring '03, Spring '04,
Spring '05, Fall '06, Fall '10, Fall '13, Fall'14, Fall 15, Fall 16)

CISC 667 Communication Skills for Computer Science Researchers
(Spring '17, Spring '18).

CISC 872 Advanced Program Analysis and Transformations
(Fall '99, Fall '01, Spring '05)

CISC 872 Optimizing and Parallelizing Compilers (Spring '92, Fall '93, Fall '95)

CISC 873 Compiling for Advanced Architectures (Fall '02)

CISC 874 Introduction to Parallel Computing (Spring '93, Fall '94, Fall '96)

CISC 879 Issues in High Performance Computing (Spring '97)

CISC 879 Compilation Research Issues for Massive Parallelism (Fall '94)

CISC 879 Java: Compilers, Tools, and Applications (Spring '98)

CISC 879 Parallelization of Scientific Applications (Fall '00)

CISC 879 Software Testing and Maintenance (Fall '08, Spring '04, Fall '09)

CISC 879 Software Tools and Environments (Spring '07)

CISC 879 Text Analysis for Software Engineering (Fall '13, Fall'17)

Coordinator, CIS 890 Special Interest Group on Compiling for HPC,

CISC 890: SIGHPC: weekly seminar, fall/spring, 6/92-6/00.
Coordinator, CIS 890 Special Interest Group on Prog Anal and Comp Techniques,
CISC 890: SIGPACT: weekly seminar, fall/spring semesters, 9/00-present.
CISC 890: SIG-NEWGRAD: weekly seminar, Fall '04, Fall '06.
Rice University
Advanced Compiler Construction (Fall '86, Fall '88, Spring '90)

Professional Activities

External Professional Research Leadership Activities:
Program CoChair, Technical Research Track, Intl Conf on Soft Eng (ICSE), 2023
Area Chair, International Conf on Soft Engineering (ICSE), 2021.
Harlan Mills Awards Selection Committee, 2020, 2021. 2022
Associate Editor, Journal of Software Testing, Verification and Reliability, 2016-2020.
Member, The Research Foundation - Flanders (FWO) Strategic Basic Research (SBO)
Expert Panel, 2018-2019.
Workshops Cochair, ICSE 2020.
Mining Software Repositories (MSR) Conference Awards Committee, 2018.
IEEE TCSE Distinguished Paper Awards Selection Committee, 2017-2019.
Member ACM Outstanding Contribution Awards Committee, 2017-present.
Associate Editor, ACM Transactions on Software Engineering and Methodology, 2008-2014.
Acting Editor-in-Chief (for conflict papers), ACM Transactions on Software Engineering
and Methodology, 2012-2014.
Doctoral Symp Chair, International Conference on Software Maintenance, 2016.
Program CoChair, International Conference on Software Maintenance and Evolution
(ICSME), 2014.
Doctoral Symp CoChair, International Conference on Software Testing, 2014.
Doctoral Symp Chair, International Conference on Software Maintenance, 2013.
CoOrganizer, NaturaLiSE Workshop at ICSE 2013.
CoOrganizer, TAinSE Workshop at ICSM 2012.
Program and General Cochair, Workshop on Program Analysis for Software Tools and
Analysis (PASTE) 2011.
Member, ISSTA Steering Committee, 2006-2010.
Tutorials Chair, International Conference on Software Maintenance (ICSM) 2011.
CoChair, Language and Compiler Techniques for Parallel Computing (LCPC), 2009.
CoChair, Systems Research Mentoring Workshop, 2008.
Organizer, FSE Student Research Symposium, 2008.
Conference Chair, Intl Symp on Software Testing and Analysis, ISSTA, 2006.
Member, Steering Committee for Midatlantic Student Workshop on Prog Lang
and Systems, 2002-2010.
Chair, Midatlantic Student Workshop on Prog Lang and Systems, 2005.
CoChair, Workshop on Dynamic Analysis, WODA, 2005.
Chair, Student Research Forum, ACM SIGSOFT Foundations of Software Engineering,
FSE, 2004, 2002.

Co-Chair, Student Research Forum, ACM Conf on Programming Language Design and
Implementation, PLDI, 2001.

Awards Committee Member, Most Influential PLDI Conference Paper Award, 2001.

Chair, Midatlantic Student Workshop on Programming Languages and
Systems, (MASPLAS'00), April 2000.

Invited Distinguished Lecturer and Panel Member, CRAW/Lucent Distinguished Lecture
Series, 2000.

Elected Vice Chair of the ACM SIGPLAN Executive Committee (June 1999-June 2001).

Awards Committee Chair, Most Influential PLDI Conference Paper Award, 2000.

Organizing Committee, International Symposium on Software Testing and Analysis, (
ISSTA), 1998.

Elected Secretary/Treasurer of the ACM SIGPLAN Executive Committee (1997-1999).

Member of the ACM SIGPLAN Executive Committee (June 1997-June 1999).

Elected Secretary of the ACM SIGPLAN Executive Committee (June 1995-June 1997).

Member of the ACM SIGPLAN Executive Committee (June 1995-June 1997).

Member of Workshop Committee for Supercomputing (1995).

Publicity Chair, ACM Conference on Programming Language Design and
Implementation, 1994.

Research Mentor, CRA Distributed Mentor Project, (1994, 1995, 1998, 2000, 2001, 2002).

Treasurer, 15th Annual ACM SIGACT-SIGPLAN POPL Symposium, (1988).

ACM National Visiting Lecturer, (1988 - 1990).

Reviewer for
  National Science Foundation
  Canadian Foundation for Innovation
  ACM Transactions on Programming Languages and Systems
  IEEE Transactions on Parallel and Distributed Systems
  IEEE Transactions on Software Engineering
  ACM Transactions on Software Engineering and Methodology
  Automated Software Engineering Journal
  Software Testing, Verification and Reliability Journal
  The Computer Journal
  International Journal of Parallel Programming
  Journal of Programming Languages
  IEEE Computers and Digital Techniques
  Parallel Computing
  HPCA

External Professional Teaching, Diversity, Mentoring, Outreach Activities:
  CRA-Education Committee Cochair 2017-2024.
  CRA Board as CRA-E Representative 2020-2024.
  CRA Career Engagement Working Group, Nov 2022 - 2024.
  Co-PI on CRA UR2PhD program funded by Philanthropic Partner January 2023-present.
  CRA's Communications working group starting Nov 2022 - 2024
  Member, CRA Search Committee for new CRA Board Director, 2021

Co-created CRA-E/CRA-WP 10-week Mentoring program for NSF CSGrad4US fellows, 2021-present
Advisory Board, NSF IUSE Project: "Collaborative Research: Supporting Project-Based Learning in Undergraduate Software Engineering Courses, Daqing Hou, 2021-present.
CRA-Education Committee Member 2014-present.
Co-Organizer, First Student Mentoring Workshop, Int Conf on Soft Eng, ICSE 2019.
Co-Organizer, Symp for Teaching Track Faculty at SIGCSE 2018, SIGCSE 2019,
                SIGCSE 2020, SIGCSE 2021.
Member, CS Teachers Association (CSTA) 2015-2016 Standards Rev Task Force.
Member, SIGPLAN Programming Languages Research Mentoring Workshops (PLMW)
                Steering Committee, 2018-present.
Cochair, Programming Languages Research Mentoring Workshop, SPLASH 2017.
ACM Awards Committee, Outstanding Contribution to ACM, 2017, 2018, 2019.
Speaker, New Faculty Symposium at ICSE 2017.
Invited as part of Delaware state's 4-person team to code.org's Governor's K-12 CS4All
                Convening, 2016.
Cochair, CRA-W Undergraduate Research Mentoring Workshop at ICSE 2016.
PI and CoChair, CRA-W Undergraduate Townhalls Project, 2014-present.
Member, CRA Undergraduate Research Awards Selection Committee, 2014.
Representative and Speaker, State of Delaware Contingent to New York City Roundtable on
                CS in Schools. 2014.
PI and Team Lead on NSF CE21 CS10K project Partner4CS in Delaware, 2012-present.
Coorganizer/presenter, SIGCSE Workshop on Making the Most of Undergraduate
                Research 2011, 2012, 2013.
Conference CoChair and Leadership Committee Member, Grace Hopper Celebration, 2011.
Program CoChair and Leadership Committee Member, Grace Hopper Celebration, 2010.
Advisory Board Member, ACM-W/ABI Regional Grace Hopper Conferences project.
Chair, Academic Advisory Board, Grace Hopper Celebration, 2009.
Cochair, CRA-W (Annual) Graduate Cohort, 2009-2014.
Steering Committee Member, CRA Committee on the Status of Women in Computing
                Research (CRA-W), 2005 - present.
Panel Member, Mentoring Difficult and Sensitive Issues, Grace Hopper Celebration, 2009.
Cochair, CRA Committee on the Status of Women in Computing Research, Sep 2005-2009.
Board Member, Committee on the Status of Women in Computing Research (CRA-W),
                May 2001 - present.
Advisory Board Member, Commonwealth Alliance for Information Technology
                Education (CAITE), UMass.
Review Panel Member, Mount Holyoke College CS Department Review, 2006.
Chair, Steering Committee, Intl Symp on Software Testing and Analysis, 06-07.
Panel Member, Grace Hopper Panel on Undergraduate Research Opportunities, 2007.
Member, Academic Advisory Board, Grace Hopper Conference, 2007.
Chair, CRA-W Career Mentoring Workhop, 2005.
CoChair, PhD Forum, Grace Hopper Conference, 2004, 2006.
CoChair, Graduate Cohort Program and Workshop, 2004, 2005.
Chair, CRA-W Career Mentoring Workhop, with FCRC, June 2003.
Panel Member, Grace Hopper Conference, Undergraduate Research, September 2002.

Member, Committee on Science and the Arts, The Franklin Institute,
(Computer and Cog Sci Cluster), June 2001-Sept 2004.
Chair, ACM SIG Discretionary Fund Committee, June 1997 - June 1999.
Member of DANTES (Defense Activity for Non-traditional Edu Support) Exam Writing
Committee, March 1998.
Member of ACM SIG Discretionary Fund Committee, (August 1996 - May 1998).
Member, ACM National Committee on Student Membership and Chapters, (1980-1982).
Editor of the ACM national Student Newsletter, (1981-1982).

Program Committees:
ICSE2022, ICPC2022, ICSE2021, FSE 2020, testEd2020, ICSE PC Board 2019, ICSE PC Board 2018
FSE 2017, MSR 2017, ICST 2017,
ISSTA 2016, MSR 2016, ICSE 2016 Technical Briefings, ICPC 2015.
ICST 2015. SANER 2015, ICSE 2014. ASE 2014 ERC, ASE 2013. ICPC 2013.
ICSE 2013 Formal Research Demos.
ICST 2013. ICSM 2013. ISSTA 2013 Doct Symposium. WCRE 2913,
ICSE 2012. ISSTA 2012. ASPLOS 2012. ETSE 2012. FSE 2012 Demos. Regression 2012.
WCRE Industry 2012. OOPSLA 2011. ASPLOS 2011.
MSR 2011.
International Symposium on Software Testing and Analysis (ISSTA) 2010.
International Conference on Software Maintenance (ICSM) 2010.
Workshop on Program Analysis for Software Tools and Engineering (PASTE) 2010.
Conference on Mining Software Repositories (MSR) 2010.
Workshop on Advances in Message Passing (AMP) 2010.
External Review Committee, Programming Language Design and Implementation PLDI 2010.
Compiler Construction (CC09).
International Conference on Software Maintenance (ICSM) 2009.
International Symposium on Software Reliability and Engineering (ISSRE) 2009.
International Conference on Software and Data Technologies (ICSOFT) 2009.
Architectural Support for Programming Languages and Operating Systems (ASPLOS09).
International Conference on Software Testing (ICST) 2009.
Conference on Mining Software Repositories (MSR) 2009.
First Workshop on Web Testing (WebTest09).
Language and Compiler Techniques for Parallel Computing (LCPC) 2008.
Workshop on Testing Analysis and Verification for Web Applciations (TAV-WEB), 2008.
International Conference on Software Maintenance (ICSM) 2008.
Workshop on Linking Aspect Technology and Evolution (LATE) 2007, 2008.
International Conference on Software and Data Technologies, ICSOFT 2007, 2008.
Programming Language Design and Implementation (PLDI) 2007.
International Conf on Soft Engineering (ICSE) 2006.
10th European Conference on Software Maintenance and Reengineering (CSMR)
2006, 2007, 2008.
International Symp on Software Testing and Analysis (ISSTA) Big-New-Ideas papers 2006.
International Symp on Software Testing and Analysis (ISSTA) Industry papers 2006.
Workshop on Towards Evaluation of Aspect Mining, TEAM 2006.

International Conference on Software Engineering Advances, ICSEA 2006.
Third International Workshop on Software Quality Assurance, SOQUA 2006.
Workshop on Linking Aspect Technology and Evolution (LATE) 2006.
Workshop on Testing Analysis and Verification for Web Applciations (TAV-WEB), 2006.
Workshop on Dynamic Analysis (WODA), 2005, 2006.
Workshop on Remote Analysis and Measurement of Software Systems (RAMSS '04).
eclipse Technology eXchange Workshop at ETAPS, March 2004.
Programming Languages Track of the Symposium for Applied Computing, 2004.
eclipse Technology eXchange Workshop at OOPSLA'03, October 2003.
Software Engineering Education Track of the Intnl Conf on
                              Software Engineering (ICSE'03), May 2003.
International Symposium on Software Testing and Analysis (ISSTA'02), July 2002.
International Conference on
                              Parallel Architectures and Compilation Techniques (PACT'00), Oct
5th International Workshop on Languages, Compilers,
                              and Runtime Systems for Scalable Computers, (LCR) (May 2000)
10th International Conference on Parallel and Distributed
                              Computing and Systems (PDCS'98) (October 1998)
ACM SIGPLAN Principles and Practice of Parallel Programming '97 (PPoPP, June 1997)
Supercomputing '96 (November 1996)
ACM Conference on Programming Language Design and Implementation (PLDI, June 1995)
Supercomputing '94 (November 1994)
Programming Languages Track of the Symposium for Applied Computing (March 1994)

Proposal Review Panels (served within 1995-present):
    NSF CISC Committee of Visitors
    NSF ITR/CCF Small, Medium, Large Panels
    NSF CSEMS Panel
    NSF Experimental Software Systems Panel
    NSF CAREER Panel Review
    NSF Research Initiation Awards Program
    Department of Energy Research Review Panel
    NSF ILI Panel Review
    NSF REU Site Panel Review

Leadership and other Professional Development
    Cultural Competence in Computing (3C) Fellows Program, 2021
    Delaware 21-Day Racial Equity and Social Justice Challenge, 2020
    Executive Leadership in Academic Technology, Engineering and Science (ELATES), 2019-20
    National Center for Faculty Development and Diversity, Faculty Success Program,
            Spring 2018-Fall 2018.
    Individual Coaching Experience, Illumina Executive Coaching, spring 2017.

Professional Memberships

IEEE Computer Society
Association for Computing Machinery (ACM)
ACM Special Interest Group in Programming Languages (SIGPLAN)
ACM Special Interest Group in Software Engineering (SIGSOFT)
CSTA Member

Department and University Service Activities

University of Delaware
    Chair, CIS Dept Committee on Community Enrichment,
        Retention, Awards, and Diversity, 2021-2023
    Member, CIS Department Executive Committee, 2015-2023.
    Leader, UD Partnership for Computing Education, 2019-2020.
    Member, UD Partnership for Public Education (PPE) Steering Committee, 2016-2018.
    Member, UD ADVANCE Canvassing Committee, Charles Riordan, chair, 2016-2018.
    Member, College of Engineering Undergraduate Diversity Committee, 2016-2018.
    Member, UD Committee to Develop Digital Studies Program, 2017-2019.
    Chair, CIS Department Strategic Planning for Infrstructure Change for Excellence, 2018-2019.
    Member, CoE Named Professor Subcommittee on Outstanding Junior
    Faculty Award, 2017-present.
    Chair, Adhoc College of Engineering Committee on EGGG Revision, 2014-2016.
    Chair, CIS Department SPARC Room Development Committee, 2015-2016.
    Member, CIS Department Faculty Recruiting Committee 2015.
    Member, CIS Department Undergraduate Committee 2014-2016.
    Faculty Advisor, CISTERS, 2015-present.
    Chair, UD Masters in Software Engineering Program Committee, 2010-2012.
    Member, UD ADVANCE team for Faculty Mentoring and Recruitment Workshop
    Development, 2009-2012.
    Chair, CIS Department Publicity Committee, 2011-2012.
    Co-Liaison, STARS at Univ of Delaware, 2012-2014.
    Co-Liaison, NCWIT at Univ of Delaware, 2012-present.
    Member, UD Middle States Review Committee (specializing in graduate
    education and research), 2009-2011.
    Member, UD CIS/ECE Curriculum Development team for Masters in
    Software Engineering, 2008-2010.
    Member, UD Curriculum Development team for Computational Science
    certificate program, 2008-2009.
    Advisor, UD Master of Software Engineering program, 2009-present.
    Member, Women in Science and Engineering (WISE) 2006-2010.
    Round Table Moderator, Promotion and Tenure Panel, 2008.
    Co-Organizer, UD CS Research Day, 2008.
    Member, CIS Graduate Program Committee, 2007-2009.
    Co-Curator, CIS Museum, 2006-present.

Member, CIS Faculty Recruiting Committee, 2005-07.
Member, CIS Executive Committee, 2004-2005.
Chair, CIS Space Committee, 2005.
Member, Math Department Faculty Recruiting Committee, 2004-2005.
Member, CIS Graduate Program Committee, 2003-2004.
Member, CIS Recruiting Committee for Assistant to the Chair, 2003.
Panelist, University New Faculty Orientation Panel, Fall 2004.
Panelist, College Blue and Golden Days Panel, 2004.
Member, CIS Chair Review Committee, 2003-2004.
Chair, CIS Graduate Program Committee, 2002-2003 (major curriculum review).
Chair, CIS Undergraduate Committee, 1999-2002 (development of new Info Systems major).
Chair, Arts and Science College Awards Committee, 2001-2004.
Member, Arts and Science College Senate Steering Committee, 2001-2003.
Chair, New CIS MIS Major Curriculum Development Committee, 2001-2002.
Member of Colburn Prize Award Committee, spring 2001.
Arts and Science College Awards Nominations Committee Member, 1999.
Judge, Delaware Math, Science, and Engineering Competition, 1999.
Member of CIS Lecturer Recruiting committee, 1999.
Promotion and Tenure Panel Member, 1999.
Representative of CIS Dept on Engineering Accreditation Visit, 1999.
Member of Colburn Prize Award Committee, spring 1998.
Fellow, Institute for Transforming Undergraduate Education, June 1997.
Undergraduate Advisor for about 30 students, September 1994 - present.
Co-Instructor, University of Delaware Engineering Outreach Program,
"Introduction to Objected-Oriented
  Programming and C++," January 1996, June 1997.
Member of CIS Department Infrastructure Proposal Committee, 1995 - 1996.
Member of CIS Department Computing Equipment Plan Committee, January 1995.
Member of CIS Department Recruiting Committee, September 1994 - present.
Member of CIS Department Chairperson Search Committee, 1993 - 1994, 1998 - 1999.
Member of CIS Department Undergraduate Committee, 1993 - 1994, 1997-98.
Advisor for Juniors, September 1993 - September 1994.
Member of CIS Department Graduate Committee, September 1992 - September 1993.

Rice University
Member, Graduate Admissions Committee, CS Dept., February 1990-May 1990.
Chairperson, Affiliates Committee, CS Dept., September 1988-January 1990.
Member, Undergraduate Committee, CS Dept., September 1987-May 1990.
Member, Faculty Recruiting Committee, CS Dept., September 1987-September 1988.
Chairperson, Colloquium Committee, CS Dept., June 1986-September 1987.
Faculty Associate, Hanszen College,, September 1989-May 1990