CURRICULUM VITAE

MARY LOU SOFFA

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University of Pittsburgh
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RESEARCH INTERESTS

Optimizing compilers, software engineering, program analysis, instruction level parallelism, program debugging and testing tools, compiling for embedded systems.

EDUCATION

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

M.S. in Mathematics, Ohio State University.

B.S. in Mathematics, University of Pittsburgh, magna cum laude, Phi Beta Kappa.

ACADEMIC APPOINTMENTS

Professor, Department of Computer Science, University of Pittsburgh, 1990-present.

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, Jan. 1987-Dec. 1987.

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

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

HONORS (Selective)

Keynote Speaker, Compiler Construction Conference, Barcelona, March, 2004.

Distinguished paper, “A Family of Test Adequacy Criteria for Database-Driven Applications,” (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,) “Complete Removal of Redundant Expressions”, (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, June 2003.

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

Girl Scout Woman of Distinction for 2003.

Distinguished Speaker, Department of Computer Science, University of Maryland, 2002.

Invited Speaker, Grace Murray Hopper Conference, 2002.

Distinguished Speaker, Department of Computer Science and Engineering, University of Michigan, 2001.

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

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

Invited Speaker, Model Checking and Program Analysis Seminar, Munich, Germany, Feb. 2000.

ACM Fellow, 1999.

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.

Keynote Speaker, “Advances in Data Flow," International Symposium on Static Analysis, Venice, Sept. 1999.

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

PROFESSIONAL ACTIVITIES

Editorial Boards

ACM Transactions on Software Engineering Methodology, 2003 – present.

Computer Languages, 1987-present.

South African Journal of Computing, 1996-present.

Journal of Empirical Software Engineering, 2003- present.

International Journal of Parallel Programming, 1995-2003.

ACM Transactions on Programming Languages and Systems, 1993-2001.

IEEE Transactions on Software Engineering, 1994-2000.

Boards, Advisory Committees

Board of Directors, Computing Research Association (CRA), elected by CS & E Department Chairs of Ph.D. granting institutions (mostly); member: 1996-present; Vice Chair: 1997-2001.

Swedish Research Council, 2000 – present.

ACM SIGPLAN Programming Languages Design and Implementation (PLDI) Conference, 2001-present.

NSF Advance Project, Georgia Tech, 2002-present.

Software Tools and Technology Transfer, Springer, 1998 - present.

Steering Committees

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

ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), 1998-present.

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

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

Conference/Program Chair

Program Co-Chair, IEEE TCSE/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 TCSE/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 Committee member (since 1990)

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.

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

ACM SIGPLAN/SIGACT 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, CA, 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.

Static 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.

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

Grace Hopper Conference, September 1997.

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 TCSE/ACM SIGSOFT International Conference on Software Engineering, 1994.

International Workshop on Automated and Algorithmic Debugging, 1993, 1994, 1996.

ACM SIGARCH/SIGOPS/SIGPLAN, Architectural Support for Programming Languages and Operating Systems (ASPLOS), 1992 and 1994.

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

Second Conference on Parallel and Distributed Computing, 1990.

Member/Officer/Co-Chair

Computer Research Association (CRA) Committee on Status of Women in CSE, Co-chair, 1999-2002, member 1996-present.

CRA 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, February, 1996 and May, 1996. bb

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.

Distinguished Visitor Program, University of Montana, April, 1993.

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

Invited Speaker (last 2 years)

CRA Career Mentoring Workshop for Faculty, February, 2004.

Harvard University, Department of Computer Science 2003.

University of Notre Dame, Department of Computer Science2003.

Issues in the National Landscape, National Science Foundation, 2003.

National Symposium on the Advancement of Women in Science, Harvard University, 2003.

Clara Booth Luce Lecture Series, Washington College, 2002.

CRA Career Mentoring Workshop for Faculty, February, 2002.

University of Michigan, Department of EECS, 2002

University of Massachusetts, Department of Computer Science, 2002

University of Maryland, Department of Computer Science, 2002

Georgia Tech, College of Computing, 2002

CRA Career Mentoring Workshop for Faculty, February, 2002.

JOURNAL PUBLICATIONS

C. Jaramillo, R. Gupta and M. L. Soffa, "FullDoc: A Robust Symbolic Debugger of Optimized Code, under revision.

C. Jaramillo, R. Gupta and M.L. Soffa, "Comparison Checking: An Approach to verifying Optimizer", submitted.

A. Memon, M. Pollack, and M. L. Soffa, "Comparing Causal-Link and Propositional Planners: Tradeoffs between Plan Length and Domain Size," submitted.

S. Katz, D. Allbritton, J. Aronis, C.Wilson, and M.L. Soffa, "Gender and Race in Predicting Achievement in Computer Science," **IEEE Technology and Society,** Special Issue on Women and Minorities in Information Technology, Volume 22, 3, 20-27, 2003.

A. Balcita, D. Carver, M.L. Soffa, "Shortchanging the Future of Information Technology: The Untapped Resource," **ACM SIGCSE Inroads, Special Issue on Women and Computing**, June 2002.

A. Memon, M. Pollack, and M. L. Soffa, "Hierarchical GUI Test-Case Generation Using Automated Planning," *IEEE* **Transactions on Software Engineering**, Vol. 27, No. 2, pages 144-155, February 2001.

D. Whitfield and M. L. Soffa, "An Approach for Exploring Code Improving Transformations," **ACM Transactions on Programming Languages and Systems** *(TOPLAS)*, vol. 19, no. 6, pages 1053-1084, November 1997.

E. Duesterwald, R. Gupta, and M.L. Soffa, "A Practical Framework for Demand-Driven Interprocedural Data Flow Analysis," **ACM Transactions on Programming Languages and Systems (TOPLAS)**, vol. 19, no. 6, pages 992-1030, November, 1997

R. Gupta, M.L. Soffa, and J. Howard, "Hybrid Slicing: Integrating Dynamic Information with Static Analysis," **ACM Transactions of Software Engineering Methodology**, vol. 6, no. 4, pages 370-397, 1997.

C.R. Dow, S.K. Chang and M.L. Soffa, "Visual Transformation Specification," *Software Visualization*, World Scientific Publishing Co., pp. 141-159, 1996.

R. Gupta, M.J. Harrold, and M.L. Soffa, "Program Slicing-Based Regression Testing Techniques," **Journal of Software Testing, Verification and Reliability**, Vol.6, No. 2, June, 1996

R. Kramer, R. Gupta, and M.L. Soffa, "The Combining DAG: A Technique for Parallel Data Flow Analysis," **IEEE Transactions on Parallel and Distributed Systems**, Vol. 5, No. 8, pages 805-813, August 1994.

R. Gupta, M.L. Soffa, and D. Ombres, "Efficient Register Allocation Via Coloring using Clique Separators," **ACM Transactions on Programming Languages and Systems**, Vol. 16, No. 3, pages 370-386, May 1994.

B. Malloy, E. Lloyd, and M.L. Soffa, "Scheduling Dags for Asynchronous Multiprocessor Execution," **IEEE Transactions on Parallel and Distributed Systems**, Vol. 5, No. 5, May, 1994, pages 498-508, May, 1994.

M.J. Harrold and M.L. Soffa, "Efficient Computation of Interprocedural Definition-Use Chains," **ACM Transactions of Programming Languages and Systems**, Vol. 16, No. 2, pages 175-204, March, 1994.

D. Whitfield and M.L. Soffa, "The Design and Implementation of Genesis," **Software-Practice and Experience**, Vol. 25, No. 3, pages 307-325, March 1994.

R. Gupta and M.L. Soffa, "Employing Static information in the Generation of Test Cases," **Journal of Software Testing, Verification and Reliability**, Vol. 3, No. 1, pages 29-48, December 1993.

M.J. Harrold, R. Gupta, and M.L. Soffa, "A Methodology for Controlling the Size of a Test Suite," **ACM Transactions on Software Engineering and Methodology**, Vol. 2, No. 3, pages 270-285, July 1993.

L. Pollock and M.L. Soffa "Incremental Global Reoptimizations of Programs," **ACM Transactions on Programming Languages and Systems**, Vol. 14, No. 2,pages. 173-200, April 1992.

R. Gupta and M.L. Soffa, "Compile-time Techniques for Improving Scalar Access Performance in Parallel Memories," **IEEE Transactions on Parallel and Distributed Systems**, Vol. 2, No. 2, pages 138-148, April 1991.

M.J. Harrold and M.L. Soffa, "Selection of Data for Integration Testing," **IEEE Software**, pages 58-65, March 1991.

M. Bivens and M.L. Soffa, "Incremental Register Allocation," **Software-Practice and Experience**, Vol. 20, No. 10, pages 1015-1047, October 1990.

M.J. Harrold and M.L. Soffa, "TestInc," **IEEE Software**, pages 57, May 1990.

R. Gupta and M.L. Soffa, "Region Scheduling: An Approach for Detecting and Redistributing Parallelism, "**IEEE Transactions on Software Engineering**, Vol. 16, No. 4, pages 421-431, April 1990.

B. Malloy and M.L. Soffa, "Conversion of Simulation Processes," **Software Practice and Experience**, Vol.20, No. 2, pp. 191-207, Feb. 1990.

R. Gupta and M.L. Soffa, "Compilation Techniques for a Reconfigurable LIW Architecture**," The Journal of Supercomputing**, Vol. 3, pages 271-304, 1989.

L. Pollock and M.L. Soffa, "An Incremental Version of Iterative Data Flow Analysis**," IEEE Transactions on Software Engineering**, vol. 15, No. 11, pages 537-1549, December, 1989.

C.C. Wang, E. Lloyd and M.L. Soffa "On Locating Minimum Feedback Vertex Sets," **Journal of Computer and System Sciences**, Vol. 37, No. 3, pages 292-311, December, 1988.

J. Stephenson Blair, P. Kearns and M.L. Soffa, "An Optimistic Implementation of the Stack-Heap," **The Journal of Systems and Software**, Vol. 5, No. 3, pages. 193-202, March, 1985.

D Quammen, J. P. Kearns, M.L. Soffa, "Efficient Storage Management for Temporary Values in Concurrent Programming Languages," **IEEE Transactions on Computers**, Vol.34, No. 9, pages 832-840, 1985.

C. C. Wang, E. Lloyd and M.L. Soffa, "Feedback vertex sets and cyclically reducible graphs." **Journal of ACM,** Vol. 32, No. 2, pp. 296-313, February, 1985.

C.C. Wang and M. L. Soffa, "Eager Reclamation," **IEEE Transactions on Software Engineering**, SE-11(4) 1985, pp. 437-439.

F. Lafora and M.L. Soffa, "Reverse Execution in Debugging a Generalized Control Regime," **Computer Languages**, Vol. 3, No. 3, , pp. 183-192, 1984

L. Coon, P. Kearns and M.L. Soffa, "The Contraction of Control Implementations**," Computer**

Languages, vol.8, no. 1, 1983, pp. 15-25.

P. Kearns and M.L. Soffa, "The Implementation of Retention in a Coroutine Environment," **Acta Informatica**, vol. 19, 1983, pp. 221-233.

M. L. Soffa, "Control Discipline Necessity: Making The Languages As General As The Implementation," **BIT**, vol. 22, 1982, pp. 169-182.

J.P. Kearns, C. Meier and M.L. Soffa, "The Performance Evaluation of Control Implementations," **IEEE Transactions on Software Engineering**, SE-8(2), 1982, pp. 89-96.

G. Lindstrom and M.L. Soffa, "Referencing and Retention in Block Structured Coroutines," **ACM Transactions on Programming Languages and Systems**, 3(3) 1981, pp. 263-292.

M.L. Soffa and W. Pauli, "Coroutine Behavior and Implementation," **Software Practice and Experience,** vol. 10(3) 1980, pp. 189-204.

REFEREED CONFERENCE/WORKSHOP PUBLICATIONS

M. Zhao, B. Childers and M.L. Soffa, "Profit-Driven Optimization," submitted.

N. Kumar, B. Childers and M.L. Soffa, "Dino: Dynamic Instrumentation Optimization," submitted.

S. Katz, D. Allbritton, J. Aronis, C.Wilson, and M.L. Soffa, "Factors that predict achievement, gender and race differences, and learning-to-program characteristics in undergraduate computer science courses," submitted.

S. Katz, D. Allbritton, J. Aronis, C.Wilson, and M.L. Soffa, "Increasing diversity in the information technology workforce: Implications from a study of how students learn to program,'' submitted.

S. Katz, D. Allbritton, J. Aronis, C.Wilson, and M.L. Soffa, "A study to identify predictors of achievement in an introductory computer science course," *Proceedings of SIGCPR'03: SIG Computer Personnel Research Conference* 2003, New York: Association for Computing Machinery.

M. L. Pilla, P. O. A. Navaux, F. M. G. França, A. T. da Costa, B. R. Childers, M. L. Soffa, "The Limits of Speculative Trace Reuse on Deeply Pipelined Processors," *15th Symposium of Computer Architecture and High Performance Computing* (SBAC-PAD03), Brazil, November, 2003

Bruce Childers, Jack W. Davison 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.

A. Memon and M. L. Soffa, "Regression Testing of GUIs," ACM SIGSOFT Foundations of Software Engineering Conference, Sept. 2003.

G. 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.

M. Zhao, B. Childers and M.L. Soffa, "Predicting the Impact of Optimizations for Embedded Systems," *2003 ACM SIGPLAN Conference on Languages, Compilers, and Tools for Embedded Systems*, San Diego, CA., pp. 1-11, 2003.

K. Scott, N. Kumar, S. Verlusamy, B. Childers, J. Davidson and M.L. Soffa, "Retargetable and Reconfigurable Software Dynamic Translation," *Conference on Code Generation and Optimization*, San Francisco, CA, March 2003.

S. Katz, J. Aronis, D. Allbritton, C. Wilson and M.L. Soffa, "*An Experiment to Identify Predictors of Achievement in an Introductory Computer Science Course*", ACM Conference on Computer Personnel Research, 2003.

C. Jaramillo, R. Gupta and Mary Lou Soffa, "Verifying Optimizers through Comparison Checking," *Compiler Optimization Meets Compiler Verification Workshop*, joint with ETAPS, Grenoble, France, April, 2002.

M.J. Harrold, A. Orso, G. Rothemel, M.L. Soffa, "Using Component Metadata to Support the Regression Testing of Component-Based Software," *International Conference on Software Maintenance*, Florence, Italy, November, 2001

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*, Sept. 2001, pages 256-276, Vienna, Austria.

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, Nov. 6-10, 2000.

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.

C. Jaramillo, R. Gupta, and M.L. Soffa, ``FULLDOC: A Full Reporting Debugger for Optimized Code, " *International Static Analysis Symposium*, LNCS, Springer Verlag, Santa Barbara, CA, June-July 2000.

Memon, M. Pollack, M.L. Soffa, ``Plan Generation for GUI Testing," *Fifth International Conference on Artificial Intelligence Planning and Scheduling*, Brackenridge, Co. April 14-19, 2000.

N. Gupta, A. Mathur, and M.L. Soffa, "UNA Based Iterative Test Data Generation and its Evaluation," *The IEEE Automated Software Engineering Conference (ASE)*, Cocoa Beach, Fl., October 1999.

Jaramillo, R. Gupta and M.L. Soffa, "Comparison Checking: An Approach to Avoid Debugging of Optimized Code," *The Joint 7th European Software Engineering Conference (ESEC) and the ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE)*, Toulouse, France, pages 268-284, Sept. 1999.

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

R. Bodik, R. Gupta and M.L. Soffa, "Load-Reuse Analysis: Design and Evaluation, " *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, Atlanta, Georgia, pages 64-76, May, 1999.

T. Nakra, R. Gupta and M.L. Soffa, "Value Prediction in VLIW Machines," *ACM/IEEE 26th International Symposium on Computer Architectures (ISCA)*, pages 258-269, Atlanta, Georgia, May, 1999.

T. Nakra, R. Gupta, and M.L. Soffa "Global Context-based Value Prediction," *Proceedings Fifth International Symposium on High Performance Computer Architecture (HPCA)*, pages 4-12, January, 1999.

N. Gupta, M. Mathur, M.L. Soffa, "Automated Test Data Generation Using an Iterative Relaxation Method," *ACM SIGSOFT Foundations of Software Engineering (FSE)*, pages 231-244, Nov. 1998.

C. Jaramillo, R. Gupta and M.L. Soffa, "Capturing the Effects of Code Improving Transformations," *Proceedings of International Conference on Parallel Architectures and Compilation Techniques (PACT)*, pages 118-123, Oct. 1998.

D. Berson, R. Gupta and M.L. 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.

R. Bodik, R. Gupta and M.L. Soffa, "Complete Removal of Redundant Expressions," Proceedings of *ACM/SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, pages 1-15, June, 1998.

J. Tims, R. Gupta and M.L. Soffa, "Data flow Analysis Driven Dynamic Data Partitioning," *Fourth Workshop on Languages, Compilers, and Run-time Systems for Scalable Computers*, pages 75-91, CMU, Pittsburgh, Pa. May, 1998.

R. Bodik, R. Gupta and M.L. Soffa, "Refining Data Flow Information through Infeasible Path Detection and Tracing," *Proceeding Sixth European Software Engineering Conference and ACM SIGSOFT Foundations of Software Engineering*, Zurich, LNCS 1301, Springer Verlag, pages 361-377, 1997.

R. Bodik, R. Gupta and M.L. Soffa, "Interprocedural Conditional Branch Elimination," *ACM/SIGPLAN 1997 Conference on Programming Languages Design and Implementation (PLDI)* pages 146-158, June, 1997.

C.R. Dow, M.L. Soffa and S.K. Chang, "A Unifying Framework for Undoing Code Transformations," *International Computer Symposium (ICS)*, Taiwan, December, 1996.

D. Berson, P. Chang, R. Gupta and M.L. 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, Ca. August 8-10, 1996.

E. Duesterwald, R. Gupta, and M.L. Soffa, "A Demand-Driven Analyzer for Data Flow Testing at the Integration Level," *International Conference on Software Engineering* (ICSE), pages 575-584, Berlin,

Germany, March 1996.

R. Gupta and M.L. Soffa, "Priority Based Data Flow Testing," *IEEE-CS International Conference on Software Maintenance (ICSM)*, pages 348-357, Nice, France, October 1995.

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

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

E. Duesterwald, R. Gupta, and M.L. Soffa, "Interprocedural Data Flow Analysis on Demand," *The 22nd Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL)* pages 37-48, San Francisco, California, January 1995.

D. Berson, R. Gupta, and M.L. Soffa, "GURRR: A Global Unified Resource Requirements Representation," *ACM SIGPLAN Workshop on Intermediate Representations*, pages 23-34, San Francisco, California, January 1995.

Chyi-Ren Dow, M.L. Soffa and S.K. Chang, "An Efficient Technique to Undo Transformations," *IEEE ICPADS 94: 1994 International Conference on Parallel and Distributed Systems*, Hsinchu, Taiwan, Dec, 1994.

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

R. Gupta and M.L. Soffa, "A Framework for Partial Data Flow Analysis," *IEEE-CS International Conference on Software Maintenance (ICSM)*, pages 4-13, Victoria, British Columbia, September 1994.

D. Berson, R. Gupta, and M.L. 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, pages 135-146, Montreal, Canada, August 1994.

Chyi-Ren Dow, M.L. Soffa, and S.K. Chang, "Undoing Transformations in an Independent Order" *International Conference on Parallel Processing (ICPP)*, Chicago, Illinois, August, 1994.

P. Pineo and M.L. Soffa, "A Practical Approach to the Symbolic Debugging of Parallelized Code," *International Conference on Compiler Construction* (CC), Edinburgh, Scotland, April, 1994.

E. Duesterwald, R. Gupta, and M.L. Soffa, "Reducing the Cost of Data Flow Analysis By Congruence Partitioning," *International Conference on Compiler Construction (CC)*, LNCS 786 Springer Verlag, pages 357-373, Edinburgh, Great Britain, April, 1994.

Chyi-Ren Dow, Shi-Kuo Chang and M.L. 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.

Debbie Whitfield and M.L. Soffa, "Investigating Properties of Code Transformations," *International Conference on Parallel Processing*, St. Charles, Illinois, pp. 238-245, August, 1993.

E. Duesterwald, R. Gupta, and M.L. Soffa, "A Practical Data Flow Framework for Array Reference Analysis and its Application in Optimizations," *ACM SIGPLAN'93 Conference on Programming Language Design and Implementation (PLDI)*, pages 68-77, Albuquerque, New Mexico, June 1993.

D. Berson, R. Gupta, and M.L. 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*, IFIP Transactions A-23, pages 243-254, Orlando, Florida, January 1993.

Chyi-Ren Dow, S.K. Chang and M.L. Soffa, "A Software System for the Visualization of Parallelizing Programs," *The International Computer Symposium*, Taiwan, pp. 768-775, December, 1992.

B. Malloy, R. Gupta, and M.L. Soffa, "A Shape Matching Approach for Scheduling Fine-Grained Parallelism," *The 25th Annual ACM/IEEE International Symposium on Microarchitecture* (*MICRO)* pages 264-267, Portland, Oregon, December 1992.

R. Gupta, M.J. Harrold, and M.L. Soffa, "An Approach to Regression Testing using Slicing," *IEEE-CS International Conference on Software Maintenance*, pages 299-308, Orlando, Florida, November 1992.

Chyi-Ren Dow, M.L. Soffa, and S.K. Chang, "A Visualization System for Parallelizing Programs," *ACM International Conference on Supercomputing '92*, Minneapolis, November 1992.

T. Watts, M.L. Soffa, and R. Gupta, "Techniques for Integrating Parallelizing Transformations and Compiler Based Scheduling Methods," *International Conference on Supercomputing'92*, pages 830-839, Minneapolis, Minnesota, November, 1992.

E. Duesterwald, R. Gupta, and M.L. Soffa, "Register Pipelining: An Integrated Approach to Register Allocation for Scalar and Subscripted Variables," *International Workshop on Compiler Construction* (CC) LNCS 641 Springer Verlag, pages 192-206, Paderborn, Germany, October 1992.

R. Gupta and M.L. Soffa, "Automatic Generation of a Compact Test Suite," *The Twelfth IFIP World Computer Congress*, Vol. I, pages 237-243, Madrid, Spain, September 1992.

E. Duesterwald, R. Gupta, and M.L. Soffa, "Distributed Slicing and Partial Re-execution for Distributed Programs," *Fifth Workshop on Languages and Compilers for Parallel Computing*, LNCS 757 Springer Verlag, pages 497-511, Yale University, New Haven, Connecticut, August 1992.

Brian Malloy, M.L. Soffa and E. Lloyd, "A Fine Grained Approach to Scheduling Asynchronous Multiprocessors," *4th International Conference on Computing and Information*, Toronto, Canada, May, 1992.

Chyi-Ren Dow, S.K. Chang, and M.L. Soffa, "A Visual Optimization Specification Language," *Advanced Visual Interfaces Workshop*, Rome, Italy, World Scientific Series in Computer Science, Vol. 36, World Scientific Press, 289-303, May, 1992.

Shan Fan Liu and M.L. Soffa "Parallel Task Assignment by Graph Partitioning," *PARLE '92*, Paris, France, June, 1992.

R. Kramer, R. Gupta, and M.L. Soffa, "The Combining DAG: A Technique for Parallel Data Flow Analysis," *The Sixth International Parallel Processing Symposium (IPPS)*, pages 652-655, Beverly

Hills, California, March 1992.

E. Duesterwald, R. Gupta, and M.L. Soffa, "Rigorous Data Flow Testing through Output Influences," *The Second Irvine Software Symposium*, pages 131-145, University of California, Irvine, California, March 1992.

P. Pineo and M.L. Soffa, "The Symbolic Debugging of Code Transformed for Parallel Execution," *ACM/SIGPLAN Debugging Workshop '91*, Albuquerque, New Mexico, 1991, pp. 23-29, November, 1991.

E. Duesterwald and M.L. 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, pp. 138-148, October, 1991.

R. Sharma and M.L. Soffa, "Parallel Generational Garbage Collection*," Object-Oriented Programming Systems, Languages, and Applications (OOPSLA)*, pp. 16-32, October, 1991.

D. Whitfield and M.L. Soffa, "Automatic Generation of Global Optimizations," *ACM SIGPLAN '91 Conference on Programming Language Design and Implementation*, Toronto, Canada, pp. 120-129, June, 1991.

P. Pineo and M.L. Soffa, "Debugging Parallelized Code Using Code Liberation Technique," *ACM SIGPLAN Workshop on Parallel and Distributed Debugging*, Santa Cruz, Ca., pp. 103-114, May, 1991.

B. Heggy and M. L. Soffa, "Architectural Support for Register Allocation in the Presence of Aliasing," *ACM International Conference on Supercomputing '90*, pp. 720-729, November, 1990.

M.J. Harrold, R. Gupta, and M.L. Soffa, "A Methodology for Controlling the Size of a Test Suite," *IEEE-CS International Conference on Software Maintenance*, pages 302-310, San Diego, California, November 1990.

M.J. Harrold, R. Gupta, and M.L. Soffa, "TBM: A Testbed Management Tool," *The Seventh International Conference on Testing Computer Software*, pages 47-56, San Francisco, California, June 1990.

R. Gupta, L. Pollock, and M.L. Soffa, "Parallelizing Data Flow Analysis*," Workshop on Parallel Compilation*, Kingston, Ontario, May 1990.

D. Whitfield and M.L. Soffa, "An Approach to Ordering Optimizing Transformations," *Second ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP)*, pp. 137-146, March, 1990.

M.J. Harrold and M.L. Soffa, "Computation of Interprocedural Definition and Use Dependencies," *IEEE 1990 International Conference on Computer Languages*, March 1990, pp. 297-306.

L. Pollock and M.L. Soffa, "Incremental Global Optimization for Faster Recompilations," *IEEE 1990 International Conference on Computer Languages*, New Orleans, La., March 1990, pp. 281-290 (selected as a best paper).

M.J. Harrold and M.L. Soffa, "Interprocedural Data Flow Testing," *ACM Software Testing, Analysis and Verification Symposium*, Key West, Florida, pp. 158-167, December, 1989.

R. Gupta, M.L. Soffa, and T.F. Steele, "Register Allocation via Clique Separators," *ACM SIGPLAN'89 Conference on Programming Language Design and Implementation* (*PLDI),* pages 264-275, Portland, Oregon, June 1989.

M.J. Harrold and M.L. Soffa, "An Incremental Data Flow Testing Tool," *International Conference on Testing Computer Software*, May, 1989.

M. Bivens and M.L. Soffa, "Reuse of Compiler Analysis in a Programming Environment*," ACM 1989 Computer Science Conference* February, 1989.

M.J. Harrold and M.L. Soffa, "An Incremental Approach to Unit Testing," *IEEE/ACM Conference on Software Maintenance (ICSM),* pp. 362-367, October, 1988.

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

R. Gupta and M.L. Soffa, "A Matching Approach to Utilizing Fine-Grained Parallelism," The *Twenty-first Annual Hawaii International Conference on System Sciences*, Vol. I, pages 148-156, Kona, Hawaii, January 1988.

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

R. Gupta and M.L. Soffa, "A Reconfigurable LIW Architecture," *International Conference on Parallel Processing (ICPP),* pages 893-900, St. Charles, Illinois, August 1987.

R. Gupta and M.L Soffa, "Region Scheduling," *The Second ACM International Conference on Supercomputing,* Vol. III, pages 141-148, Santa Clara, May 1987.

M. Bivens and M.L. Soffa, "Incremental Generation of High-Quality Code," *ACM National Computer Conference,* Chicago, Il., June, 1987, pp. 189-197.

B. Malloy and M.L. Soffa, "An Efficient Implementation of SimCal*," International Conference on Modeling and Simulation,* Pittsburgh, Pa., April, 1987.

R. Gupta and M.L. Soffa, "SHAPE: A Highly Adaptable and Parallel System," *ACM Computer Science Conference*, pages 107-114, Cincinnati, February 1986. 8

B. Malloy and M.L. Soffa, "SimCal: The Merger of Simula and Pascal," *IEEE Winter Simulation Conference*, pp. 397-403, February, 19886.

L. Pollock and M.L. Soffa, "Incromint - An INCRemental Optimizer for Machine INdependent Transformations," *ACM SoftFair II*, San Francisco, pp. 162-171, December, 1985.

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

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

C.C. Wang, E. Lloyd and M.L. Soffa, "Feedback vertex sets in polynomial time - A new class," *Twenty-Second Annual Allerton Conference*, Illinois, pp. 291-298, October, 1984.

P. Kearns and M.L. 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. Also appeared in Real-time Systems Newsletter, 1984, pp. 46-50.

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

J.P. Kearns and M.L. Soffa, "Performance Comparison of Copy-less Coroutine Implementations," 5th *IEEE COMPSAC*, pp. 213-218, 1981.

S. Robinson and M.L. Soffa, "An Instructional Tool for Beginning Programming Students*," Eleventh SIGCSE Technical Symposium On Computer Science Education*, SIGCSE Bulletin 12(1), Feb. 1980.

M. Lemon, M.L. Soffa and G. Lindstrom, "Control Separation in Programming Languages," *1977 Annual ACM Conference*, Washington, 1977.

GRANTS

National Science Foundation, "*Adapting Program Code Continuously and Adaptively*," (Co-PI: Bruce Childers), Sept. 2003– March, 2006, $654,538.

National Science Foundation, "*Advance: From Associate Professor to Full with Distinguished Professors Leading the Way,"* (Co-PI: Jane Cuny), Sept 2003 – March 2006, *$250K*,

CRAW Graduate Student Cohort, Microsoft $50K, ACM $40K, (Co-PI: Jane Cuny), Jan. 2004 – Jan. 2006.

National Science Foundation, "*Continuous Compilation: A New Approach to Aggressive and Adaptive Code Transformations*," (Co-PI: Bruce Childers), Sept. 2002 – March, 2004, $180,000.

IBM Eclipse Project, "*SoftTest: An Eclipse Plug-in for Scalable and Flexible Software Testing of Java Programs*", November, 2002, $28,000.

National Science Foundation, "*Group Travel Grant for Faculty from Minority Institutions to Attend FSE-*10, Sept. 2002 – Sept. 2003, $25,000.

National Science Foundation, *"Learning Behaviors and Background Characteristics that Promote Retention of Women and Minorities in Undergraduate Computer Science Programs*, (Co-PI: Sandra Katz), Sept. 2000 - December 2003, $528,167.

Commonwealth of Pennsylvania, Link to Learn - "*Increasing the participation of women and minorities in computer science"*, April, 2000 - March, 2002. $301,530.

National Science Foundation, *Presidential Award for Mentoring*, Sept. 1999 - August, 2001, $10,000.

National Science Foundation, "*A Framework for Path and Resource Sensitive Optimizations*, Grant CCR-980859, (Co-PI: Rajiv Gupta), Sept. 1998-August, 2002, $360,000.

National Science Foundation, "*Experimental Software Systems: Experimental Evaluation of Scalable*

Optimization Techniques", Grant EIA-9806525, (Co-PIs: Rajiv Gupta, Lori Pollock, David Whalley), Oct., 1998-August, 2002, $400,000.

Hewlett Packard Laboratories, Palo Alto, California, "*Optimizations Techniques for Superscalar/VLIW Architectures*, (Co-PI: Rajiv Gupta), Jan., 1996-December, 1998, $103,034.

Hewlett Packard Laboratories, Palo Alto, California, "*Debugging of Optimized Code",* (Co-PI: Rajiv Gupta), Jan., 1996-December, 1998, $338,421.

National Science Foundation, "*Demand Driven Computation of Partial Data Flow and its Application in Software Engineering",* Grant CCR-9402226, (Co-PI: Rajiv Gupta), Sept., 1995-May, 1999, $240,000.

National Science Foundation, *Grant for Faculty at Minority and Women's Colleges and Universities*, (Co-PI: Barbara Ryder and Edith Schonberg), February, 1994 - August, 1995, $20,000.

National Science Foundation, "*Unifying Framework for Parallelizing Transformations*," Grant CCR 9109089, July, 1991 to December, 1994, $283,265.

National Science Foundation, "*Fine and Coarse Grain Incremental Compilation"*, CCR-8801104, Optimized Code, May, 1988 to January, 1991, $162,198.

National Science Foundation, Research Instrumentation - *Hypercube*, (Co-PIs: R. Melhem and T. Znati), January, 1990 to December, 1990, $124,300.

National Science Foundation Professorship for Women, "*Incremental Code Optimization and Generation,* U. of California, Berkeley, Jan. 1987 - Dec 1987, $82,565.

National Science Foundation, Grant MCS-8119341, "*Implementation of Concurrency*," May 1982 to June 1987, $203,945.

National Science Foundation, Grant MCS79-06102, "*Control Implementation in Programming Languages*," September 1979 to February, 1984, $92,012.

National Science Foundation, Computer Science and Computer Engineering Research Equipment, 1982, (Co-PI: P. Kearns), $60,000.

National Science Foundation, Computer Science Department Research Equipment, 1979, $40,000.

Ph.D. STUDENTS – advisor/coadvisor

Graduated

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

Tarun Nakar, *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.

Rastislav Bodik, *Code Optimizations for Fine-Grained Architectures*, December, 1999, **Recipient of 2000 SIGPLAN Dissertation Award**, Assistant Professor, University of California at Berkeley.

Neelam Gupta: *Automated Test Data Generation using Relaxation Methods*, August, 1999, Assistant Professor, and University of Arizona.

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.

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*, August, 1990, AT&T.

Mary Jean Harrold, *An Approach to Incremental Testing*, December, 1988, Professor, Georgia Tech.

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

Rajiv Gupta, *Design of a Highly Parallel System*, August, 1987, Professor, University of Arizona.

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

George Logothetis, *On the Automatic Generation of Error-Repairing LL- and LR-based parsers*, April, 1983, AT&T.

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.

Current Ph.D. Students

Min Zhao, Profit Driven Optimization, degree expected 2004.

Greg Kapfhammer, Testing Applications using Databases, degree expected 2004.

Shukang Zhou, Dynamic Optimization, proposal expected 2004.

Yuqiang Huang, Checking the correctness of optimization, proposal expected 2004.

Naveen Kumar, Debugging Adaptive Code, proposal expected 2004.

Jonathan Misurda, Flexible Testing Framework, proposal expected 2005.

External Member Ph.D. committees

Manos Renieris, Brown University, expected 2004.

David Lacey, Oxford University, completed 2003.

Bruno Blanchet, Ecole Polytechnique, Paris France, completed 2000.

Nahid Shahmehri, University of Linkoping, Sweden, completed 1991.

M.S. STUDENTS

Adviser on 55 M.S. students' projects.

CONSULTING

Zymark

Corporation Mellon Institute - Carnegie Mellon

University Bell Laboratories

Westinghouse

Airbrake Company

Westinghouse Electric Corporation

UNIVERSITY/DEPARTMENT ACTIVITIES (SELECTED)

University Activities

Chancellor's Committee on Diversity, 2000- present.

Faculty Sponsor and helped organize: Organization of Women in Science (OWIS), 1997 – present.

University of Pittsburgh Board of Trustee's 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.

Provost's Subcommittee for the Evaluation of Academic Programs (SEAP), 1991-1996.

Conference for Women Graduate Students, workshop leader, Nov. 1990.

Provost's Advisory Committee for Undergraduate Programs, 1990-1991.

Provost's 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, Oct., 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, U. of Pittsburgh, June 1982: Workshop Leader.

Department Activities

Organized first CS Day, held annually since 2000.

Chair, Graduate Program Committee, 2001-2003.

Developed and editor for first departmental newsletter, Links, 1997- 2000.

Member, Graduate Admissions and Financial Aid, 1977-1990, 1996-2002.

Member, Faculty Search Committee, 1980-1984, 1990-1996.

Chair, Undergraduate Curriculum, 1989-1991.

Chair, Faculty Search Committee, 1988-89.

Member, Graduate Curriculum, 1986-1988.

Member, EE/CS Committee, 1988.

Chair, Department Chairperson Search Committee, 1984.

Chair, Undergraduate Curriculum, 1982-1983.

Course Scheduler, 1978-1983.

TA/TF Coordinator, 1978-1982.

Member, Publications Committee, 1977-1978.

TEACHING

Graduate Courses/Seminars

Advanced Program Analysis

Compiler Design

Advanced Compiler Design Compiling

Techniques for Parallel Systems.

Seminar on Programming Languages.

Seminar on Programming Languages Control Structures

Undergraduate Courses

Programming Languages for the Web

Survey of Programming Languages

Assembly Languages

Introduction to Computer Programming

Structure and Design of Programming Languages

Introduction to Compiler Design

Operating Systems

Introduction to Information Structures