Mary Lou Soffa

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Research Interests

Optimizing compilers, software engineering, program analysis, instruction level parallelism, program debugging and testing tools, software systems for the multi-core processors, testing cloud applications, testing for machine learning applications

Education

Ph.D. in Computer Science, University of Pittsburgh, 1977

M.S. in Mathematics, Ohio State University

B.S. in Mathematics, University of Pittsburgh, Magna Cum Laude, Phi Beta Kappa

Academic Employment

Owen R.Cheatham Professor of Sciences, Department of Computer Science, University of Virginia, 2004-present

Chair, Department of Computer Science, University of Virginia, 2004-2012

Professor, Department of Computer Science, University of Pittsburgh, 1990-2004

Graduate Dean in Arts and Sciences, University of Pittsburgh, 1991-1996

Visiting Associate Professor, Department of Electrical Engineering and Computer Science, University of California at Berkeley, 1987

Associate Professor, Department of Computer Science, University of Pittsburgh, 1983-1990

Assistant Professor, Department of Computer Science, University of Pittsburgh, 1977-1983

Honors/Awards

SEAS Distinguished Faculty Award, 2020

NCWIT Harrold - Notkin Research and Mentoring Award, 2020

University of Virginia Research Award, 2020

Distinguished Paper, A Statistics-Based Performance Testing Methodology for Cloud Applications, ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), August, 2019

Most Distinguished Alumni, 50th Anniversary of Computer Science, University of Pittsburgh, 2016

IEEE Software Engineering Women in Science and Engineering Leadership Award, 2015

ACM SIGSOFT Influential Educator Award, 2014

Ken Kennedy Award, October 2012

IEEE Fellow, 2012

Best Paper Award, ACM/IEEE International Symposium on Code Generation and Optimization, 2012

IEEE MICRO Top Pick, Bubble-Up: Increasing Utilization in Modern Warehouse scale Computers via Sensible Co-Locations, Jason Mars, Lingjia Tang, Robert Hundt, Kevin Skadron and Mary Lou Soffa, 2011

Anita Borg Technical Leadership Award, 2011

ACM SIGSOFT Distinguished Service Award, 2010

Named in Top 25 Software Engineer Scholars in World, July, CACM, 2007

Nico Habermann Award, June 2006

ACM Fellow, 1999

Distinguished paper, âĂIJA Family of Test Adequacy Criteria for Database-Driven Applications,âĂİ (co-authored with Greg Kapfhammer), ACM SISOFT Foundations of Software Engineering (FSE), 2003

Most Influential papers of 20 years in ACM/SIGPLAN Programming Languages Design and Implementation (PLDI), âĂIJComplete Removal of Redundant Expressions,âĂİ (co-authored with R. Bodik and R. Gupta), 40 out of 550 papers selected and appeared in a PLDI Anniversary issue, 2003

ACM/SIGPLAN Distinguished Service Award, 2003

Girl Scout Woman of Distinction, 2003

Dissertation Adviser of Rastislav Bodik, winner of ACM SIGPLAN Award for the Best Dissertation in Programming Languages, 2000

Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring, White House, Washington, D.C., 1999

Teaching Award, Department of Computer Science, University of Pittsburgh, 1999 and 2001

Faculty Honor Roll, University of Pittsburgh, 1999

Best Paper, Hybrid Slicing: An Approach for Refining Static Slices using Dynamic Information, *ACM SIGSOFT Third Symposium on the Foundations of Software Engineering,* 1995

Best paper, Hybrid Slicing: An Approach for Refining Static Slices using Dynamic Information, *ACM SIGSOFT Third Symposium on the Foundations of Software Engineering,* 1995

Best Paper, Incremental Global Optimization for Faster Recompilations, *IEEE 1990 International Conference on Computer Languages,*1990.

NSF Visiting Professorship for Women, University of California at Berkeley, 1987

Keynotes/Distinguished/invited Speaker

ACM SIGPLAN Conference on Systems, Programming, Languages, and Applications Conference (SPLASH), 2020

Distinguished Speaker, Virginia Tech, 2020

Distinguished Speaker, Mary Jean Harrold and David Notkin Lecture, Georgia Tech, 2019

Invited Speaker, ACM ESEC/FSE 2017 Doctoral Symposium, 2017

Distinguished Speaker, University of Michigan, 2016

Distinguished Speaker, University of British Columbia, 2015

Distinguished Speaker, Hanoi University of Science, Vietnam, 2015

Distinguished Speaker, University of British Columbia, 2015

Keynote, Capital Area Celebration of Women in Technology, 2015

Distinguished Speaker, Institute of Information Science, Academia Sinica Taiwan 2014

Distinguished Speaker, Hong Kong University of Science and Technology, 2014

Invited Keynote, Software Engineering Educators Symposium, 2014

Distinguished Speaker, University of Waterloo, 2013

Distinguished Speaker, Rice University, 2013

Distinguished Speaker, University of Texas, Austin, 2013

Keynote Speaker, SESENA workshop at ICSE, 2013

Keynote Speaker, University of Alabama, 2013

Invited Speaker, James Madison Univeristy, 2012

Invited speaker, IBM Yorktown, 2012

Distinguished Speaker, College of William and Mary, 2011

Keynote Speaker, International Conference on Software Testing, Verification and Validation, Paris, France, 2010

Distinguished Speaker, Triangle Computer Science, Duke University and University of North Carolina, 2010

Deans Distinguished Lecture, University of Texas at San Antonio, April 2009

Distinguished Speaker, ISR, University of California, Irvine, 2009

Keynote Speaker, University of Alabama, 2009

Invited Speaker, Department of Computer Science, Temple University, 2009

Keynote Speaker, 11th IEEE High Assurance Systems Engineering Symposium (HASE) 2008

WISE Distinguished Speaker, University of Delaware, 2008

Distinguished Speaker, University of Illinois at Chicago, 2007

Invited speaker, New Faculty Symposium, 2006

Keynote Speaker, Mid-Atlantic Student Workshop on Programming Languages and Systems, April 2005

Keynote Speaker, Fifth International Conference on Quality Software, Melbourne, Australia, 2005

Distinguished Speaker, Michigan Institute of Technology, 2005

Keynote Speaker, NSF ITWF and ITR PIs Conference, October 2004

Distinguished Speaker, Stony Brook University, 2004

Distinuished Speaker, University of Nebraska, Lincoln, 2004

Distinguished Speaker, University of Illinois, Urbana-Champaign 2004

Keynote Speaker, Compiler Construction Conference, Barcelona, March 2004

Distinguished Speaker, IBM Lecturer Series, Notre Dame, Department of Computer Science, November 2003

Distinguished Speaker, University of Maryland, 2002 Distinguished Speaker, University of Michigan, 2001

Distinguished Speaker, IBM T.J. Watson Research Center, 2001

Keynote Speaker, Model Checking and Program Analysis Seminar, Munich, Germany, February 2000

Publications

Journal Articles

Tanima Dey, Wei Wang, Jack Davidson, and Mary Lou Soffa, ReSense: Mapping Dynamic Workloads of Co-located Multi-threaded Applications using Resource Sensitivity, *ACM Transactions on Architecture and Code Optimizations* 10(4): 41-66 (2013).

Jim Cohoon, Joanne Cohoon, Mary Lou Soffa, Educating Diverse Computing Students at the University of Virginia, *Computer*, pages 52-55, 2013.

Apala Guha, Kim Hazelwood and Mary Lou Soffa, Memory Optimization of Dynamic Binary Translators for Embedded Systems, *ACM Transactions in Architecture and Code Optimization*, Vol. 9, Issue 3, September, 2012.

Yuqiang Huang, Bruce Childers and Mary Lou Soffa, Detecting Bugs in Register Allocation, *ACM Transactions on Programming Languages and Systems* 32(4): (2010).

Sandra Katz, David Allbritton, John Aronis, Christine Wilson and Mary Lou Soffa, Gender, achievement, and persistence in an undergraduate computer science program, *ACM SIGMIS Database* 37(4): 42-57 (2006).

Min Zhao, Bruce Childers, and Mary Lou Soffa, An Approach Toward Profit-Driven Optimization, *ACM Transactions on Architecture and Code Optimization* 3(3): 231-262 (2006).

Barbara Ryder, Mary Lou Soffa, and Margaret Burnett, The Impact of Software Engineering Research on Modern Programming Languages *ACM Trans. Soft. Eng. Methodology*. 14(4): 431-477 (2005).

Naveen Kumar, Bruce R. Childers, Dan Williams, Jack W. Davidson and Mary Lou Soffa, Compile-time Planning for Overhead Reduction in Software Dynamic Translators, *International Journal on Parallel Programming*, 33(2-3): 103-114 (2005).

Sandra Katz, David Allbritton, John Aronis, Christine Wilson and Mary Lou Soffa, Gender and Race in Predicting Achievement in Computer Science, Special Issue on Women and Minorities in Information Technology, *IEEE Technology and Society*, 22(3): 20-27 (2003).

Barbara G. Ryder and Mary Lou Soffa, Influences on the Design of Exception Handling , ACM SIG-SOFT Project on the Impact of Software Engineering Research on Programming Language Design, *ACM SIGSOFT Software Engineering Notes*, 28(4): 29-35 (2003).

Angela M. Balcita, Doris L. Carver and Mary Lou Soffa, Shortchanging the Future of Information Technology: The Untapped Resource, Inroads, Special Issue on Women and Computing, *SIGCSE Bulletin* 34(2): 32-25 (2002).

Atif Memon, Martha E. Pollack and Mary Lou Soffa, Hierarchical GUI Test-Case Generation Using Automated Planning, *IEEE Trans. Software Eng.* 27(2): 144-155 (2001).

Deborah Whitfield and Mary Lou Soffa, An Approach for Exploring Code Improving Transformations, *ACM Trans. Program. Lang. Syst.* 19(6): 1053-1084 (1997).

Evelyn Duesterwald, Rajiv Gupta and Mary Lou Soffa, A Practical Framework for Demand- Driven Interprocedural Data Flow Analysis, *ACM Trans. Program. Lang. Syst.* 19(6): 992-1030 (1997).

Rajiv Gupta, Mary Lou Soffa and John Howard, Hybrid Slicing: Integrating Dynamic Information with Static Analysis, *ACM Trans. Software Eng. Methodol.* 6(4): 370-397 (1997).

Rajiv Gupta, Mary Jean Harrold and Mary Lou Soffa, Program Slicing-Based Regression Testing Techniques, *Softw. Test., Verif. Reliab.* 6(2): 83-111 (1996).

Chyi-Ren Dow, Shi-Kuo Chang and Mary Lou Soffa, Visual Transformation Specifications, *Software Visualization*, (Peter Eades and Kang Zhang, Eds.), World Scientific Pub. Co.pgs. 141-162 (1996)

Robert Kramer, Rajiv Gupta and Mary Lou Soffa, The Combining DAG: A Technique for Parallel Data Flow Analysis, *IEEE Trans. Parallel Distrib. Syst.* 5(8): 805-813 (1994).

Brian A. Malloy, Errol L. Lloyd and Mary Lou Soffa, Scheduling DAGS for Asynchronous Multiprocessor Execution, *IEEE Trans. Parallel Distrib. Syst.* 5(5): 498-508 (1994).

Rajiv Gupta, Mary Lou Soffa and Denise Ombres, Efficient Register Allocation Via Coloring Using Clique Separators, *ACM Trans. Program. Lang. Syst.* 16(3): 370-386 (1994).

Deborah Whitfield and Mary Lou Soffa, The Design and Implementation of Genesis, *Software Prac. Exper.* 24(3): 307-325 (1994).

Mary Jean Harrold and Mary Lou Soffa, Efficient Computation of Interprocedural Definition- Use Chains, *ACM Trans. Program. Lang. Syst.* 16(2): 175-204 (1994).

Mary Jean Harrold, Rajiv Gupta and Mary Lou Soffa, A Methodology for Controlling the Size of a Test Suite, *ACM Trans. Softw. Eng. Methodology* 2(3): 270-285 (1993).

Rajiv Gupta and Mary Lou Soffa, Employing Static Information in the Generation of Test Cases, *Software Test. Verification and .Reliab.* 3(1): 29-48 (1993).

Lori L. Pollock and Mary Lou Soffa, Incremental Global Reoptimizations of Programs, *ACM Trans. Program. Lang. Syst.* 14(2): 173-200 (1992).

Mary Jean Harrold and Mary Lou Soffa, Selecting and Using Data for Integration Testing, *IEEE Software* 8(2)): 58-65 (1991).

Rajiv Gupta and Mary Lou Soffa, Compile-time Techniques for Improving Scalar Access Performance in Parallel Memories, *IEEE Trans. Parallel Distrib. Syst.* 2(2): 138-148 (1991).

Mary Bivens and Mary Lou Soffa, Incremental Register Allocation, *Software. Pract. Exper* 20(10): 1015-1047 (1990).

Rajiv Gupta and Mary Lou Soffa, Region Scheduling: An Approach for Detecting and Redistributing Parallelism, IEEE Trans. Software Eng. 16(4): 421-431 (1990).

Brian A. Malloy and Mary Lou Soffa, Conversion of Simulation Processes to Pascal Constructs, *Softw. Pract. Exper* 20(2): 191-207 (1990).

Rajiv Gupta and Mary Lou Soffa, Compilation Techniques for a Reconfigurable LIW Architecture, *The Journal of Supercomputing*, Vol. 3(4): 271-304 (1989).

Lori L. Pollock and Mary Lou Soffa, An Incremental Version of Iterative Data Flow Analysis,*IEEE Trans. Softw. Eng.* 15(12): 1537-1549 (1989).

Errol L. Lloyd, Mary Lou Soffa and Ching-Chy Wang, On Locating Minimum Feedback Vertex Sets, *Journal of Computer and System Sciences*, 37(3): 292-311 (1988).

Jean R. Stephenson Blair, Phil Kearns and Mary Lou Soffa, An Optimistic Implementation of the Stack-Heap, *The Journal of Systems and Software* 5(3): 193-202 (1985).

Donna J. Quammen, John P. Kearns and Mary Lou Soffa, Efficient Storage Management for Temporary Values in Concurrent Programming Languages, *IEEE Trans. Computers* 34(9): 832-840 (1985).

Ching-Chy Wang, Errol L. Lloyd and Mary Lou Soffa, Feedback vertex sets and cyclically reducible graphs, *Journal of the ACM* 32(2): 296-313 (1985).

Ching-Chy Wang and Mary Lou Soffa, Eager Reclamation, *IEEE Trans. Software Eng.* 11(4): 437-439 (1985).

Fernando Lafora and Mary Lou Soffa, Reverse Execution in Debugging a Generalized Control Regime, *Comput. Lang.* 9(3/4): 183-192 (1984).

Lawrence A. Coon, John P. Kearns and Mary Lou Soffa, The Contraction of Control Implementations, *Comput. Lang.* 8(1): 15-25 (1983).

John P. Kearns and Mary Lou Soffa, The Implementation of Retention in a Coroutine Environment, *Acta Inf.* 19: 221-233 (1983).

Mary Lou Soffa, Control Discipline Necessity: Making the Languages as General as the Implementation, *BIT* 22(2): 169-182 (1982).

John P. Kearns, Carol J. Meier and Mary Lou Soffa, The Performance Evaluation of Control Implementations, *IEEE Trans. Softw. Eng.* 8(2): 89-96 (1982).

Gary Lindstrom and Mary Lou Soffa, Referencing and Retention in Block Structured Coroutines, *ACM Trans. Program. Lang. Syst.* 3(3): 263-292 (1981).

W. Pauli and Mary Lou Soffa, Coroutine Behavior and Implementation, *Software. Practice and Experience.*10(3): 189-204 (1980).

Refereed Conference Proceedings

Swaroopa Dola, Mary Lou Soffa and Matthew Dwyer, Distribution-Aware testing of Neural Networks using Generative Models, International Conference on Software Engineering, 2021, ICSE 2021

Nora Evans, Brad Campbell, and Mary Lou Soffa, Is Rust used as a Memory Safe Language?, ICSE 2020

Distinguished paper: Sen He, Glenna Manns, John Saunders, Wei Wang, Lori Pollock, A Statistics-Based Performance Testing Methodology for Cloud, Foundations of Software Engineering Conference, 2019 Applications, ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), August, 2019

Ji Gao, Jack Lanchantin, Mary Lou Soffa, Yanjun Qi, Black-box Generation of Adversarial Text Sequences to Evade Deep Learning Classifiers, First Deep Learning AND Security Workshop (DLS18, co-located with the 39th IEEE Symposium on Security and Privacy, 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, March 2018.

Wei Wang, Zheng Qui, and Mary Lou Soffa, Improving Energy Performance through Software Voltage Scaling, *in preparation*

Wei Wang, Jack Davidson, and Mary Lou Soffa, Predicting the Memory Bandwidth and Optimal Core Allocations for Multi-threaded Applications on Large-scale NUMA Machines, *Proceedings of High Performance Computer Architecture,* pp. 419-431, 2016

Wei Wang, Tanima Dey, Jack Davidson, Mary Lou Soffa, DraMon: Predicting Memory Bandwidth Usage of Multi-threaded Programs with High Accuracy and Low Overhead, *Symposium on High Performance Computer Architecture* Feb, 2014

Tanima Dey, Wei Wang, Jack Davidson, and Mary Lou Soffa, ReSense: Mapping Dynamic Workloads of Co-located Multi-threaded Applications using Resource Sensitivity, *Symposium on High Performance and Embedded Architecture and Compilation,* Jan, 2014

Lingjia Tang, Jason Mars, Wei Wang, Tanima Dey, and Mary Lou Soffa, ReQoS: Reactive Static/Dynamic Compilation for QoS in Warehouse Scale Computers, *ACM Transactions on Architecture and Code Optimizations* , 2014 ,

Wei Wang, Tanima Dey, Jason Mars, Lingjia Tang, Jack Davidson and Mary Lou Soffa, Performance Analysis of Thread Mappings with a Holistic View of the Hardware Resources, *ISPASS* , 2012

Jing Yang, Kevin Skadron, Mary Lou Soffa and Kamin Whitehouse, Potential of Dynamic Binary Parallelization, *Proceedings of the International Workshop on Unique Chips and Systems,* February 2012.

Jason Mars, Lingjia Tang, Robert Hundt, Kevin Skadron and Mary Lou Soffa, Bubble-Up: Increasing Utilization in Modern Warehouse Scale Computers via Sensible Co-locations, *ACM/IEEE MICRO* December 2011, IEEE MICRO Top Pick 2011.

Jim Cohoon, Joanne M. Cohoon, and Mary Lou Soffa, Focusing HS Teachers on Attracting Diverse Students in CS, 41st *ASEE/IEEE Frontiers on Education Conference*, October 2011.

Jonathan Misurda, Bruce R. Childers and Mary Lou Soffa, Jazz2: A Flexible and Extensible Framework for Structural Testing in a Java VM, *9th International Conference on the Principles and Practice of Programming in Java*, August 2011.

Wei Le and Mary Lou Soffa, Generating Analyses for Detecting Faults in Path Segments, *ACM International Symposium on Software Testing and Analysis*, July 2011.

Lingjia Tang, Jason Mars, Neil Vachharajani, Robert Hundt, Mary Lou Soffa, The Impact of Memory Subsystem Resource Sharing on Datacenter Applications, *Proceedings of the 37th Annual International Symposium on Computer Architecture (ISCA)*, June, 2011

Lingjia Tang, Jason Mars and Mary Lou Soffa, Contentiousness vs. Sensitivity: Improving Contention Aware Runtime Systems on Multicore Architectures, *ACM SIGPLAN International Workshop on Adaptive Self-Tuning Computing Systems for the Exaflop Era (EXADAPT)*, co-located with PLDI, June 2011

Jason Mars and Mary Lou Soffa, Loaf: A Framework and Infrastructure for Creating Online Adaptive Solutions, *SIGPLAN International Workshop on Adaptive Self-Tuning Computing Systems for the Exaflop Era (EXADAPT)*, co-located with PLDI, June 2011

Wei Le, Jing Yang, Mary Lou Soffa and Kamin Whitehouse, Lazy Preemption to Enable Path- Based Analysis of Interrupt-Driven Code, *2nd International Workshop on Software Engineering for Sensor Network Applications*, May, 2011

Mary Lou Soffa, Kristen Walcott, Jason Mars, Exploiting Hardware Advances for Software Testing and Debugging *Proceedings of the 33nd ACM/IEEE International Conference on Software Engineering (ICSE)* NIER Track, 2011

Jing Yang, Kevin Skadron and Kamin Whitehouse, Feasibility of Dynamic Binary Parallelization, *HotPar* 2011

Tanima Dey, Wei Wang, Jack Davidson, Mary Lou Soffa, Characterizing Multi-threaded Applications based on Shared-Resource Contention, *IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS)*, Austin, Texas, April 2011

Jason Mars, Lingjia Tang and Mary Lou Soffa, Directly Characterizing Cross Core Interference Through Contention Synthesis, *International Conference on High Performance Embedded Architectures and Compilers (HiPEAC)*, Heraklion, Greece, January 2011

Wei Le and Mary Lou Soffa, Path-Based Fault Correlations, *18th Foundations of Software Engineering (FSE)*, Santa Fe, NM, November 2010

Apala Guha, Kim Hazelwood and Mary Lou Soffa, Balancing Memory and Performance through Software Flushing of Software Code Cache, *International Conference on Compilers Architecture and Synthesis for Embedded Systems (CASES)*, Scottsdale, AZ, October 2010

Jason Mars, Neil Vachharajani, Robert Hundt and Mary Lou Soffa, Contention Aware Execution: Online Contention Detection and Response, *ACM/IEEE International Symposium on Code Generation and Optimization (CGO)*, April 2010, 257-265.

Apala Guha, Kim Hazelwood and Mary Lou Soffa, DBT Path Selection for Holistic Memory Efficiency and Performance, *ACM SIGPLAN/SIGOPS International Conference on Virtual Execution Environments (VEE)*, Pittsburgh, PA, March 2010, 145-156.

Min Zhao, Bruce Childers and Mary Lou Soffa, A Framework for Exploring Optimization Properties, *Compiler Conference*, York, United Kingdom, March 2009, 32-47.

Naveen Kumar, Bruce Childers and Mary Lou Soffa, Transparent Debugging of Dynamically Optimized Code, *International Symposium on Code Generation and Optimization (CGO)*, Seattle, Washington, March 2009, 275-286.

Apala Guha, Kim Hazelwood and Mary Lou Soffa, Code Lifetime Based Memory Reduction for Virtual Execution Environments, *Proceedings of the 6th Workshop on Optimizations for DSP and Embedded Systems (ODES)* Boston, Massachusetts, April 2008.

Jason Mars and Mary Lou Soffa, Mats: Multicore Adaptive Trace Selection, *Third Workshop on Software Tools for Multicore Systems (STMCS 2008)*, collocated with Code Generation and Optimization (CGO), April 2008.

Gregory M. Kapfhammer and Mary Lou Soffa, Database-Aware Test Coverage Monitoring, *ACM Software Engineering Conference*, Hyderabad, India, February 2008, 77-86.

Mary Lou Soffa and Evelyn Duesterwald: *Sixth International Symposium on Code Generation and Optimization (CGO 2008)*, April 5-9, 2008, Boston, Massachusetts, 2008

Wei Le and Mary Lou Soffa, Marple: a demand-driven path-sensitive buffer overflow detector, *Proceedings of the 16th ACM SIGSOFT International Symposium on Foundations of Software Engineering*, San Diego, California, November 2008, 272-282.

Mary Lou Soffa, Path Sensitive Analysis for Security Flaws, 11th Systems Engineering Symposium, *(HASE)*, Nanjing, China, 2008, pg. 3.

Adam Smith, Joshua Geiger, Gregory M. Kapfhammer and Mary Lou Soffa, Test Suite Reduction and Prioritization with Call Trees, *Proceedings of the IEE/ACM International Conference on Automated Software Engineering*, Atlanta, Georgia, November, 2007, 539-540.

Gregory M. Kapfhammer and Mary Lou Soffa, Using Coverage Effectiveness to Evaluate Test Suite Prioritizations, *Proceedings of the ACM International Workshop on Empirical Assessment of Software Engineering Languages and Technologies*, Atlanta, Georgia, November 2007

Sara Alspaugh, Kristen R. Walcott, Michael Belanich, Gregory M. Kapfhammer and Mary Lou Soffa, Efficient Time-Aware Prioritization with Knapsack Solvers, *Proceedings of the ACM International Workshop on Empirical Assessment of Software Engineering Languages and Technologies*, Atlanta, Georgia, November 2007.

Nguyet T.M. Nguyen and Mary Lou Soffa, Program Representations for Testing Wireless Sensor Network Applications, Workshop on Domain Specific Approaches to Software Test Automation, in conjunction with the *6th ESEC/FSE Conference*, September 2007, 20-26.

Wei Le and Mary Lou Soffa, Refining Buffer Overflow Detection via Path Sensitive, Demand Driven Analysis, *Program Analysis for Software Tools and Engineering (PASTE)*, San Diego, California, June 14, 2007, 63-68.

Apala Guha, Kim Hazelwood and Mary Lou Soffa, Reducing Exit Stub Memory Consumption in Code Caches, *International Symposium on High Performance Embedded Architectures and Compilers (HiPEAC)*, Ghent, Belgium, January 2007, 87-101.

Apala Guha, Jason Hiser, Naveen Kumar, Jing Yang, Min Zhao, Shukang Zhou, Bruce R. Childers, Jack W. Davidson, Kim M. Hazelwood and Mary Lou Soffa, Virtual Execution Environments: Support and Tools, *Proceedings of the NSF Next Generation Software Program Workshop* held in conjunction with the *International Parallel and Distributed Processing Symposium*, Long Beach, California, USA. March 2007, pages 1-6.

Jing Yang, Mary Lou Soffa, Leo Selavo and Kamin Whitehouse, Clairvoyant: a comprehensive source-level debugger for wireless sensor networks, *The 5th ACM Conference on Embedded Networked Sensor Systems (Sensys)*, Sydney, Australia, November 2007, 189-203.

Jason D. Hiser, Naveen Kumar, Min Zhao, Shukang Zhou, Bruce R. Childers, Jack W. Davidson, and Mary Lou Soffa, *Techniques and Tools for Dynamic Optimization, NSF Next Generation Software Workshop*, collocated with the International Parallel and Distributed Processing Symposium (NSFNGS '06). Rhodes Island, Greece, April 25-29, 2006, 312-320.

Kristen R. Walcott, Mary Lou Soffa, Gregory M. Kapfhammer, and Robert S. Roos, Time-Aware Test Suite Prioritization, *ACM SIGPLAN International Symposium on Software Testing and Analysis*, Portland, Maine, July 2006, 1-12.

Yuqiang Huang, Bruce R. Childers, and Mary Lou Soffa, Catching and Identifying Bugs in Register Allocation, *13th International Static Analysis Symposium*, Seoul, Korea, August 2006, 281-300.

Jing Yang, Shukang Zhou, and Mary Lou Soffa, Dimension: An Instrumentation Tool for Virtual Execution Environments, *Second International Conference on Virtual Execution Environments (VEE '06),* Ottawa, Canada, June 14-16, 2006, 164-174.

Gregory M. Kapfhammer, Mary Lou Soffa and Daniel Mosse, Testing in resource constrained execution environments, *ACM/IEEE International Conference on Automated Software Engineering*, Long Beach, California, November 7-11, 2005, 418-422.

Naveen Kumar, Bruce R. Childers and Mary Lou Soffa, TDB: A Source-Level Debugger for Dynamically Translated Programs, *ACM SIGPLAN/SIGSOFT Sixth Int'l. Symposium on Automated and Analysis-Driven Debugging* Monterey, California, September 19-21, 2005, 123-132.

Naveen Kumar, Bruce R. Childers and Mary Lou Soffa, Low Overhead Program Monitoring and Profiling, *ACM SIGPLAN/SIGSOFT Workshop on Program Analysis for Software Tools and Engineering (PASTE'05)*, Lisbon, Portugal, September 5-6, 2005, 28-34.

Jonathan Misurda, James A. Clause, Juliya L. Reed, P. Gandra, Bruce R. Childers and Mary Lou Soffa, Jazz: A Tool for Demand-Driven Structural Testing, *14th ETAPS International Conference on Compiler Construction (CC'05)*, Edinburgh, Scotland, April 2005, 242-245.

Jonathan Misurda, James A. Clause, Juliya L. Reed, P. Gandra, Bruce R. Childers and Mary Lou Soffa, Demand-Driven Structural Testing with Dynamic Instrumentation, *International Conference on Software Engineering*, St. Louis, May 2005, 156-165.

Min Zhao, Bruce R. Childers and Mary Lou Soffa, A Model-based Framework: An Approach for Profit-driven Optimization, *ACM Int'l. Conference on Code Generation and Optimization (CGO'05)*, San Jose, California, March 2005, 317-327.

Shukang Zhou, Bruce Childers, and Mary Lou Soffa, Planning for Code Buffer Management in Distributed Virtual Execution Environments, *ACM/USENIX Virtual Execution Environments Conference*, Chicago, Illinois, June 2005, 100-109.

Naveen Kumar, Jonathan Misurda, Bruce R. Childers and Mary Lou Soffa, Instrumentation in Software Dynamic Translators for Self-Managed Systems, *ACM SIGSOFT Workshop on Self- Managing Systems (WOSS'04)* during the ACM SIGSOFT Int'l. Symposium on Foundations of Software Engineering, 2004, 90-94

Kevin Scott, Naveen Kumar, Bruce R. Childers, Jack W. Davidson and Mary Lou Soffa, Overhead Reduction Techniques for Software Dynamic Translation, *NSF Next Generation Software Workshop*, collocated with 18th International Parallel and Distributed Processing Symposium (IPDPS âĂŹ04) âĂŞ Workshop 10, April 2004

Sandra Katz, David Allbritton, John Aronis, Christine Wilson and Mary Lou Soffa, *Proceedings of the 6th International Conference on Learning Sciences*, Santa Monica, CA 2004

Gregory M. Kapfhammer and Mary Lou Soffa, A Family of Test Adequacy Criteria for Database-Driven Applications, *ACM SIGSOFT Foundations of Software Engineering Conference,* Sept. 2003, selected as a Distinguished Paper, 98-107.

Min. Zhao, Bruce R. Childers and Mary Lou Soffa, Predicting the Impact of Optimizations for Embedded Systems, *2003 ACM SIGPLAN Conference on Languages, Compilers, and Tools for Embedded Systems*, San Diego, CA, 1-11, 2003.

Atif Memon and Mary Lou Soffa, Regression Testing of GUIs, *ACM SIGSOFT Foundations of Software Engineering Conference* , Sept. 2003, 118-127.

Mauricio L. Pilla, Amarildo T. da Costa, Felipe M. G. Franca, Bruce R. Childers and Mary Lou Soffa, The Limits of Speculative Trace Reuse on Deeply Pipelined Processors, *15th Symposium of Computer Architecture and High Performance Computing (SBAC-PAD03)* , Brazil, 36-45.

Sandra Katz, John Aronis, David Allbritton, Christine Wilson and Mary Lou Soffa, A Study to Identify Predictors of Achievement in an Introductory Computer Science Course, *Proceedings of SIG Computer Personnel Research Conference*, 2003, New York: Association for Computing Machinery, 157-161.

B. Childers, M. L. Soffa, J. Beaver, L. Ber, K. Cammarata, T. Kane, J. Litman, and J. Misurda, SoftTest: A Framework for Software Testing of Java Programs, *ACM SIGPLAN Conf. on Object-Oriented Programming, Systems, Languages, and Applications,* October 27, 2003, 79-83.

Bruce Childers, Jack W. Davidson and Mary Lou Soffa, Continuous Compilation: A New Approach to Aggressive and Adaptive Code Transformation, *Proceedings of the International Parallel and Distributed Processing Symposium (IPDPS'03)*, Nice, 2003, 205.

K. Scott, N. Kumar, S. Verlusamy, B. Childers, J. Davidson and Mary Lou Soffa, Retargetable and Reconfigurable Software Dynamic Translation, *Conference on Code Generation and Optimization*, San Francisco, CA, March 2003, 36-47.

Clara Jaramillo, Rajiv Gupta and Mary Lou Soffa, Debugging and Testing Optimizers through Comparison Checking, *Compiler Optimization Meets Compiler Verification Workshop,* joint with ETAPS, Grenoble, France, April, 2002.

Alessandro Orso, Mary Jean Harrold, David S. Rosenblum, Gregg Rothermel and Mary Lou Soffa, Using Component Metacontent to Support the Regression Testing of Component-Based Software, *International Conference on Software Maintenance*, Florence, Italy, November, 2001, 716-725

Atif Memon, Mary Lou Soffa and Martha E. Pollock, Coverage Criteria for GUI Testing, *8th European Software Engineering Conference and 9th ACM SIGSOFT Symposium on the Foundations of Software Engineering*, Vienna, Austria, Sept. 2001, 256-276.

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Bruce Childers, Jack W. Davidson and Mary Lou Soffa, Continuous Compilation: A New Approach to Aggressive and Adaptive Code Transformation, *Proceedings of the International Parallel and Distributed Processing Symposium (IPDPS'03)*, Nice, 2003, 205.

K. Scott, N. Kumar, S. Verlusamy, B. Childers, J. Davidson and Mary Lou Soffa, Retargetable and Reconfigurable Software Dynamic Translation, *Conference on Code Generation and Optimization*, San Francisco, CA, March 2003, 36-47.

Clara Jaramillo, Rajiv Gupta and Mary Lou Soffa, Debugging and Testing Optimizers through Comparison Checking, *Compiler Optimization Meets Compiler Verification Workshop,* joint with ETAPS, Grenoble, France, April, 2002.

Alessandro Orso, Mary Jean Harrold, David S. Rosenblum, Gregg Rothermel and Mary Lou Soffa, Using Component Metacontent to Support the Regression Testing of Component-Based Software, *International Conference on Software Maintenance*, Florence, Italy, November, 2001, 716-725

Atif Memon, Mary Lou Soffa and Martha E. Pollock, Coverage Criteria for GUI Testing, *8th European Software Engineering Conference and 9th ACM SIGSOFT Symposium on the Foundations of Software Engineering*, Vienna, Austria, Sept. 2001, 256-276.

Tarun Nakra, Bruce R. Childers and Mary Lou Soffa, Width-sensitive Scheduling for Resource Constrained VLIW Processors, *ACM Workshop on Feedback-Directed and Dynamic Optimization (FDDO),* Monterey, December 2000.

Atif M. Memon, Martha E. Pollack and Mary Lou Soffa, Automated Test Oracles for GUIs, *Eighth International Symposium on the Foundations of Software Engineering, (FSE2000)*, San Diego, CA, November 6-10, 2000, 30-39.

Neelam Gupta, Aditya Mathur and Mary Lou Soffa, Generating Test Data for Branch Coverage, *15th IEEE International Conference on Automated Software Engineering (ASE'2000)*, Grenoble, France, September 2000, 219-228.

Clara Jaramillo, Rajiv Gupta and Mary Lou Soffa, FULLDOC: A Full Reporting Debugger for Optimized Code, *International Static Analysis Symposium*, LNCS, Springer Verlag, Santa Barbara, CA, June-July 2000, 240-259.

Atif M. Memon, Martha E. Pollack, and Mary Lou Soffa, A Planning-Based Approach to GUI Testing, *13th International Software/Internet Quality Week*, San Francisco, CA, May 2000.

Atif M. Memon, Martha Pollack and Mary Lou Soffa, Plan Generation for GUI Testing, *Fifth International Conference on Artificial Intelligence Planning and Scheduling*, Brackenridge, Co. April 14-19, 2000, 226-235.

Neelam Gupta, Aditya Mathur and Mary Lou Soffa, UNA Based Iterative Test Data Generation and its Evaluation, *EEE Automated Software Engineering Conference (ASE)*, Cocoa Beach, Fl., October 1999.

Clara Jaramillo, Rajiv Gupta and Mary Lou Soffa, Comparison Checking: An Approach to Avoid Debugging of Optimized Code, *Joint 7th European Software Engineering Conference (ESEC) and the ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE)*, Toulouse, France, September 1999, 268-284.

Atif Memon, Martha Pollack and Mary Lou Soffa, Using a Goal-driven Approach to Generate Test Cases for GUIs, *ACM/IEEE International Conference on Software Engineering (ICSE)* Los Angeles, May 1999, 257-266. (Selected as a best paper).

Rastislav Bodik, Rajiv Gupta and Mary Lou Soffa, Load-Reuse Analysis: Design and Evaluation, *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, Atlanta, Georgia, May 1999, 64-76.

Tarun Nakra, Rajiv Gupta and Mary Lou Soffa, Value Prediction in VLIW Machines, *CM/IEEE 26th International Symposium on Computer Architectures (ISCA),* Atlanta, Georgia, May 1999, 258-269

Tarun Nakra, Rajiv Gupta and Mary Lou Soffa, Global Context-based Value Prediction, *Proceedings Fifth International Symposium on High Performance Computer Architecture (HPCA)*, January 1999, 4-12.

Neelam Gupta, Aditya P. Mathur and Mary Lou Soffa, Automated Test Data Generation Using an Iterative Relaxation Method, *ACM SIGSOFT Foundations of Software Engineering (FSE)*, November 1998, 231-244.

Clara Jaramillo, Rajiv Gupta and Mary Lou Soffa, Capturing the Effects of Code Improving Transformations, *Proceedings of International Conference on Parallel Architectures and Compilation Techniques (PACT)*, October 1998, 118-123.

David A. Berson, Rajiv Gupta and Mary Lou Soffa, Integrated Instruction Scheduling and Register Allocation Techniques, *International Workshop on Languages and Compilers for Parallel Computing (LCPC),* Springer Verlag, Chapel Hill, North Carolina, August 1998, pp. 247-262.

Rastislav Bodik, Rajiv Gupta and Mary Lou Soffa, Complete Removal of Redundant Expressions, *Proceedings of ACM/SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, June 1998, 1-15.

Jodi Tims, Rajiv Gupta and Mary Lou Soffa, Data flow Analysis Driven Dynamic Data Partitioning, *Fourth Workshop on Languages, Compilers, and Run-time Systems for Scalable Computers,* Pittsburgh, Pa. May 1998, 75-91.

Rastislav Bodik, Rajiv Gupta and Mary Lou Soffa, Refining Data Flow Information through Infeasible Path Detection and Tracing, *Proceeding Sixth European Software Engineering Conference and ACM SIG-SOFT Foundations of Software Engineering*, Zurich, LNCS 1301, Springer Verlag, 1997 pages 361-377, 1997.

Rastislav Bodik, Rajiv Gupta and Mary Lou Soffa, Interprocedural Conditional Branch Elimination, *ACM/SIGPLAN 1997 Conference on Programming Languages Design and Implementation (PLDI)*, June 1997, 146-158.

Evelyn Duesterwald, Rajiv Gupta and Mary Lou Soffa, A Demand-Driven Analyzer for Data Flow Testing at the Integration Level, *International Conference on Software Engineering (ICSE)*, Berlin, Germany, March 1996, 575-584.

David A. Berson, Pohua P. Chang, Rajiv Gupta and Mary Lou Soffa, Integrating Program Optimizations and Transformations with the Scheduling of Instruction Level Parallelism, *Ninth Annual Workshop on Languages and Compilers for Parallel Computing*, Santa Jose, California, August 8-10, 1996, 207-221.

Chyi-Ren Dow, Mary Lou Soffa and Shi-Kuo Chang, A Unifying Framework for Undoing Code Transformations, I*nternational Computer Symposium (ICS),* Taiwan, December 1996.

Rajiv Gupta and Mary Lou Soffa, Priority Based Data Flow Testing, *IEEE-CS International Conference on Software Maintenance (ICSM)*, Nice, France, October 1995, 348-257.

Rajiv Gupta and Mary Lou Soffa, Hybrid Slicing: An Approach for Refining Static Slices using Dynamic Information, *ACM SIGSOFT Third Symposium on the Foundations of Software Engineering,* Washington, DC, October 1995, 29-40. (Selected as a best paper)

Evelyn Duesterwald, Rajiv Gupta and Mary Lou Soffa, Interprocedural Data Flow Analysis on Demand, *ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL),* San Francisco, California, January 1995, 37-48.

David A. Berson, Rajiv Gupta and Mary Lou Soffa, GURRR: A Global Unified Resource Requirements Representation, *ACM SIGPLAN Workshop on Intermediate Representations,* San Francisco, California, January 1995, 23-34.

Patricia P. Pineo and Mary Lou Soffa, A Practical Approach to Single Assignment Code, *Conference on Parallel Architectures and Compiler Technologies (PACT '95)* Greece, July 1995, 147-158.

Chyi-Ren Dow, Mary Lou Soffa and S.K. Chang, An Efficient Technique to Remove Transformations, IEEE ICPADS 94: 1994 *International Conference on Parallel and Distributed Systems*, Hsinchu, Taiwan, December 1994, 392-397

Chyi-Ren Dow, Shi-Kuo Chang and Mary Lou Soffa, An Overview of the PIVOT Environment for Program Restructuring, *IEEE 1994 International Computer Symposium*, Hsinchu, Taiwan, December 1994.

Rajiv Gupta and Mary Lou Soffa, A Framework for Partial Data Flow Analysis, *IEEE-CS International Conference on Software Maintenance (ICSM)*, Victoria, British Columbia, September 1994, 4-13.

David A. Berson, Rajiv Gupta and Mary Lou Soffa, Resource Spackling: A Framework for Integrating Register Allocation in Local and Global Schedulers, *International Conference on Parallel Architectures and Compilation Techniques*, IFIP Transactions A-50, Montreal, Canada, August 1994, 135-146.

Chyi-Ren Dow, Mary Lou Soffa, and S.K. Chang, Undoing Code Transformations in an Independent Order, *International Conference on Parallel Processing (ICPP),* Chicago, Illinois, August 1994, 108-115.

Patricia Prather Pineo and Mary Lou Soffa, A Practical Approach to the Symbolic Debugging of Parallelized Code, *International Conference on Compiler Construction (CC)*, Edinburgh, Scotland, April 1994, 339-356.

Evelyn Duesterwald, Rajiv Gupta and Mary Lou Soffa, Reducing the Cost of Data Flow Analysis By Congruence Partitioning, *International Conference on Compiler Construction (CC),* Edinburgh, Scotland, April 1994, 356-373.

Chyi-Ren Dow, Shi-Kuo Chang and Mary Lou Soffa, Program Visualization for Parallelized Code with the Aid of Visual Transformation Specifications, *Software Automation for Productivity Improvement Series on Software Engineering and Knowledge Engineering*, 1994.

Lori Pollock, Mary Bivens and Mary Lou Soffa, Debugging Optimized Code Via Tailoring, *ISSTA,* Seattle, Washington, August 1994.

Debbie Whitfield and Mary Lou Soffa, Investigating Properties of Code Transformations, *International Conference on Parallel Processing*, St. Charles, Illinois, August 1993, 156-160.

Evelyn Duesterwald, Rajiv Gupta and Mary Lou Soffa, A Practical Data Flow Framework for Array Reference Analysis and its Application in Optimizations, *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, Albuquerque, New Mexico, June 1993, 68-77.

David A. Berson, Rajiv Gupta and Mary Lou Soffa, URSA: A Unified ReSource Allocator for Registers and Functional Units in VLIW Architectures, *Conference on Architectures and Compilation Techniques for Fine and Medium Grain Parallelism*, IFP Transactions A-23, Orlando, Florida, January 1993, 243-254.

Chyi-Ren Dow, Shi-Kuo Chang and Mary Lou Soffa, A Software System for the Visualization of Parallelizing Programs, *The International Computer Symposium*, Taiwan, December 1992, 768-775.

Brian A. Malloy, Rajiv Gupta and Mary Lou Soffa, A Shape Matching Approach for Scheduling Fine-Grained Parallelism, *25th Annual ACM/IEEE International Symposium on Microarchitecture (MICRO)*, Portland, Oregon, December 1992, 264-267.

Rajiv Gupta, Mary Jean Harrold and Mary Lou Soffa, An Approach to Regression Testing using Slicing, *IEEE-CS International Conference on Software Maintenance*, Orlando, Florida, November 1992, 299-308.

Chyi-Ren Dow, Shi-Kuo Chang and Mary Lou Soffa, A Visualization System for Parallelizing Programs, *ACM International Conference on Supercomputing '92*, Minneapolis, November 1992, 194-203.

Tia Watts, Mary Lou Soffa and Rajiv Gupta, Techniques for Integrating Parallelizing Transformations and Compiler Based Scheduling Methods, *ACM/IEEE International Conference on Supercomputing*, Minneapolis, Minnesota, November 1992, 830-839.

Evelyn Duesterwald, Rajiv Gupta and Mary Lou Soffa, Register Pipelining: An Integrated Approach to Register Allocation for Scalar and Subscripted Variables, *International Conference on Compiler Construction (CC)* LNCS 641 Springer Verlag, Paderborn, Germany, October 1992, 192-206.

Rajiv Gupta and Mary Lou Soffa, Automatic Generation of a Compact Test Suite, The Twelfth IFIP World Computer Congress, Vol. I, Madrid, Spain, September 1992, 237-243.

Evelyn Duesterwald, Rajiv Gupta and Mary Lou Soffa, Distributed Slicing and Partial Re- execution for Distributed Programs, *Fifth Workshop on Languages and Compilers for Parallel Computing*, LNCS 757 Springer Verlag, Yale University, New Haven, Connecticut, August 1992, 497-511.

Brian Malloy, and Errol L. Lloyd and Mary Lou Soffa, A Fine Grained Approach to Scheduling Asynchronous Multiprocessors, *4th International Conference on Computing and Information*, Toronto, Canada, May 1992, 139-142.

Chyi-Ren Dow, Shi-Kuo Chang and Mary Lou Soffa, A Visual Optimization Specification Language, *Advanced Visual Interfaces Workshop*, Rome, Italy, World Scientific Series in Computer Science, Vol. 36, World Scientific Press, May 1992, 289-303.

Shan Fan Liu and Mary Lou Soffa, Parallel Task Assignment by Graph Partitioning, *PARLE* Paris, France, June 1992, 965-966.

Robert Kramer, Rajiv Gupta and Mary Lou Soffa, The Combining DAG: A Technique for Parallel Data Flow Analysis, *The Sixth International Parallel Processing Symposium (IPPS)*, Beverly Hills, California, March 1992, 652-655.

Evelyn Duesterwald, Rajiv Gupta and Mary Lou Soffa, Vigorous Data Flow Testing through Output Influences, *Second Irvine Software Symposium*, University of California, Irvine, California, March 1992, 131-145.

Patricia Prather Pineo and Mary Lou Soffa, The Symbolic Debugging of Code Transformed for Parallel Execution, *ACM/SIGPLAN Debugging Workshop* Albuquerque, New Mexico, November 1991, 23-29.

Evelyn Duesterwald and Mary Lou Soffa, Concurrency Analysis in the Presence of Procedures using a Data Flow Framework, *ACM/IEEE Proceedings of Symposium on Testing, Analysis, and Verification*, Victoria, Canada, October 1991, 138-148.

Ravi Sharma and Mary Lou Soffa, Parallel Generational Garbage Collection, *Object-Oriented Programming Systems, Languages, and Applications (OOPSLA)*, October 1991, 16-32.

Deborah Whitfield and Mary Lou Soffa, Automatic Generation of Global Optimizations, *ACM SIGPLAN '91 Conference on Programming Language Design and Implementation*, Toronto, Canada, June 1991, 120-129.

Patricia Prather Pineo and Mary Lou Soffa, Debugging Parallelized Code Using Code Liberation Technique, *ACM SIGPLAN Workshop on Parallel and Distributed Debugging* , Santa Cruz, California, pp. 108-119, May, 1991.

Ben Heggy and Mary Lou Soffa, Architectural Support for Register Allocation in the Presence of Aliasing, *ACM International Conference on Supercomputing* , pp. 720-729, November 1990, 730-739.

Mary Jean Harrold, Rajiv Gupta and Mary Lou Soffa, A Methodology for Controlling the Size of a Test Suite, *IEEE-CS International Conference on Software Maintenance,* San Diego, California, November 1990, 302-310.

Mary Jean Harrold, Rajiv Gupta and Mary Lou Soffa, TBM: A Testbed Management Tool, *Seventh International Conference on Testing Computer Software*, San Francisco, California, June 1990, 47-56.

Rajiv Gupta, Lori L. Pollock and Mary Lou Soffa, Parallelizing Data Flow Analysis, *ACM Workshop on Parallel Compilation*, Kingston, Ontario, May 1990.

Deborah Whitfield and Mary Lou Soffa, An Approach to Ordering Optimizing Transformations, *Second ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP),* March 1990, 137-146.

Mary Jean Harrold and Mary Lou Soffa, Computation of Interprocedural Definition and Use Dependencies, *IEEE 1990 International Conference on Computer Languages,* March 1990, 297-306.

Lori Pollock and Mary Lou Soffa, Incremental Global Optimization for Faster Recompilations, *IEEE 1990 International Conference on Computer Languages*, New Orleans, La., March 1990, 281-290. (Selected as a best paper.)

Mary Jean Harrold and Mary Lou Soffa, Interprocedural Data Flow Testing, *ACM Software Testing, Analysis and Verification Symposium,* Key West, Florida, December 1989, 158-167.

Rajiv Gupta, Mary Lou Soffa, and Tim Steele, Register Allocation via Clique Separators, *ACM SIGPLAN'89 Conference on Programming Language Design and Implementation (PLDI)*, Portland, Oregon, June 1989, 264-275.

Mary Jean Harrold and Mary Lou Soffa, An Incremental Data Flow Testing Tool, *International Conference on Testing Computer Software*, May 1989.

M. P. Bivens and M. L. Soffa, Reuse of Compiler Analysis in a Programming Environment, A*CM 1989 Computer Science Conference* February 1989, 368-373.

Mary Jean Harrold and Mary Lou Soffa, An Incremental Approach to Unit Testing, *IEEE/ACM Conference on Software Maintenance (ICSM)*, October 1988, 362-367.

Rajiv Gupta and Mary Lou Soffa, Compile-time Techniques for Efficient Utilization of Parallel Memories, *ACM SIGPLAN Symposium on Parallel Programming: Experience with Applications, Languages and Systems*, New Haven, July 1988, 235-246.

Rajiv Gupta and Mary Lou Soffa, A Matching Approach to Utilizing Fine-Grained Parallelism, *Twenty-first Annual Hawaii International Conference on System Sciences* Vol. I, Kona, Hawaii, January 1988, 148-156.

Lori Pollock and Mary Lou Soffa, High-Level Debugging with the Aid of an Incremental Optimizers, *Proceedings of Hawaii International Conference on System Sciences*, January 1988, 524-532.

Rajiv Gupta and Mary Lou Soffa, A Reconfigurable LIW Architecture, *International Conference on Parallel Processing (ICPP)*, St. Charles, Illinois, August 1987, 893-900.

M. P. Bivens and Mary Lou Soffa, Incremental Generation of High-Quality Code, *ACM National Computer Conference*, Chicago, Illinois, June 1987, 189-197.

Rajiv Gupta and Mary Lou Soffa, Region Scheduling, *The Second ACM International Conference on Supercomputing* , Vol. III, Santa Clara, May 1987, 141-148.

Brian Malloy and Mary Lou Soffa, An Efficient Implementation of SimCal, *International Conference on Modeling and Simulation* , Pittsburgh, Pennsylvania, April 1987.

Rajiv Gupta and Mary Lou Soffa, SHAPE: A Highly Adaptable and Parallel System, *ACM Computer Science Conference*, Cincinnati, Ohio, February 1986, 107-114.

Brian Malloy and Mary Lou Soffa, SimCal: The Merger of Simula and Pascal, *IEEE Winter Simulation Conference*, February 1986, 397-403.

Lori Pollock and Mary Lou Soffa, Incromint - An INCRemental Optimizer for Machine INdependent Transformations, *ACM SoftFair II,* San Francisco, California, December 1985, 162-171.

Rajiv Gupta and Mary Lou Soffa, The Efficiency of Storage Management Schemes for Ada Programs, *ACM/SIGAda Ada International Conference*, Paris, May 1985, 164-172. Also published in Sigplan Notices, Vol. 20, No. 11, November 1985, 30-38.

Lori L. Pollock and Mary Lou Soffa, Incremental Compilation of Locally Optimized Code, *ACM SIGPLAN Principles of Programming Languages (POPL) Symposium*, January 1985, 152-164.

hing-Chy Wang, Errol L. Lloyd and Mary Lou Soffa, Feedback vertex sets in polynomial time - A new class, *Twenty-Second Annual Allerton Conference*, Illinois, October 1984, 291-298.

John P. Kearns and Mary Lou Soffa, A Laboratory for Experimental Work in the Efficient Implementation of Concurrent High Level Languages, *Workshop on Real-Time Operating Systems*, Niagara Falls, New York, August 1983, 46-50.

L. Cheng, Mary Lou Soffa and Y.H. Yang, Simulation of an I/O Driven Requirements Language, *6th IEEE COMPSAC*, September 1982, 213-218.

John P. Kearns and Mary Lou Soffa, Performance Comparison of Copy-less Coroutine Implementations, *5th IEEE COMPSAC*, 1981, 213-218.

S. Robinson and Mary Lou Soffa, An Instructional Tool for Beginning Programming Students, *Eleventh SIGCSE Technical Symposium On Computer Science Education*, 12(1), February 1980.

M. Lemon, Mary Lou Soffa and G. Lindstrom, Control Separation in Programming Languages,*1977 Annual ACM Conference,* Washington, D.C., 1977.

Grants

Pan University Institute for Cyber Innovation and Society, with Jack Davidson, Deborah Johnson, Cody Fleming and Alf Weaver, UVA Provost, 2019

UVA Cybersecurity Initative: Cyber Technology for the Benefit of Society, with Jack Davidson, Deborah Johnson, Cody Fleming, and Alf Weaver, UVA Dean, 2018

SEAS Research Innovation Award, Program Analysis, Verification, and Testing of "Safe" Rust Software on Embedded Systems, Mary Lou Soffa and Brad Campbell, 2018

National Science Foundation, SHF: Cloud Mentoring: Guiding Cloud Service for Cost Performance through Testing and Recommendation, PI, 08/01/2016-07/31/2020

Google Grant, PI, Adaptive Scheduling in the Heterogeneous Datacenter, 2012

National Science Foundation, PI, Scaling the Implicitly Parallel Programming Model with Lifelong Thread Extraction and Dynamic Adaptation, PI, May, 2010 - April, 2014.

National Science Foundation, Collaborative Research: REEact: A Robust Execution Environment for Fragile Multicore Systems, PI, Sept., 2008-August, 2012

National Science Foundation, Outreach and Pedagogy to Increase Undergraduate Diversity at Engineering Schools, PI, May, 2008 - April 2011

National Science Foundation, Virtual Execution Environments for Heterogeneous Embedded Devices, (Co-PI) Sept. 2007-Aug. 1010

Google Grant, Contention-Aware Online Adaptation, PI, 2010

National Science Foundation, Preparing and Graduating Engineering Scholars, PI, Oct. 2006-20011

Microsoft, Testing for Security, PI, 2004-2006

National Science Foundation, Adapting Program Code Continuously and Adaptatively, (Co-P), September 2003-March, 2006

National Science Foundation, Advance: From Associate Professor to Full with Distinguished Professors Leading the Way, (PI), September 2003-March 2006

CRAW Graduate Student Cohort, Microsoft and ACM, (PI), January 2004-January 2006

National Science Foundation, Continuous Compilation: A New Approach to Aggressive and Adaptive Code Transformations, PI, September 2002-March, 2004,

IBM Eclipse Project, SoftTest: An Eclipse Plug-in for Scalable and Flexible Software Testing of Java Programs,PI, November, 2002

National Science Foundation, Group Travel Grant for Faculty from Minority Institutions to Attend FSE-10, PI, September 2002-September 2003

National Science Foundation, Learning Behaviors and Background Characteristics that Promote Retention of Women and Minorities in Undergraduate Computer Science Programs, (Co-PI), September 2000-December 2003

Commonwealth of Pennsylvania, Link to Learn âĂŞ Increasing the participation of women and minorities in computer science, PI, April 2000-March 2002

National Science Foundation, Presidential Award for Mentoring, PI, September 1999-August, 2001

National Science Foundation, A Framework for Path and Resource Sensitive Optimizations, Grant CCR-980859, (Co-PI), September 1998-August, 2002

National Science Foundation, Experimental Software Systems: Experimental Evaluation of Scalable Optimization Techniques, Grant EIA-9806525, PI, October 1998-August 2002

Hewlett Packard Laboratories, Palo Alto, California, Optimizations Techniques for Superscalar/VLIW Architectures, PI, January 1996-December 1998

Hewlett Packard Laboratories, Palo Alto, California, Debugging of Optimized Code, (Co-PI), January 1996-December 1998

National Science Foundation, Demand Driven Computation of Partial Data Flow and its Application in Software Engineering, Grant CCR-9402226, PI, September 1995-May, 1999

National Science Foundation, Grant for Faculty at Minority and Women's Colleges and Universities, PI , February 1994-August 1995,

National Science Foundation, Unifying Framework for Parallelizing Transformations, PI, July 1991-December 1994

National Science Foundation, A Unifying Framework for Parallelization Transformations, PI, July 1991 - June, 1994

National Science Foundation, Fine and Coarse Grain Incremental Compilation of Optimized Code, PI, May 1988-January 1991

National Science Foundation, Research Instrumentation - Hypercube, (Co-PI), January 1990-December 1990

National Science Foundation Professorship for Women, Incremental Code Optimization and Generation, PI, University of California, Berkeley, January 1987-December 1987

National Science Foundation,Implementation of Concurrency, PI, May 1982-June 1987

National Science Foundation, Control Implementation in Programming Language, PI< September 1979-February 1984

National Science Foundation, Computer Science and Computer Engineering Research Equipment, 1982, (Co-PI)

National Science Foundation, Computer Science Department Research Equipment, 1979

National Science Foundation, Control Implementation in Programming Languages, Sept. 1979-Aug, 1982

Ph.D. Students

Adviser: Current

　Nora Evans, expected graduation, 2021 (Co-advised with Sebastian Elbaum)

　Swaroopla Dola, expected graduation, 2021 (Co-advised with Matt Dwyer)

Adviser: Graduated

Wei Wang, Addressing Professor Over-Provisioning on Large Scale Multi-Core Platforms, 2015, Assistant Professor, U. of Texas at San Antonio

Tanima Dey, ReSense: A Unified Framework for Improving Performance and Reliability in Multicore Architectures, 2013, Research Scientist, Intel

Jing Yang, Trace-Based Dynamic Binary Parallelization, August 2012, Research Scientist, Citadel Global Multistrategy Hedge Fund, Inc.

Kristen Walcott-Justice, Testing in a Resource-Constrained Environment, 2012, Assistant Professor, University of Colorado at Colorado Springs

Lingjia Tang, Mitigating Resource Contention in Warehouse-Scale Computers, 2012, Assistant Professor, University of Michigan

Jason Mars, Rethinking the Architecture of Warehouse-Scale Computers, 2012, Assistant Professor, University of Michigan

Wei Le, Towards A Practical, Path-Based Framework for Detecting and Diagnosing Faults, 2010, Assistant Professor, Iowa State University.

Apala Guha, Memory Optimization of Dynamic Binary Translators for Embedded Systems, August 2010, Intel, Santa Clara

Greg Kapfhammer, Testing Applications Using Databases, August 2008, Professor, Allegheny College

Naveen Kumar, Debugging Adaptive Code, August 2008

Min Zhao, Profit Driven Optimization, August 2007, HP Labs

Atif Memon, A Framework for Testing Graphical User Interfaces, July 2001, Professor, University of Maryland.

Tarun Nakra, A Framework for Value Prediction in VLIW, June 2001, Research Scientist, IBM Research

Clara Jaramillo, Source Level Debugging Techniques and Tools of Optimized Code, August 2000; Assistant Professor, Chatham College (first job)

Rastislav Bodik, Code Optimizations for Fine-Grained Architectures, December 1999, Recipient of 2000 SIGPLAN Dissertation Award, Professor, University of Washington

Neelam Gupta: Automated Test Data Generation using Relaxation Methods, August 1999, Assistant Professor University of Arizona (first job)

Jodi Tims, Automatic Generation of Data Distributions for Distributed Memory Machines, August 1998, Department Chair, St. Francis College

Tia Watts, Integrating Parallelizing Transformations and Compiler-based Scheduling Methods, December 1997, Associate Professor, Indiana University of Pennsylvania

David Berson, Integrating Instruction Scheduling, Register Allocation, and Program Transformations for Fine-Grained Architectures, November 1996, Senior Scientist, Motorola/Starcore

Evelyn Duesterwald, A Demand Driven Approach for Efficient Interprocedural Data Flow Analysis, May 1996, Research Scientist, IBM T.J. Watson Research Center

Chy-Ren Dow, A Visualization System for Transformed Parallelized Programs, August 1994, Associate Professor, Feng-Chia University, Taiwan

Pat Pineo, Value Tracking in Code Transformed for Parallelism, April 1993, Professor, Edinboro University, Pennsylvania

Deborah Whitfield, A Unifying Framework for Optimizing Transformations, August 1991, Professor, Slippery Rock College

Brian Malloy, A Fine-Grained Approach to Scheduling Asynchronous Execution on Multiprocessors, April, 1991 Associate Professor, Clemson University

Ravi Sharma, Data Partitioning: An Approach to Parallel Storage Reclamation, 1990, ATT

Mary Jean Harrold, An Approach to Incremental Testing, 1988, Professor, Georgia Tech (deceased)

Mary Bivens, Generation of High-Quality Target Code, August 1987, Professor, Allegheny College

Rajiv Gupta, Design of a Highly Parallel System, 1987, Professor, University of California, Riverside

Lori Pollock, An Approach to Incremental Compilation of Optimized Code, April 1986, Chaired Professor, University of Delaware

George Logothetis, On the Automatic Generation of Error-Repairing LL- and LR-based parsers, April 1983, ATT

Ching-Chy Wang, An Axiomatic Approach to Control Description and Implementation, August 1983, CEO, Leverage Design Acceleration Corporation

Fernando Lafora-Garcia, The Design and Implementation of Debugging Systems for Languages with Advanced Control Structures, August 1982, DEC Corporation, Spain

External Ph.D. Committee member

Lili Wei, Hong Kong University of Science, dissertation committee,2020

Peng Liu, Hong Kong University, 2014

Manos Renieris, Brown University, 2006

David Lacey, Oxford University, 2003

Bruno Blanchet, Ecole Polytechnique, Paris France, 2000

Nahid Shahmehri, University of Linkoping, Sweden, 1991, first woman PH.D. in Sweden

M.S. students

Adviser to over 100 M.S. students

Professional Activities

Editorial Boards

ACM Transactions on Software Engineering Methodology, 2003-2009

Journal of Computer Languages, 1987-2008

South African Journal of Computing, 1996-2014

Journal of Empirical Software Engineering, 2003-2015

Journal of Software Tools and Technology Transfer, Springer, 1998-2001

International Journal of Parallel Programming, 1995-2003

ACM Transactions on Programming Languages and Systems, 1993-2001

IEEE Transactions on Software Engineering, 1994-2000

Boards and Advisory Committees

CRA Graduate Cohort for Minorities and People with Disabilities, Founder, 2017

UVA Charge (Advance), 2011-2017

ACM Council, 2008 to 2016 (elected) Member-at-Large

ACM Council, 2004 to 2008 (elected) Member-at-Large

ACM Council, 2000 to 2008 (elected) Member-at-Large

ACM Publications Board, 2005 to 2018

Chair, ACM Publications Journal Assessment and Evaluation, 2013-2017

Swedish Research Council Evaluation Board, 2016

Virginia Tech CS Advisory Board, 2006

CMU School of Computer Science Advisory Board, 2005

Computing Research Association (CRA) Board of Directors, Vice President elected by CS E Department Chairs of Ph.D. granting institutions, 1997-2001

Computing Research Association (CRA) Board of Directors, member, elected by CS E Department Chairs of Ph.D. granting institutions, 1996 -2006

Swedish Research Council, 2000-2005

NSF Advance Project, Georgia Tech, 2002-2006

Steering Committees

International Symposium on Code Generation and Optimizations, 2020

CRA Graduate Cohort for Underrepresented Minorities and Disabled Students

Conference on Architectural Support for Programming Languages and Operating Systems, 2009 to 2012

IEEE/IFIPS International Conference on Parallel Architectures and Compilation Techniques (PACT), 2001-2003

CM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), 1998- 2008

ACM SIGSOFT/SIGPLAN Program Analysis for Software Tools and Engineering (PASTE), 1998-2005

ACM/SIGPLAN Programming Languages Design and Implementation Conference (PLDI), 2001-2005

Conference/Program Chair

International Symposium on Code Generation and Optimizations, 2021, Program Co-chair

Conference Chair, Conference on Architectural Support for Programming Languages and Operating Systems, Washington, DC 2009

Conference Chair for IEEE/ACM Code Generation and Optimizations, Boston, 2008

Chair of CRA Graduate Cohort Workshop - 2004

Co-Chair of CRA Workshop for New Chairs, Snowbird Conference, 2006

Program Co-Chair, IEEE/ACM SIGSOFT International Conference on Software Engineering (ICSE), Shanghai, China, 2006

Chair, Emerging Technologies: Can Optimization Technology Meet the Demands? Dagstuhl Workshop, 2003

Chair, Doctoral Workshop, IEEE/ACM SIGSOFT International Conference on Software Engineering, 2001 and 2003

Conference Chair, ACM SIGSOFT Foundations of Software Engineering Conference (FSE) Sept. 2002

Program Chair, ACM/SIGPLAN Programming Languages Design and Implementation Conference (PLDI), June 2001

Program Chair, IEEE/IFIPS International Conference on Parallel Architectures and Compilation Techniques (PACT), October 2000

Chair, Recruitment and Retention of Women and Minorities Panel, CRA Snowbird Conference, July 2000

Chair, Mentoring Senior Faculty for Career Options Panel, CRA Workshop on Careers for Women in Computer Science and Engineering, May 1999

Conference Chair, ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), March 1998

Conference Co-Chair, ACM SIGPLAN Programming Languages Design and Implementation, June 1994

Program Committees

European Symposium on Software Engineering and Foundations of Software Engineering, 2020

International Symposium on Computer Architecture, External Program Committee, 2019

International Conference on Software Testing, program committee member, 2018

International Symposium on Microarchitecture, 2017

SIGPLAN/SIGOPS International Conference on Virtual Execution Environments, 2016

SIGPLAN Conference on Code Generation and Optimization, 2015

ACM/IEEE Super Computing Conference, 2014

Foundations of Software Engineering, 2014

2014 Regression Testing Workshop, 2012

ACM Foundations of Software Engineering, 2012

Parallel Architectures and Compilation Techniques, 2011

Parallel Architectures and Compilation Techniques, 2012

SIGPLAN Code Generation and Optimization, 2011

Workshop on Software Engineering for Sensor Network Applications, 2010

Static Analysis Symposium, 2010

ACM SIGPLAN Programming Language Design and Implementation, 2009

IEEE/ACM SIGSOFT International Conference on Software Engineering (ICSE), 2009

The 2007 International Conference for High Performance Computing and Communications (SC07), Reno, Nevada, 2006

Sixth International Conference on Aspect-Oriented Software Development, Vancouver, Canada, 2007
Virtual Execution Environments, San Diego, 2007

Sixth International Symposium on Automated and Analysis-Driven Debugging (AADEBUG 2005) Virtual Execution Environments, 2005

IEEE TCSE/ACM SIGSOFT International Conference on Software Engineering (ICSE), 2005

ACM SIGARCH/SIGOPS/SIGPLAN, International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2004

Static Analysis Symposium (SAS), Verona, Italy, May 2004

Second Technology Exchange Workshop, held with ETAPS 2004

Value-Prediction and Value-Based Optimization Workshop, held with ASPLOS 2004

Principles of Programming Languages (POPL), 2004

IEEE TCSE/ACM SIGSOFT International Conference on Software Engineering (ICSE), 2004

ACM SIGPLAN, Conference on Languages, Compilers and Tools for Embedded Systems, LCTES, 2003
Static Analysis Symposium (SAS), San Diego, California, 2003

Compiler Optimization meets Compiler Verification (COCV), ETAPS, 2003

ACM SIGPLAN International Symposium on Code Generation and Optimization (CGO), 2003

IEEE/IFIPS International Conference on Parallel Architectures and Compilation Techniques (PACT), October 2002

Second Workshop on Compilers and Operating Systems for Low Power (COLP01), 2001 ACM SIGPLAN Conference on Programming Languages Design and Implementation (PLDI), June 2001

Analysis Symposium (SAS), September 2001

IEEE TCSE/ACM SIGSOFT International Conference on Software Engineering May 2001

ACM SIGSOFT International Conference on Foundation of Software Engineering (FSE), November 2000

ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), August 2000

Static Analysis Symposium (SAS'99), September 1999

IEEE/IFIPS International Conference on Parallel Architectures and Compilation Techniques (PACT), October 1999

Static Analysis Symposium (SAS'98), September 1998

EEE International Conference on Parallel and Distributed Computing and Systems (PDCS'98), October 1998

Grace Hopper Conference, September 1997

ACM Architectural Support for Programming Languages and Operating Systems (ASPLOS), 1996

IEEE International Conference on Distributed Computing Systems, 1996

IEEE/IFIPS Fourth International Conference on Parallel Architectures and Compilation Techniques (PACT'96), 1996

IEEE International Symposium on Microarchitectures (MICRO), 1995

IEEE/ACM SIGSOFT International Conference on Software Engineering, 1994

International Workshop on Automated and Algorithmic Debugging, 1993, 1994

Architectural Support for Programming Languages and Operating Systems, 1994

ACM SIGARCH/SIGOPS/SIGPLAN, Architectural Support for Programming Languages and Operating Systems (ASPLOS), 1992

ACM SIGPLAN/SIGACT Symposium on Principles of Programming Languages (POPL), 1992

Member/Officer/Chair

Co-Chair, New Faculty Symposium, ICSE 2020

Student Research Committee, ICSE, 2019

ICSE 2018 Doctoral Symposium, Speaker, 2018

ISSTA 2017 Doctoral Symposium, committee member, 2017

Computer Research Association Committee on Education, 2013 âĂŞ 2015

ACM Council, 2008-20016

NCWIT Aspirations in Computing, 2013-2015 Delegation for Vietnam Foundation to serve on panel in VietNam.

ACM Publications Board, 2006 âĂŞ

Computer Research Association Board on Status of Women, Co-chair 1999-2002

Computer Research Association (CRA) Board on Status of Women, 1997-2015; 2016-present

Computer Research Association Board member 1996-2006

Computer Research Association Committee on Government Affairs, 1998-2000

ACM SIG Board, Council Representative, 2000-2002

ACM SIG Board, Member-at-Large, 1998-2000

ACM/SIGPLAN Chair, 1997-1999

ACM/SIGPLAN Executive Committee, 1991-2001

ACM/SIGPLAN Vice Chair for Conferences, 1995-1997

ACM/SIGPLAN Treasurer, 1991-1995

ACM/SIGPLAN Professional Activities Committee (PAC), 1993-1995

ACM/SIGSOFT Member-at-Large, 1993-1997

Panel member in CRA Workshop for Women's Careers in Computer Science and Engineering, 1996

Expert adviser for faculty position, University of Linkoping, Sweden, 1997-98

OOPSLA Doctoral Symposium Committee, 1996

Advisory Committee, Department of Computer Science, University of Virginia, 1993- 1995 D

Distinguished Visitor Program, University of Montana, April 1993

Member: ACM, ACM/SIGPLAN, ACM/SIGSOFT, IEEE, IEEE Computer Society

Consulting

Zymark

Corporation Mellon Institute - Carnegie Mellon University Bell Laboratories

Westinghouse Airbrake Company

Westinghouse Electric Corporation

University/School/Department Activities, Selected

University of Virginia

SEAS P & T Committee, 2016, 2017, 2019

SEAS P & T Committee, Chair, 2018

Chair, CS Peer Review Committee, 2017, 2018, 2019

CS Peer Review Committee, 2015-2016, 2020

SEAS Research Advisory Committee Search Committee, 2016

Stephenson Chair in Data Science, 2016

SEAS Restructure P & T Policy, 2015

Director UVA Academic Search Portal, Charge/NSF Advance Program, 2012-2017

Provost Promotion and Tenure Committee, 2013-2106

Search Committee, SEAS Associate Dean for Research and Graduate Programs, 2014

Search Committee, SEAS Associate Dean for Development, 2010

Co-founder of BACS Committee, 2009, with Dave Evans

CS Diversity Committee Chair, 2012- present

CS Undergraduate Committee, 2013- 2016

Information Technology, 2005-2008

University of Pittsburgh

Chancellors Committee on Diversity, 2000-2004

Faculty Sponsor and helped organize: Organization of Women in Science (OWIS), 1997-2004

University of Pittsburgh Board of TrusteeâĂŹs Committee on Diversity, 2001-2003

Member of 3 team internal review committee of the Department of Biological Sciences, 1997

Member, Provost Committee on Sexual Harassment, 1995-1998

Member, Provost Committee on Internet, 1995-2000

Chair, Search Committee for Provost, 1993-94

University Research Council, 1991-1996

University Council on Graduate Studies, 1991-1996

ProvostĂŹs Subcommittee for the Evaluation of Academic Programs (SEAP), 1991-1996

Conference for Women Graduate Students, workshop leader, November, 1990

ProvostĂŹs Advisory Committee for Undergraduate Programs, 1990-1991

ProvostĂŹs Advisory Committee for Women's Concerns, 1989-1991

College of Arts and Science Committee on Quantitative and Formal Reasoning, 1989-1991

Provost Development Fund, reviewer, 1989, 1995

Affirmative Action Committee, 1988-1990

Conference for Women Graduate Students, workshop leader, October 1988 FAS Tenure Council, 1985-1989

Member, Department of Electrical Engineering Chair Search Committee, 1985 Computer Center Executive Committee, 1977-1984

Computer Science and Engineering, NSF Sponsored Conference, U. of Pittsburgh, June 1981: Workshop Leader in 2 sessions Careers for Women in Computers, Engineering and Science,NSF Sponsored Conference, University of Pittsburgh, June 1982: Workshop Leader

Diversity Activities

Founder, Computing Research Association Graduate Cohort for Underrepresented Minorities and Disabled, 2020

UVA CS Diversity Committee Chair, 2012-2018

NCWIT Aspirations in Computing Board, 2013-2015

Co-founder, Computing Research Association Graduate Cohort for Women, 2010

Co-founder, Computing Research Association Cohort for Associate Professors, 2010

Computer Research Association Board on Status of Women, Co-chair 1999-2002

Computer Research Association (CRA) Board on Status of Women, 1997-2015; 2016-present

Panel member in CRA Workshop for Women's Careers in Computer Science and Engineering, 1996 item UVA CS Diversity Committee Chair, 2012- present

U of Pittsburgh Chancellor Committee on Diversity, 2000-2004

U. of Pittsburgh Faculty Sponsor and helped organize: Organization of Women in Science, 1997-2004

University of Pittsburgh Board of Trustee Committee on Diversity, 2001-2003

University of Pittsburgh Conference for Women Graduate Students, workshop leader, November, 1990

Teaching

Graduate Courses

Program Analysis and Testing

Computer Science Perspectives

Compilers, design, implementation and optimization

Concurrency in Software Software Testing

Advanced Program Analysis Compiler Design

Advanced Compiler Design Compiling Techniques for Parallel Systems Seminar on Programming Languages

Run-time Systems

Seminar on Programming Languages Control Structures

Undergraduate Courses

Programming Languages for Web applications

Software Testing

Principles and Practice: Compilers

Design and Implementation Programming Languages for Web Applications

Programming Languages for the Web Survey of Programming Languages

Computer Organization

Introduction to Computer Programming Structure and Design of Programming Languages

Introduction to Compiler Design

Operating Systems

Introduction to Information Structure