Margaret R. Martonosi

Dept. of Electrical Engineering
Princeton University
Princeton, NJ 08544-5263

Email: martonosi@princeton.edu
Phone: 609-258-1912; Fax: 609-258-2931
http://www.princeton.edu/~mrm

CURRENT STATUS

2/ 2004-present	**Professor**. Dept. of Electrical Engineering, Princeton University;
9/1994-present	**Affiliated faculty**, Dept. of Computer Science
Research areas:	Computer architectures and the hardware/software interface, particularly power-efficient systems, and most recently, power-efficient wireless networks.

OTHER PROFESSIONAL EXPERIENCE

7/2005-7/2007	Associate Dean for Academic Affairs, School of Engineering and Applied Science.
1/2005-7/2005	Visiting Scholar (sabbatical) Dept. of Computer Science and Engineering, University of Washington.
6/2004-12/2004	Research Staff Member and Academic Visitor (sabbatical) IBM T.J. Watson Research Center.
2000-2004	Associate Professor. Dept. of Electrical Engineering, Princeton University.
1994-2000	Assistant Professor. Dept. of Electrical Engineering, Princeton University.
1/94-8/94	Post-Doctoral Scholar, FLASH Multiprocessor project, Stanford University.
3/87-12/93	Research Assistant, Stanford University.

EDUCATION

Stanford University. Ph.D. in Electrical Engineering. Completed December, 1993. Conferred 1994.

Dissertation: Analyzing and Tuning Memory Performance in Sequential and Parallel Programs.
Advisors: Professors Anoop Gupta and Thomas E. Anderson

Stanford University. Master of Science in Electrical Engineering, September, 1987.

Cornell University. Bachelor of Science in Electrical Engineering with Distinction, June, 1986.

HONORS

School of Engineering Commendation List for Outstanding Teaching, Fall '06 (ELE475, Computer Architecture); Fall '07 (ELE475, Computer Architecture), Spring '08 (ELE583, Great Moments in Computing).

Best Paper award. *38th Annual International Symposium on Microarchitecture*. Barcelona, Spain. November, 2005.

Paper selected for inclusion in "Top Picks in Computer Architecture." IEEE Micro. Feb 2006.

ZebraNet II hardware chosen as Design Contest winner at 2003 Intl. Symposium on Low-Power Electronics and Design (ISLPED). August, 2003.

IBM Faculty Partnership Program Award. 2000, 2001, 2002.

Princeton University 250th Anniversary Fund for Innovation in Undergraduate Education. 2000. For curriculum development related to an introductory programming course on handheld devices.

Princeton University School of Engineering Howard B. Wentz Award. 1998. ("Recognizing excellence in teaching and scholarship")

National Science Foundation Faculty Early Career Development Award, 1995-1998.

Princeton University 250th Anniversary Fund for Innovation in Undergraduate Education. 1997. For curriculum development related to an undergraduate course in Configurable Computing.

Princeton University Research Board Award, 1995-1996, 1997-1998.

National Science Foundation Graduate Fellowship, 1986-1989.

Cornell University AT&T Award, 1985.

Cornell University John McMullen Scholar, 1985.

GRANTS

2008	**Google Corporation**. Data-Center-Level Power/Performance Management. $100000 (no overhead).
2007-2009	**National Science Foundation CSR-EHS**: Cross-System Modeling and Management for Variation-Adaptive Computing. Joint with Marculescu (CMU). Princeton share: $50K/year.
2006-2009	**National Science Foundation CSR-EHS**: A Space and Resource Aware Computing Architecture for Dynamic Networks. Joint with Peh and Ulrich Kremer (Rutgers). MRM share: $150K/year.
2006-2009	**National Science Foundation CT**: Well-Typed Trustworthy Computing in the Presence of Transient Faults. Joint with Walker, August, Clark, and Appel. (COS). MRM share ($55K).
2006-2009	**Princeton Institute for International and Regional Studies (PIIRS).** School of Engineering and Applied Science: Technology for Developing Regions. Martonosi is PI. (Joint with Celia (CEE) and Rubenstein (EEB).) $370,000.
2005-2008	**National Science Foundation.** Flow-Based Computer Systems Support for Synergistic Hardware-Software Management of Embedded Systems. Co-PI. (PI is Peh. Other co-PIs are August, Li). $125,000.
2005-2008	**DARPA/MARCO:** A Proposal for Collaborative Research in the Design, Verification, and Test of Integrated Gigascale Systems: The GigaScale Systems Research Center. $375K.
2005-2007	**Intel Corporation**. Dynamic Compiler-time Energy and Power Control for Intel Processors. $40000 (no overhead). Co-PI. (PI is Clark).
2004-2006	**National Science Foundation**. Joint EU/US program for international collaboration. $90,900 supplement to NSF ITR grant: Designing "Real-Power" Systems: Static and Dynamic Techniques for Managing Power / Performance Tradeoffs. Principal investigator.
2004-2006	**National Science Foundation.** Adaptive, Power-Efficient Processors for Sensors and Embedded Systems. $294,889. Principal Investigator. (Co-PI is Clark.)
2003-2005	**National Science Foundation.** Spin-Based Quantum Computing Using Electrons on the Surface of Liquid Helium: Physics and Computer Architecture. $399,245. Co-Principal Investigator. (PI is Lyon.)
2003-2006	**Intel Corporation**. Power/Performance Modeling for Java-based XScale Systems. $120,000 gift (no overhead). Principal investigator.
2003-2006	**Semiconductor Research Corporation.** Adaptively-Controlled Execution for Power and Performance. $179,000. Principal Investigator.
2002	**IBM University Partnership Award.** $40,000 gift (no overhead) to support research in power-aware computing.
2002-2005	**National Science Foundation**. Information Technology Research Initiative (Medium-Scale program) ZebraNet: Position-Aware, Power-Aware Wireless Computing for Wildlife Tracking. $1,300,000. Principal investigator. (Co-PIs are Poor, Peh and Rubenstein, Ecology and Environmental Biology).
2001-2006	**National Science Foundation CISE Research Infrastructure Award**. Pervasive Computing: Applications and Systems. $1,700,000. Co-principal Investigator. (PI is Dobkin, CS. Other Co-Pis are Felten, Li, and Peterson, CS).
2001	**IBM University Partnership Award**. $20,000 gift (no overhead) to support research in power-aware computing.
2000-2003	**National Science Foundation**. Information Technology Research Initiative. Designing "Real-Power" Systems: Static and Dynamic Techniques for Managing Power / Performance Tradeoffs. $793,528. Principal investigator. (Co-Pis are Malik and Clark, CS).
2000	**IBM University Partnership Award.** $40,000 gift (no overhead) to support research in power-aware computing.

2000-2003	**National Science Foundation.** Instrumentation Support for System-on-a-chip and Embedded System Research. $74,720. Principal investigator.
2000-2003	**Intel Corporation**. Power-Aware Organizational Tradeoffs in High-Performance Processors. $300,000 (Part of patent licensing agreement.) Principal investigator.
1999-2004	**New Jersey Commission on Science and Technology.** Center for Embedded System-on-a-chip Design. Co-principal investigator. My share: $200,000.
1999	**Microsoft Corporation**. Compile-Time and Run-Time Techniques for Program Customization. $25,000 funding (no overhead). Principal investigator.
1997-2000	**Intel Corporation**. Power-Aware Organizational Tradeoffs in High-Performance Processors. $150,000 funding. Principal investigator. (with Prof. Douglas W. Clark, CS).
1997	**NEC C&C Research Labs**. $20,000 research gift (no overhead) for configurable computing. Principal investigator.
1997-2000	**National Science Foundation**. Principal Investigator. Applications and Tools for Configurable Computing in Sequential and Parallel Computers. $400,000.
1997-2000	**DARPA ITO**. Principal Investigator. Performance and Synthesis Tools for Adaptive Computing. $600,879 funding.
1995-1998	**National Science Foundation Faculty Early Career Development (CAREER) Award**. Principal Investigator. An Integrated Hardware and Software Performance Monitoring System. $135,000.
1995-1999	**National Science Foundation**. Co-Principal Investigator. SHRIMP: Architectural and Systems Support for Inexpensive, High-Performance Multicomputers. $1,500,000 funding.
1995-1997, 2006-7	**NSF/Computing Research Association Distributed Mentoring Project**. Summer funding for research with 1-2 women undergraduates per summer from other schools.

PATENTS

Pending	*System and Method of Efficient Resource Management by Predicting Stable Durations of a Workload Phase*. With Alper Buyuktosunoglu, Pradip Bose, Chen-Yong Cher, Prabhakar N Kudva, Canturk Isci. Applied July, 2006.
Granted 2008	*Method and Apparatus for Reducing Leakage Power in a Cache Memory using Adaptive Time-Based Decay*. With Zhigang Hu, Stefanos Kaxiras. US Patent #7472302.
Granted 2004.	*System and method of operand value based processor optimization by detecting a condition of pre-determined number of bits and selectively disabling pre-determined bit-fields by clock gating*. With David Brooks. Licensed to Intel Corp. (non-exclusive). US Patent #6,745,336.
Granted 2002.	*Method and Apparatus for SAT Solver Architecture with Very Low Synthesis and Layout Overhead*. With P. Ashar, P. Zhong. US Patent #6,415,430
Granted 2001.	*An Edge-Endpoint-Based Configurable Hardware Architecture for VLSI CAD Layout Design Rule Checking*. With P. Ashar, Z. Luo. US Patent #6,324,673.
Granted 2001.	*Configurable Hardware System Implementing Boolean Satisfiability and Method Thereof*. With P. Ashar, S. Malik, P. Zhong. US Patent #6,247,164.
Granted 2000.	Implementation of Boolean Satisfiability with Non-Chronological Backtracking in Configurable Hardware. With P. Ashar, S. Malik, P. Zhong. US Patent #6,038,392.

PUBLICATIONS

BOOKS

Stefanos Kaxiras and Margaret Martonosi. Computer Architecture Techniques for Power-Efficiency. Morgan & Claypool Publishers Synthesis Lectures on Computer Architecture. 2008, (doi:10.2200/S00119ED1V01Y200805CAC004).

JOURNAL PUBLICATIONS

1. Vincent Lenders and Margaret Martonosi. Repeatable and Realistic Experimentation in Mobile Wireless Networks. IEEE Transactions on Mobile Computing. To appear.
2. Eric Chi, Stephen A. Lyon, and Margaret Martonosi. Deterministic error model for quantum computer simulation. Physical Review A (Vol.77, No.5) May 2008. Selected for May 2008 issue of Virtual Journal of Quantum Information (published by the American Physical Society and the American Institute of Physics).
3. Pradip Hari, Kevin Ko, Emmanouil Koukoumidis, Ulrich Kremer, Margaret Martonosi, Desiree Ottoni, Li-Shiuan Peh, Pei Zhang. SARANA: Language, Compiler, and Runtime System Support for Spatially-Aware and Resource-Aware Mobile Computing. Invited paper. Philosophical Transactions of the Royal Society A. (Mathematical, Physical, and Engineering Sciences). 2008.
4. Yong Wang, Margaret Martonosi, and Li-Shiuan Peh, "Predicting Link Quality using Supervised Learning in Wireless Sensor Networks", in ACM Sigmobile Mobile Computing and Communications Review (MC2R), July, 2007
5. James Donald and Margaret Martonosi. An Efficient, Practical Parallelization Methodology for Multicore Architecture Simulation. Computer Architecture Letters. 2006.
6. Gilberto Contreras, Margaret Martonosi, Jinzhang Peng, Guei-Yuan Lueh, and Roy Ju. The XTREM Power and Performance Simulator for the Intel XScale Core: Design and Experiences. ACM Transactions on Embedded Computing Systems. 2006
7. Q. Wu, M. Martonosi, D. W. Clark, V.J. Reddi, D. Connors, Y. Wu, J. Lee, and D. Brooks , “Dynamic Compiler Driven Control for Microprocessor Energy and Performance”, in IEEE Micro Special Issue: Top Picks from Computer Architecture Conferences, Vol. 26, No. 1, February, 2006
8. Qiang Wu, Philo Juang, Margaret Martonosi, Li-Shiuan Peh, and Douglas W. Clark. Formal Control Techniques for Power-Performance Management in High-Performance Processors. IEEE Micro. Special issue on Low-Power Processors and Technology (Sep/Oct 2005)
9. Canturk Isci, Margaret Martonosi, Alper Buyuktosonoglu. Long-term Workload Phases: Duration Predictions and Applications to DVFS. IEEE Micro. Special issue on Low-Power Processors and Technology (Sep/Oct 2005)
10. Yong Wang, Margaret Martonosi, Li-Shiuan Peh, MARio: Mobility-Adaptive Routing using Route Lifetime Abstractions in Mobile Ad hoc Networks. ACM SIGMOBILE Mobile Computing and Communications Review archive. Volume 8 , Issue 4 (October 2004) pp. 77 - 81
11. F. Xie, M. Margaret and S. Malik. "Intra-program Dynamic Voltage Scaling: Bounding Opportunities with Analytical Modeling", ACM Transactions on Architecture and Code Optimization (TACO), September, 2004.
12. Philo Juang, Kevin Skadron, Margaret Martonosi, Zhigang Hu, Douglas W. Clark, Philip W. Diodato, and Stefanos Kaxiras. Implementing Branch Predictor Decay Using Quasi-Static Memory Cells. Transactions on Computer Architecture (TACO). June, 2004 .
13. Kevin Skadron, Margaret Martonosi, David August, Mark Hill, David J. Lilja, Vijay S. Pai. Challenges in Computer Architecture Evaluation. IEEE Computer. August, 2003. pages 30-35.
14. Philo Juang, Phil Diodato, Stefanos Kaxiras, Kevin Skadron, Zhigang Hu, Margaret Martonosi, Douglas W. Clark. "Implementing Decay Techniques using 4T Quasi-Static Memory Cells." *Computer Architecture Letters*. Volume 1, Sep. 2002.

15. Zhigang Hu, Stefanos Kaxiras, Margaret Martonosi. Let caches decay: Reducing leakage energy via exploitation of cache generational behavior. *ACM Transactions on Computer Systems.* Volume 20, Issue 2. (May, 2002) pages 161 – 190.

16. David Brooks and Margaret Martonosi. Value-based Clock Gating and Operation Packing: Dynamic Strategies for Improving Processor Power and performance. *ACM Transactions on Computer Systems*. Volume 18, No. 2 (May. 2000) pages 89 – 126.

17. Peixin Zhong , Margaret Martonosi, Pranav Ashar. An FPGA-Based SAT Solver Architecture with Near-Zero Synthesis and Layout Overhead. *IEE Proceedings: Computers and Digital Techniques. Special Issue on Reconfigurable Systems*. May 2000. Volume 147, No. 3, pages 135-41.

18. Zhen Luo and Margaret Martonosi. Using Delayed Addition Techniques to Accelerate Configurable Computing Applications. *IEEE Transactions on Computers*. Volume 49, No. 3, pages 208-218. March, 2000.

19. Zhen Luo and Margaret Martonosi. Design Rule Checking in Configurable Hardware. *VLSI Design (Special Issue on Reconfigurable Computing).* 2000. Vol. 10, No. 3, pages 249-263.

20. Kevin Skadron, Margaret Martonosi, Douglas W. Clark. Speculative Updates of Local and Global Branch History: A Quantitative Analysis. *Journal of Instruction-Level Parallelism*. Vol. 2, Jan, 2000. (http://www.jilp.org/vol2).

21. Somnath Ghosh, Margaret Martonosi, Sharad Malik. Cache Miss Equations: A Compiler Framework for Analyzing and Tuning Memory Behavior. *ACM Transactions on Programming Languages and Systems*. July, 1999. Vol. 21, No. 4, pages 703-746.

22. Kevin Skadron, Pritpal Ahuja, Douglas W. Clark, Margaret Martonosi. Branch Prediction, Instruction Window Size and Cache Size: Performance Tradeoffs and Sampling Techniques. *IEEE Transactions on Computers*. November, 1999. Vol. 48, No. 11, pages 1260-1281.

23. Margaret Martonosi, Scott Karlin, Cheng Liao, Douglas W. Clark. Performance Monitoring Infrastructure in the Shrimp Multicomputers. *International Journal of Parallel and Distributed Systems and Networks. Invited paper in special issue on "Measurement of Program and System Performance"*. 1999. Volume 2, Number 3, pages 126-133.

24. Peixin Zhong, Pranav Ashar, Sharad Malik, Margaret Martonosi. Using Reconfigurable Computing Techniques to Accelerate Problems in the CAD Domain: A Case Study with Boolean Satisfiability. *IEEE Transactions on Computer-Aided Design*. June 1999. pages 861-868.

25. Mary W. Hall and Margaret Martonosi. Adaptive Parallelism in Compiler-Parallelized Code. *Concurrency: Practice and Experience*. Volume 10(14), pages 1235-1250 (1998).

26. Mark Horowitz, Margaret Martonosi, Todd C. Mowry, Michael D. Smith. Informing Memory Operations: Memory Performance Feedback Mechanisms and their Applications. *ACM Transactions on Computer Systems*. May, 1998. Volume 16(2), pages 170-205.

27. Per Stenström, Erik Hagersten, David Lilja, Margaret Martonosi, Madan Venugopal. Shared-Memory Multiprocessing: Significant Issues and Research Needs. *IEEE Computer*, December, 1997. Vol. 30(12), pages 44-50.

28. Somnath Ghosh, Margaret Martonosi, Sharad Malik. Cache Miss Equations: An Analytical Representation of Cache Misses. *IEEE TCCA Newsletter*. June, 1997.

29. Margaret Martonosi and Kelly Shaw. Interactions between Application Write Performance and Compilation Techniques: A Preliminary View. *IEEE TCCA Newsletter*. June, 1997.

30. Evan Torrie, Margaret Martonosi, Chau-Wen Tseng, Mary W. Hall. Characterizing the Memory Behavior of Compiler-Parallelized Applications. *IEEE Transactions on Parallel and Distributed Systems*. December, 1996. Volume 7(12), pages 1224-1237.

31. Margaret Martonosi, Anoop Gupta, Thomas E. Anderson. Tuning Memory Performance in Sequential and Parallel Programs. *IEEE Computer*, April, 1995, pages 32-40.

ARCHIVAL PROCEEDINGS OF REFEREED CONFERENCES

1. Abhishek Bhattacharjee and Margaret Martonosi. “Thread Criticality Predictors for Dynamic Performance, Power, and Resource Management in Chip Multiprocessors”, International Symposium on Computer Architecture (ISCA-36), June 2009.
2. Abhishek Bhattacharjee, Margaret Martonosi, “Characterizing the TLB Behavior of Emerging Parallel Workloads on Chip Multiprocessors”, International Conference on Parallel Architectures and Compilation Techniques (PACT-18), Sept 2009. (One of three finalists selected for the Best Paper Award)
3. Gilberto Contreras and Margaret Martonosi. Characterizing and Improving the Performance of The Intel Threading Building Blocks Runtime Library. IEEE International Symposium on Workload Characterization. September, 2008.
4. Abhishek Bhattacharjee, Gilberto Contreras, Margaret Martonosi, “Full-System Chip Multiprocessor Power Evaluations Using FPGA-Based Emulation”, International Symposium on Low Power Electronics and Design (ISLPED), August 2008.
5. Pei Zhang and Margaret Martonosi. “LOCALE: Collaborative Localization Estimation for Sparse Mobile Sensor Networks”. Proc. International Conference on Information Processing in Sensor Networks (IPSN). April 2008.
6. Vincent Lenders, Emmanouil Koukoumidis, Pei Zhang, and Margaret Martonosi. “Location-based Trust for Mobile User-Generated Contents: Applications, Challenges and Implementations”, ACM Sigmobile HotMobile Workshop, Napa Valley, CA, USA, February 2008.
7. Christopher M. Sadler and Margaret Martonosi. “DALi: A Communication-Centric Data Abstraction Layer for Energy-Constrained Devices in Mobile Sensor Networks,” Proceedings of the ACM Conference on Mobile Systems, Applications, and Services (MobiSys) June 2007.
8. Eric Chi, Stephen A. Lyon, and Margaret Martonosi. Tailoring Quantum Architectures to Implementation Style: A Quantum Computer for Mobile and Persistent Qubits. 34th International Symposium on Computer Architecture. San Diego, CA. June, 2007.
9. Canturk Isci, Alper Buyuktosunoglu, Chen-Yong Cher, Pradip Bose and Margaret Martonosi. "An Analysis of Efficient Multi-Core Global Power Management Policies: Maximizing Performance for a Given Power Budget." 39th ACM/IEEE International Symposium on Microarchitecture (MICRO-39), December 2006.
10. Canturk Isci, Gilberto Contreras and Margaret Martonosi. "Live, Runtime Phase Monitoring and Prediction on Real Systems with Application to Dynamic Power Management." 39th ACM/IEE International Symposium on Microarchitecture (MICRO-39), December 2006.
11. Christopher M. Sadler and Margaret Martonosi. Data Compression Algorithms for Energy-Constrained Devices in Delay Tolerant Networks. 4th ACM Conference on Embedded Networked Sensor Systems (ACM Sensys 2006). Boulder, CO. November, 2006. (Best Presentation Award)
12. Pei Zhang, and Margaret Martonosi. "Poster Abstract: Energy Adaptation Techniques to Optimize Data Delivery in Store-and-Forward Sensor Networks". The Fourth ACM Conference on Embedded Networked Sensor Systems. Nov, 2006.
13. Gilberto Contreras and Margaret Martonosi. "Techniques for Real-System Characterization of Java Virtual Machine Energy and Power Behavior." *IEEE International Symposium on Workload Characterization (IISWC)*, October 2006.
14. James Donald and Margaret Martonosi. Power Efficiency for Variation-Tolerant Multicore Processors. IEEE International Symposium on Low Power Electronics and Design (ISLPED). Tegernsee, Germany. October, 2006.

15. Yong Wang, Margaret Martonosi, and Li-Shiuan Peh, " Supervised Learning in Sensor Networks: New Approaches with Routing, Reliability Optimizations ", Proceedings of IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2006), Reston, VA, Sept., 2006

16. Yong Wang, Margaret Martonosi, and Li-Shiuan Peh, "Situation-aware Caching Strategies in Highly Varying Mobile Networks", Proceedings of IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS 2006), Monterey, CA, September, 2006

17. James Donald and Margaret Martonosi. Techniques for Multicore Thermal Management: Classification and New Exploration. *33rd International Symposium on Computer Architecture*. Boston, MA. June, 2006.

18. Canturk Isci and Margaret Martonosi. Phase Characterization for Power: Evaluating Control-Flow-Based and Event-Counter-Based Techniques. 12th International Symposium on High-Performance Computer Architecture (HPCA). February, 2006.

19. Qiang Wu, Vijay J. Reddi, Youfeng Wu, Jin Lee, Daniel Connors, David Brooks, Margaret Martonosi, Douglas W. Clark. A Dynamic Compilation Framework for Controlling Microprocessor Energy and Performance. *38th Annual International Symposium on Microarchitecture*. Barcelona, Spain. November, 2005. (Best Paper Award)

20. Canturk Isci and Margaret Martonosi. Detecting Recurrent Phase Behavior under Real-System Variability. 2005 IEEE International Symposium on Workload Characterization. October, 2005.

21. Fen Xie, Margaret Martonosi, Sharad Malik. Efficient Behavior-driven Runtime Dynamic Voltage Scaling Policies. *International Conference on Hardware/Software Codesign and System Synthesis. (CODES+ISS)*, September, 2005.

22. Fen Xie, Margaret Martonosi, Sharad Malik. Bounds on Power Savings Using Runtime Dynamic Voltage Scaling: An Exact Algorithm and a Linear-time Heuristic Approximation. *10th International Symposium on Low Power Electronics and Design (ISLPED)*. August, 2005.

23. Gilberto Contreras, Margaret Martonosi. Power Prediction of Intel Xscale Processors Using Performance Monitoring Unit Events. *10th International Symposium on Low Power Electronics and Design (ISLPED).* August, 2005.

24. Philo Juang, Qiang Wu, Li-Shiuan Peh, Margaret Martonosi, D. W. Clark. Coordinated, Distributed, Formal Energy Management of Chip Multiprocessors. *10th International Symposium on Low Power Electronics and Design (ISLPED).* August, 2005.

25. Qiang Wu, Philo Juang, Margaret Martonosi, Douglas W. Clark. Voltage and Frequency Control with Adaptive Reaction Time in Multiple-Clock-Domain Processors. *Eleventh International Symposium on High-Performance Computer Architecture (HPCA)*. February, 2005. San Francisco, CA.

26. Qiang Wu, Philo Juang, Margaret Martonosi, Douglas W. Clark. Formal Online Methods for Voltage/Frequency Control in Multiple Clock Domain processors. *Eleventh International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS).* October, 2004. Boston, MA.

27. P. Zhang, C. Sadler, S. Lyon, and M. Martonosi, “Hardware Design Experiences in ZebraNet,” Proceedings of *SenSys 2004*, November 2004.

28. Yong Wang, Li-Shiuan Peh, and Margaret Martonosi. ATLAS: Mobility-Adaptive Behavior Using Route Lifetime Abstractions in Mobile Ad Hoc Networks. *Fifth ACM International Symposium on Mobile Ad Hoc Networking and Computing. (poster) MobiHoc 2004*

29. Gilberto Contreras, Margaret Martonosi, Jinzhan Peng, Roy Ju, Guei-Yuan Lueh. XTREM: A Power Simulator for the Intel XScale. *ACM SIGPLAN/SIGBED 2004 Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES'04).* Washington, DC. June, 2004.

30. Ting Liu, Christopher M. Sadler, Pei Zhang, and Margaret Martonosi. Implementing Software on Resource-Constrained Mobile Sensors: Experiences with Impala and ZebraNet. In *Mobisys 2004, the Second International Conference on Mobile Systems, Applications, and Services.* Boston, MA. June, 2004.

31. Russ Joseph, Zhigang Hu, and Margaret Martonosi. Spectral Analysis for Characterizing Program Power and Performance. *2004 IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS).* Austin, TX. March, 2004.

32. Russ Joseph, Zhigang Hu, and Margaret Martonosi. Wavelet Analysis for Microprocessor Design: Experiences with Wavelet-Based dI/dt Characterization. *Tenth International Symposium on High-Performance Computer Architecture (HPCA).* Madrid, Spain. February, 2004.

33. Canturk Isci and Margaret Martonosi. Run-time Power Monitoring and Estimation in High-Performance Processors: Methodology and Experiences. *36th Annual International Symposium on Microarchitecture*. San Diego, CA. December, 2003.

34. Ting Liu and Margaret Martonosi. Impala: A Middleware System for Managing Autonomic Parallel Sensor Systems. *ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP).* San Diego, CA. June, 2003.

35. Fen Xie, Margaret Martonosi, Sharad Malik. Compile-time Dynamic Voltage Scaling Using Mixed-integer Linear Programming. *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI).* San Diego, CA. June, 2003

36. Zhigang Hu, Margaret Martonosi, Stefanos Kaxiras. Timekeeping Techniques for Predicting and Optimizing Memory Behavior. *IEEE International Solid-State Circuits Conference.* (ISSCC). San Francisco, CA. February, 2003. *(Solicited submission, Technology Directions track.)*

37. Russ Joseph, David Brooks, Margaret Martonosi. Control Techniques to Eliminate Voltage Emergencies in High-Performance Processors. *Ninth International Symposium on High-Performance Computer Architecture (HPCA).* Anaheim, CA. February, 2003.

38. Zhigang Hu, Margaret Martonosi, Stefanos Kaxiras. TCP: Tag Correlating Prefetchers. *Ninth International Symposium on High-Performance Computer Architecture (HPCA).* Anaheim, CA. February, 2003.

39. Philo Juang, Hide Oki, Yong Wang, Margaret Martonosi, Li-Shiuan Peh, Daniel Rubenstein. Energy-Efficient Computing for Wildlife Tracking: Design Tradeoffs and Early Experiences with ZebraNet. *Tenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS).* October, 2002, pages 96-107.

40. Zhigang Hu, Philo Juang, Phil Diodato, Stefanos Kaxiras, Kevin Skadron, Margaret Martonosi, Douglas W. Clark. Applying Decay Strategies to Branch Predictors for Leakage Energy Savings. *International Conference on Computer Design*. Freiburg, Germany. September, 2002.

41. Zhigang Hu, Philo Juang, Phil Diodato, Stefanos Kaxiras, Kevin Skadron, Margaret Martonosi, Douglas W. Clark. Managing Leakage for Transient Data: Decay and Quasi-Static 4T Memory Cells. *International Symposium on Low-Power Electronics and Design*. (poster and extended abstract) Monterey, CA. August, 2002, pages 52-55.

42. Zhigang Hu, Stefanos Kaxiras, Margaret Martonosi. Timekeeping in the Memory System: An Efficient Approach to Predicting and Optimizing Memory Behavior. *29th International Symposium on Computer Architecture*. Anchorage, Alaska. May, 2002, pages 209-220.

43. Russell Joseph and Margaret Martonosi. Run-time Power Estimation in High Performance Microprocessors. *ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED'01)*. August, 2001, pages 135-140.

44. Stefanos Kaxiras, Zhigang Hu, Margaret Martonosi. Cache Decay: Exploiting Generational Behavior to Reduce Cache Leakage Power. *28th International Symposium on Computer Architecture*. Göteborg, Sweden. July, 2001, pages 240-251.

45. Margaret Martonosi and Hongli Zhang. A Mathematical Cache Miss Analysis for Pointer Data Structures. Invited paper in "Fundamental Methods for Performance Tuning on Cache-based Systems" track at *Tenth SIAM Conference on Parallel Processing for Scientific Computing.* Portsmouth, VA. March, 2001.

46. David Brooks and Margaret Martonosi. Dynamic Thermal Management for High-Performance Microprocessors. *Seventh International Conference on High-Performance Computer Architecture (HPCA-7).* January, 2001.

47. K. Skadron, M. Martonosi, D. W. Clark, A Taxonomy of Branch Mispredictions, and Alloyed Prediction as a Robust Solution to Wrong-History Mispredictions, *Symposium on Parallel Architectures and Compilation Techniques*. October, 2000.

48. Darko Stefanovic and Margaret Martonosi. Limits and Graph Structure of Available Instruction-Level Parallelism. *European Conference on Parallel Computing* (EuroPar). August, 2000.

49. Darko Stefanovic and Margaret Martonosi. Static and Dynamic Bitwidth Analysis. *Symposium on Field Programmable Logic* (FPL). August, 2000. (Also available as a Springer-Verlag volume.)

50. David Brooks and Margaret Martonosi. Wattch: A Framework for Architectural-Level Power Analysis and Optimizations. *27th International Symposium on Computer Architecture*. June, 2000, pages 83-94.

51. Somnath Ghosh, Margaret Martonosi, Sharad Malik. Automated Cache Optimizations using CME Driven Diagnosis. *14th Intl. Conference on Supercomputing (ICS).* May, 2000, pages 316-326.

52. Cheng Liao, Margaret Martonosi, Douglas W. Clark. Experience with an Adaptive Globally-Synchronizing Clock Algorithm. *ACM Symposium on Parallel Algorithms and Architectures*. June, 1999, pages 106 – 114.

53. Cheng Liao, Margaret Martonosi, Douglas W. Clark. An Adaptive Globally-Synchronizing Clock Algorithm and its Implementation on a Myrinet-based PC Cluster . *ACM SIGMETRICS Symp. on Measurement and Modeling of Computer Systems* (short paper/poster). May, 1999, pages 200-201.

54. Zhen Luo, Margaret Martonosi, Pranav Ashar. An Edge-Endpoint-Based Configurable Hardware Architecture for VLSI CAD Layout Design Rule Checking. *IEEE Symposium on FPGAs for Custom Computing Machines*. April, 1999.

55. David Brooks and Margaret Martonosi. Dynamically Exploiting Narrow Width Operands to Improve Processor Power and Performance. *Fifth International Conference on High-Performance Computer Architecture (HPCA-5)* . January, 1999.

56. Kevin Skadron, Pritpal S. Ahuja, Margaret Martonosi, Douglas W. Clark. Improving Prediction for Procedure Returns with Return-Address-Stack Repair Mechanisms. *31st ACM/IEEE International Symposium on Microarchitecture.* November, 1998, pages 259-271.

57. Zhen Luo and Margaret Martonosi. Using Delayed Addition to Accelerate Integer and Floating-Point Arithmetic on FPGAs. *SPIE Conference on Configurable Computing: Technology and Applications*. November, 1998.

58. Peixin Zhong, Margaret Martonosi, Sharad Malik, Pranav Ashar. Solving Boolean Satisfiability with Dynamic Hardware Configurations. *Eighth International Workshop on Field Programmable Logic and Applications*. August, 1998. (Also published as Springer-Verlag Lecture Notes in Computer Science Volume 1482).

59. Somnath Ghosh, Margaret Martonosi, Sharad Malik. Precise Miss Analysis for Program Transformations with Caches of Arbitrary Associativity. *Eighth Intl. Symposium on Architectural Support for Programming Languages and Operating Systems (ASPLOS).* October, 1998, pages 228-239.

60. Cheng Liao, Margaret Martonosi, Douglas W. Clark. Performance Monitoring in a Myrinet-Connected Shrimp Cluster. 1998 *ACM Sigmetrics Symposium on Parallel and Distributed Tools (SPDT).* August, 1998, pages 21-29.

61. Cheng Liao, Dongming Jiang, Margaret Martonosi, Douglas W. Clark, Liviu Iftode. Monitoring Shared Virtual Memory on a Myrinet-based PC Cluster. *12th ACM International Conference on Supercomputing (ICS).* July 1998, pages 251-258.

62. Kevin Skadron, Pritpal S. Ahuja, Margaret Martonosi, Douglas W. Clark. Multi-Path Execution: Opportunities and Limits. *12th ACM International Conference on Supercomputing (ICS).* July, 1998. pages 101-108.

63. Matthias A. Blumrich, Richard D. Alpert, Yuqun Chen, Douglas W. Clark, Stefanos N. Damianakis, Cezary Dubnicki, Edward W. Felten, Liviu Iftode, Kai Li, Margaret Martonosi, Robert A. Shillner. Design Choices in the SHRIMP System: An Empirical Study. *25th Annual International Symposium on Computer Architecture (ISCA).* June, 1998. pages 330-341.

64. Peixin Zhong, Pranav Ashar, Sharad Malik, Margaret Martonosi. Using Reconfigurable Computing Techniques to Accelerate Problems in the CAD Domain: A Case Study with Boolean Satisfiability. *Design Automation Conference*. June, 1998, pages 194-199.

65. Peixin Zhong, Margaret Martonosi, Pranav Ashar, Sharad Malik. Accelerating Boolean Satisfiability with Configurable Hardware. *IEEE Symposium on FPGAs for Custom Computing Machines (FCCM).* April, 1998.

66. Somnath Ghosh, Margaret Martonosi, Sharad Malik. Cache Miss Equations: An Analytical Representation of Cache Misses. *11th ACM International Conference on Supercomputing.* July, 1997, pages 317 – 324.

67. Sharad Malik, Margaret Martonosi, Yau-Tsun Steven Li. Static Timing Anlysis of Embedded Software. *Design Automation Conference.* June, 1997, pages 147-152.

68. Peixin Zhong and Margaret Martonosi. Using Reconfigurable Hardware to Customize Memory Hierarchies. *SPIE Conference on Reconfigurable Technology for Rapid Product Development and Computing.* November, 1996.

69. Mark Horowitz, Margaret Martonosi, Todd C. Mowry, Michael D. Smith. Memory Performance Feedback Mechanisms in Modern Processors. *23rd Annual International Symposium on Computer Architecture (ISCA).* May, 1996, pages 260-270.

70. Margaret Martonosi, Douglas W. Clark, Malena Mesarina. The SHRIMP Hardware Performance Monitor: Design and Applications. *ACM SIGMETRICS Symposium on Parallel and Distributed Tools (SPDT).* May, 1996. pages 61-69.

71. Margaret Martonosi, David Ofelt, Mark Heinrich. Integrating Performance Monitoring and Communication in Parallel Computers. *1996 ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems*. May, 1996, pages 138-147.

72. Wayne Wolf, Bede Liu, Andrew Wolfe, Margaret Martonosi, Yiqing Liang. A Digital Video Library for Classroom Use. *International Symposium on Digital Libraries*. August, 1995.

73. Evan Torrie, Chau-Wen Tseng, Margaret Martonosi, Mary W. Hall. Evaluating the Memory System Behavior of Compiler-Parallelized Codes on Multiprocessors. *International Conference on Parallel Architectures and Compilation Techniques*, June, 1995, pages 204-213. (Selected as an award paper for subsequent journal publication.)

74. Margaret Martonosi, Anoop Gupta, Thomas E. Anderson. Effectiveness of Trace Sampling for Performance Debugging Tools. *ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems*, May, 1993, pages 248-259.

75. Margaret Martonosi, Anoop Gupta, Thomas E. Anderson. MemSpy: Analyzing Memory System Bottlenecks in Programs. *1992 ACM Sigmetrics and Performance '92 International Conference on Measurement and Modeling of Computer Systems*, June 1992, pages 1-12.

76. Margaret Martonosi and Anoop Gupta. Tradeoffs in Message Passing and Shared Memory Implementations of a Standard Cell Router. *1989 International Conference on Parallel Processing.* Volume III, August, 1989, pages 88-96.

BOOK CHAPTERS

1. David Brooks, Margaret Martonosi, John-David Wellman and Pradip Bose. Power-Performance Modeling and Tradeoff Analysis for a High End Microprocessor. A chapter in Power-Aware Computer Systems, published in the series Lecture Notes in Computer Science. Springer Berlin / Heidelberg. Volume 2008/2001. Pages 126-136.
2. Peixin Zhong, Margaret Martonosi, and Sharad Malik. Boolean Satisfiability: Creating Solvers Optimized for Specific Problem Instances. (invited chapter) Reconfigurable Computing: The Theory and Practice of FPGA-based Computation. Editors: Scott Hauck and Andre Dehon. Elsevier, 2007.
3. Pei Zhang, Chris Sadler, Ting Liu, Ilya Fischhoff, Margaret Martonosi, Stephen A. Lyon, Daniel I. Rubenstein. Habitat Monitoring with ZebraNet: Design and Experiences. Chapter in Wireless Sensor Networks: A Systems Perspective, N. Bulusu and S. Jha (editors), Artech House, 2005.
4. Per Stenström, Erik Hagersten, David Lilja, Margaret Martonosi, Madan Venugopal. Trends in Shared-Memory Multiprocessing. Chapter in Advances in Computers. Marvin Zelkowitz, editor. Academic Press. 1999.

REFEREED WORKSHOPS

1. Sibren Isaacman, Margaret Martonosi. "Potential for Collaborative Caching and Prefetching in Largely-Disconnected Villages." ACM Wireless Networks and Systems for Developing Regions Workshop (Held in conjunction with ACM MobiCom), September 2008
2. Carole-Jean Wu and Margaret Martonosi. A Comparison of Capacity Management Schemes for Shared CMP Caches. The Annual Workshop on Duplicating, Deconstructing, and Debunking. Held in conjunction with the 35th International Symposium on Computer Architecture (ISCA). June, 2008
3. Eric Chi, Stephen A. Lyon, and Margaret Martonosi. A Combinatorial Noise Model for Quantum Computer Simulation. The 4th Workshop on Non-Silicon Computing. (Held in conjunction with the FCRC 2007 and the 34th International Symposium on Computer Architecture (ISCA 2007)). June, 2007.
4. Pei Zhang, Christopher Sadler and Margaret Martonosi. "Middleware for Long-term Deployment of Delay-tolerant Sensor Networks". The first International Workshop on Middleware for Sensor Networks (MidSens'06). Nov, 2006.
5. Yong Wang, Chieh-Yih Wan, Margaret Martonosi, and Li-Shiuan Peh, "Transport Layer Approaches for Improving Idle Energy in Challenged Sensor Networks", Proceedings of ACM SIGCOMM Workshop on Challenged Networks (CHANTS 2006), Pisa, Italy, September, 2006
6. Yong Wang, Margaret Martonosi, and Li-Shiuan Peh, "A Supervised Learning Approach for Routing Optimizations in Wireless Sensor Networks", Proceedings of ACM/SIGMOBILE Workshop on Multi-hop Ad Hoc Networks: from theory to reality (REALMAN 2006), pp. 79-86, Florence, Italy, May, 2006 (in conjunction with ACM MobiHoc 2006) (Acceptance rate: 12/68)
7. Julia Chen, Philo Juang, Kevin Ko, Gilberto Contreras, David Penry, Ram Rangan, Adam Stoler, Li-Shiuan Peh, and Margaret Martonosi. Hardware-modulated parallelism in chip multiprocessors. Workshop on Design, Architecture and Simulation of Chip Multi-Processors (dasCMP 2005). November, 2005. Also published as ACM SIGARCH Computer Architecture News. Volume 33 , Issue 4 (November 2005)
8. Yong Wang, Margaret Martonosi, and Li-Shiuan Peh, Poster Abstract: A New Scheme on Link Quality Prediction and its Applications to Metric-Based Routing, Proceedings of ACM SenSys, November, 2005
9. Yong Wang, Sushant Jain, Margaret Martonosi, and Kevin Fall, Erasure Coding Based Routing for Opportunistic Networks, *Proceedings of ACM SIGCOMM Workshop on Delay Tolerant Networking. (WDTN)* August, 2005.

10. James Donald and Margaret Martonosi. Leveraging Simultaneous Multithreading for Adaptive Thermal Control. *Second Workshop on Thermal-Aware Computer Systems (TACS-2). (Associated with International Symposium on Computer Architecture*.) June, 2005.

11. Canturk Isci, Margaret Martonosi, and Alper Buyuktosonoglu. Workload Phase Duration Prediction and its Application to DVS. IBM ACEED (Austin Conference on Energy-Efficient Design). March, 2005.

12. Canturk Isci, Zhigang Hu, and Margaret Martonosi. Building Microarchitectural Stressmarks for Thermal Testing. IBM ACEED (Austin Conference on Energy-Efficient Design). March, 2005.

13. Canturk Isci, Gilberto Contreras, Margaret Martonosi. Hardware Performance Counters for Detailed Runtime Power and Thermal Estimations:Experiences and Proposals. *Workshop on Hardware Performance Monitor Design and Functionality. (Associated with 11th Symposium on High-Performance Computer Architecture.)* February, 2005.

14. James Donald and Margaret Martonosi. Temperature-Aware Design Issues for SMT and CMP Architectures. *Workshop on Complexity-Effective Design*. (*Associated with International Symposium on Computer Architecture*.) June, 2004.

15. Yong Wang, Margaret Martonosi, and Li-Shiuan Peh. Mobility-Adaptive Routing Using Route Lifetime Abstractions in Mobile Ad Hoc Networks. Poster session. Fifth ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc) 2004.

16. Russ Joseph, David Brooks, Margaret Martonosi. Live, Runtime Power Measurements as a Foundation for Evaluating Power/Performance Tradeoffs. *Workshop on Complexity-Effective Design*. (Associated with 28th Annual International Symposium on Computer Architecture) July, 2001.

17. Zhigang Hu, Stefanos Kaxiras, Margaret Martonosi. Improving Cache Power Efficiency with an Asymmetric Set-Associative Cache. *Workshop on Memory Performance Issues*. (Associated with 28th Annual International Symposium on Computer Architecture) July, 2001.

18. David Brooks, J.D. Wellman, Margaret Martonosi, Pradip Bose. Power-Performance Modeling and Tradeoff Analysis for a High End Microprocessor. *Workshop on Power Aware Computing Systems. (Associated with Symposium on Architectural Support for Programming Languages and Operating Systems.)* November, 2000.

19. Zhigang Hu and Margaret Martonosi. Reducing Register File Power Consumption by Exploiting Value Lifetime Characteristics. *Workshop on Complexity-Effective Design*. (*Associated with International Symposium on Computer Architecture*.) June, 2000.

20. David Brooks and Margaret Martonosi. Adaptive Thermal Management for High-Performance Microprocessors. *Workshop on Complexity-Effective Design*. (*Associated with International Symposium on Computer Architecture*.) June, 2000.

21. Xianfeng Zhou and Margaret Martonosi. Augmenting Modern Superscalar Architectures with Configurable Extended Instructions. *Reconfigurable Architectures Workshop. (Associated with International Parallel and Distributed Processing Symposium).* May, 2000.

22. David Brooks and Margaret Martonosi. Implementing Application-Specific Cache Coherence Protocols in Configurable Hardware. *Workshop on Communications, Architecture, and Applications for Network-based Parallel Computing*. (CANPC, held in conjunction with HPCA-5), January, 1999.

23. Christina Leung, David Brooks, Margaret Martonosi, Douglas W. Clark. Exploiting Narrow Bitwidth Operations for Power and Performance. *Power-Driven Microarchitecture Workshop (in conjunction with ISCA98)*. Barcelona, Catalonia, Spain. June, 1998.

24. Cheng Liao, Dongming Jiang, Margaret Martonosi, Douglas W. Clark, Liviu Iftode. Monitoring Shared Virtual Memory on a Myrinet-based PC Cluster. *7th International Workshop on Scalable Shared-Memory Multiprocessors (in conjunction with ISCA98)*. Barcelona, Catalonia, Spain. June, 1998.

25. Mary Hall and Margaret Martonosi. Adaptive Parallelism in Compiler-Parallelized Code. *2nd SUIF Compiler Workshop*. August, 1997, Stanford, CA.

26. Peixin Zhong, Margaret Martonosi, Sharad Malik, Pranav Ashar. Implementing Boolean Satisfiability in Configurable Hardware. *International Workshop on Logic Synthesis*. May, 1997.

27. David L. Oppenheimer and Margaret Martonosi. Performance Signatures: A Mechanism for Intrusion Detection. *Information Survivability Workshop '97*. February, 1997.

28. Somnath Ghosh, Margaret Martonosi, Sharad Malik. Cache Miss Equations: An Analytical Representation of Cache Misses. *HPCA Workshop on Interactions between Compilers and Computer Architectures*. February, 1997.

29. Margaret Martonosi and Kelly Shaw. Interactions between Application Write Performance and Compilation Techniques: A Preliminary View. *HPCA Workshop on Interactions between Compilers and Computer Architectures*. February, 1997.

30. Margaret Martonosi. Leveraging off Monitoring/Coherence Similarities in Parallel Machines. *IEEE Symposium on Parallel and Distributed Processing Workshop on Program Visualization and Instrumentation*. October, 1996.

31. Samiha Mourad, Margaret Martonosi, Edward J. McCluskey. Benchmarking Magnitude Comparators. *4th Technical Workshop: New Directions for Integrated Circuit Testing*. October, 1989.

TECHNICAL REPORTS AND OTHER PUBLICATIONS

1. Canturk Isci; Margaret Martonosi; Alper Buyuktosunoglu. "Dynamic Adaptation in Server-Class Microprocessors: Workload Phase and Duration Predictions with Live Counter Measurements". IBM Research Report #RC23448. 2005.

2. Russ Joseph, Margaret Martonosi, Zhigang Hu. "Spectral Analysis for Characterizing Program Power and Performance". IBM Research Report #RC22935. 2003.

3. Russ Joseph, Zhigang Hu, Margaret Martonosi. "Wavelet Analysis for Microprocessor Design: Experiences with Wavelet-Based dI/dt Characterization". IBM Research Report #RC22855. 2003.

4. David Brooks, Pradip Bose, Margaret Martonosi. "Experimental validation of relative accuracy limits and sensitivities in power-performance simulators". IBM Research Report #RC22621. 2002.

5. Zhigang Hu, Margaret Martonosi, Stefanos Kaxiras. "TCP: Tag Correlating Prefetchers". IBM Research Report #RC22626. 2002.

6. David M. Brooks, John-David Wellman, Margaret Martonosi, Pradip Bose. "Power-Performance Modeling and Tradeoff Analysis for a High End Microprocessor". IBM Research Report #RC21875. 2001.

7. Zhigang Hu, Philo Juang, Kevin Skadron, Margaret Martonosi, D. W. Clark. Applying Decay Strategies to Branch Predictors for Leakage Energy Savings. Tech Report CS-2001-24, Univ. of Virginia Dept. of Computer Science. Oct. 2001.

8. David Brooks, Margaret Martonosi, Pradip Bose. "Abstraction via Separable Components: An Empirical Study of Absolute and Relative Accuracy in Processor Performance Modeling". IBM Research Report #RC21909. 2000.

9. Edward Felten, Wenjia Fang, Margaret Martonosi. Contention and Queueing in an Experimental Multicomputer: Analytical and Simulation-based Results. Princeton Computer Science Department Technical Report #TR-508-96. January, 1996.

10. Mark Horowitz, Margaret Martonosi, Todd C. Mowry, Michael D. Smith. Informing Loads: Enabling Software to Observe and React to Memory Behavior. Stanford Computer Systems Laboratory Technical Report #CSL-TR-95-673. July, 1995.

11. Margaret R. Martonosi. Analyzing and Tuning Memory Performance in Sequential and Parallel Programs. Ph.D. Dissertation. Dept. of Electrical Engineering, Stanford University. December, 1993. Also Stanford Computer Systems Laboratory Technical Report #CSL-TR-94-602.

SUMMARY OF ACTIVITIES

TEACHING

Fall, 1994	ELE 475: Computer Architecture
Spring, 1995	ELE 580: High-Performance Computing: Design and Evaluation
Spring, 1996	ELE 475: Computer Architecture
Fall, 1996	ELE 475: Computer Architecture
Spring, 1997	ELE 580a: Configurable Computing
Fall, 1997	ELE 475: Computer Architecture
Spring, 1998	ELE 470: Configurable Computing. (Curriculum development and equipment funded via $50,000 award from Princeton's 250th Anniversary Fund for Innovation in Undergraduate Education.)
Fall, 1998	ELE 475: Computer Architecture
Spring 1999	ELE 470: Configurable Computing
Fall, 1999	ELE 375, 475: Filled in for several lectures
Spring, 2000	ELE 470: Configurable Computing
Fall, 2000	ELE 375: Computing Structures
Spring, 2001	ELE 101: Computing for a Mobile World. Co-taught with Prof. Steve Lyon. (Curriculum development and equipment funded via award from Princeton's 250th Anniversary Fund for Innovation in Undergraduate Education.)
Fall, 2001	ELE 375/COS471: Computing Structures. ELE 375 offered as a cross-listed course with COS 471, and with a significantly revamped lab.
Spring, 2002	ELE 101: Computing for a Mobile World. Co-taught with Prof. Steve Lyon.
Fall, 2002	ELE 375/COS471: Computing Structures. ELE 375 offered as a cross-listed course with COS 471.
Spring, 2003	ELE 101: Computing for a Mobile World.
Fall, 2003	ELE580/COS597: Great Moments in Computing. (Graduate discussion-oriented course on seminal works across the field.) Co-taught with Prof. Doug Clark (CS)
Spring, 2004	ELE 101: Computing for a Mobile World.
Fall, 2004-Spring, 2005: On sabbatical; No teaching.	
Fall, 2005	ELE580/COS597: Great Moments in Computing. (Graduate discussion-oriented course on seminal works across the field.) Co-taught with Prof. Doug Clark (CS).
Spring, 2006:	Teaching release: Associate Dean.
Fall, 2006	ELE 475: Computer Architecture
Spring, 2007:	Teaching release: Associate Dean.
Fall, 2007	ELE 475: Computer Architecture
Spring, 2008	ELE/COS583: Great Moments in Computing. (Graduate-level discussion-oriented course on seminal works across the field.) Co-taught with Prof. Doug Clark (CS).
Fall, 2008	ELE 475: Computer Architecture
Spring, 2009	ELE/COS583: Great Moments in Computing. (Graduate-level discussion-oriented course on seminal works across the field.) Co-taught with Prof. Doug Clark (CS).

ADVISING

PH.D. STUDENTS GRADUATED:

Dr. Peixin Zhong. March, 1999. Dissertation Title: Using Configurable Computing to Accelerate Boolean Satisfiability. First job: Lucent Technologies. Now assistant professor at Michigan State University.

Prof. Kevin Skadron. April, 1999 (CS student, co-advised with Prof. Douglas W. Clark). Characterizing and Removing Branch Mispredictions. Now tenured associate professor at University of Virginia Dept. of Computer Science.

Dr. Somnath Ghosh (co-advised with Prof. Sharad Malik) September, 1999. Cache Miss Equations: Compiler Analysis Framework for Tuning Memory Behavior. Now at Intel Corp.

Dr. Zhen Luo. January, 2001. Accelerating CAD Applications using Configurable Hardware. Now at Synopsys Corp.

Cheng Liao. June, 2001. (CS student, co-advised with Prof. Douglas W. Clark.) Using Plug-In Techniques for Programmable I/O Devices. (deceased)

Prof. David Brooks. September, 2001. Design and Modeling of Power-Efficient Computer Architectures. Now in tenure-track faculty position at Harvard University Division of Engineering and Applied Sciences.

Dr. Zhigang Hu. Graduated 9/2002. The Timekeeping Methodology: Exploiting Generational Lifetime Behavior to Improve Processor Power and Performance. Now at IBM Research.

Dr. Russell Elphege Joseph. Graduated 2004. Monitoring and Managing Microprocessor Power Variation: Techniques and Applications. Now tenure-track faculty member at Northwestern University.

Dr. Philo Juang. Graduated 2006. Energy Management Techniques for Chip Multiprocessors. Now at Google Corp.

Dr. Fen Xie. Graduated 2006. (co-advised with Prof. Sharad Malik.) Optimizing and Bounding Software-Controlled Dynamic Voltage/Frequency Scaling: Analysis for Uniprocessors and Multiprocessors. Now at EMC.

Dr. Qiang Wu. Graduated 2006. (CS student, co-advised with Prof. Douglas W. Clark.) Architectural and Compiler Techniques for Microprocessor Power and Performance Management. Now at AMD.

Dr. Chris Sadler. Graduated 2007. Energy Conservation Techniques in Mobile Delay-Tolerant Sensor Networks. First job: Google.

Dr. James Donald. Graduated 2007. Techniques for Multicore Power and Thermal Management. First job: NVIDIA.

Dr. Canturk Isci. Graduated 2007. Workload-Adaptive Power Management with Live Phase Monitoring and Prediction. First job: VMWare.

Dr. Yong Wang. Graduated 2007, (CS student, co-advised with Prof. Li-Shiuan Peh.) Situation-Aware Optimizations in Challenged Networks. First job: VMWare.

Dr. Gilberto Contreras. Graduated 2008. Support for Dynamic Management of Parallelism in Chip Multiprocessors. First job: NVIDIA.

Dr. Pei Zhang. Graduated 2008. Collaboration and Adaptation for the Longevity of Mobile Delay-Tolerant Sensor Systems. First job: Carnegie Mellon University.

Dr. Eric Chi. Graduated 2009. Architecting Efficiency, Performance, and Scalability for Quantum Computers First job: NVIDIA.

CURRENT GRADUATE RESEARCH ADVISEES

Abhishek Bhattacharjee. Post-generals Ph.D. student.
Ozlem Bilgir. Pre-generals Ph.D. student.
Sibren Isaacman. Pre-generals Ph.D. student.
Wenhao Jia. Pre-generals Ph.D. student.
Emmanouil Koukoumidis. Post-generals Ph.D. Student (co-advised with Li-Shiuan Peh).
Ting Liu. Post-generals Ph.D. student. (Dept of Computer Science)
Yavuz Yetim. Pre-generals Ph.D. student. (co-advised with Sharad Malik).
Carole-Jean Wu. Post-generals Ph.D. Student.

PH.D. DISSERTATION COMMITTEE MEMBER FOR:

Changhoon Kim (non-reader) Dept. of Computer Science.
Kaiyu Chen (non-reader). 1/2009.
Amit Kumar (reader) Dept. of Electrical Engineering. 8/2008
Matthew Bridges (non-reader) Dept. of Computer Science. 9/2008.
Guilherme Ottoni (non-reader), Dept. of Computer Science. 8/2008.
Frances Perry (non-reader), Dept. of Computer Science. 8/2008.
Pedro Chaparro, UPC Barcelona. 2/2008.
Chia-Han Lee. Dept. of Computer Science. FPO 2/2008.
Daijue Tang, Dept. of Electrical Engineering. 7/2007.
Ram Rangan, Dept. of Computer Science. 5/2007 (reader)
Jiang Xu, Dept. of Electrical Engineering. 2/2007.
Taliver Heath, Dept. of Computer Science, Rutgers University. 2/2007.
Vassos Soteriou, Dept. of Electrical Engineering. 12/2006.
Nitin Garg, Dept. of Computer Science. 9/2006.
Ja-Chin Audrey Lee, Dept. of Electrical Engineering. 1/2006.
Yang Ni, Dept. of Computer Science, Rutgers University. 12/2005.
Lin Zhong, Dept. of Electrical Engineering. 9/2005
Kelly Shaw, Dept. of Computer Science, Stanford University. 3/2005.
Magnus Ekman, Chalmers Inst. of Tech., Gothenburg, Sweden 12/2004.
Tat K. Tan, Dept. of Electrical Engineering. 4/2004.
Lintao Zhang, Dept. of Electrical Engineering. 3/2004. (Reader)
C-H. Hsu, Dept. of Computer Science, Rutgers University. 5/2003.
Jiong Luo, Dept. of Electrical Engineering. 11/2003.
Ying Sophie Zhao, Dept. of Electrical Engineering. 10/2001. (Reader)

POSTDOCTORAL ASSOCIATES

Vincent Lenders. Ph.D. ETH Zurich. 2006. 1/2007-1/2008. Research on sparse networks of mobile systems.

Prof. Darko Stefanovic. Ph.D. University of Massachusetts. December, 1998. At Princeton 1/1999 to 8/2000, research on compilation to configurable hardware. Next job: tenure-track faculty in Dept. of Computer Science at University of New Mexico.

UNDERGRADUATE RESEARCH ADVISEES

Class of 1995
Andrew Stack
Class of 1996
Asmara Afework (undergraduate at Wayne State University, summer intern at Princeton via CRA-W Distributed Mentoring Program)
James Fei
Peter Kovac
David Oppenheimer
C. Eric Schrock
Class of 1997
Alfredo Cabeza
Andrew Howse
Luke McDowell
Arvind Seshan
Kelly Shaw (undergraduate at Duke University, summer intern at Princeton via CRA-W Distributed Mentoring Program)
Jon Snitow
Class of 1998
Joshua Toub
Jason Williams
Class of 2000

Christina Leung
Conor Madigan
Matthew Moskewicz
Hide Oki (CS)
Andrew Steiner

Class of 2001
Marie Eyoum (undergraduate at Virginia Union University, summer intern at Princeton via CRA-W Distributed Mentoring Program)
Gilberto Contreras (undergraduate at Univ. of Texas El Paso, summer intern at Princeton)

Class of 2002
Finnegan Callabro
Samuel Edoho-Eket (3 semesters)
Russ Ellis
Chidozie Enyinna (2 semesters)
Lisa Hsu
Jason Kace
Kinari Patel (2 semesters)
Karen Tang (2 semesters)
Jeremy Wall (2 semesters)

Class of 2003
Brad Hill

Class of 2004
Abhinav Agrawal (Intel Research Award winner)
Rachel Armitage (Oxford University Class of ’04; via Princeton-Oxford exchange program; 2 semesters)

Class of 2006
Prithvi Raj (2 semesters)

Class of 2007
Matthew Plough (SRC Undergraduate Research Award)
Gila Engel (undergraduate at Touro College, summer intern at Princeton via CRA-W Distributed Mentoring Program)
Maria Kazandjieva (undergraduate at Mt. Holyoke College, summer intern at Princeton via CRA-W Distributed Mentoring Program)

Class of 2008
Adriana Kovashka (undergraduate at Pomona College, summer intern at Princeton via CRA-W Distributed Mentoring Program)
Rebecca Fischer (undergraduate at Hiram College, summer intern at Princeton via CRA-W Distributed Mentoring Program)

Class of 2009
Megan Elmore (undergraduate at Georgia Tech, summer intern at Princeton via CRA-W Distributed Mentoring Program)
Brian Geistweite (CS, 2 semesters, thesis)
Ryan Bayer

Class of 2010
Sahar Hasan (undergraduate at Columbia University, summer intern at Princeton via CRA-W Distributed Mentoring Program)
Muhammad Amjad
T.J. Fazio

Undergraduate Academic Advisor: EE Class of ’98 (For 3 years from 1996-1998), EE Class of ’10.
Freshman Advisor: SEAS Class of ’01, SEAS Class of ’02, SEAS Class of ’04, SEAS Class of ’05.

DEPARTMENTAL SERVICE

9/01-6/04	**Director of Graduate Studies**
9/00-9/01	**EE Department Undergraduate Curriculum Committee**

9/00-9/01	**Chair, EE Department Undergraduate Labs Committee**
1/99-8/00, 1/01-9/01	**EE Department Computing Committee**
9/99-9/01	**Computer Engineering group Graduate Coordinator**
1/99-10/00	**EE Department General Exam Committee**
10/98-3/00	**EE Department Strategic Planning Committee**
9/94-9/95	**Seminar Chair**. Computer Engineering Group, Dept. of Electrical Engineering
3/96-99	**Princeton Summer Institute Organizing Committee**

SCHOOL OF ENGINEERING AND UNIVERSITY-WIDE SERVICE

4/08-present	**Executive Committee**, Keller Center for Innovation in Engineering Education
4/08-present	**Executive Committee,** Princeton Center for Information Technology Policy.
4/06-4/08	**Executive Committee,** Princeton Institute for International and Regional Studies.
7/05-7/2007	**Associate Dean for Academic Affairs,** School of Engineering and Applied Science
9/2005-7/2007	**Chair, Faculty Team on Engineering Diversity (FTE-D)**
5/07	**Faculty Judge.** Princeton Undergraduate Research Symposium.
9/2005-6/2006	**Co-Chair, Faculty Search committee for Transformative hire in Engineering and the Life Sciences**
1/01-6/04	**Faculty adviser to Princeton GWISE (Graduate Women in Science and Engineering)**
10/01-6/04	**EE representative to Master of Engineering program committee.**
9/03-6/04	**Fellowship Sub-Committee of the Faculty Committee on the Graduate School**
9/02-6/04	**University Priorities Committee** (Chaired by Provost, makes operating budget recommendations to Trustees)
3/03-6/04	**SEAS Strategic Planning Committee**
11/02-9/03	**Policy Sub-Committee of the Faculty Committee on the Graduate School**
9/01-6/02	**Student Life and Discipline Subcommittee of the Faculty Committee on the Graduate School**
12/01-4/02	**Selection Committee for President's Award for Distinguished Teaching**
9/00-6/01	**Faculty Advisory Committee, McGraw Center for Teaching and Learning**
9/97-5/00	**Faculty Advisory Committee on Policy**
9/97-5/00	**Council of the Princeton University Community**
9/97-5/00	**Executive Committee of the Council of the Princeton University Community**
6/95-present	**Faculty Fellow**. Affiliated professor at Princeton University's residential colleges.

RESEARCH COMMUNITY LEADERSHIP AND SERVICE

General Co-Chair, 2009 International Symposium on Microarchitecture (ACM)

Technical Program Co-Chair, 2009 International Conference on High Performance Embedded Architectures & Compilers (HiPEAC).

Technical Program Co-Chair, 6th ACM Conference on Embedded Networked Sensor Systems (SenSys 2008).

Member of Board of Directors, ACM SIGARCH (ACM's Special Interest Group on Computer Architecture). 7/07-present.

Member, Anita Borg Institute Award Committee. 2009-present.

Member, Eckert-Mauchly Award Committee. ACM Representative to joint IEEE/ACM committee selecting most prestigious career award in Computer Architecture. 2/2007-present.

External Advisory Committee member. NSF ADVANCE Program at Columbia University Earth Institute. 1/2007-present.

Member of Interview Committee. Vietnam Education Foundation. September, 2006. VEF is a US Government agency offering graduate science and engineering fellowships to Vietnamese undergraduates. I was part of an interview trip coordinated by NAE/NAS and VEF that traveled to Hanoi to conduct selection interviews**.**

Co-Chair. CRA-W/CDC Summer School Workshop on Computer Architecture. Princeton, NJ July 2006.

Technical Program Chair, 2006 ACM Conference on Architecture Support for Programming Languages and Operating Systems.

Member of Board of Directors, ACM SIGMETRICS (ACM's Special Interest Group on Performance Measurement and Modeling). 7/01-7/05. (two terms).

Vice-Chair, ACM SIGARCH (ACM's Special Interest Group on Computer Architecture). 7/03-7/07 (two terms).

Member of Board, Computing Research Association's Committee on the Status of Women in Computing Research. April, 2005-present.

Scientific Committee Member, African Institute of Science and Technology. International, multi-disciplinary committee of academic researchers offering technical and curricular guidance regarding the formation of the three-campus African Institute of Science and Technology (AIST) system.

Advisory Board Member, Georgia Institute of Technology: Center for Experimental Research in Computer Systems (CERCS) /Research Infrastructure (RI) Technical Advisory Board. Fall, 2002. (CERCS is a joint research center spanning College of Computing and School of Electrical and Computer Engineering at Georgia Tech.)

Technical Program Committee Co-Chair, 2002 ACM Sigmetrics Conference on Measurement and Modeling of Computer Systems. (Co-chair with Prof. Edmundo de Souza y Silva, UFRJ, Brazil.)

Member of Steering Committee:

- 2010 International Conference on High Performance Embedded Architectures & Compilers (HiPEAC '10)
- 14th Annual International Conference on Architecture Support for Programming Languages and Operating Systems. March, 2009.
- 13th Annual International Conference on Architecture Support for Programming Languages and Operating Systems. March, 2008.
- 32nd International Symposium on Computer Architecture (ISCA). June, 2005.
- 2005 International Conference on High Performance Embedded Architectures & Compilers (HiPEAC '05)

Workshop Organizer: Along with Prof. Kevin Skadron (U. Virginia) organized an invitation-only NSF Workshop on Computer Performance Evaluation with ~20 distinguished attendees.

Editorial Boards:

- IEEE Transactions on Mobile Computing (2/2008-present)
- ACM Transactions on Architecture and Compiler Optimization (5/2003 to present)
- IEEE Computer Architecture Letters (12/2001 to 2005)
- ACM Transactions on Modeling and Computer Simulation (1/1999 to 2004)
- IEEE Transactions on Parallel and Distributed Systems (1/2000 to 1/2004)

Technical Program Committee Memberships:

2010

IEEE International Symposium on High-Performance Computer Architecture (HPCA). Bangalore, India. January, 2010.

37th International Symposium on Computer Architecture (ISCA). June, 2010

2009

Intl. Conf. on High Performance Embedded Architectures & Compilers (HiPEAC). (co-chair)

14th Annual International Conference on Architecture Support for Programming Languages and Operating Systems. March, 2009.

2nd Annual HotMetrics workshop, in conjunction with the joint ACM SIGMETRICS/Performance 2009 conference. Seattle, WA. June, 2009.

Workshop on Energy Efficient Design (WEED 2009) in conjunction with ISCA '09.

Workshop on Modeling, Benchmarking, and Simulation (MoBS) in conjunction with ISCA '09.

2008

35th International Symposium on Computer Architecture (ISCA). June, 2008

7th ACM Conference on Embedded Networked Sensor Systems (SenSys), November 2007 (co-chair)

2007

Program Committee IEEE MICRO Special Issue "Top Picks in Computer Architecture" 2007

34th International Symposium on Computer Architecture (ISCA). June, 2007

ACM SIGMETRICS 2007 International Conference on Measurement and Modeling of Computer Systems.

IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS 2007)

16th International World Wide Web Conference (WWW2007). Developing Regions track.

International Conference on Parallel Architectures and Compilation Techniques (PACT'07)

MobiSys, the International Conference on Mobile Systems, Applications, and Services, 2007

Fourth Workshop on Embedded Networked Sensors (EmNets 2007)

5th ACM Conference on Embedded Networked Sensor Systems (SenSys), November 2007

First International Workshop on Mobile Opportunistic Networking (MobiOpp) 2007

2006

Twelfth International Symposium on Architectural Support for Programming Languages and Operating Systems (ASPLOS). Program Chair.

2005

International Solid-State Circuits Conference (ISSCC). TPC member for Digital sub-track.

Third International Conference on Mobile Systems, Applications, and Services (Mobisys 2005).

IEEE Fourth International Conference on Information Processing in Sensor Networks (IPSN'05)

3rd Annual ACM SIGPLAN Workshop on Memory Systems Performance (MSP '05)

IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS)

International Conference on Parallel Architectures and Compilation Techniques (PACT'05)

2004

Program Committee IEEE MICRO Special Issue "Top Picks in Computer Architecture" 2004

31st International Symposium on Computer Architecture (ISCA). June, 2004

Eleventh International Symposium on Architectural Support for Programming Languages and Operating Systems (ASPLOS)

37th Annual International Symposium on Microarchitecture (Micro-37)

2003

2003 International Conference on Supercomputing (ICS)

First ACM Conference on Embedded Networked Sensor Systems (SenSys 2003)

2003 ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED'03)

Workshop on Complexity-Effective Design (WCED '03)

2002

35th Annual International Symposium on Microarchitecture (Micro-35)

Workshop on Complexity-Effective Design (WCED '02)
International Symposium on Low-Power Electronics and Design (ISLPED '02)
International Conference on Parallel Architectures and Compilation Techniques (PACT'02)
29th International Symposium on Computer Architecture (ISCA). Anchorage, Alaska. May, 2002.
8th IEEE International Symposium on High-Performance Computer Architecture (HPCA). Boston, MA. February, 2002.
ACM Sigmetrics Conference on Measurement and Modeling of Computer Systems (Program Committee Co-chair)

2001

IEEE Intl. Symposium on Performance Analysis for Systems and Software (ISPASS).
ACM Sigmetrics Conference on Measurement and Modeling of Computer Systems
2001 ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED '01)
International Conference on Parallel Architectures and Compilation Techniques (PACT'01)

2000

Workshop on Complexity-Effective Design
6th IEEE International Symposium on High-Performance Computer Architecture (HPCA)
7th Reconfigurable Architectures Workshop (RAW '00)
27th International Symposium on Computer Architecture (ISCA)
ACM Sigmetrics Conference on Measurement and Modeling of Computer Systems
2000 IEEE Symposium on FPGAs for Custom Computing Machines

1999

1999 International Conference on Supercomputing (ICS)
6th Reconfigurable Architectures Workshop (RAW '99)

1998

25th International Symposium on Computer Architecture (ISCA)
Joint ACM Sigmetrics and Performance '98 Conference on Measurement and Modeling of Computer Systems
1998 International Conference on Parallel Processing (ICPP)
1998 ACM Sigmetrics Symposium on Parallel and Distributed Tools (SPDT)

1997

ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems

Grants and NSF Panel Reviews: NSF ITR Review panel, May, 2001. NSF Career Award Reviews, October, 1999. NSF Next-Generation Software January, 2002. NSF EHS Reviews, Fall, 2007.

Paper and Grant Reviews: for NSF, numerous journals and conferences.

Publicity Chair, 28th International Symposium on Computer Architecture (ISCA). Gothenburg, Sweden. June, 2001.

Committee Member ETS GRE Subject Exam Committee for Computer Science. 2004-2008.

SOCIETIES AND AFFILIATIONS

Member: ACM, ACM SIGARCH (Special Interest Group on Computer Architecture, Vice-chair), ACM SIGMETRICS (Special Interest Group on Performance Measurement and Modeling)
Senior Member: IEEE and IEEE Computer Society

TUTORIALS, SEMINARS, AND KEYNOTE TALKS

Invited Panelist: Workshop on Energy-Efficient Design. Associated with International Symposium on Computer Architecture (ISCA). June, 2009.

Invited Lecturer and Panelist. Rutgers CCC Workshop on Green Information Technology. May, 2009.

Distinguished Lecturer. Georgia Institute of Technology Dept. of Electrical and Computer Engineering. Emerging Issues for Next-Generation Microprocessors. Dec. 2008.

Keynote Speaker: International Conference on Compilers, Architectures and Synthesis for Embedded Systems (CASES). ZebraNet and Beyond: Applications and Systems Support for Mobile, Dynamic Networks. October, 2008.

Seminar Speaker. University of Edinburgh Dept. of Computer Science. Emerging Issues for Next-Generation Microprocessors. Sept. 2008.

Invited Speaker. UK Royal Society Meeting on Ubiquitous Computing. ZebraNet and Beyond: Applications and Systems Support for Mobile, Dynamic Networks. March, 2008.

Distinguished Lecturer: ZebraNet and Beyond: Applications and Systems Support for Mobile, Dynamic Networks. Rutgers University Dept. of Electrical and Computer Engineering. March, 2008

Invited Speaker. IBM Research Seminar Series. Emerging Issues for Next-Generation Microprocessors. Feb, 2008.

Invited Speaker. University of Delaware Computer Science Seminar. ZebraNet and Beyond: Applications and Systems Support for Mobile, Dynamic Networks. Feb, 2008.

Invited Speaker. Harvey Mudd College Presentation Days. ZebraNet: Challenges and Experiences in Interdisciplinary Research. April, 2007.

Plenary Speaker: Senior Women's Forum, The Future of Computing: A Vision. Architecting Mobile Systems of the Future: Technical and Social Challenges. Cambridge University, UK. March, 2007.

Invited Speaker. Cornell University AMD Lecture Series in Computer Architecture. Dynamic Adaptive Techniques for Power, Performance, and Thermal Management in Chip Multiprocessors. November, 2006.

Keynote Speaker: Mobile Sensor Networks & the Princeton ZebraNet Project: Experiences and Challenges. Eighteenth Annual Symposium on Computer Architecture and High-Performance Computing (SBAC-PAD). Minas Gerais, Brazil. October, 2006.

Invited Panelist: Research in Interdisciplinary Science. Feedback and Dynamics in Nature Workshop, Grace Hopper Celebration of Women in Computing, San Diego, CA, October, 2006.

Invited Speaker and Interviewer: NAS/NAE trip to Vietnam to interview for US government funded Vietnam Education Foundation (VEF) graduate fellowships. Seminars at two Vietnamese universities.

Invited Teacher: Power-efficient Computing. ACACES 2006 Second International Summer School on Advanced Computer Architecture and Compilation for Embedded Systems. L'Aquila, Italy. July, 2006

Keynote Speaker: Mobile Sensor Networks & the Princeton ZebraNet Project: Experiences and Challenges. Twelfth International IEEE Conference on Parallel and Distributed Systems. Minneapolis, Minnesota. July, 2006.

Invited Panelist: How will we develop and program emerging robust, low-power, adaptive multicore computing systems? Twelfth International IEEE Conference on Parallel and Distributed Systems. Minneapolis, Minnesota. July, 2006.

Keynote Speaker: Embedded Systems in the Wild: ZebraNet Software, Hardware, and Deployment Experiences. ACM SIGPLAN/SIGBED Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES). Ottawa, Canada. June, 2006.

Invited Seminar: Embedded Sensor Networks and the Princeton ZebraNet Project:
Experiences and Challenges. Dartmouth College Computer Science Colloquium. February, 2006

Invited Seminar: Embedded Sensor Networks and the Princeton ZebraNet Project:
Experiences and Challenges. Harvard University Computer Science Colloquium. November, 2005

Invited Seminar: The Princeton ZebraNet Project: Sensor Networks for Wildlife Tracking. University of California, Santa Barbara Department of Computer Science. May, 2005

Invited Seminar: "Adaptive Power/Performance Management for High-end Microprocessors". IBM Research CMOS Design Forum. Yorktown, NY. April, 2005.

Invited Speaker and Participant. Dagstuhl Workshop on Power-aware Computing Systems. Dagstuhl, Germany. April, 2005.

Invited Speaker: "Adaptive Power/Performance Management for High-end Microprocessors". IBM Austin Conference on Energy-Efficient Design. March, 2005.

Distinguished Lecturer. "The Princeton ZebraNet Project: Sensor Networks for Wildlife Tracking", University of Pennsylvania Department of Computer and Information Science. November, 2004.

Invited Seminar: "The Princeton ZebraNet Project: Sensor Networks for Wildlife Tracking". IBM Research. Hawthorne, NY. September, 2004.

Invited Seminar: "The Princeton ZebraNet Project: Sensor Networks for Wildlife Tracking". IBM Research. Yorktown, NY. July, 2004.

Invited Seminar: "The Princeton ZebraNet Project: Sensor Networks for Wildlife Tracking". Telcordia Labs. Morristown, NJ. December, 2003.

Invited Seminar: "The Princeton ZebraNet Project: Sensor Networks for Wildlife Tracking". Microsoft Research Labs. Mountain View, CA. December, 2003.

Invited Seminar: "The Princeton ZebraNet Project: Sensor Networks for Wildlife Tracking". University of Washington Computer Science and Engineering Department. October, 2003.

Invited Seminar: "The Princeton ZebraNet Project: Sensor Networks for Wildlife Tracking". Microsoft Research Labs. Seattle, WA. October, 2003.

Invited participant in CRA-W Career Mentoring Workshop panel. (part of Federated Computing Research Conferences). San Diego, CA. June, 2003.

Invited Seminar: "Power-Aware Computer Systems". Purdue University. Computing Research Institute. West Lafayette, IN. May, 2003.

Invited Seminar: "The Princeton ZebraNet Project". Duke University. Fitzpatrick Center on Photonics and Communication Systems. Durham, NC. March, 2003.

Invited Seminar: "Power-Aware Computer Systems". Massachusetts Institute of Technology. EECS Department. Cambridge, MA. December, 2002.

Distinguished Lecturer: "High-Tech Wildlife: Power-Aware Computing, Biocomplexity and the Princeton ZebraNet Project" University of California, San Diego. Sponsored by CRA-W, Depts. of Computer Science, Electrical & Computer Engineering, and CAL-IT^2. November, 2002.

Invited participant in CRA-W faculty/industry/grad student panel on Women, Engineering, and Graduate School. University of California, San Diego Dept of Computer Science. November, 2002.

Invited Seminar: "The Princeton ZebraNet Project: Energy-Efficient Computing meets Biocomplexity Research". Carnegie Mellon University ECE Department. Pittsburgh, PA. October, 2002.

Invited Seminar: "Stratified Sensing Networks". Telcordia Research. Morristown, NJ. October, 2002.

Invited Seminar: "Power-Aware Computer Systems: Measurement, Monitoring and Design". Intel Microprocessor Research Lab. Low-Power Computing Research Forum. Santa Clara, CA. September, 2002.

Invited Seminar: "Energy-Efficient Computing for Wildlife Tracking: Design Tradeoffs for ZebraNet". Rutgers University CS Department. Piscataway, NJ. September, 2002.

Invited Seminar: "Power-Aware Computer Systems: Measurement, Monitoring and Design". HP/Intel Joint Seminar Series. Shrewsbury, MA (Intel/HP IA64 and Alpha Microprocessor groups) and Marlborough, MA (High-performance Alpha Systems division) July, 2002.

Invited Panelist: IEEE Symposium on VLSI panel on Power-Aware Software. Pittsburgh, PA. April, 2002

Host and Panel Member: CRA-W faculty/industry/grad student panel on Women, Engineering, and Graduate School. Princeton University Departments of Electrical Engineering and Computer Science. November, 2001.

Invited Seminar: "Power-Efficient Architectures: Challenges and Opportunities". IBM TJ Watson Research Labs. October, 2001.

Tutorial: "Power-Aware Design, Analysis, and Modeling". 28th Annual International Symposium on Computer Architecture. July, 2001.

Tutorial: "Power-Performance Modeling, Analysis and Validation". 2001 ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems. Cambridge, MA. June, 2001. (Other tutorial speakers: Dr. Pradip Bose, IBM Research, and my graduate student, David Brooks).

Invited Seminar: "Power-Aware Architectures: Modeling and Techniques". University of Texas-Austin Computer Science Seminar Series. March, 2001.

Invited Tutorial: "Power-Performance Modeling, Analysis and Validation". Seventh IEEE Symposium on High-Performance Computer Architecture (HPCA-7) Monterrey, Mexico. January, 2001. (Other tutorial speakers: Dr. Pradip Bose, IBM Research, and my graduate student, David Brooks).

Distinguished CRA-W Lecturer: "Power-Aware Computer Architecture" University of Massachusetts Dept. of Computer Science. November, 2000.

Invited participant in CRA-W faculty/industry/grad student panel on Women, Engineering, and Graduate School. University of Massachusetts Dept of Computer Science. November, 2000.

Invited Seminar: "Architecture-level Models and Optimizations for Power Dissipation in Superscalar Processors". IBM TJ Watson Research Labs. June, 2000.

Invited Seminar: "Power-Aware Computer Architecture". University of Toronto Department of Electrical Engineering. February, 2000.

Invited Seminar: "Power-Aware Computer Architecture". University of Rochester Departments of Electrical and Computer Engineering and Computer Science. February, 2000.

Distinguished Lecturer: Hardware and Software Techniques for Program Customization. University of Virginia Dept. of Computer Science "Top Gun" Distinguished Lecture Series. November, 1999.

NSF Funding Planning Workshop: Research Directions for Next-Generation Systems Design and Integration. Invited participant. (CISE Directorate, CSA Program). June, 1999.

NSF Funding Planning Workshop: Research Directions for Experimental Systems. Invited participant. (CISE Directorate, Experimental Systems Program). September, 1998.

DARPA Funding Planning Workshop: Power-Aware Computers and Communication. Invited participant. (DARPA Information Technology Office). August, 1998.

Invited Seminars: "Compile-Time and Run-Time Approaches for Customizing Computations and Computer Systems". Given at: University of Washington, Massachusetts Institute of Technology, Stanford University, Microsoft Corporation, Hewlett-Packard Labs, Cornell University, Carnegie Mellon University, Dartmouth University. May, 1998-March, 1999.

Tutorial: 1997 ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems. Hardware and Software Performance Monitoring. Seattle, WA. June, 1997.

Invited Seminars: "Applications and Tools for Configurable Computing". Given at EE Department Corporate Affiliates Program, NEC C&C Research Laboratories. April-May, 1997.

Invited Talks: "Hardware and Software Performance Monitoring in Parallel and Distributed Systems". Given at AT&T Laboratories, invited talk at IEEE SPDP Workshop on Program Visualization and Instrumentation. February-March, 1997.

Invited Talks: "Memory Performance Monitoring in Modern Sequential and Parallel Computers". Given at: University of Utah, Hewlett-Packard Labs, University of Rochester, invited talk at 1995 International

Workshop on Computer Performance Measurement and Analysis, and Silicon Graphics Inc. January 1995-June 1996.

Tutorial: 1996 ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems. Hardware and Software Performance Monitoring. Philadelphia, PA. May, 1996.