

# Margaret R. Martonosi

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**Hugh Trumbull Adams '35 Professor of Computer Science**, Princeton University  
**Assistant Director for Computer and Information Science and Engineering**  
(CISE) at National Science Foundation. (IPA Rotator).

**Andrew Dickson White Visiting Professor-At-Large**, Cornell University

**Associated faculty**, Dept. of Electrical Engineering; Princeton Environmental Institute,  
Center for Information Technology Policy, Andlinger Center for  
Energy and the Environment.

**Research areas:** Computer architectures and the hardware/software interface,  
particularly power-aware computing and mobile networks.

## HONORS

**IEEE Fellow.** “For contributions to power-efficient computer architecture and systems design”

**ACM Fellow.** “For contributions in power-aware computing”

**2016-2022: Andrew Dickson White Visiting Professor-At-Large.** Cornell University. Roughly twenty people worldwide are extended this title based on their professional stature and expertise, and are considered full members of the Cornell faculty during their six-year term appointment.

**2019 SRC Aristotle Award, for graduate mentoring.**

**2018 IEEE Computer Society Technical Achievement Award.**

**2018 IEEE International Conference on High-Performance Computer Architecture Test-of-Time Paper award**, honoring the long-term impact of our HPCA-5 (1999) paper entitled “Dynamically Exploiting Narrow Width Operands to Improve Processor Power and Performance”

**2017 ACM SenSys Test-of-Time Paper award**, honoring the long-term impact of our SenSys 2004 paper entitled “Hardware Design Experiences in ZebraNet”.

**2017 ACM SIGMOBILE Test-of-Time Paper Award**, honoring the long-term impact of our ASPLOS 2002 paper entitled “Energy-Efficient Computing for Wildlife Tracking: Design Tradeoffs and Early Experiences with ZebraNet”.

**2015 ACM SIGARCH/IEEE-CS TCCA Long-term Influential ISCA Paper Award**, honoring the long-term impact of our ISCA 2000 paper entitled “Wattch: A Framework for Architectural-Level Power Analysis and Optimizations”.

**One of the 25 Most Significant Papers from the first 20 years of FCCM.** “Accelerating Boolean Satisfiability with Configurable Hardware.”, by Peixin Zhong, Margaret Martonosi, Pranav Ashar, and Sharad Malik. FCCM 1998. (Recognized at FCCM 2013).

**2015-2016: Jefferson Science Fellow, U.S. Department of State.** One of 11 tenured STEM professors selected for one-year fellowships on international technology policy.

**Marie R. Pistilli Women in EDA Achievement Award,** Design Automation Conference. June, 2015

**Anita Borg Institute ABIE Technical Leadership Award.** Oct, 2013.

**National Council of Women in Technology (NCWIT) & AT&T Undergraduate Research Mentoring Award.** May, 2013

**Princeton University Graduate Mentoring Award.** May, 2010.

**Best Paper awards:**

*49th Annual International Symposium on Microarchitecture.* Taipei, Taiwan. November, 2016.

*Ninth International Conference on Mobile Systems, Applications, and Services (MobiSys).* Washington, DC. June, 2011.

*First International Green Computing Conference (IGCC'10) (IEEE).* Chicago, IL. August, 2010.

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

Multiple papers selected for inclusion in “**Top Picks in Computer Architecture.**” IEEE Micro. 2006-present.

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

**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), Spring '09 (ELE583, Great Moments in Computing). Fall '10 (ELE580A, Green Information Technology). Spring '15 (ELE583, Great Moments in Computing).

**Princeton University 250<sup>th</sup> Anniversary Fund for Innovation in Undergraduate Education.** In 2000, for curriculum development related to an introductory programming course on handheld devices. In 1997, for curriculum development related to an undergraduate course in Configurable Computing.

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

**Qualcomm Faculty award.** 2017, 2018

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

**National Science Foundation CAREER Award,** 1995-1998.

**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.

## PROFESSIONAL EXPERIENCE

2/2020-present **Assistant Director** for the Computer and Information Science and Engineering (CISE) Directorate, National Science Foundation.

7/2017-1/2020 **Director,** Keller Center for Innovation in Engineering Education

- 8/2015- 8/2016 **Jefferson Science Fellow**, US Department of State. (1-year sabbatical doing tech policy in State Department's International Communications and Information Policy office. Now continuing as a part-time expert consultant.
- 1/2011-1/2012 **Acting Director**. Center for Information Technology Policy.
- 9/2010-present **Professor**. Dept. of Computer Science, Princeton University;
- 2/ 2004-9/2010 **Professor**. Dept. of Electrical Engineering, Princeton University;
- 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.
- 9/1994-9/2010 **Affiliated faculty**, Dept. of Computer Science
- 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.

## GRANTS

- 2018-2022 **DARPA Software-Defined Hardware Program**. The DECADES Project: Deeply-Customized Accelerator-Oriented Data Supply Systems Synthesis
- 2018-2023 **National Science Foundation Expedition in Computing**. EPiQC:Enabling Practical-Scale Quantum Computation. PI transferred to Houck due to NSF CISE AD.
- 2018-2021 **National Science Foundation SHF**. Decentralized On-Chip Infrastructure for Robustness and Portability in Heterogeneous Multicores. PI transferred to Tureci due to NSF CISE AD.

- 2017-2020 **National Science Foundation CPS.** Towards Secure, Privacy-Preserving, Verifiable Cyberphysical Systems. PI transferred to Tureci due to NSF CISE AD.
- 2017-2019 **SRC JUMP Center on Applications Driving Architectures.** Co-PI and Communications theme leader.
- 2015-2018 **National Science Foundation XPS.** Verification and Optimization Tools for Heterogeneous Memory Consistency Models.
- 2013-2017 **DARPA/MARCO STARNET program. C-FAR Center on Future Architectures Research.** Co-PI and Communications theme leader.
- 2013-2017 **DARPA PERFECT Program.** ESP: Embedded Scalable Platforms for Terascale Energy-Efficient Computing. (Collaborative with Columbia University and University of California, Berkeley).
- 2011-2014 **National Science Foundation Cyberphysical Systems:** Efficient Mapping and Management of Applications onto Cyber-Physical Systems. (Collaborative with Prof. Pei Zhang, CMU).
- 2011-2014 **National Science Foundation CCF-SHF:** ShapeShifting and PubSub for Tailoring Memory Accesses and Communication in Heterogeneous Multiprocessors. (Collaborative with Prof. Kevin Skadron, Virginia).
- 2011-2014 **IARPA:** Aggressive Optimization and Resource Estimation of Next-Generation Quantum Computing Systems.
- 2009-2012 **National Science Foundation CNS-CSR:** System Support for Managing Carbon Footprints and Electricity Costs in Internet Services.
- 2009-2012 **National Science Foundation CCF-SHF SISA:** A System-Level ISA for Power-Performance Management in CMPs.
- 2008 **Google Corporation.** Data-Center-Level Power/Performance Management.
- 2007-2010 **National Science Foundation CSR-EHS:** Cross-System Modeling and Management for Variation-Adaptive Computing. Joint with Marculescu (CMU).
- 2006-2010 **National Science Foundation CSR-EHS:** A Space and Resource Aware Computing Architecture for Dynamic Networks. Joint with Peh and Ulrich Kremer (Rutgers).
- 2006-2010 **National Science Foundation CT:** Well-Typed Trustworthy Computing in the Presence of Transient Faults. Joint with Walker, August, Clark, and Appel. (COS).
- 2005-2010 **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).
- 2005-2009 **DARPA/MARCO:** A Proposal for Collaborative Research in the Design, Verification, and Test of Integrated Gigascale Systems: The GigaScale Systems Research Center.
- 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).)

2005-2009 **Intel Corporation.** Dynamic Compiler-time Energy and Power Control for Intel Processors. Co-PI. (PI is Clark).

2004-2006 **National Science Foundation.** Joint EU/US program for international collaboration. 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. PI. (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. Co-Principal Investigator. (PI is Lyon.)

2003-2006 **Intel Corporation.** Power/Performance Modeling for Java-based XScale Systems. Principal investigator.

2003-2006 **Semiconductor Research Corporation.** Adaptively-Controlled Execution for Power and Performance. Principal Investigator.

2002 **IBM University Partnership Award.** For 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. 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. Co-principal Investigator. (PI is Dobkin, CS. Other Co-Pis are Felten, Li, and Peterson, CS).

2001 **IBM University Partnership Award.** For 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. Principal investigator. (Co-Pis are Malik and Clark, CS).

2000 **IBM University Partnership Award.** For research in power-aware computing.

2000-2003 **National Science Foundation.** Instrumentation Support for System-on-a-chip and Embedded System Research. Principal investigator.

2000-2003 **Intel Corporation.** Power-Aware Organizational Tradeoffs in High-Performance Processors. Principal investigator.

1999-2004 **New Jersey Commission on Science and Technology.** Center for Embedded System-on-a-chip Design. Co-principal investigator.

1999 **Microsoft Corporation.** Compile-Time and Run-Time Techniques for Program Customization. Principal investigator.

1997-2000 **Intel Corporation.** Power-Aware Organizational Tradeoffs in High-Performance Processors. Principal investigator. (with Prof. Douglas W. Clark, CS).

- 1997 **NEC C&C Research Labs.** For configurable computing. Principal investigator.
- 1997-2000 **National Science Foundation.** Principal Investigator. Applications and Tools for Configurable Computing in Sequential and Parallel Computers.
- 1997-2000 **DARPA ITO.** Principal Investigator. Performance and Synthesis Tools for Adaptive Computing.
- 1995-1998 **National Science Foundation Faculty Early Career Development (CAREER) Award.** Principal Investigator. An Integrated Hardware and Software Performance Monitoring System.
- 1995-1999 **National Science Foundation.** Co-Principal Investigator. SHRIMP: Architectural and Systems Support for Inexpensive, High-Performance Multicomputers.
- 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

- Granted 2014 *Inter-core Cooperative TLB Prefetchers.* With Abhishek Bhattacharjee. US Patent #8880844. (Also, #9,524,232 in 2016)
- 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.

## ARCHIVAL PUBLICATIONS

According to Google Scholar on January 15, 2020, my publications have received a total of 26,688 citations, with an h-index of 71.

## BOOKS

National Academies Consensus Study Report: Quantum Computing: Progress and Prospects (2018). (Martonosi was member of 13-person committee that authored the report.)  
<https://www.nap.edu/catalog/25196/quantum-computing-progress-and-prospects>

Magnus Själander, Margaret Martonosi, and Stefanos Kaxiras. Power-Efficient Computer Architectures: Recent Advances. Synthesis Lectures on Computer Architecture 2014 9:3, 1-96

Stefanos Kaxiras and Margaret Martonosi. Computer Architecture Techniques for Power-Efficiency. Morgan & Claypool Publishers Synthesis Lectures on Computer Architecture. 2008,

## ARCHIVAL PROCEEDINGS OF REFEREED CONFERENCES

1. Term Grouping Techniques for VQE and Quantum Dynamics Circuits. K Gui, P Gokhale, T Tomesh, Y Ding, O Angiuli, M Suchara, M Martonosi. Bulletin of the American Physical Society. 2020.
2. Software Mitigation of Crosstalk on Noisy Intermediate-Scale Quantum Computers. P Murali, DC McKay, M Martonosi, A Javadi-Abhari. arXiv preprint arXiv:2001.02826 . Accepted for publication at International Conference on Architecture Support for Programming Languages and Operating Systems. 2020
3. Minimizing state preparations in variational quantum eigensolver by partitioning into commuting families. P Gokhale, O Angiuli, Y Ding, K Gui, T Tomesh, M Suchara, M Martonosi. arXiv preprint arXiv:1907.13623. 2019
4. Statistical assertions for validating patterns and finding bugs in quantum programs. Y Huang, M Martonosi. Proceedings of the 46th International Symposium on Computer Architecture. 2019
5. OKAPI: In support of application correctness in smart home environments. T Melissaris, K Shaw, M Martonosi. 2019 Fourth International Conference on Fog and Mobile Edge Computing (FMEC) 2019.
6. Resource optimized quantum architectures for surface code implementations of magic-state distillation. A Holmes, Y Ding, A Javadi-Abhari, D Franklin, M Martonosi, FT Chong. Microprocessors and Microsystems 67, 56-70. 2019
7. Full-Stack, Real-System Quantum Computer Studies: Architectural Comparisons and Design Insights. P Murali, NM Linke, M Martonosi, AJ Abhari, NH Nguyen, CH Alderete. Proceedings of the 46th International Symposium on Computer Architecture. (Selected for IEEE Micro Top Picks in Computer Architecture). arXiv preprint arXiv:1905.11349. 2019
8. Efficient Data Supply for Parallel Heterogeneous Architectures. TJ Ham, JL Aragón, M Martonosi, ACM Transactions on Architecture and Code Optimization (TACO) 16 (2), 2019.

9. Security Verification via Automatic Hardware-Aware Exploit Synthesis: The CheckMate Approach. C Trippel, D Lustig, M Martonosi IEEE Micro Top Picks in Computer Architecture. 39 (3), 84-93 2019.
10. Noise-adaptive compiler mappings for noisy intermediate-scale quantum computers. P Murali, JM Baker, A Javadi-Abhari, FT Chong, M Martonosi. Proceedings of the Twenty-Fourth International Conference on Architectural Support for Programming Languages and Operating Systems. 2019
11. Formal constraint-based compilation for noisy intermediate-scale quantum systems. P Murali, A Javadi-Abhari, FT Chong, M Martonosi. Microprocessors and Microsystems 66, 102-112. 2019
12. Next Steps in Quantum Computing: Computer Science's Role. M Martonosi, M Roetteler. arXiv preprint arXiv:1903.10541 2019.
13. Caroline Trippel, Daniel Lustig, and Margaret Martonosi. CheckMate: Automated Synthesis of Hardware Exploits and Security Litmus Tests. The 51st Annual IEEE/ACM International Symposium on Microarchitecture (MICRO), October 2018.
14. Yatin A. Manerkar, Daniel Lustig, Margaret Martonosi, and Aarti Gupta. PipeProof: Automated Memory Consistency Proofs of Microarchitectural Specifications. The 51st Annual IEEE/ACM International Symposium on Microarchitecture (MICRO), October 2018.
15. Yongshan Ding, Adam Holmes, Ali Javadi-Abhari, Diana Franklin, Margaret Martonosi, and Frederic T. Chong. Magic-State Functional Units: Mapping and Scheduling Multi-Level Distillation Circuits for Fault-Tolerant Quantum Architectures. The 51st Annual IEEE/ACM International Symposium on Microarchitecture (MICRO), October 2018.
16. Hongce Zhang, Caroline Trippel, Yatin A. Manerkar, Aarti Gupta, Margaret Martonosi, and Sharad Malik. Integrating Memory Consistency Models with Instruction-Level Abstraction for Heterogeneous System-on-Chip Verification. The 18th Conference on Formal Methods in Computer-Aided Design (FMCAD), October 2018.
17. Yatin A. Manerkar, Daniel Lustig, Margaret Martonosi, and Michael Pellauer. "RTLCheck: Verifying the Memory Consistency of RTL Designs", the 50th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO), October 2017.
18. Ali Javadi-Abhari, Pranav Gokhale, Adam Holmes, Diana Franklin, Ken Brown, Margaret Martonosi, and Frederic T. Chong. Optimized Surface Code Communication in Superconducting Quantum Computers, International Symposium on Microarchitecture. Boston, MA. October 2017
19. Themis Melissaris, Kelly A. Shaw, Margaret Martonosi. Locomotive: Optimizing Mobile Web Traffic Using Selective Compression, IEEE International Symposium on a World of Wireless Mobile and Multimedia Networks (WoWMoM), June 2017.



20. TriCheck: Memory Model Verification at the Trisection of Software, Hardware, and ISA. Caroline Trippel, Yatin A. Manerkar, Daniel Lustig, Michael Pellauer, Margaret Martonosi. 22nd International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Xian, China, April 2017
21. Graphicionado: A High-Performance and Energy-Efficient Accelerator for Graph Analytics, Tae Jun Ham, Lisa Wu, Narayanan Sundaram, Nadathur Satish, Margaret Martonosi. 49th Annual IEEE/ACM International Symposium on Microarchitecture. October, 2016. **(Best Paper Award)**.
22. COATCheck: Verifying Memory Ordering at the Hardware-OS Interface. Daniel Lustig, Geet Sethi, Margaret Martonosi, and Abhishek Bhattacharjee. 21st International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), April 2016. **(Subsequently selected for IEEE Micro Top Picks in Computer Architecture)**.
23. CCICheck: Using  $\mu$ hb Graphs to Verify the Coherence-Consistency Interface. Yatin A. Manerkar, Daniel J. Lustig, Michael I. Pellauer, Margaret Martonosi. 48th Annual IEEE/ACM International Symposium on Microarchitecture. December, 2015. **(Nominated for Best Paper Award)**.
24. DeSC: Decoupled Supply-Compute Communication Management for Heterogeneous Architectures. Tae Jun Ham, Juan Luis Aragon, Margaret Martonosi. 48th Annual IEEE/ACM International Symposium on Microarchitecture. December, 2015. **(Subsequently selected for Honorable Mention in IEEE Micro Top Picks in Computer Architecture)**.
25. Daniel J. Lustig, Caroline Trippel, Michael Pellauer, Margaret Martonosi. ArMOR: Defending Against Consistency Model Mismatches in Heterogeneous Architectures", the 42nd International Symposium on Computer Architecture (ISCA), June 2015.
26. Ozlem Bilgir Yetim and Margaret Martonosi. Dynamic Adaptive Techniques for Learning Application Delay Tolerance for Mobile Data Offloading. IEEE INFOCOM 2015. March, 2015. (Acceptance rate: 19%)
27. Yavuz Yetim, Sharad Malik, Margaret Martonosi. CommGuard: Mitigating Communication Errors in Error-Prone Parallel Execution. 20<sup>th</sup> International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). March, 2015.
28. Jeff Heckey, Ali JavadiAbhari, Shruti Patil, Adam Holmes, Daniel Kudrow, Ken Brown, Diana Franklin, Frederic T. Chong, and Margaret Martonosi. Compiler Management of Communication and Parallelism for Quantum Computation. 20<sup>th</sup> International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). March, 2015.
29. Daniel Lustig, Michael Pellauer, and Margaret Martonosi. PipeCheck: Specifying and Verifying Microarchitectural Enforcement of Memory Consistency Models. 47th Annual IEEE/ACM International Symposium on Microarchitecture.

December, 2014. **Nominated for Best Paper Award. (Subsequently selected for IEEE Micro Top Picks in Computer Architecture).**

30. Ali JavadiAbhari, Shruti Patil, Chen-Fu Chiang, Jeff Heckey, Margaret Martonosi, Frederic T. Chong. Characterizing the Performance Effect of Trials and Rotations in Applications that use Quantum Phase Estimation. IEEE International Symposium on Workload Characterization (IISWC). October, 2014
31. Ozlem Bilgir Yetim and Margaret Martonosi. Adaptive Delay-Tolerant Scheduling for Efficient Cellular and WiFi Usage. IEEE International Symposium on a World of Wireless Mobile and Multimedia Networks. June, 2014.
32. Ali JavadiAbhari, Shruti Patil, Jeff Heckey, Daniel Kudrow, Alexey Lvov, Frederic T. Chong, Margaret Martonosi. ScaffCC: A Framework for Compilation and Analysis of Quantum Computing Programs. ACM International Conference on Computing Frontiers, May 2014. **Stamatis Vassiliadis Best Paper Award.**
33. Wenhao Jia, Kelly A. Shaw, and Margaret Martonosi. MRPB: Memory Request Prioritization for Massively Parallel Processors. 20th IEEE International Symposium on High Performance Computer Architecture (HPCA 2014)
34. Darakhshan Mir, Sibren Isaacman, Ramon Cáceres, Margaret Martonosi, and Rebecca Wright. "DP-WHERE: Differentially Private Modeling of Human Mobility", In Proc. IEEE International Conference on Big Data (BigData), October 2013
35. Wenhao Jia, Kelly Shaw, and Margaret Martonosi, "Starchart: Hardware and Software Optimization Using Recursive Partitioning Regression Trees." International Conference on Parallel Architectures and Compilation Techniques (PACT), September, 2013.
36. Yavuz Yetim, Margaret Martonosi, and Sharad Malik. Extracting Useful Computation From Error-Prone Processors for Streaming Applications", Design, Automation & Test in Europe (DATE) Conference. March, 2013.
37. Dan Lustig and Margaret Martonosi. Reducing GPU Offload Latency Via Fine-Grained CPU-GPU Synchronization. HPCA 2013. The 19th IEEE International Symposium on High Performance Computer Architecture (HPCA). Shenzhen, China. Feb. 2013.
38. Maja Etinski, Margaret Martonosi, Kien Le, Ricardo Bianchini, and Thu Nguyen. "Optimizing the Use of Request Distribution and Stored Energy for Cost Reduction in Multi-Site Internet Services" The Second IFIP Conference on Sustainable Internet and ICT for Sustainability, October, 2012.
39. Ozlem Bilgir Yetim and Margaret Martonosi. "Adaptive Usage of Cellular and WiFi Bandwidth: An Optimal Scheduling Formulation (Short Paper)." The 7<sup>th</sup> ACM International Workshop on Challenged Networks (CHANTS 2012). August 2012.
40. S. Isaacman, R. Becker, R. Cáceres, M. Martonosi, J. Rowland, A. Varshavsky, and W. Willinger. Human Mobility Modeling at Metropolitan Scales. 10th ACM

International Conference on Mobile Systems, Applications, and Services (MobiSys), June 2012.

41. Wenhao Jia, Kelly A. Shaw, and Margaret Martonosi. Characterizing and Improving the Use of Demand-Fetched Caches in GPUs. 26th International Conference on Supercomputing (ICS 2012). June, 2012.
42. Wenhao Jia, Kelly Shaw, and Margaret Martonosi. Stargazer: Automated Regression-based GPU Design Space Exploration. 2012 IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS). April, 2012. Nominated for Best Paper Award.
43. Yavuz Yetim, Sharad Malik, and Margaret Martonosi. EPROF: An Energy/Performance/ Reliability Optimization Framework for Streaming Applications. ASP-DAC Conference. Jan-Feb, 2012.
44. Carole-Jean Wu, Aamer Jaleel, Will Hasenplough, Margaret Martonosi, Simon Steely Jr., and Joel Emer. SHiP: Signature-Based Hit Predictor for High Performance Caching. Proceedings of the 44th International Symposium on Microarchitecture (MICRO-44). December 2011.
45. Carole-Jean Wu, Aamer Jaleel, Margaret Martonosi, Simon Steely Jr., and Joel Emer. PACMan: Prefetch-Aware Cache Management for High Performance Caching. Proceedings of the 44th International Symposium on Microarchitecture (MICRO-44). December 2011.
46. Sibren Isaacman, Stratis Ioannidis, Augustin Chaintreau and Margaret Martonosi. Distributed Rating Prediction in User-Generated Content Streams. 5th ACM Conference on Recommender Systems (RecSys 2011). October, 2011.
47. Emmanouil Koukoumidis, Li-Shiuan Peh and Margaret Martonosi. SignalGuru: Leveraging Mobile Phones for Collaborative Traffic Signal Schedule Advisory. 9th International Conference on Mobile Systems, Applications, and Services (MobiSys), June 2011. **Best Paper Award.**
48. Sibren Isaacman, Ramon Caceres, Alex Varshavsky, Margaret Martonosi, Richard A. Becker, Stephen Kobourov. Identifying Important Places in People's Lives from Cellular Network Data. Pervasive 2011, the Ninth International Conference on Pervasive Computing. June, 2011.
49. Emmanouil Koukoumidis, Li-Shiuan Peh, and Margaret Martonosi. RegReS: Adaptively Maintaining a Target Density of Regional Services in Opportunistic Vehicular Networks. Ninth Annual IEEE International Conference on Pervasive Computing and Communications (PerCom 2011). March, 2011.
50. Carole-Jean Wu and Margaret Martonosi. Characterization and Dynamic Mitigation of Intra-Application Cache Interference. 2011 IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS). April, 2011. **(Nominated for Best Paper award.)**
51. Isaacman, S., M. Martonosi. "Low-Infrastructure Methods to Improve Internet Access for Mobile Users in Emerging Regions." 20th International World Wide Web Conference (WWW 2011), March 2011

52. Abhishek Bhattacharjee, Daniel Lustig, and Margaret Martonosi. Shared Last-Level TLBs for Chip Multiprocessors. International Symposium on High-Performance Computer Architecture (HPCA). February, 2011.
53. Pradip Hari, John McCabe, Jonathan Banafato, Marcus Henry, Kevin Ko, Emmanouil Koukoumidis, Ulrich Kremer, Margaret Martonosi, Li-Shiuan Peh. Adaptive Spatiotemporal Node Selection in Dynamic Networks. International Conference on Parallel Architectures and Compilation Techniques (PACT-19), Sept 2010.
54. Kien Le, Ozlem Bilgir, Ricardo Bianchini, Margaret Martonosi, Thu Nguyen. Capping the Brown Energy Consumption of Internet Services at Low Cost. International Conference on Green Computing. August, 2010. **Best Paper Award.**
55. K. Le, O. Bilgir, R. Bianchini, M. Martonosi, T. D. Nguyen. Managing the Cost, Energy Consumption, and Carbon Footprint of Internet Services. In Proceedings of ACM SIGMETRICS 2010, June 2010.
56. Bhattacharjee, A. and Martonosi, M. Inter-core cooperative TLB for chip multiprocessors. Proc. 15<sup>th</sup> Symposium on Architecture Support for Programming Languages and Operating Systems (ASPLOS), March, 2010, 359-370.
57. 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)**
58. 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.
59. 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.
60. 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.
61. 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.
62. Vincent Lenders, Emmanouil Koukoumidis, Pei Zhang, and Margaret Martonosi. “Location-based Trust for Mobile User-Generated Contents: Applications, Challenges and Implementations”, ACM Sigmobility HotMobile Workshop, Napa Valley, CA, USA, February 2008.
63. 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.

64. 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.
65. 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.
66. Canturk Isci, Gilberto Contreras and Margaret Martonosi. "Live, Runtime Phase Monitoring and Prediction on Real Systems with Application to Dynamic Power Management." 39th ACM/IEEE International Symposium on Microarchitecture (MICRO-39), December 2006.
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6. Sibren Isaacman, Richard Becker, Ramón Cáceres, Stephen Kobourov, Margaret Martonosi, James Rowland, Alexander Varshavsky. "Identifying Important Places in People's Lives from Cellular Network Data." NetMob 2011. Second conference on the Analysis of Mobile Phone Datasets and Networks. Oct. 2011. Cambridge, MA
7. Ozlem Bilgir, Margaret Martonosi and Qiang Wu. "Exploring the Potential of CMP Core Count Management on Data Center Energy Savings." 3rd Workshop on Energy Efficient Design (WEED 2011), June 2011.
8. Sibren Isaacman, Margaret Martonosi. "The C-LINK System for Collaborative Web Usage: A Real-World Deployment in Rural Nicaragua" 3<sup>rd</sup> ACM Workshop on Networking Systems for Developing Regions. (Held in conjunction with SOSR). October, 2009.
9. 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
10. 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 35<sup>th</sup> International Symposium on Computer Architecture (ISCA). June, 2008
11. 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.
12. 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.
13. 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
14. 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)

15. 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)
16. 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
17. 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.
18. 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.
19. 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.
20. Canturk Isci, Zhigang Hu, and Margaret Martonosi. Building Microarchitectural Stressmarks for Thermal Testing. IBM ACEED (Austin Conference on Energy-Efficient Design). March, 2005.
21. 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 11<sup>th</sup> Symposium on High-Performance Computer Architecture.)* February, 2005.
22. 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.
23. 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.
24. 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 28<sup>th</sup> Annual International Symposium on Computer Architecture)* July, 2001.

25. Zhigang Hu, Stefanos Kaxiras, Margaret Martonosi. Improving Cache Power Efficiency with an Asymmetric Set-Associative Cache. *Workshop on Memory Performance Issues*. (Associated with 28<sup>th</sup> Annual International Symposium on Computer Architecture) July, 2001.
26. 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.
27. 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.
28. 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.
29. 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.
30. 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.
31. 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.
32. Cheng Liao, Dongming Jiang, Margaret Martonosi, Douglas W. Clark, Liviu Iftode. Monitoring Shared Virtual Memory on a Myrinet-based PC Cluster. *7<sup>th</sup> International Workshop on Scalable Shared-Memory Multiprocessors (in conjunction with ISCA98)*. Barcelona, Catalonia, Spain. June, 1998.
33. Mary Hall and Margaret Martonosi. Adaptive Parallelism in Compiler-Parallelized Code. *2<sup>nd</sup> SUIF Compiler Workshop*. August, 1997, Stanford, CA.
34. Peixin Zhong, Margaret Martonosi, Sharad Malik, Pranav Ashar. Implementing Boolean Satisfiability in Configurable Hardware. *International Workshop on Logic Synthesis*. May, 1997.
35. David L. Oppenheimer and Margaret Martonosi. Performance Signatures: A Mechanism for Intrusion Detection. *Information Survivability Workshop '97*. February, 1997.

36. 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.
37. 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.
38. 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.
39. Samiha Mourad, Margaret Martonosi, Edward J. McCluskey. Benchmarking Magnitude Comparators. *4<sup>th</sup> Technical Workshop: New Directions for Integrated Circuit Testing*. October, 1989.

## TECHNICAL REPORTS AND OTHER PUBLICATIONS

1. Next Steps in Quantum Computing: Computer Science's Role. Margaret Martonosi and Martin Roetteler. Summary report on May, 2018 CCC Workshop. <https://cra.org/ccc/wp-content/uploads/sites/2/2018/11/Next-Steps-in-Quantum-Computing.pdf>
2. Exploring the Trisection of Software, Hardware, and ISA in Memory Model Design. Caroline Trippel, Yatin A. Manerkar, Daniel Lustig, Michael Pellauer, Margaret Martonosi. CoRR abs/1608.07547 (2016)
3. Counterexamples and Proof Loophole for the C/C++ to POWER and ARMv7 Trailing-Sync Compiler Mappings. Yatin A. Manerkar, Caroline Trippel, Daniel Lustig, Michael Pellauer, Margaret Martonosi. CoRR abs/1611.01507 (2016)
4. 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.
5. Russ Joseph, Margaret Martonosi, Zhigang Hu. "Spectral Analysis for Characterizing Program Power and Performance". IBM Research Report #RC22935. 2003.
6. Russ Joseph, Zhigang Hu, Margaret Martonosi. "Wavelet Analysis for Microprocessor Design: Experiences with Wavelet-Based dI/dt Characterization". IBM Research Report #RC22855. 2003.
7. David Brooks, Pradip Bose, Margaret Martonosi. "Experimental validation of relative accuracy limits and sensitivities in power-performance simulators". IBM Research Report #RC22621. 2002.
8. Zhigang Hu, Margaret Martonosi, Stefanos Kaxiras. "TCP: Tag Correlating Prefetchers". IBM Research Report #RC22626. 2002.
9. 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.

10. 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.
11. 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.
12. 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.
13. 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.
14. 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.

#### **OPINION PIECES AND MAJOR PRESS COVERAGE**

1. Press coverage on SpectrePrime and MeltdownPrime vulnerabilities. February, 2018
2. Statement on Diversity Presented at MICRO-50. Coverage on ACM SIGARCH blog and repeated on CRA blog:  
<https://www.sigarch.org/statement-on-diversity-at-micro-50/>  
<https://cra.org/statement-diversity-micro-50/>
3. Coverage on our ASPLOS 2017 paper regarding TriCheck memory model verification and RISC-V ISA Specification errors:  
<https://www.sciencedaily.com/releases/2017/04/170412132359.htm>  
<https://phys.org/news/2017-04-tool-architectures-reveals-flaws-emerging.html>  
<https://www.electronicweekly.com/open-source-engineering/risc-v-bugs-found-princeton-2017-04/>  
<http://www.designtimes.com/articles/3175/20170414/risc-v-processor-architecture-researchers-discovered-errors-design.htm>  
[https://www.eurekalert.org/pub\\_releases/2017-04/pues-tfc041217.php](https://www.eurekalert.org/pub_releases/2017-04/pues-tfc041217.php)  
<http://www.princeton.edu/main/news/archive/S49/20/10O81/index.xml?section=topstories>
4. How to Mine Cell-Phone Data Without Invading Your Privacy. By David Talbot. Coverage on our NetMob 2013 and MobiSys 2012 papers on mobility modeling. <http://www.technologyreview.com/news/514676/how-to-mine-cell-phone-data-without-invading-your-privacy/>
5. Margaret Martonosi. CNN Opinion piece on experimental science and data in politics and public policy: "Pull Akin from House Science Committee". August 23, 2012. <http://www.cnn.com/2012/08/23/opinion/martonosi-akin-science>

6. Margaret Martonosi. PBS “Need to Know” Opinion piece on Federal funding for IT Research. “IT research and the U.S. economy: A long view” February 16, 2012. <http://www.pbs.org/wnet/need-to-know/opinion/it-research-and-the-economy/13109/>
7. Extensive Coverage on SignalGuru project: (Selected articles from August, 2011)
  - a. Time: “Traffic App by MIT and Princeton Could Change Driving Forever.” <http://techland.time.com/2011/08/29/traffic-app-by-mit-and-princeton-could-change-driving-forever/>
  - b. NYTimes/GigaOm: “Research: Using Smartphones for Frugal Driving”. <http://www.nytimes.com/external/gigaom/2011/08/26/26gigaom-research-using-smartphones-for-frugal-driving-92932.html>
  - c. CNET: “Dashboard Phones Track Traffic Light Wait Times”. [http://news.cnet.com/8301-17938\\_105-20097453-1/dashboard-phones-track-traffic-light-wait-times/](http://news.cnet.com/8301-17938_105-20097453-1/dashboard-phones-track-traffic-light-wait-times/)
  - d. Slashdot: “SignalGuru Helps Drivers Avoid Red Lights”. <http://mobile.slashdot.org/story/11/08/29/0744243/SignalGuru-Helps-Drivers-Avoid-Red-Lights>
8. CNN Tech News article on ZebraNet project. “Endangered zebra life caught on GPS”. 4/24/08. <http://edition.cnn.com/2008/TECH/04/24/zebras.gps/>
9. BBC Radio4 “Leading Edge” programme. “The ZebraNet”. 12/5/02. [http://www.bbc.co.uk/radio4/science/leadingedge\\_20021205.shtml](http://www.bbc.co.uk/radio4/science/leadingedge_20021205.shtml)

## SUMMARY OF ACTIVITIES

### TEACHING

Martonosi has an outstanding track record of innovation in education, both in bringing current research topics into the classroom, and in teaching STEM topics to non-STEM students. Her ELE101 course “Computing for a Mobile World” offered undergraduates an in-depth programming experience (satisfying the Engineering School’s computing requirement) while also exposing them to issues from mobile networking, power-efficiency and other related topics. Perhaps in part of its unique approach in teaching “intro programming”, her class also was notable for attracting a diverse range of students, with roughly twice the women of other intro programming options and a range of engineering and non-engineering majors. At the “other end” of the curriculum, Martonosi teaches a graduate course entitled “Great Moments in Computing”, in which students learn about our discipline’s most fundamental topics by reading and discussing *original* primary-source materials from George Boole, Alan Turing, Maurice Wilkes, Gordon Moore, and others.

### Operating Systems

- COS318.
- *Comprehensive course on Operating Systems Concepts and Design. Aimed primarily at upper-level undergraduates, with some graduate enrollment also. Semester-long course project implements a full operating system.*

- Fall, 2011.

### **Computer Architecture**

- EE 475.
- *Advanced Computer Architecture class aimed seniors and graduate students. Taught in a discussion-oriented, interactive style with design scenarios and problems posed to students during lecture. In-depth research project serves as capstone experience.*
- Fall, 1994; Spring, 1996; Fall, 1996; Fall, 1997; Fall, 1998; Fall, 1999 (partial); Fall, 2006; Fall, 2007; Fall, 2008; Fall, 2009; Spring, 2011.

### **Great Moments in Computing**

- Taught first as EE580, now listed as EE583/CS583.
- *Martonosi introduced this course (co-taught with CS Prof. Doug Clark) to expose EE and CS graduate students to the great works of the field. Discussion-based course covers theories and inventions from Boole, Wilkes, Turing, Moore, and others using original, primary-source readings.*
- Fall, 2003; Fall, 2005; Spring, 2008; Spring, 2009; Spring, 2013; Spring 2015.

### **Mobile Computing**

- Taught first as COS590B.
- *Discussion-based course covers theory, practice, and technology trends in mobile systems. Course project to build or evaluate a mobile phone application or other mobile system.*
- Spring, 2012

### **Green Information Technology**

- Taught first as EE580A.
- *Discussion-based course covers techniques for power-aware computing with a particular focus on datacenters and very-large-scale parallel systems. In addition to computer systems and techniques, the course also covers public policy issues related to electricity pricing and carbon markets.*
- Fall, 2010

### **Computing for a Mobile World**

- ELE 101, Co-taught with Prof. Steve Lyon.
- *Introductory programming course which both satisfied the Engineering School's computing requirement for all Engineering majors, and also satisfied the "Science and Technology" requirement for non-Engineers. Highly-diverse collection of students from wide range of majors.*
- *Introduced students both to programming and more broadly to issues of modern computing including performance and energy constraints, networking, and graphical user interfaces.*
- *Curriculum development and equipment funded via award from Princeton's 250<sup>th</sup> Anniversary Fund for Innovation in Undergraduate Education.*

- Spring, 2001; Spring, 2002; Spring, 2003; Spring, 2004.

### **Computer Organization**

- Taught first as EE375 then cross-listed as EE375/CS471, then as CS/EE375.
- *First course in Princeton's Computer Organization / Computer Architecture sequence. Introduces students to basics of instruction fetch and execution. In 2000, Martonosi significantly revamped and modernized the hands-on lab, which includes processor design using FGPA emulation. In 2013, Martonosi returned to the course and revamped it to adjust prerequisite requirements to fit CS curriculum.*
- Fall 1999 (partial); Fall, 2000; Fall, 2001; Fall, 2002; Fall, 2013; Fall, 2014; Fall, 2016.

### **Configurable Computing**

- Taught first as EE580 (special topics) and subsequently as EE470.
- *Senior and Graduate-level course on the use of programmable hardware (e.g. FPGAs) for customized computing of targeted algorithms.*
- *Curriculum development and equipment funded via award from Princeton's 250<sup>th</sup> Anniversary Fund for Innovation in Undergraduate Education.*
- Spring, 1997; Spring, 1998; Spring, 1999; Spring 2000.

### **High-Performance Computing: Design and Evaluation**

- ELE 580—special topics.
- *Special topics graduate seminar course on methods and tools for Computer Performance Modeling, Simulation, and Measurement.*
- Spring, 1995

## **ADVISING**

### **PH.D. STUDENTS GRADUATED:**

1. Caroline Trippel. *Concurrency and Security Verification in Heterogeneous Parallel Systems*. October, 2019. First job: Pre-battical at Facebook Research, and tenure-track faculty position at Stanford University.
2. Tae Jun Ham. *Data Access Optimization in Accelerator-Oriented Heterogeneous Architecture through Decoupling and Memory Hierarchy Specialization*. June, 2018. First job: Post-doc at Seoul National University (to satisfy Korean military service.)
3. Ali Javadi-Abhari. *Towards a Scalable Software Stack for Resource Estimation and Optimization in General-Purpose Quantum Computers*. June, 2017. First Job: IBM T. J. Watson Research Center.
4. Daniel Lustig. *Specifying, Verifying, and Translating Between Memory Consistency Models*. November, 2015. First job: NVIDIA Research.
5. Yavuz Yetim. Graduated 2015. *Streaming Computation on Error-Prone Programmable Platforms*. First job: Google.
6. Ozlem Bilgir Yetim. Graduated 2015. *Minimizing Cellular Data Usage Using Application Delay Tolerance*. First job: VMWare.

7. Wenhao Jia. Graduated 2014. Analysis and Optimization Techniques for Massively Parallel Processors. First job: Qualcomm Research. (Co-advised with Prof. Kelly Shaw, University of Richmond.)
8. Carole-Jean Wu. Graduated 2012. Dynamic Techniques for Mitigating Inter- and Intra-Application Cache Interference. First job: Tenure-track Assistant Professor, Arizona State University.
9. Sibren Isaacman. Graduated 2012. Modeling the Impact of Human Mobility: Mobile Devices as Sensors and Content Vectors. First job: Tenure-track Assistant Professor, Loyola University of Maryland.
10. Emmanouil Koukoumidis. Graduated 2011. Collaborative and Adaptive Mobile Device-Resident Service Architectures. First job: Microsoft Corp.
11. Abhishek Bhattacharjee. Graduated 2010. Thread Criticality and TLB Enhancement Techniques for Chip Multiprocessors. Now tenured Professor, Rutgers University.
12. Dr. Eric Chi. Graduated 2009. Architecting Efficiency, Performance, and Scalability for Quantum Computers. Now at NVIDIA.
13. Dr. Pei Zhang. Graduated 2008. Collaboration and Adaptation for the Longevity of Mobile Delay-Tolerant Sensor Systems. Research Scientist at Carnegie Mellon University.
14. Dr. Gilberto Contreras. Graduated 2008. Support for Dynamic Management of Parallelism in Chip Multiprocessors. Now at NVIDIA.
15. Dr. Yong Wang. Graduated 2007, (CS student, co-advised with Prof. Li-Shiuan Peh.) Situation-Aware Optimizations in Challenged Networks. Now at VMWare.
16. Dr. Canturk Isci. Graduated 2007. Workload-Adaptive Power Management with Live Phase Monitoring and Prediction. Now at IBM Research.
17. Dr. James Donald. Graduated 2007. Techniques for Multicore Power and Thermal Management. Now at NVIDIA.
18. Dr. Chris Sadler. Graduated 2007. Energy Conservation Techniques in Mobile Delay-Tolerant Sensor Networks. Now at Google.
19. 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 Horizon Robotics.
20. 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.
21. Dr. Philo Juang. Graduated 2006. Energy Management Techniques for Chip Multiprocessors. Now at Google Corp.
22. Dr. Russell Elphege Joseph. Graduated 2004. Monitoring and Managing Microprocessor Power Variation: Techniques and Applications. Tenure-track faculty member at Northwestern University.
23. Dr. Zhigang Hu. Graduated 9/2002. The Timekeeping Methodology: Exploiting Generational Lifetime Behavior to Improve Processor Power and Performance. Independent investor.
24. Prof. David Brooks. September, 2001. Design and Modeling of Power-Efficient Computer Architectures. Endowed Chair Professor. Harvard University School of Engineering and Applied Sciences.



25. Cheng Liao. June, 2001. (CS student, co-advised with Prof. Douglas W. Clark.) Using Plug-In Techniques for Programmable I/O Devices. (deceased)
26. Dr. Zhen Luo. January, 2001. Accelerating CAD Applications using Configurable Hardware. Now at Magma Design Corp.
27. 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.
28. Prof. Kevin Skadron. April, 1999 (CS student, co-advised with Prof. Douglas W. Clark). Characterizing and Removing Branch Mispredictions. Endowed Chair Professor at University of Virginia Dept. of Computer Science.
29. Dr. Peixin Zhong. March, 1999. Dissertation Title: Using Configurable Computing to Accelerate Boolean Satisfiability. Now at Qualcomm.

#### CURRENT GRADUATE RESEARCH ADVISEES

Naorin Hossain, Pre-Generals PhD student.  
 Yatin Manerkar. Post-Generals PhD student.  
 Themistoklis Melissaris. Post-Generals PhD student.  
 Aninda Manocha, Post-Generals PhD student  
 Prakash Murali, Post-Generals PhD student  
 Wei Tang, Pre-Generals PhD student  
 Teague Tomesh, Pre-Generals PhD student  
 Marcelo Orenes Vera, Pre-Generals PhD student

#### PH.D. DISSERTATION COMMITTEE MEMBER FOR:

Qi (Jade) Nie (non-reader). Dept. of Electrical Engineering.  
 Michael McKeown (non-reader) Dept. of Electrical Engineering.  
 Jordan Fix (non-reader) Dept. of Computer Science. Nov, 2019  
 Adi Fuchs (non-reader). Dept. of Electrical Engineering. May, 2019  
 Yanqi Zhou (non-reader). Dept. of Electrical Engineering. May, 2018.  
 Arpit Joshi (external examiner), Dept. of Computer Science. University of Edinburgh.  
 April, 2018.  
 Pareesa Golnari (reader) Dept. of Electrical Engineering. March, 2018.  
 Yipeng Huang (external committee member), Dept. of Computer Science. Columbia University. February, 2018.  
 Paolo Mantovani (external committee member), Dept. of Computer Science. Columbia University. May, 2017.  
 Yaosheng Fu (non-reader). Dept. of Electrical Engineering. September, 2017.  
 Pramod Subramanyan (reader). Dept. of Electrical Engineering. 12/2016  
 Vasileios Spiliopoulos, Computer Science, Uppsala University. 9/2016  
 Konstantinos Koukos, Computer Science, Uppsala University. (Faculty Opponent) 9/2016  
 Rob Kiefer (non-reader). Dept of Computer Science. 5/2015.  
 Peng Sun (non-reader). Dept of Computer Science. 5/2015.  
 Divjyot Sethi (non-reader). Dept. of Electrical Engineering. 9/2014.  
 Kristof Dubois (external member of Ph.D. Jury) Ghent University, Belgium.

John Demme (External reader), Dept. of Computer Science, Columbia University. 1/2014

Qingyuan Deng (external reader), Dept. of Computer Science, Rutgers University.

Carven Chan (reader) Dept. of Electrical Engineering.

Wyatt Lloyd (non-reader). Dept of Computer Science.

Daniel Schwartz-Narbonne (reader). Dept. of Electrical Engineering.

Prakash Prabhu. (non-reader). Dept. of Computer Science

Arnab Sinha. (non-reader). Dept. of Electrical Engineering. 8/2012.

Kostantinos Aisopos (reader). Department of Electrical Engineering. 4/2012

Niket Agarwal (reader). Dept. of Electrical Engineering. 8/2010.

Kien Le, Rutgers University Dept. of Computer Science

Thomas Jablin (non-reader) Dept. of Computer Science.

Christian Bienia (non-reader) Dept. of Computer Science. 12/2010.

Jeffrey Dwoskin, Dept. of Electrical Engineering. 5/2010.

Bin Li, Dept. of Electrical Engineering. 11/2009.

Changhoon Kim, Dept. of Computer Science. 6/2009.

Kaiyu Chen, Dept. of Electrical Engineering. 1/2009.

Amit Kumar (reader) Dept. of Electrical Engineering. 8/2008

Matthew Bridges, Dept. of Computer Science. 9/2008.

Guilherme Ottoni, Dept. of Computer Science. 8/2008.

Frances Perry, Dept. of Computer Science. 8/2008.

Pedro Chaparro (reader) 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 (reader) 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 (reader) Chalmers Inst. of Tech., Gothenburg, Sweden 12/2004.

Tat K. Tan, Dept. of Electrical Engineering. 4/2004.

Lintao Zhang (reader) Dept. of Electrical Engineering. 3/2004.

C-H. Hsu (reader) Dept. of Computer Science, Rutgers University. 5/2003.

Jiong Luo, Dept. of Electrical Engineering. 11/2003.

Ying Sophie Zhao (reader) Dept. of Electrical Engineering. 10/2001.

#### POSTDOCTORAL ASSOCIATES

Esin Tureci. 4/2019-present

Luwa Matthews. Ph.D. Duke. Research on heterogeneous parallelism. 6/2018–8/2019.

Yipeng Huang. Ph.D. Columbia University. Research on Quantum Computing. 6/2018-present.

Tyler Sorensen. Ph.D. Imperial College, London. Research on heterogeneous parallelism. 7/2018-present.  
Daeki Cho. Ph.D. UCLA. Research on heterogeneous mobile systems. 12/2014 – 2015.  
Shruti Patil. Ph.D. University of Minnesota, 2012. 3/2013-3/2014. Research on quantum computing and synthesis of QC machines.  
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. Associate Professor, Dept. of Computer Science, University of New Mexico.

#### UNDERGRADUATE RESEARCH ADVISEES

Fall, 2019: Jake Kirkham '20, Markos Markakis (EE) '20. Jason Kim '21, Watson Jia '21, Julian Knodt '21.

Summer, 2019: Lia Yeh and Emma Dasgupta. Princeton/IBM QURIP program. Yeh's work won the MICRO-52 ACM Student Research Competition and advanced to the grand finals.

Spring, 2019: Lois Dzebissov '19; John Suh '20, Jake Kirkham '20, Nicholas Liu '21. Markos Markakis (EE) '20.

Fall 2018: Lois Dzebissov '19.

Spring, 2018: Vivian Mo '18. Melana Hammel '18. Rani Jaiswal '18 (second reader). Katherine Lim '18 (second reader).

Fall, 2017: Vivian Mo '18. Melana Hammel '18.

Spring 2017: CS Independent Work Co-Coordinator. Troy Murtha '17. Daphne Weinstein '17.

Fall, 2016: Daphne Weinstein. IW Seminar 02 on Internet of Things.

Spring, 2015: Gabriel Banevicius, Salvador Martinez

Fall 2014: Gabriel Banevicius, Matthew Drabick, Matthew Haake, Jonathan Meisel.

Previous semesters:

Class of 2015

Gabe Banevicius (Junior Thesis, 2 semesters)

Cornellius Metto

Class of 2014

Noah Apthorpe

Ailsa Leen (Oxford exchange program. 2 semesters)

Catherine Wu  
Class of 2013  
Richard Morse Price II (2 semesters, thesis)  
Shreshth Singhal (2 semesters, thesis)  
Kaitlin Stouffer (2 semesters, thesis. Princeton Sachs Prize winner; Gates  
Cambridge Scholar)  
Class of 2012  
Matt Jacobson  
Eric Kuto  
Zane Ma  
Kashif Smith (2 semesters, thesis)  
Class of 2011  
Kate Fischl  
Griffin Telljohann (CS, 2 semesters, thesis)  
Tarun Pondicherry (second reader on EE Senior Thesis.)  
Class of 2010  
Sahar Hasan (undergraduate at Columbia University, summer intern at Princeton via  
CRA-W Distributed Mentoring Program)  
Muhammad Amjad  
T.J. Fazio (CS, one semester junior independent work, plus two semesters senior  
thesis).  
Evan Kelly  
Brian Levee  
Michael Bachand  
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 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 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 2006  
Prithvi Raj (2 semesters)  
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 2003

Brad Hill

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 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 2000

Christina Leung

Conor Madigan

Matthew Moskewicz

Hide Oki (CS)

Andrew Steiner

Class of 1998

Joshua Toub

Jason Williams

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 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 1995

Andrew Stack

**DEPARTMENTAL, ENGINEERING SCHOOL, AND UNIVERSITY-WIDE SERVICE**

2017-2020 **Academic Advisor:** CS Undergraduate Class of '20  
2016 **Freshman Advisor:** SEAS Undergraduate Class of '20  
2011-2015 **Academic Advisor:** CS Undergraduate Class of '15  
2013-2015 **Chair, Faculty Search Committee,** Dept. of Computer Science.  
2014-2015 **Member, Senior Faculty Search Committee,** Andlinger Center for Energy and the Environment.  
2014-2015 **Review committee member.** ACEE/PEI Joint Call for Proposals for Innovative Research, Teaching, and Mentorship in Energy and the Environment.  
9/10-2015 **Executive Committee,** Program in Information Technology and Society  
4/08-2015 **Executive Committee,** Keller Center for Innovation in Engineering Education  
4/08-2015 **Executive Committee,** Princeton Center for Information Technology Policy.  
9/11-6/2012 **Faculty Search Committee,** Dept. of Computer Science.  
1/11-12/11 **Acting Director,** Princeton Center for Information Technology Policy.  
2/11-6/11 **Selection Community,** Princeton McGraw Center for Teaching and Learning Graduate Mentoring Award.  
9/10-1/11 **Search committee,** Princeton University Dean of the College.  
9/10-5/11 **Faculty Search Committee,** Dept. of Electrical Engineering.  
3/07-6/2010 **Academic Advisor:** EE Undergraduate Class of '10  
4/06-4/08 **Executive Committee,** Princeton Institute for International and Regional Studies.  
5/07 **Faculty Judge.** Princeton Undergraduate Research Symposium.  
7/05-7/07 **Associate Dean for Academic Affairs,** School of Engineering and Applied Science  
9/05-7/07 **Chair, Faculty Team on Engineering Diversity (FTE-D)**  
9/05-6/06 **Co-Chair, Faculty Search committee for Transformative hire in Engineering and the Life Sciences**  
9/03-6/04 **Fellowship Sub-Committee of the Faculty Committee on the Graduate School**  
3/03-6/04 **SEAS Strategic Planning Committee**  
11/02-9/03 **Policy 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)  
12/01-4/02 **Selection Committee for President's Award for Distinguished Teaching**  
9/01-6/04 **EE Department Director of Graduate Studies**  
9/01-6/02 **Freshman Adviser, SEAS Undergraduate Class of '05.**  
9/01-6/02 **Student Life and Discipline Subcommittee of the Faculty Committee on the Graduate School**  
9/00-9/01 **EE Department Undergraduate Curriculum Committee**  
9/00-9/01 **Chair, EE Department Undergraduate Labs Committee**

9/00-6/01	<b>Faculty Advisory Committee, McGraw Center for Teaching and Learning</b>
1/99-8/00, 1/01-6/04	<b>Faculty adviser to Princeton GWISE (Graduate Women in Science and Engineering)</b>
1/01-9/01	<b>EE Department Computing Committee</b>
10/01-6/04	<b>EE representative to Master of Engineering program committee.</b>
9/99-9/01	<b>Computer Engineering group Graduate Coordinator</b>
1/99-10/00	<b>EE Department General Exam Committee</b>
10/98-3/00	<b>EE Department Strategic Planning Committee</b>
9/98-6/99	<b>Freshman Adviser, SEAS Undergraduate Class of '02.</b>
9/97-5/00	<b>Council of the Princeton University Community</b>
9/97-5/00	<b>Faculty Advisory Committee on Policy</b>
9/97-5/00	<b>Executive Committee of the Council of the Princeton University Community</b>
9/97-6/98	<b>Freshman Adviser, SEAS Undergraduate Class of '01.</b>
3/95-6/98	<b>Undergraduate Academic Advisor: EE Undergraduate Class of '98</b>
9/94-9/95	<b>Seminar Chair.</b> Computer Engineering Group, Dept. of Electrical Engineering
3/96-99	<b>Princeton Summer Institute Organizing Committee</b>
6/95-present	<b>Faculty Fellow.</b> Affiliated professor at Princeton University's residential colleges.

## **RESEARCH COMMUNITY LEADERSHIP AND SERVICE**

**Series Editor, Morgan-Claypool Synthesis Lectures in Computer Architecture.**

### **Program Committee Chair:**

- **Technical Program Committee Co-Chair, ACM Symposium on Computing for Development (DEV-4). December, 2013.**
- **Technical Program Committee Chair, 2013 International Symposium on Computer Architecture. June, 2013.**
- **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).**
- **Technical Program Chair, 2006 ACM Conference on Architecture Support for Programming Languages and Operating Systems.**
- **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.)**

### **Conference General Chair:**

- **General Co-Chair, 2011 International Conference on High Performance Embedded Architectures & Compilers (HiPEAC).**

- **General Co-Chair, 2009 International Symposium on Microarchitecture (ACM)**
- **Workshop Organizer:** Along with Prof. Kevin Skadron (U. Virginia) organized an invitation-only NSF Workshop on Computer Performance Evaluation with ~20 distinguished attendees. (2001)

**Advisory Boards, Boards of Directors, and External Review:**

- **2018: Committee of external scholars to review Brown University's Department of Computer Science**
- **2018-2020: Singapore National Research Foundation (NRF) Fellowship Evaluation Panel (FEP)**
- **2017-2018: National Academies of Science, Engineering & Medicine Committee on Technical Assessment of the Feasibility and Implications of Quantum Computing.**
- **2015-2019: NSF Computer and Information Science and Engineering (CISE) Directorate Advisory Committee. Co-Chair 2016-2019.**
- **2014-2017: ACM SIGARCH Maurice Wilkes Award Committee**
- **2012-2015: Member, Advisory Board for the Department of Computer and Information Science at University of Pennsylvania.**
- **External Advisory Committee Member. Computer Engineering Program. University of California, Santa Barbara. 1/2010-2014. Chair of committee: 2012-2014.**
- **Elected Member of CRA Board of Directors, Computing Research Association. 6/09-2018. 2010-11: Chair, Election Committee. Executive committee 2011-2014.**
- **2014-2016. Selection committee member for ABIE Tech Leadership Award, Anita Borg Institute.**
- **2013-4. Expert Evaluator for Recruitment at KTH Royal Institute of Technology, Stockholm, Sweden.**
- **2013-2015: Defense Advanced Research Projects Agency (DARPA) Information Science and Technology (ISAT) study group.**
- **Member of Board of Directors, ACM SIGARCH (ACM's Special Interest Group on Computer Architecture). 7/07-2010.**
- **External Advisory Committee member. NSF ADVANCE Program at Columbia University Earth Institute. 1/2007-2009.**
- **2012-2015: ACM Doctoral Dissertation Award Committee**
- **Swedish Research Council 2010 Senior Researcher Review Committee.**
- **New York Academy of Sciences Blavatnik Award Review Committee. 2010 selection process.**
- **IEEE Fellows Committee. Class of 2011 Fellows. Class of 2012 Fellows.**
- **Member, Anita Borg Institute Award Committee. 2009-2010.**
- **Member, Eckert-Mauchly Award Committee. ACM Representative to joint IEEE/ACM committee selecting most prestigious career award in Computer Architecture. 2/2007-2010.**



- **Member of Interview Committee. Vietnam Education Foundation.** September, 2006; August, 2010. 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 and Ho Chi Minh City to conduct selection interviews.
- **Member of Board of Directors, ACM SIGMETRICS (ACM's Special Interest Group on Performance Measurement and Modeling). 7/01-7/05.**
- **Vice-Chair, ACM SIGARCH (ACM's Special Interest Group on Computer Architecture). 7/03-7/07 (two terms).**
- **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 Service towards Improving Diversity:**

- **Chair. CRA-W/CDC Summer School Workshop on Computer Architecture. Princeton, NJ July 2006.**
- **CRA-W, Computing Research Association's Committee on the Status of Women in Computing Research. Member of Board: April, 2005-2013. Elected Member of Steering Committee: April, 2011-2013. Co-Chair: 2017-2020**

#### **Member of Conference Steering Committee:**

- 2011 CRA/CCC Workshop on "Advancing Computer Architecture Research: What Now in ILP Research?". September, 2010.
- 1st ACM Annual Symposium on Computing for Development (DEV). December, 2010
- 8th ACM Conference on Embedded Networked Sensor Systems (SenSys 2010). November, 2010.
- 2010 CRA/CCC Workshop on "Advancing Computer Architecture Research: Popular Parallel Programming". February, 2010.
- 2010 International Conference on High Performance Embedded Architectures & Compilers (HiPEAC) January, 2010.
- 7th ACM Conference on Embedded Networked Sensor Systems (SenSys 2009). November, 2009
- 2009 CRA/CCC Workshop on "Computer Science and Global Development". August, 2009.
- 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) January, 2005.

### **Editorial Boards:**

IEEE Micro (7-2009-2016)  
 ACM Transactions on Architecture and Compiler Optimization (5/2003 to 5/2015)  
 IEEE Transactions on Mobile Computing (2/2008-8/2012)  
 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:**

#### **2020**

- International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). March, 2020.

#### **2019**

- International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). March, 2019. (External Review Committee.)
- 51st Annual IEEE/ACM International Symposium on Microarchitecture. (MICRO-51). October, 2019. (External Review Committee)
- IEEE MICRO Top Picks in Computer Architecture.

#### **2018**

- IEEE International Conference on Rebooting Computing

#### **2017**

- 50th Annual International Symposium on Microarchitecture (MICRO-50)

#### **2016**

- No program committees due to sabbatical leave.

#### **2015**

- 47th International Symposium on Computer Architecture (ISCA). June, 2015
- MobiSys 2015: The 13th International Conference on Mobile Systems, Applications, and Services. June, 2015.
- International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). March, 2015. (External Review Committee.)
- IEEE International Symposium on High-Performance Computer Architecture (HPCA). February, 2015.

#### **2014**

- Program Committee for pre-ISCA Workshop on Parallelism in Mobile Platforms (PRISM-2). June, 2014.

- Selection committee for IEEE MICRO Special Issue “Top Picks in Computer Architecture” 2014.
- 19th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). March, 2014.
- 1<sup>st</sup> Workshop on Probabilistic and Approximate Computing (Approx14) (Co-located with PLDI). June, 2014

### 2013

- DEV-4. ACM Conference on Technology for Development. December, 2013. (Program Co-Chair)
- 40th International Symposium on Computer Architecture (ISCA). June, 2013. (Program Chair)

### 2012

- 17th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS). March, 2012.
- 33rd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2012)
- 39th International Symposium on Computer Architecture (ISCA). June, 2012

### 2011

- 4<sup>th</sup> HotPower Workshop. (Associated with SOSP)
- 5th ACM Workshop on Networked Systems for Developing Regions (NSDR 2011)
- WW2011. Special Track on Emerging Regions. India, 2011.
- 38th International Symposium on Computer Architecture (ISCA). June, 2011
- 16th Annual International Conference on Architecture Support for Programming Languages and Operating Systems (ASPLOS). March, 2011.

### 2010

- IEEE International Symposium on High-Performance Computer Architecture (HPCA). Bangalore, India. January, 2010.
- 37th International Symposium on Computer Architecture (ISCA). June, 2010
- Eighth International Conference on Mobile Systems, Applications, and Services (Mobisys 2010).
- Workshop on Exascale Evaluation and Research Techniques (EXERT) at ASPLOS. March, 2010
- 1st ACM Annual Symposium on Computing for Development (DEV). December, 2010

### 2009

- 14th Annual International Conference on Architecture Support for Programming Languages and Operating Systems. March, 2009.
- 2<sup>nd</sup> 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

## **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)
- 16<sup>th</sup> 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

## **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**

- 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)
- 29<sup>th</sup> International Symposium on Computer Architecture (ISCA). Anchorage, Alaska. May, 2002.
- 8<sup>th</sup> IEEE International Symposium on High-Performance Computer Architecture (HPCA). Boston, MA. February, 2002.

## **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
- 6<sup>th</sup> IEEE International Symposium on High-Performance Computer Architecture (HPCA)
- 7<sup>th</sup> Reconfigurable Architectures Workshop (RAW '00)
- 27<sup>th</sup> 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)
- 6<sup>th</sup> Reconfigurable Architectures Workshop (RAW '99)

## **1998**

- 25<sup>th</sup> 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

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

**Publicity Chair**, 28<sup>th</sup> International Symposium on Computer Architecture (ISCA).  
Gothenburg, Sweden. June, 2001.

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

## **TUTORIALS, SEMINARS, AND KEYNOTE TALKS**

Distinguished Lecturer, University of California, San Diego. November 2019.

Distinguished Lecturer, Rutgers University Dept. of Computer Science. February 2019.

Invited Plenary Speaker. SC'18, Dallas, TX. November, 2018.

Tutorial: MICRO-51. Tutorial on Quantum Computing. October, 2018. (With Chong and Javadi-Abhari)

Invited Participant, White House Summit on Quantum Information Science.  
September, 2018.

Invited Speaker, IBM Research. September, 2018.

Invited Speaker. Microsoft Faculty Summit. 2 talks in sessions on Security and Quantum Computing. August, 2018.

Keynote Speaker, ACM PLDI Conference. June, 2018.

Keynote Speaker. ACM SIGMETRICS Conference. June, 2018.

Tutorial: International Symposium on Computer Architecture. Tutorial on Quantum Computing. June, 2018. (With Chong and Javadi-Abhari)

Distinguished Lecturer. Duke University Departments of Computer Science and Electrical Engineering. April, 2018.

Keynote Speaker. International Symposium on High-Performance Computer Architecture (HPCA). February, 2018.

Mary Jean Harrold Distinguished Lecturer. Georgia Tech. January 2018.

Keynote Speaker: "End of Moore's Law Challenges and Opportunities: A Computer Architect's Perspectives". IEEE International Conference on Rebooting Computing (ICRC), November, 2017. Washington, DC.

Keynote Speaker: "End of Moore's Law Challenges and Opportunities: A Computer Architect's Perspectives". Future Forum. October, 2017. Beijing, China.

Cornell University A. D. White Visiting Professorship Lecture: "Technology, Policy, and Service: The Way Forward". October, 2017, Ithaca, NY.

Tutorial: International Symposium on Computer Architecture. Tutorial on Specification and Verification of Memory Consistency Models. June, 2017

Invited Panelist: ACM A.M. Turing Award Turns 50: Celebrating 50 Years of Computing's Greatest Achievements (Turing 50). "Moore's Law is Really Dead: What's Next?". Panel chaired by Dr. John Hennessy. June, 2017

Distinguished Lecturer: University of California, Santa Barbara Institute for Energy Efficiency. May 2017.

Distinguished Lecturer: University of Pennsylvania. January 2017

Distinguished Lecturer: Carnegie Mellon University. January 2017

Distinguished Lecture: University of Chicago. December, 2016.

Keynote Speaker: MICRO-49. 49th Annual ACM/IEEE International Symposium on Microarchitecture. (First female keynote speaker in history of conference.) October, 2016.

Invited Seminar: University of Richmond Computer Science. March, 2016.

Invited Seminar: D. E. Shaw Research. February, 2016.

Distinguished Lecturer: Columbia University. November 2015.

Distinguished Lecturer: University of Maryland. October 2015.

Distinguished Lecturer. University of Waterloo School of Computer Science. June, 2015.

Invited Plenary Speaker. Quantum Programming Workshop. Institute for Quantum Computing. University of Waterloo, Ontario. June, 2015.

Distinguished Lecturer: Northeastern University. January 2015.

Invited Speaker. Career Workshop for Women and Minorities in Computer Architecture held in conjunction with MICRO 2014. Cambridge, UK. December, 2014.

Invited Speaker, Ghent University, May 2014.

Invited Speaker. University of Wisconsin. March, 2014.

Distinguished Lecture, Drexel University. January, 2014.

Keynote Speaker: 9<sup>th</sup> International Conference on High-Performance and Embedded Architectures and Compilers (HiPEAC). Vienna, Austria. January, 2014.

Invited Speaker. "Power-Aware Computing: Then and Now" Grace Hopper Celebration of Women in Computing. October, 2013.

Distinguished Lecture, "Mobile Computing: A Computer Architect's View". Duke University Dept. of Computer Science. March 2013.

Keynote Speaker, "Roadmapping Computer Architecture". CRA-W/CDC Computer Architecture Summer School. Evanston, IL. August, 2012.

Invited Speaker, "Mobile Computing: A Computer Architect's View". Microsoft Research, April, 2012.

Keynote Speaker "Parallelism, Heterogeneity, Communication: Emerging Challenges for Performance Analysis". 2012 IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS). April, 2012.

Distinguished Lecture, "Mobile Computing: A Computer Architect's View". Cornell University, School of Electrical and Computer Engineering, March, 2012.

Invited Speaker. "Research Challenges for Power-Aware Micro-architecture, Systems and Beyond". NSF Workshop on Cross-Layer Power Optimization and Management. February, 2012.

Distinguished Lecture, "Human Mobility and Universal Data Connectivity: Opportunities and Challenges". University of Illinois, Urbana-Champaign, Dept. of Computer Science. Nov, 2011.

Invited Technical Speaker. "Connecting the Disconnected: Improving Internet Access for the Other Four Billion". Grace Hopper Symposium. Portland, OR. November, 2011.

Workshop. Making the Most of Undergraduate Research. SIGCSE 2011. Dallas, TX. March, 2011.

Invited Seminar. Energy-Efficient Computing: The Role of Parallelism. Intel Corp. May, 2010.

Distinguished Lecture. Energy-Efficient Computing: The Role of Parallelism. University of Toronto. April, 2010.

Cray Distinguished Lecturer. Energy-Efficient Computing: The Role of Parallelism. University of Minnesota Dept. of Computer Science. March, 2010.

Distinguished Lecturer. Energy-Efficient Computing: From the Handheld to the Data Center . University of Southern California Ming Hsieh EE Department Distinguished Lecture Series. February, 2010.

Invited Panelist: CRA Career Mentoring Workshop, February, 2010.

Invited Panelist: DIMACS Workshop on Designing Networks for Manageability. Panel on Management and Energy-Efficiency Issues in Data Centers. November 12 - 13, 2009

Organizer of Special Session International Conference on Compilers, Architectures and Synthesis for Embedded Systems (CASES). Embedded Sensing Systems and Societal Impact. October, 2009.

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<sup>2</sup>. 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”. 28<sup>th</sup> 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.