

Curriculum Vitae

Patricia J. Teller

EDUCATION

May 1991, Ph.D., Computer Science, New York University, Courant Institute of Mathematical Sciences, Translation-Lookaside Buffer Consistency in Highly-Parallel Shared-Memory Multiprocessors.

January 1981, M.S., Computer Science, New York University.

February 1979, B.A., magna cum laude, New York University, Major: Computer Science, Minor: Economics.

TRAINING

In addition to numerous short workshops related to teaching and learning that are not listed, the following include one- and multiple-day workshops on this and other topics.

Leadership Workshop, May 2004.

The Team Learning Option Workshop, New Mexico State University, November 30, 2001.

Advanced Cooperative Learning Workshop, The University of Texas at El Paso, January 27, 2000.

Academic Integrity Workshop, The University of Texas at El Paso, May 1999.

NSF-sponsored Workshop, "Learn from success: workshops on establishing and obtaining support for long-term research and education programs," Denver, CO., December 2-3, 1998.

Welcoming Diversity Workshop (sponsored by Project Change El Paso and presented by the National Coalition Building Institute is Tomorrow), The University of Texas at El Paso, May 9, 1998.

Advanced Cooperative Learning Workshop, August 1997.

Cooperative Learning Workshop, August 1996.

Peer Group Teaching Workshop, New Mexico State University, 1995.

WRITE! Workshop, IBM T. J. Watson Research Center, 1990.

Presentation Workshop, IBM T. J. Watson Research Center, 1990.

HONORS AND AWARDS

SC08 General Chair. (The SCxy Conference is the largest (appx. 9,000 attendees) International Conference for High Performance Computing and Communications; it started in 1988.)

Invited Speaker at The Conference on High Speed Computing – Paths to Petaflops (The Salishan Conference), sponsored by Lawrence Livermore, Los Alamos, and Sandia National Laboratories, April 2005, Gleneden Beach, Oregon. (see Invited Presentations).

UTEP Star Award for research infrastructure, January 2005 (see Funding).

Elected Chair/Past Chair and Member of the Leadership Team, The Coalition to Diversity Computing (CDC), July 1, 2004-June 30, 2005/July 1, 2005-June 30, 2006. (CDC is a project-based organization that has as its primary goal the enhancement and diversification of the available pool of highly-trained scientists and engineers in computer-related fields. It is a joint organization of the Association of Computing Machinery (ACM), Computer Research Association (CRA), and Institute of Electrical and Electronic Engineering Computer Society (IEEE-CS).)

IBM Faculty Awards, 2005/2006, 2004/2005, 2003/2004, 2002/2003 (see Funding).

Elected Member of Steering Committee of SCxy Conference Series, November 2003-November 2006.

Member of Terascale Advisory Council of the Pittsburgh Supercomputing Center, 2002/2003.

CETaL Fellow, The University of Texas at El Paso, Fall 2001-Fall 2004. (CETaL fellows are full-time UTEP faculty and select administrators who have shown a strong commitment to teaching and have demonstrated teaching excellence in their own practice.)

Distinguished Teacher Nominee, The University of Texas at El Paso, Spring 2001.

ACM (Local UTEP Chapter) Faculty Appreciation Award, April 2002 and December and April 2001.

Faculty Marshal of Students, College of Engineering, Graduation, Fall 2000.

Certificate of Appreciation and Gift, The Institute for Community-based Teaching and Learning at The University of Texas at El Paso, \$1000, September 2000.

Indirect Incentive Awards, The University of Texas at El Paso Office of Research and Sponsored Projects, \$1000, March 2005, \$1000, November 2003 and \$1000, September 2000.

Keynote Speaker, Consortium for Computing in Small Colleges, Texas A&M University-Corpus Christi, April 2000.

Best Paper Award, 1998 Frontiers in Education Conference.

Invited Speaker, Transputers '94, September 1994.

Faculty Opponent and Invited Speaker, Lund Institute of Technology, School of Electrical Engineering, Lund, Sweden, May 1994.

Outstanding Referee Award, IEEE Computer Society Press, March 1994.

Honorary Member of the Golden Key National Honor Society, March 1994.

University Junior Faculty Teaching Award Nominee of Department and College, New Mexico State University, March 1994.

Best Paper Award Nominee, Architecture Track, Twenty-Seventh Hawaii International Conference on System Sciences, January 1994.

University Junior Faculty Teaching Award Nominee of Department and College, New Mexico State University, March 1993.

NYU Violet Award, New York University, March 1988.

Best Paper Award Nominee, Twenty-First Hawaii International Conference on System Sciences, January 1988.

Fellowship, New York University, Courant Institute of Mathematical Sciences, February 1979 - June 1983.

NYU Founders Day Award, New York University, February 1979.

Member of the Phi Beta Kappa National Honor Society, February 1979.

RESEARCH INTERESTS

Dynamic adaptation of applications, operating systems, and computer architectures; performance evaluation, modeling, and enhancements; workload characterization; parallel and distributed computing; computer architecture, and operating systems.

RELATED WORK EXPERIENCE

August 2005 – Present: The University of Texas at El Paso, El Paso, TX, Professor; August 2001 – August 2005: Associate Professor; January 1997 – August 2001: Assistant Professor: Teach courses in computer architecture, operating systems, performance evaluation, and parallel and distributed computing. Supervise undergraduate and graduate students, including Master's and Ph.D. candidates, involved in independent studies and research projects (see Students). Conduct and supervise research in the following areas: improved computer system/application performance through dynamic adaptation of the operating system, application, and runtime system in response to real-time constraints via performance monitoring, evaluation, and modeling; development and use of performance evaluation and modeling techniques for large scale-computer systems to identify application, architecture, and operating system performance problems and ways to enhance performance; development of methodologies for understanding the data generated by on-chip performance counters and use of this data to improve application performance; use of multivariate statistical analysis techniques to analyze performance counter data and communication event traces and use of this analysis to enhance application performance; characterization of workloads with respect to microarchitecture utilization and memory hierarchy design; design and development of hardware support for runtime software-fault detection; development and use of strategies for enhancing student learning, increasing retention, and increasing graduate student enrollment. (See Grants, Publications, Students.) Participate as member of university, college, department, and outside committees (see Service). Participate in outreach activities (see Service).

August 2001 – August 2003: The University of Texas at El Paso, El Paso, TX, Assistant Dean, Graduate Studies, The College of Engineering: Facilitate communication and coordination among the graduate advisors in the various departments of the College. Improve communication and coordination with the Graduate School. Initiate, organize, and orchestrate a hooding ceremony (before graduation) of the Master's candidates. Attend College Administrative Council weekly meetings, present talks re: the graduate programs of the College during presentations to constituents from industry, academia, and the government.

Summer 1996: Intel Corporation, Hillsboro, Oregon, Visiting Faculty: Measure and analyze execution characteristics of graphics applications, including gaming applications.

January 1992 - January 1997: New Mexico State University, Las Cruces, NM, Assistant Professor: Teach courses in computer architecture, operating systems, parallel computing, simulation, and performance evaluation. Design an innovative, hand-on course in machine programming and organization (see Publications). Supervise undergraduate and graduate students, including Master's and Ph.D. candidates, involved in independent studies and research projects. Conduct and supervise research in workload characterization (w.r.t. the memory hierarchy), uniprocessor and multiprocessor memory hierarchy design and performance evaluation, operating systems, parallel discrete event simulation, multiprocessor simulators, address-trace generators, and efficient simulation of multiprocessor performance on multiprocessors (see Grants, Publications, Students). Co-organize Computer Science/Electrical and Computer Engineering weekly seminar re: parallel processing. Participate as member of university, college, and department committees (see Service). Participate in outreach activities (see Service).

August 1991 - December 1991: NYU, CIMS, Ultracomputer Research Laboratory, NYC, NY, Research Scientist: Supervise graduate students working on porting parallel scientific programs to the NYU Ultracomputer. Study Weather benchmark using trace-driven simulations.

June 1989 - July 1991: IBM, T. J. Watson Research Center, Hawthorne, NY, Visiting Researcher: Study shared-memory multiprocessor performance w.r.t. memory hierarchies, virtual memory, multitasking, and cache consistency via trace-driven simulations. Research page replacement policies for shared-memory multiprocessors, parallel cache simulation techniques, and cache behavior.

January 1985 - April 1989: NYU, CIMS, Ultracomputer Research Laboratory, NYC, NY, Associate Research Scientist: Develop simulators to study network behavior, demand paging, and techniques for maintaining TLB consistency in shared-memory multiprocessors. Research debugging and monitoring of parallel programs. Design and implement master-slave (UNIX-based) operating system for IBM RP3

multiprocessor prototype. Design processor board for an Ultracomputer prototype. Parallelize programs. Coordinate Parallel Computing Seminar from Spring 1987 through Spring 1989.

July 1983 - November 1985: NYU, CIMS, NYC, NY, Assistant Research Scientist: At NYU: research cache consistency techniques and virtual memory implementation in highly-parallel, shared-memory multiprocessors. At IBM, T.J. Watson Research Center: parallelize applications to run on VM/EPEX, a VM parallel environment. Work with beta version of VM/EPEX and discover system bugs. Modify PSIMUL, a parallel program tracing facility, to provide specific tracing functionalities and use this to collect traces of parallel programs.

September 1982 - May 1984: NYU, CIMS, NYC, NY, Computer Science Lecturer: Teach undergraduate courses entitled Introduction to Computers and Programming (one semester) and Computer Architecture (three semesters).

September 1981 - June 1982: Grace Church School, NYC, NY, Instructor: Design and supervise a hands-on program in computer literacy for elementary school children in grades 2 through 8.

SCHOLARSHIP

PUBLICATIONS

REFEREED JOURNAL PAPERS

P. Teller and S. Seelam, "Insights into Providing Dynamic Adaptation of Operating System Policies," *ACM Operating Systems Review*, April 2006.

P. Teller and A. Gates, "Using the Affinity Research Group Model to Involve Undergraduate Students in Computer Science Research," *Journal of Engineering Education*, October 2001.

V. Adve, R. Bagrodia, J. Browne, E. Deelman, A. Dube, E. Houstis, J. Rice, R. Sakellariou, D. Sundaram-Stukel, P. Teller, and M. Vernon, "POEMS: End-to-end Performance Design of Parallel Adaptive Computational Systems," *IEEE Transactions on Software Engineering*, November 2000.

A. Gates and P. Teller, "An Integrated Development of a Dynamic Software-fault Monitoring System," *Journal of Integrated Design and Process Science*, **4**, 3, pp. 63-78, September 2000.

A. Gates, P. Teller, A. Bernat, N. Delgado, and C. Kubo Della-Piana, "Expanding Participation in Undergraduate Research Using the Affinity Group Model," *Journal of Engineering Education*, **88**, 4, pp. 409-414, October 1999.

G. Chen, A. Gottlieb, and P. Teller, "Optimization Techniques for Directory-based Cache Coherence Protocols for Large-scale Multiprocessors," *Parallel Computing: Trends and Applications*, pp. 671-674, 1994.

P. Teller, "Translation-lookaside Buffer Consistency," *IEEE Computer*, **23**, 6, pp. 26-36, June 1990.

INVITED JOURNAL PAPERS

P. Teller, "MP Simulations via Unscheduled Traces," *Calculateurs paralleles*, **7**, 1, pp. 9-25, April 1995.

BOOK SECTIONS

A. Bernat and P. Teller, "Concurrent/Distributed Computing Paradigm," *CRC Handbook of Computer Science and Engineering, Second Edition*, edited by Allen Tucker, Bob Stern, and Bob Noonan, et al., December 2003.

P. Teller, "The Cost of TLB Consistency," *Cache and Interconnect Architectures in Multiprocessors*, edited by M. Dubois and S. Thakkar, Norwell, MA: Kluwer Academic Publishers, pp. 1-14, 1990.

P. Teller, "Common Memory Working Group Summary," *Instrumentation for Future Parallel Systems*, edited by M. Simmons, R. Koskela, and I. Bucher, Addison-Wesley Publishing Co., pp. 233-237, 1989.

INVENTION DISCLOSURES

P. Teller and H. Stone, "Parallel Simulation of Multiprocessor Caches," *IBM Invention Disclosure*, July 1992.

REFEREED CONFERENCE AND WORKSHOP PAPERS

P. J. Teller, M. Taufer, R. Romero, and A. Kerstens, "Collaborative Research Tools for Students, Staff and Faculty," to appear in the *Proceedings of the International SUN Conference*, March 2006, In Press.

P. J. Teller, R. Araiza, J. Nava, and A. Taylor, "End-User Tools for Analysis of Parallel Performance Data," to appear in the *Proceedings of the 2006 DoD HPC Users Group Conference (UGC)*, Denver, CO, June 2006.

M. G. Aguilera, P. J. Teller, M. Taufer, and F. Wolf, "A Systematic Multi-step Methodology for Performance Analysis of Communication Traces of Distributed Applications based on Hierarchical Clustering," to appear in the *Proceedings of the 5th International Workshop on Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems (PMEO-PDS 2006)*, in conjunction with the IEEE International Parallel & Distributed Processing Symposium (IPDPS), April 2006.

M. Taufer, P. Teller, D. Anderson, and C. Brooks III, "Metrics for Effective Resource Management in Global Computing Environments," *Proceedings of the 1st IEEE International Conference on e-Science and Grid Technologies (eScience 2005)*, Melbourne, Australia, December 2005.

R. Araiza, M. G. Aguilera, T. Pham, and P. Teller, "Towards a Cross-Platform Microbenchmark Suite for Evaluating Hardware Performance Counter Data," ACM Digital Library, *Proceedings of the Richard Tapia Celebration of Diversity in Computing Conference 2005*, sponsored by ACM, IEEE-Computer Society, and CRA, September 18, 2005.

D. Villa, M. Meswani, P. Teller, and B. Olszewski, "Profiling Memory Subsystem Performance in an Advanced POWER Virtualization Environment," *Proceedings of the Workshop on Operating System Interference on High Performance Applications*, in conjunction with the 14th International Conferences on Parallel Architectures and Compilation Techniques (PACT05) Conference, sponsored by ACM and IEEE, September 18, 2005.

S. Seelam, J. Suresh Babu, and P. Teller, "Automatic I/O Scheduler Selection for Latency and Bandwidth Optimization," *Proceedings of the Workshop on Operating System Interference on High Performance Applications*, in conjunction with the 14th International Conferences on Parallel Architectures and Compilation Techniques (PACT05) Conference, sponsored by ACM and IEEE, August 31, 2005.

S. Moore, D. Cronk, F. Wolf, A. Purkayastha, P. Teller, **R. Araiza, M. Aguilera,** and **J. Nava,** "Performance Profiling and Analysis of DoD Applications Using PAPI and TAU," *Proceedings of the Department of Defense, High Performance Computing Modernization Program Users Group Conference 2005*, Nashville, TN, June 27-30, 2005.

S. Seelam, R. Romero, P. Teller, and B. Buros, "Enhancements to Linux I/O Scheduling," *Proceedings of the Linux Symposium*, July 2005.

R. Portillo, D. Villa, P. J. Teller, and B. Olszewski, "Mining Performance Data From Sampled Event Traces," *Proceedings of the 12th Annual Meeting of the IEEE/ACM International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS 2004)*, October 2004; also in *Proceedings of the Sixth Annual Austin Center for Advanced Studies Conference*, February 24-25, 2005.

D. Villa, J. Acosta, P. J. Teller, B. Olszewski, and **T. Morgan,** "Memory Performance Profiling via Sampled Performance Monitor Event Traces," *Proceedings of the 5th Los Alamos Computer Science Symposium (LACSI 2004)*, October 2004.

D. Villa, J. Acosta, P. J. Teller, B. Olszewski, and **T. Morgan,** "A Framework for Profiling Multiprocessor Memory Performance," *Proceedings of the 10th International Conference on Parallel and Distributed Systems*, July 2004.

S. Moore, D. Terpstra, K. London, P. Mucci, P. Teller, **L. Salayandia, A. Bayona,** and **M. Nieto,** "PAPI Deployment, Evaluation, and Extensions," *Proceedings of the DoD High Performance Computing Modernization Program's User Group Conference 2003*, Bellevue, WA, June 2003.

P. Teller, **M. Nieto,** and S. Roach, "Combining Learning Strategies in a First Course in Computer Architecture," *Proceedings of the Workshop on Computer Architecture Education (WCAE 2003)*, held in conjunction with *The 30th International Symposium on Computer Architecture and 2003 Federated Computing Research Conference*, San Diego, CA, pp. 41-48, June 2003.

M. Maxwell, P. Teller, **L. Salayandia,** and S. Moore, "Accuracy of Performance Monitoring Hardware," *Proceedings of the Los Alamos Computer Science Institute Symposium 2002 (LACSI 2002)*, Santa Fe, NM, October 2002.

M. Maxwell, S. Moore, P. Teller, "Efficiency and Accuracy Issues for Sampling vs. Counting Modes of Performance Monitoring Hardware," *Proceedings of the DoD High Performance Computing Modernization Program's User Group Conference 2002*, June 2002.

G. Rybak, P. Teller, and R. Oliver, "Identifying Application Performance Limitations associated with Microarchitecture Design," *Proceedings of the Los Alamos Computer Science Institute Symposium 2001 (LACSI 2001)*, Santa Fe, NM, October 15-18, 2001.

W. Korn, P. Teller, and **G. Castillo**, "Just How Accurate Are Performance Counters," *Proceedings of the 2001 IEEE International Performance, Computing and Communications Conference (IPCCC 2001)*, Phoenix, AZ, pp. 303-310, April 4-6, 2001.

P. Teller and A. Gates, "Applying the SSEAL Affinity Research Group Model to Computer Science Research Projects," *Proceedings of the 2000 Frontiers in Education Conference (FIE 2000)*, Kansas City, MO, October 18-21, 2000.

A. Bernat, P. Teller, A. Gates, **N. Delgado**, and C. Kubo Della-Piana, "Structuring the Student Research Experience," *Proceedings of the Fifth Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, Helsinki, Finland, pp. 17-20, July 11-12, 2000.

A. Gates and P. Teller, "An Integrated Design of a Dynamic Software-fault Monitoring System," *Proceedings of the Fourth World Conference on Integrated Design and Process Technology*, Dallas, TX, June 2000.

R. Oliver and P. Teller, "Dynamic and Adaptive Cache Prefetch Policies," *Proceedings of the 2000 IEEE International Performance, Computing and Communications Conference (IPCCC 2000)*, Phoenix, AZ, February 20-22, 2000.

P. Teller and A. Gates, "Progress Towards a Comprehensive Knowledge-based Monitoring System for the Development and Evolution of Software," *Proceedings of the High Performance Computing and Communications Program/Computational Aerosciences 2000 Workshop (HPCC/CAS Workshop)*, NASA Ames Research Center, February 15-17, 2000.

A. Gates and P. Teller, "DynaMICs: an Automated and Independent Software-fault Detection Approach," *Proceedings of the Fourth IEEE International Symposium on High-Assurance Systems Engineering Symposium (HASE '99)*, Washington, D.C., pp. 11-19, November 17-19, 1999.

A. Gates, P. Teller, A. Bernat, S. Cabrera, and C. Kubo Della-Piana, "A Cooperative Model for Orienting Students to Research Groups," *Proceedings of the 1999 Frontiers in Education Conference (FIE 1999)*, San Juan, Puerto Rico, CD-ROM, November 1999.

R. Oliver and P. Teller, "Are All Scientific Workloads Equal?," *Proceedings of the 1999 IEEE International Performance, Computing and Communications Conference (IPCCC '99)*, Scottsdale, AZ, pp. 284-290, February 1999.

P. Teller, **M. Maxwell**, and A. Gates, "Towards the Design of a Snoopy Coprocessor for Dynamic Software-fault Detection," *Proceedings of the 1999 IEEE International Performance, Computing and Communications Conference (IPCCC '99)*, Scottsdale, AZ, pp. 310-317, February 1999.

A. Gates, P. Teller, A. Bernat, **N. Delgado**, and C. Kubo Della-Piana, "Meeting the Challenge of Expanding Participation in the Undergraduate Research Experience," *Proceedings of the 1998 Frontiers in Education Conference*, Tempe, Arizona, pp.1133-1138, November 4-7, 1998 (Best Paper Award).

E. Deelman, A. Dube, Y. Luo, R. Oliver, D. Sundaram-Stukel, V. Adve, R. Bagrodia, J. Browne, E. Houstis, O. Lubeck, J. Rice, P. Teller, and M. Vernon, "POEMS: End-to-end Performance Design of Parallel, Adaptive Computational Systems," *Proceedings of the First International Workshop on Software and Performance (WOSP)*, Santa Fe, NM, pp. 18-30, October 12-16, 1998.

R. Oliver, **W. McGregor**, and P. Teller, "Accurate Measurement of System Call Service Times for Trace-driven Simulation of Memory Hierarchy Designs," *Proceedings of the 1998 IEEE International Performance, Computing, and Communications Conference (IPCCC '98)*, Tempe/Phoenix, AZ, pp. 239-244, February 16-18, 1998.

R. Oliver and P. J. Teller, "Generating Dynamically Scheduled Memory Address Traces," *Proceedings of the 1998 IEEE International Performance, Computing, and Communications Conference (IPCCC '98)*, Tempe/Phoenix, AZ, pp. 245-250, February 16-18, 1998.

P. Teller, "Experimental, Cooperative Labs in a First Course in Computer Architecture," *Proceedings of the 1997 Frontiers in Education Conference (FIE '97)*, Pittsburgh, PA, November 1997.

A. Bernat, A. Gates, P. Teller, and S. Cabrera, "Affinity Groups for Student Success in Computing," *Proceedings of the 1997 ADMI Conference*, Washington, DC, pp. 206-211, May 29-30, 1997.

P. Teller and T. Dunning, "Mobil Robots Teach Machine Programming and Organization," *Proceedings of Supercomputing '95*, San Diego, CA, CD-ROM, December 1995.

S. Cooper and P. Teller, "Configuring a Large LAN for TCP/IP, Appletalk, and IPX," *Proceedings of the Twentieth Annual Conference on Local Area Networks*, October 1995.

P. Teller, "Unscheduled Traces and Shared-memory Multiprocessor Simulation," *Proceedings of the International Conference on Parallel Processing (ICPP '95)*, pp. 1159-162, August 1995.

Q. Xu and P. Teller, "Unified vs. Split TLBs and Caches in Shared-memory MP Systems," *Proceedings of the International Parallel Processing Symposium (IPPS '95)*, Santa Barbara, CA, pp. 398-403, April 1995.

P. Teller and **Q. Xu**, "Memory-based Multiprocessor Translation-lookaside Buffers: Multiple Paging Arenas vs. Large-size TLBs," *Proceedings of the International Phoenix Conference on Computers and Communication*, Phoenix, AZ, pp. 47-53, April 1994.

P. Teller and A. Gottlieb, "Locating Multiprocessor TLBs at Memory," *Proceedings of the Twenty-seventh Hawaii International Conference on System Sciences (HICSS '94)*, pp. 554-563, January 1994 (Best Paper Award Nominee in Architecture Track).

G. Chen, A. Gottlieb, and P. Teller, "Optimization Techniques for Directory-based Cache Coherence Protocols for Large-scale Multiprocessors," *Proceedings of Parallel Computing 93*, Grenoble, France, September 1993.

R. Kenner, R. Bianchini, S. Dickey, and P. Teller, "A Compact Design for a Highly-parallel Shared-memory MIMD Computer," *Proceedings of Comcon Spring 1989*, Miami, FLA, pp. 264-269, February/March 1989.

R. Kenner, S. Dickey, and P. Teller, "The Design of Processing Elements on a Multiprocessor System with a High-bandwidth, High-latency Interconnection Network," *Proceedings of the Twenty-Second Hawaii International Conference on System Sciences*, pp. 319-328, January 1989.

P. Teller, R. Kenner, and M. Snir, "TLB Consistency on Highly-parallel Shared-memory Multiprocessors," *Proceedings of the Twenty-First Hawaii International Conference on System Sciences (HICSS '88)*, pp. 184-193, January 1988 (Best Paper Award Nominee).

J. Edler, A. Gottlieb, C. Kruskal, K. McAuliffe, L. Rudolph, M. Snir, P. Teller, and J. Wilson, "Issues Related to MIMD Shared-memory Computers: the NYU Ultracomputer Approach," *Proceedings of the 12th Annual International Symposium on Computer Architecture*, pp. 126-135, June 1985.

INVITED CONFERENCE PAPERS

D. Villa, M. Meswani, P. Teller, B. Olszewski, and M. Anand, "Profiling Memory Subsystem Performance in an Advanced POWER Virtualization Environment," *Proceedings of the IBM-Austin ACAS 2006 Conference*, February 2006.

R. Portillo, D. Villa, P. Teller, and B. Olszewski, "Mining Performance Data from Sampled Event Traces," *Proceedings of the IBM-Austin ACAS 2005 Conference*, February 2005.

D. Villa, J. Acosta, T. Morgan, P. Teller, and B. Olszewski, "Memory Performance Profiling via Sampled Performance Monitor Event Traces," *Proceedings of the IBM-Austin ACAS 2004 Conference*, February 2004.

P. Teller, R. Amezcua, and R. Acotsa, "Top Gun: UTEP's p690," *Proceedings of the IBM-Austin ACAS 2004 Conference*, February 2004.

T. Morgan, D. Villa, P. Teller, J. Acosta, and B. Olszewski, "L2-Cache Miss Profiling on the p690 for a Large-scale Database Application," *Proceedings of the IBM-Austin ACAS 2003 Conference*, February 2003.

V. Adve, J. Browne, B. Ensink, J. Rice, P. Teller, M. Vernon, and S. Wright, "An Approach to Optimizing Adaptive Parabolic PDE Solvers for the Grid," *Proceedings of the IPDPS 2003 NGS Workshop*, April 2003.

V. Adve, A. Akinsanmi, J. Browne, D. Buaklee, G. Deng, V. Lam, T. Morgan, J. Rice, G. Rodin, P. Teller, G. Tracy, M. Vernon, S. Wright, and J. Yi, "Model-Based Control of Adaptive Applications: An Overview," *Proceedings of the IPDPS 2002 NGS Workshop*, April 2002.

V. Adve, J. Vetter, R. Bodik, D. Kerbyson, S. Sen, and P. Teller, "Working Group 3: Performance Specification and Control Languages," *Report for Workshop on Performance Engineering Technology Research Sponsored under the NSF Next Generation Software (NGS) Program*, February 28-March 1, 2002, Austin, TX.

P. Teller, "Unscheduled Traces and Shared-memory Multiprocessor Simulation," *Transputers '94: Advanced Research and Industrial Applications*, France, September 1994.

STUDENT CONFERENCE PAPERS

L. Rauda and M. Maxwell (Advisors: A. Gates and P. Teller), "A Parallel Discrete-event Simulation of a DynaMICs Snoopy Coprocessor System," *Proceedings Thirteenth National Conference on Undergraduate Research*, Rochester, NY, April 1999.

M. Maxwell and L. Rauda (Advisors: P. Teller and A. Gates), "An Initial Design of a Coprocessor/Snoopy Hardware Integrity Constraint Monitoring Simulator," *Proceedings of the ITEA Workshop, Modeling and Simulation (Establishing Seamless, Distributed and Integrated Solutions to Real-World Problems)*, Las Cruces, NM, pp. 385-394, December 7-10, 1998 (Best Student Paper Award, \$1000 Scholarship).

A. Caraveo (Advisor: P. Teller), "Accuracy and Precision Issues in GIS Data Transfers," *Proceedings of the 1997 ADMI Symposium on Computing at Minority Institutions*, Washington, D.C., pp. 106-111, May 29-30, 1997.

M. Maxwell (Advisor: P. Teller), "Using VTune to Identify Potential Pentium Pro Performance Bottlenecks," *Proceedings of the 1997 ADMI Symposium on Computing at Minority Institutions*, Washington, D.C., pp. 2-5, May 29-30, 1997.

INVITED OTHER PAPERS

P. Teller, "Expanding the Pipeline: Coalition to Diversify Computing (CDC)," *Computing Research News*, p. 2, November 2004.

A. Gates and P. Teller, "Research in the Systems and Software Engineering Lab," *looking forward, IEEE Computer Society's Student Newsletter*, **7**, 1, 1999.

A. Gates and P. Teller, Infrastructure 98: NSF CISE/EIA RI and MII PI's Workshop, Snowbird, Utah, July 24-26, 1998, pp. 222-226.

SELECTED TECHNICAL REPORTS

In addition to quarterly and annual reports submitted to funding agencies, reports associated with conference program committee service, educational materials, Master's theses and reports, and Ph.D. dissertations, the following list includes selected technical reports that have not been published (in the formal sense of the word).

S. R. Seelam and Patricia J. Teller, "Disk Scheduling using Fair Queuing and Round-Robin: Fairness Analysis," Technical Report, University of Texas at El Paso, College of Engineering-Computer Science. El Paso, TX, December 2005.

M. G. Aguilera, R. Araiza, T. Pham, and P. Teller, "Towards a Cross-Platform Microbenchmark Suite for Evaluating Hardware Performance Counter Data," Technical Report, University of Texas at El Paso, UTEP-CS-05-32, May 2005.

J. Rice, P. Rao, P. Teller, et al., "MOL: Method of Lines Application," Technical Report, Purdue University, December 2002.

P. Teller, "On Performance Metrics," for DARPA/Mitre, August 2002..

P. Teller, **G. Rybak,** and **J. Moses,** "Characterization of Sweep3D", POEMS Report, October 1999.

P. Teller, **C. Sachar,** and **J. Galloway,** "MPI-SS", POEMS Report, August 1999.

A. Bernat, A. Gates, P. Teller, and S. Cabrera, "Building Affinity Groups to Enable and Encourage Student Success in Computing," NSF Affinity Group Model Annual Reports, short versions published in Proceedings of NSF CISE/EIA RI and MII PIs Workshop, May 1999-May 2000, May 1998-May 1999, and May 1997-May 1998.

V. Adve, R. Bagrodia, J. Browne, E. Houstis, Y. Luo, J. Rice, P. Teller, and M. Vernon, "Dynamic Performance Management: Integration of Measurement and Modeling with Compilers," December 1998.

P. Teller and R. Oliver, "POEMS Interfaces," July 1998.

P. Teller, **J. Cook,** **W. Korn,** R. Oliver, **G. Rybak,** and **C. Sachar,** "POEMS Hardware Domain Component Model Specification," 1998.

W. McGregor, **R. Oliver,** and P. Teller, "A Methodology for the Measurement of Operating System Calls," NMSU Technical Report, April 1997.

R. Oliver and P. Teller, "Unscheduled Uniprocessor Multitask Trace Generation," NMSU Technical Report, November 1996.

P. Teller, "Unscheduled Traces and Shared-memory Multiprocessor Simulation," NMSU Technical Report NMSU-CSTR-9426, 1995.

H. Molina Salgado and P. Teller, "Parallel Trace-driven Simulation of Multiprocessor Cache Systems," NMSU Technical Report, Master's, April 1994.

Q. Xu and P. Teller, "A Trace-driven Simulation Study of MIMD Shared-memory Multiprocessors," NMSU Technical Report NMSU-CSTR-9305, April 1993.

V. Lambert and P. Teller, "Cache and TLB Performance in Shared-memory Multiprocessors," NMSU Technical Report NMSU-CSTR-9309, February 1993.

P. Teller, "Consistency-ensuring TLB Management for Shared-memory Multiprocessors," IBM Research Report RC 15258, December 1989.

P. Teller, "The TLB Consistency Problem," IBM Research Report RC 15156, November 1989.

F. Darema, A. Karp, and P. Teller (contributors), "Applications Survey Report-I," IBM Research Report RC 12743, Edited by F. Darema, May 1987.

PRESENTATIONS

SELECTED INVITED TALKS

“Common Performance Metrics,” Open Source Performance Analysis Tools (OSPAT) Birds of a Feather Meeting, SC05, Seattle, WA, November 2005.

“DAiSES: Dynamic Adaptivity in Support of Extreme Scale,” FastOS PI Meeting, Rockville, MD, June 9-10, 2005.

“Challenges in Scalability of Performance Tools for Petaflops Systems,” The Conference on High Speed Computing – Paths to Petaflops (The Salishan Conference), sponsored by Lawrence Livermore, Los Alamos, and Sandia National Laboratories, April 2005, Gleneden Beach, Oregon.

“Memory Performance Profiling via Sampled Performance Monitor Event Traces,” Oregon State University, Corvallis, OR, April 2004.

“The Importance of Undergraduate Research Experiences and Higher Education – a Personal Perspective,” Guest Speaker, Research Experience For Undergraduates Spring 2002 Reception, The University of Texas at El Paso, May 15, 2002.

Keynote Lecture: “Providing Educational Opportunities to Diverse Populations: Affinity Research Groups,” (with A. Gates), Consortium for Computing in Small Colleges, Eleventh Annual South Central Conference, Texas A&M University-Corpus Christi, April 14-15, 2000.

“Towards the Design of a Snoopy Coprocessor for Dynamic Software Fault Detection,” Arctic Supercomputing Center, University of Alaska, Fairbanks, AK, April 19, 1999.

“POEMS: End-to-end Performance Design of Large Parallel Adaptive Computational Systems,” Arctic Supercomputing Center, University of Alaska, Fairbanks, AK, April 20, 1999.

“Hardware Domain Specification,” Workshop on Performance Technology, DARPA PI Meeting, Annapolis, MD, August 20, 1998.

“Hardware Working Group Summary,” Workshop on Performance Technology, DARPA PI Meeting, Annapolis, MD, August 21, 1998.

“DynaMICs,” Center for Survivable Information Systems, All Hands Meeting, University of Virginia, Charlottesville, VA, July 28-29, 1998.

“Performance Oriented End-to-end Modeling of Large Heterogeneous Adaptive Parallel/Distributed Computer/Communications Systems” (with R. Oliver), Rio Grande ACM Conference, El Paso, TX, March 27, 1998.

“POEMS Hardware Components and Component Models,” “POEMS Measurement and Parameterization of Components,” and “POEMS Sweep3D Study,” The University of Texas at Austin, POEMS PI/DARPA meeting, March 6, 1998.

“An Orientation to the Affinity Research Group Model” (with A. Gates), The Eighth National Conference on College Teaching and Learning, Jacksonville, FLA, April 1997.

“Unscheduled Traces and Shared-memory Multiprocessor Simulation,” The University of Texas at San Antonio, February 28, 1997.

“Memory-based Multiprocessor Translation-lookaside Buffers: Multiple Paging Arenas vs. Large-size TLBs,” Lund Institute of Technology, School of Electrical Engineering, Lund, Sweden, May 1994.

“Shared-memory Multiprocessor TLB Performance,” Los Alamos National Laboratory, Los Alamos, NM, June 1993.

“Locating TLBs at Memory,” Los Alamos National Laboratory, Los Alamos, NM, September 1992.

“TLB Performance in Multiprocessors, “ University of Colorado, Boulder, CO, April 1992.

“TLB Consistency in Highly-parallel Shared-memory Multiprocessors, “ Sequent Computer Systems, Inc., Beaverton, Oregon, March 1990.

“TLB Consistency in Highly-parallel Shared-memory Multiprocessors, “ IBM, T.J. Watson Research Center, Yorktown Heights, NY, April 1988.

“TLB Consistency in Highly-parallel Shared-memory Multiprocessors,” BBN Advanced Computers, Inc., Cambridge, Mass., December 1987.

SELECTED PANEL DISCUSSIONS

Panel Member, FastOS Birds of a Feather Panel, Supercomputing 2004, Pittsburgh, PA, November 2004.

Panel Member, “Increasing the Enrollment of Women in Computer Science,” 32nd SIGCSE, Technical Symposium on Computer Science Education, Charlotte, NC, February 21-25, 2001.

Panel Member, “Using Performance Measures to Design Systems,” Supercomputing '98, Orlando, FLA, November 7-13, 1998.

Panel Member, “Methodology,” First International Workshop on Software and Performance (WOSP 98), Santa Fe, NM, October 12-16, 1998.

Panel Member, “Parallel Systems Across Industry, Academia, and the National Laboratories,” Rio Grande ACM Conference, El Paso, TX, March 27, 1998.

Invited Panel Member and Moderator, “Execution- vs. Trace-driven Simulation,” IEEE International Performance, Computing, and Communication Conference, February 16-18, 1998.

Panel Member, “Advanced Architectures,” Rio Grande ACM Conference, Los Alamos National Laboratory, October 1, 1993.

Position Paper Author, “Affinity Research Groups: a Model for Retaining Students in the Computing Sciences” (with A. Gates, N. Delgado, and C. Della-Piana), panel discussion on Women and Minorities in Computing at ISECON '98, October 1998.

INVITED SEMINARS

"Parallel Architectures," Los Alamos National Laboratory-sponsored workshops, Los Alamos National Laboratory, Los Alamos, NM and University of New Mexico, Albuquerque, NM, July 1995, July 1994, January 1994, July 1993, and October 1993.

INVITED WORKSHOP TALKS

Invited Participant, IBM Petascale Tools Strategy Workshop, May 2005. (Seetharami Seelam, Ph.D. candidate, was the recipient of a \$500 award to attend this workshop). Seelam gave a presentation.

“On-board Performance Counters: What do they really tell us?,” PTools Meeting, University of Tennessee-Knoxville, September 2002.

“Enabling and Encouraging Student Success in Computing: Affinity Research Groups” (with A. Gates), NSF PI Meeting, Snowbird, Utah, August 2000.

Talk Author, “Affinity Research Groups: Preparing Students to Meet the Challenges of the New Millennium” (with A. Gates, A. Bernat, N. Delgado, and C. Della-Piana) talk given by N. Delgado at the New Mexico Network for Women in Science and Engineering Technical Symposium and Annual Meeting, October 1998.

"Shared-memory Multiprocessor TLB Performance," ISCA '93 Third Workshop on Scalable Shared-Memory Architectures (in connection with the Twentieth International Symposium on Computer Architecture), May 1993.

"Performance Evaluation of TLB Consistency Schemes via Trace-driven Simulation," ISCA '90 Workshop on Scalable Shared-Memory Architectures (in connection with the Seventeenth International Symposium on Computer Architecture), May 1990.

"Consistency-ensuring TLB Management and its Scalability," ISCA '89 Workshop on Cache and Interconnect Architectures in Multiprocessors (in connection with the Sixteenth International Symposium on Computer Architecture), May 1989.

CONFERENCE AND WORKSHOP TALKS

"Performance Profiling and Analysis of DoD Applications Using PAPI and TAU," Users Group Conference 2005, Nashville, TN, June 27-30, 2005.

"PAPI Deployment, Evaluation, and Extensions," DoD High Performance Computing Modernization Program's User Group Conference 2003, Bellevue, WA, June 2003.

"Combining Learning Strategies in a First Course in Computer Architecture," Workshop on Computer Architecture Education (WCAE 2003), held in conjunction with The 30th International Symposium on Computer Architecture and 2003 Federated Computing Research Conference, San Diego, CA, June 2003.

"Using RATs to Motivate Student Learning: from a Computer Science Perspective," The Sun Conference on Teaching and Learning, March 7-8, 2003.

"Efficiency and Accuracy Issues for Sampling vs. Counting Modes of Performance Monitoring Hardware," (with S. Moore) Department of Defense High Performance Computing Modernization Program, Users Group Conference, Austin, TX, June 10-13, 2002.

"Combining Learning Strategies to Prepare Student for Upper-level Computer Science Courses," (with M. Roach, M. Maxwell, and M. Nieto) The Sun Conference on Teaching and Learning, March 8-9, 2002.

"Applying the SSEAL Affinity Research Group Model to Computer Science Research Projects," 2000 Frontiers in Education Conference (FIE 2000), Kansas City, MO, October 18-21, 2000

"Experimental, Cooperative Labs in a First Course in Computer Architecture," 1997 Frontiers in Education Conference (FIE '97), Pittsburgh, PA, November 1997.

"Mobil Robots Teach Machine Programming and Organization," Supercomputing '95, San Diego, CA, December 3-8, 1995.

"Unscheduled Traces and Shared-memory Multiprocessor Simulation," The International Conference on Parallel Processing (ICPP '95), August 14-18, 1995.

"Memory-based Multiprocessor Translation-lookaside Buffers: Multiple Paging Arenas vs. Large-size TLBs," The International Phoenix Conference on Computers and Communication, Phoenix, AZ, April 1994.

"Locating Multiprocessor TLBs at Memory," The Twenty-seventh Hawaii International Conference on System Sciences (HICSS '94), January 1994 (Best Paper Award Nominee in Architecture Track).

"TLB Consistency on Highly-parallel Shared-memory Multiprocessors," The Twenty-First Hawaii International Conference on System Sciences (HICSS '88), January 1988 (Best Paper Award Nominee).

"Unscheduled Traces and Shared-memory Multiprocessor Simulation," Transputers '94: Advanced Research and Industrial Applications, France, September 1994.

SELECTED OTHER PRESENTATIONS

"PAPI: "DynaMICs Snoopy Coprocessor System," Sandia National Laboratories, October 1999.

"Applications: Computer Science," National Science Foundation/CONACYT-Internet II Connection Meeting, February 24, 1999

"Internet2 and Research: an Idea Session" (with P. Maxwell and A. Gates), May 20, 2000.

"Affinity Model for Research," NASA Day at the University of Texas at El Paso, October 14, 1999.

“Parallel Discrete Event Simulation,” The University of Texas at El Paso, Department of Computer Science colloquium, February 27, 1998.

POSTERS

“High Performance Computing along the Rio Grande,” Research booth with University of New Mexico, New Mexico Institute of Technology, and New Mexico State University to promote computation-based research at UTEP, Supercomputing 2005 (SC2005), Seattle, WA, November 2005.

“Building Bridges of Opportunity along the Rio Grande,” Research booth with University of New Mexico, New Mexico Institute of Technology, and New Mexico State University to promote computation-based research at UTEP, Supercomputing 2005 (SC2004), Pittsburgh, PA, November 2004.

“Hardware Performance Counters: Is What You See, What You Get?” (with A. Bayona and M. Nieto), SC2003, Phoenix, AZ, November 2003.

“POEMS: Performance Oriented End-to-end Modeling of Highly Parallel Computer and Communication Systems,” Supercomputing '97, San Jose, CA, November 1997.

STUDENT PRESENTATIONS/POSTERS

Each year several of my students present posters at the UTEP Student Research Exposition and the related abstracts are published in the Research Expo Abstract booklet. Since 2001 several (3-4) have been presented each year. These are not listed below.

L. Rauda (Advisors: A. Gates and P. Teller), “A Parallel Discrete-event Simulation of a DynaMICs Snoopy Coprocessor System,” the Thirteenth National Conference on Undergraduate Research, Rochester, NY, April 1999.

M. Maxwell (Advisors: P. Teller and A. Gates), “An Initial Design of a Coprocessor/Snoopy Hardware Integrity Constraint Monitoring Simulator,” ITEA Workshop, Modeling and Simulation (Establishing Seamless, Distributed and Integrated Solutions to Real-World Problems), Las Cruces, NM, December 7-10, 1998.

N. Delgado, D. Fox, and S. Medina (Advisors: A. Gates and P. Teller), “Towards an Electronic Framework Supporting Affinity Group Projects: Program Coordination, Communication, and Common Goal Tool for Teams,” talk at Rio Grande ACM Meeting, El Paso, TX, El Paso, TX, March 27, 1998.

FUNDING

FUNDED GRANTS

Research Grants

“Unification of Verification and Validation Methods for Software Systems,” Y. Cheon, UTEP, and J. Browne and C. Lin, University of Texas-Austin, National Science Foundation CNS Computer Systems, \$81,600, September 2005-August 2006.

“DAPLDS: Dynamically Adaptive Protein-Ligand Docking System,” with M. Taufer and M. Ceberio, UTEP, C. Brook, The Scripps Research Institute, and D. Anderson, University of California-Berkeley, National Science Foundation, \$1,120,000 total, \$655,626 UTEP, September 2005-August 2008.

“Comprehensive Memory Performance Studies of IBM POWER-based Platforms – Phase 2,” IBM Faculty Award, \$40,000, August 2005-August 2006.

“Automated Performance Data Collection, Management, and Analysis,” with S. Moore and F. Wolf, University of Tennessee-Knoxville and P. Keillor, Howard University, Department of Defense via a subcontract from Mississippi State University, \$240,000 total, \$90,000 UTEP, June 2005-May 2006.

“DAiSES, Dynamic Adaptivity in Support of Extreme Scale,” with B. Miller, University of Wisconsin-Madison, Department of Energy, \$1,500,000 UTEP, Subcontract to UW \$737,999, September 2004-September 2007.

“Comprehensive Memory Performance Studies of IBM POWER-based Platforms,” IBM Faculty Award, \$40,000, August 2004-August 2005.

“Collection and Validation of Application Benchmarking and Performance Data,” with S. Moore, University of Tennessee-Knoxville, Department of Defense via a subcontract from Mississippi State University, \$60,548, June 2004-May 2005.

“Multivariate Statistical Analysis of Large Scale Performance Data,” with S. Moore, University of Tennessee-Knoxville, Department of Defense via a subcontract from Mississippi State University, \$56,725, June 2004-May 2005.

“Third Year – Department of Defense High Performance Computing Modernization Program (HPCMP) and Programming Environment and Training (PET), PAPI Deployment, Evaluation, and Extensions” (with S. Moore, University of Tennessee), Subcontractor to MOS, \$62,120 UTEP, October 2003-October 2004.

“A General Method of Generating Miss Rate Information for Future Systems – Phase 2, Exploring the p690 Memory Hierarchy,” IBM Faculty Award, \$40,000, August 2003-August 2004.

“A General Method for Generating Miss Rate Information for Future Systems,” IBM Faculty Award, \$25,000, August 2002-August 2003.

“Collaborative Research: Performance-Driven Adaptive Software Design and Control” (with V. Adve, University of Illinois-Urbana-Champaign, R. Bagrodia, UCLA, J. C. Browne and G. Rodin, University of Texas at Austin, E. Houstis and J. Rice, Purdue University, M. Vernon, University of Wisconsin-Madison), and S. Wright, Argonne National Laboratory), National Science Foundation, CISE, New Generation Software Program, UTEP’s award: \$295,346, September 2001-January 2005 (six-month extension).

“Second Year - DoD High Performance Computing Modernization Program (HPCMP) and Programming Environment and Training (PET), PAPI Deployment, Evaluation, and Extensions” (with S. Moore, University of Tennessee), Subcontractor to MOS, \$62,076, October 2002-October 2003.

“DoD High Performance Computing Modernization Program (HPCMP) and Programming Environment and Training (PET), PAPI Deployment, Evaluation, and Extensions” (with S. Moore, University of Tennessee, and Sergiu Sanielevici, Pittsburgh Supercomputing Center), Subcontractor to MOS, \$71,000, October 2001-October 2002.

“Design of a Prototypical Snoopy Coprocessor for Dynamic Software Fault Monitoring with Integrity Constraints” (with A. Gates), Sandia National Laboratories, \$24,978, May 1999-August 1999.

“A Functional Parallel Discrete Event Simulation of a Snoopy Coprocessor for Software Monitoring with Integrity Constraints” (with A. Gates), Sandia National Laboratories, \$20,000, June 1, 2000-August 31, 2000.

“A Case Study in Model-Based Control of an Adaptive Application” (with J. Browne, The University of Texas at Austin, R. Bagrodia, UCLA, V. Adve, University of Illinois-Urbana-Champaign, E. Houstis and J. Rice, Purdue University, and M. Vernon, University of Wisconsin-Madison), National Science Foundation, CISE, NGS Program, \$300,000 total/\$36,836 UTEP subcontract to UT-Austin, February 2000-December 2000 (subcontract received September 2000, therefore, automatic six-month extension will be requested).

“PerfOrmancE Modeling System (POEMS)” (with J. Browne, The University of Texas at Austin, R. Bagrodia, UCLA, V. Adve, Rice University, E. Houstis and J. Rice, Purdue University, and M. Vernon, University of Wisconsin-Madison), DARPA, DARPA/ITO Grant No. N66001-97-C-8533, \$1,839,517 total/\$272,141 UTEP subcontract to UT-Austin, August 1997-December 2000 (with six-month extension).

“Verification of NASA Mission-Critical Software Without Sacrificing Performance” (with A. Gates), NASA FY 1997 Partnership Awards with Minority Institutions, Grant No. NAG 2 1138, \$199,887, July 1997-June 2001 (with one-year extension).

“Data Compression,” EG&G Management Systems, Inc., \$14,798, August 1995-May 1996.

“Multiprocessor TLB Performance Study,” Sandia National Laboratories’ Sandia/University Research Program, \$35,000, December 1993-September 1994.

“Multiprocessor Performance Evaluation,” Sandia National Laboratories’ Sandia/University Research Program, \$30,000, October 1992-September 1993.

Physical Infrastructure Grants

UTEP Star Award for Research Infrastructure, \$483,000 award for faculty retention and research enhancement, January 2005.

“Performance via Autonomicity, Analysis, Virtualization, and Micro-partitioning, and Research in Life Sciences and Bioinformatics,” with S. Aley, L. Bain, W. Baldwin, F. Modave, M.-Y. Leung, P. Nava, M. Taufer, and D. Villa, IBM SUR (Shared University Research) Grant, over \$600,000 retail value, May 2005. (Enhanced with funds for UTEP Star Award)

“HPC PEARLS, Performance Enhancements And Research in the Life Sciences” with S. Aley, L. Bain, W. Baldwin, S. Das, B. Stec, P. Nava, D. Williams, and D. Villa, IBM SUR (Shared University Research) Grant, \$562,327, July 2003.

Subcontract from UT-Austin’s NSF EIA-CISE Research Infrastructure award, “Mastadon: A Large-Memory, High-Throughput Simulation Infrastructure,” \$83,300, June 2003.

“Teaching Java by Computer Science Faculty” (with D. Novick), Sun Microsystems, Inc. Academic Equipment Grant Application, approximately \$60,000 matching funds, September 2000.

“Where We Are – Where We Would Like to Be” (with A. Gates), The University of Texas at El Paso, VPAA’s office, appx. \$15,000 of laboratory renovation work and furniture, 1998.

“Where We Are – Where We Would Like to Be” (with A. Gates), Technology and Communications Gateway (TCG), \$500 of electrical work, April 1998.

“Where We Are – Where We Would Like to Be” (with A. Gates), The University of Texas at El Paso, Networking and Telecommunication Services, appx. \$6000 of laboratory networking, 1998.

“A Multiprocessor Platform for Cross-Disciplinary Research in Parallel Systems” (with A. Gates, and D. Cooke), NSF Instrumentation Grants for Research in CISE, Grant No. EIA-9729990, \$71,261, December 1997-November 1998.

“End-to-End Measurement, Modeling and Simulation of Parallel/Distributed Computer Systems” (with J. Browne, C. Chase, and L. John, The University of Texas at Austin), IBM SUR Grant, UTEP: one RS-6000 workstation, \$11,500, December 1997.

Sun Microsystems, Inc., \$1,000, April 1997.

Intel Corporation, Pentium-Pro Workstation, \$7,862, January 1997.

“Reduction of Processor-Memory Traffic in Global Memory Multiprocessors,” US Army Research Office (with E. Johnson), \$98,385, July 1993.

Motorola, Inc., over \$3000 in equipment and manuals to support innovative, hands-on course in machine organization and assembly language, New Mexico State University.

Education Infrastructure, Curriculum, and Outreach Grants

“DoD High Performance Computing Modernization Program (HPCMP) and Programming Environment and Training (PET), White Paper in response to HPCMP Broad Agency Announcement dated 20 December 2000” (with V. To, HPTi, C. Pancake, Northwest Alliance for Computational Science and Engineering and Oregon State University, E. DeLoach, Morgan State University, J. Huskamp, E. Carolina University, and R. Roskies, Pittsburgh Supercomputing Center), Subcontractor to HPTi, UTEP: \$28,804, June 2003-May 2004; \$17,320, June 2002-May 2003; \$40,537, June 2001-May 2002.

“Proposal to Model Institutions of Excellence Program for Development and Implementation of a New Computer Architecture Course Sequence” (with S. Roach), UTEP’s MIE Program, \$35,000.

“Graduate Education for Minority Students in Computer Science and Engineering: Extending the Pipeline” (with D. Novick, A. Gates, and S. Cabrera), NSF CISE Research Infrastructure (EIA 0080940), \$1,254,056, September 2000-September 2005.

As part of the Model Institutes of Excellence (MIE) grant renewal, National Science Foundation, integrate the Affinity Group Model into the undergraduate research programs in the Colleges of Engineering and Science, one-month funding for summer 2001, 2002, and 2003.

“CISE Minority Institutions Infrastructure: Building Affinity Groups to Enable and Encourage Student Success in Computing” (with A. Bernat, A. Gates, and S. Cabrera), NSF Grant No. EIA-9522207, \$971,160, September 1995-August 2001 (with one-year extension).

“Development of an Innovative, Hands-on Course in Machine Programming and Organization,” New Mexico State University's Arts and Sciences Minigrant, \$1,250, June 1992.

Student Advancement Grants/Internships

Invited Participant, IBM Petascale Tools Strategy Workshop, May 2005, Seetharami Seelam, Ph.D. candidate, recipient of a \$500 award to attend this workshop -- Seelam gave a presentation at the workshop.

DoD High Performance Computing Modernization Office, all-expenses paid participants in the PET Program University of Hawaii Summer Institute, July 25-August 5, 2005, Jaime Nava and Nidia Pedregon.

Google Anita Borg Scholarship, all-expenses paid trip to Google, and all-expenses paid attendee at Grace Hopper Conference, Maria Gabriella Aguilera, \$10,000, 2004.

IBM-Austin Summer Internship, Diana Villa, Summer 2003, 2004, and 2005.

IBM-T.J. Watson Research Center, Internships, Seetharami Seelam, Spring/Summer 2003, Summer 2004, and 2005.

NPSC/IBM PhD Fellowship, Diana Villa, (\$16,000/year, summer internship at IBM-Austin, and tuition for four years), awarded March 2003.

Lawrence Livermore Laboratory, Internship, Ricardo Portillo, Fall 2002 and Summer 2003.

IBM-Austin Summer Internship, Trevor Morgan, 2002.

REU Undergraduate Research Award, Alonso Bayona, \$375/month, Spring and Fall 2002 and 2003.

REU Undergraduate Research Award, Trevor Morgan, \$375/month, Spring and Fall 2001.

REU Undergraduate Research Award, Ricardo Portillo, \$375/month, Fall 2001.

REU Undergraduate Research Award, Wendy Korn, \$750/month, Spring 1999.

REU Undergraduate Research Award, Marcos Villareal, \$750/month, Fall 1999.

The Grace Hopper Celebration of Women in Computing Scholarship, \$730 for Jeanine Cook, graduate student, The University of Texas at El Paso.

Undergraduate Research Assistantship Award, New Mexico Alliance for Minority Participation, \$1,000, September 1995-September 1996.

“Cache and TLB Performance in Shared-memory Multiprocessors,” Los Alamos National Laboratory, \$12,000, November 1992.

EDUCATION

STUDENTS

Note that the majority of the students under my supervision have been supported via external funds.

DOCTORAL STUDENTS

The University of Texas at El Paso

Yipkei Kwok, post-quals.

Mitesh Meswani, post-quals.

Seetharami Reddy Seelam, post-quals (defending April 2006).

Dejan Suskavcevic, pre-quals – co-advising with Eric MacDonald, ECE.

Alan Taylor, post-quals – co-advising with Patricia Nava, ECE.

Diana Villa, post-quals, NPSC/IBM Ph.D. Fellowship, 2003-2007.

New Mexico State University

Keith R. Bisset, Ph.D., Los Alamos National Laboratory, Adaptive and Ideal Synchronization Algorithms for Parallel Discrete Event Simulation, December 1998.

Richard Oliver, Ph.D., New Mexico State University, Process Execution Characteristics and their Use in Memory Hierarchy Design, August 1997.

MASTERS STUDENTS

The University of Texas at El Paso

Jayaraman Suresh Babu, thesis, in progress (defending Spring 2006).

Ricardo Portillo, thesis, in progress (defending Summer 2006).

Michael Maxwell, thesis, in progress.

Jose Luis Ortiz, IBM-Austin, “A Parallel Discrete-event Simulator for Studying the DynaMICS Snoopy Coprocessor,” project, in progress.

Juan Ulloa, project, in progress.

Jaime Acosta, not started.

David Flores, not started.

Maria Gabriella Aguilera, Google, “A Case Study of Communication Trace Performance Evaluation Guided by Hierarchical Clustering,” thesis, June 2005.

Ketan Maydeo, XIMIS (El Paso), “Performance Evaluation of TLB Consistency Solutions in Large-Scale Shared-Memory Multiprocessors with Consistent Caches,” thesis, May 2005.

Gary Rybak, local El Paso firm, “Mathematical Modeling for Dynamic Application Steering,” thesis, December 2004.

Diana Villa, Ph.D. candidate, “Using Sampled Performance Monitor Event Traces to Characterize Application Behavior,” thesis, December 2003.

Manuel Nieto, XIMIS (El Paso), “Visual 6811: A Simulator of the Motorola 68HC11 Microprocessor Architecture, thesis, July 2003.

Leonardo Salayandia, UTEP, "A Study of the Validity and Utility of PAPI Performance Counter Data," thesis, December 2002.

Charanjiv Sachar, Intel Corporation, "A Model for Predicting the Execution Time of Sweep3D," project, July 2000.

Gilbert Castillo, IBM-Austin "A Feasibility Study on the Use of the MIPS R10000 Processor Performance Counters," project, January 4, 2000.

Jaideep Moses, Intel Corporation, "Determination of Sweep3D's Reported Processor Utilization Using SimpleScalar Configured as a PowerPC 604e," project, August 1999.

New Mexico State University

James Williams, "A Methodology for Linux as a User Process Based on Solaris Minix on the Sparc Architecture," thesis, August 1997.

Ward P. McGregor, "Unix-like System Calls Analysis," thesis, June 1997.

Jiangang Xing, "Improving Throughput by Saving and Restoring TLBs: a Simulation Study," project, August 1994.

Hugo Molina Salgado, "Parallel Simulation of Multiprocessor Caches," project, April 1994.

Qidong Xu, "A Trace-driven Simulation Study of MIMD Shared-memory Multiprocessors," thesis, 1993.

OTHER GRADUATE STUDENTS INVOLVED IN RESEARCH

Roberto Araiza (2003-2006)

Afolami Akinsanmi (Fall 2001, Spring 2002)

Karla Castillo (Spring 2001)

Rohit Seth (Spring and Fall 2001)

PH.D. COMMITTEES

The University of Texas at El Paso

Rodrigo A. Romero, Department of Electrical and Computer Engineering, "Dedicated Distributed Memory Servers," 2004. (Chair: Dr. David H. Williams)

Yahya Zakaria Alawneh, Department of Electrical and Computer Engineering, Dynamic Pipeline Network Optimization," May 2002. (Chair: Dr. Glenn A. Gibson; Co-Chair: Dr. Mehdi Shadaram)

New Mexico State University

Ram Srinivasan, Department of Electrical and Computer Engineering, expected graduation: 2007. (Chair: Jeanine Cook).

Philip DiJang, Department of Industrial Engineering, 1998.

James Jones, Department of Computer Science, 1996.

Roy Moore, Department of Electrical and Computer Engineering, Ph.D. Comprehensive, February 1993.

SELECTED MASTERS COMMITTEES

The University of Texas at El Paso

Ameet Chavan (P. Nava, thesis, Department of Electrical and Computer Engineering, July 2003).

Rajesh Molakaseema, (B. d'Auriol, thesis), Department of Computer Science, December 2002.

Edgar Saenz, (B. d'Auriol, project), Department of Computer Science, 2001.

Hector Garces (G. Lush, thesis), Department of Electrical and Computer Engineering. "Intelligent Manger for Distributing Generic Computations," May 2001.

Arron S. Hardesty (V. Kreinovich, project), Department of Computer Science, "From Diablo to Nomad: a Reactive Design for Complex Environments," December 4, 2000.

Gustavo Breceda (P. Nava, course work/seminar papers), Department of Electrical and Computer Engineering, November 28, 2000.

Ganapathi Adimurthy (A. Gates, project), Department of Computer Science, "Analyzing Control Flow Graphs for Automated DynaMICs Software Fault Monitoring," November 21, 2000.

Ken Chen (A. Gates, project), Department of Computer Science. December 10, 1999.

Francisco Villarreal (A. Gates, project), Department of Computer Science, "Software Documentation Management System," July 12, 1999.

Shuiqing Li (A. Gates, project), Department of Computer Science, "Towards Analyzing Executable Files with EEL for a DynaMICs System," May 24, 1999.

Mohammed K. Fasiuddin, Department of Electrical and Computer Engineering, "Ethernet & Token Ring Advantages and Disadvantages," November 1998.

Ray Cereceres (A. Gates, project), Department of Computer Science, in progress.

Michelle Lujan (A. Gates, project), Department of Computer Science, in progress.

Gang Qin (A. Bernat, project), Department of Computer Science, in progress.

Edgar Saenz (B. D'Auriol, project), Department of Computer Science, in progress.

New Mexico State University

Srinivasa Tatineni, Department of Electrical and Computer Engineering, July 1994.

Favinder Thota, Department of Electrical and Computer Engineering, April 1994.

Laurel Deibel, Department of Computer Science, April 1994.

Natalija Krivokapic, Department of Computer Science, December 1993.

Ding Ma, Department of Electrical and Computer Engineering, November 1993.

Sudhanshu Das, Department of Electrical and Computer Engineering, November 1993.

Eric Iverson, Department of Computer Science, October 1993.

Ji-Heng Ha, Department of Electrical and Computer Engineering, March 1993.

Wilber Johnson, Department of Computer Science, November 1992.

UNDERGRADUATE STUDENTS INVOLVED IN RESEARCH AND OUTREACH

The University of Texas at El Paso - *Started as Undergraduate Students, continued to Graduate School

Jaime Acosta (Fall 2002 and Spring 2003)*

Brian Bandy (Fall 1997, Spring, Summer, and Fall 1998)*

Alonso Eloy Bayona (Spring 2002-present)

Arturo Caraveo (Spring and Summer 1997)

Alejandro Castaneda (Summer and Fall 2005, Spring 2006)

Robert Calder (Fall 1997)

Juan Chacon (Summer 1998 - Summer Computer Animation Workshop)

Margarita Faudoa (Spring and Summer 1997)

Mehmet Guler (Fall 1997)*

Ricardo Herrera (Spring 1998)

Chris Kirby (Fall 2001, Spring 2002)

Wendy Korn (Summer 1998 - Summer Computer Animation Workshop, Spring, Summer and Fall 1999, Spring, Summer and Fall 2000)

Roxanne Martinez (Fall 2000)

Mike Maxwell (Spring and Fall 1997 and Spring, Summer, and Fall 1998 - Summer Computer Animation Workshop Spring 1999, Summer 1999, Fall 1999, Spring 2000)*

Hector Mendoza (Spring 2001)

Trevor Morgan (Fall 1999, Spring, Summer and Fall 2000, Spring, Summer and Fall 2001, Spring and Fall 2002)

Jaime Nava (Spring, Summer, and Fall 2005, and Spring 2006)

David Nevarez (Summer 1998 - Summer Computer Animation Workshop)

Gustavo Nieto (Spring 2002 - present)

Manuel Nieto (Spring 2001, Summer 2001)*

Nidia Pedregon (Summer and Fall 2005, Spring 2006)

Miriam Pena (Fall 1999, Spring 2000)

Thientham Pham (Spring 2003-Spring 2004)

Ricardo Portillo (Spring, Summer and Fall 2001, Spring 2002)*

Luis Rauda (Fall 1998, Spring 1999)*

Gary Rybak (Spring and Fall 1998)*

Alexander Sainz (Spring and Fall 2002)

Leonardo Salayandia (Spring and Fall 1998)*

Mari Tapia (Fall 1998)

Victor Vela (Spring and Fall 1998)

Marcos Villareal (Spring, Summer and Fall 1999, Spring, Summer and Fall 2000)

Earl Yager (Spring 1998)

New Mexico State University

Liza Benally, McNair Scholar, 1994

Institut National des Telecommunications (students on internships)

Sebastien Deplaine, June 1995-Feb. 1996

Vincent Lambert, August 1992-March 1993

SERVICE

PROFESSIONAL ACTIVITIES

ADVISORY COMMITTEE MEMBER

Leadership Team, Coalition to Diversify Computing, July 2005-June 2006.

Steering Committee of SCxy Conference Series, Elected Member, November 2003-November 2006, Member due to being General Chair of SC08, November 2006-November 2009. (The SCxy Conference is the largest (appx. 7,000 attendees) International Conference for High Performance Computing and Communications; it started in 1988.)

Industrial Advisory Committee, SCxy Conference Series, January 2006-January 2009.

Advisory Committee on the Terascale Computing System at the Pittsburgh Supercomputing Center, first meeting 7 February 2001.

CONFERENCE/WORKSHOP CHAIR

General Chair, Supercomputing 2008 (SC08), Austin, TX, November 2008.

Deputy Chair, Supercomputing 2007 (SC07), Reno, NV, November 2007.

Co-Finance Chair, Supercomputing 2006 (SC 2006), Tampa, FL, November 2006. (Manage budget of over \$4.5M, coordinate with over twenty volunteer chairs; this conference has over 7,000 attendees).

Co-Chair, Technical Papers, Richard Tapia Celebration of Diversity in Computing Conference 2005, Albuquerque, NM, October 19-22, 2005,

Tutorials Chair, 2004 International Parallel and Distributed Processing Symposium (IPDPS 2004), Santa Fe, NM, April 2004.

Finance Chair, SC 2003, Phoenix, AZ, November 2003. (Manage budget of over \$2M, coordinate with over twenty volunteer program chairs; this conference had over 7,000 attendees.)

Tutorials and Workshops Chair, 30th Annual International Symposium on Computer Architecture (ISCA 2003), San Diego, CA, June 2003.

Tutorials Chair, 2003 International Parallel and Distributed Processing Symposium (IPDPS 2003), Nice, France, April 2003.

Co-organizer of SC 2003 Birds-of-a-Feather Meeting: "Women in High-performance Computing," (with Shirley Moore, University of Tennessee-Knoxville) SC 2003, Baltimore, MD, November 2002.

Publicity Coordinator, 2002 International Parallel and Distributed Processing Symposium (IPDPS 2002), Fort Lauderdale, FLA, April 2002.

Co-organizer of Workshop on Performance Engineering Technology Research Sponsored under the NSF Next Generation Software (NGS) Program, Austin, TX, (with Frederica Darema, NSF, and J. Browne, UT-Austin), February 28 – March 1, 2002.

IEEE Liaison, 2002 IEEE International Performance, Computing, and Communication Conference, Phoenix, AZ, February 2002.

Panels Coordinator, Supercomputing 2001, Denver, CO, November 2001.

Invited Speakers Chair and Back-up for Technical Program Chair, Supercomputing 2000, Dallas, TX, November 2000.

Tutorials Chair, 26th Annual International Symposium on Computer Architecture, Atlanta, GA, May 1999.

Student Volunteers Chair, Supercomputing '99, Portland, OR, November 1999. (Recruited, oriented, and managed approximately 85 students; managed \$35,000 budget (as well as student registrations and airfare grants).

Posters Chair, Supercomputing '97, November 1997.

Tutorials Chair, 23rd Annual International Symposium on Computer Architecture, May 1996.

CONFERENCE TECHNICAL PROGRAM COMMITTEE MEMBER

Technical Papers Program Committee Member, the 2006 International Conference on Parallel Processing (ICPP 2006), Operating Systems and Resource Management Program, Columbus, Ohio, August 4-6, 2006.

Technical Papers Program Committee Member, 2006 International Parallel and Distributed Processing Symposium (IPDPS 2006).

Technical Papers Program Committee Member, the 19th ACM International Conference on Supercomputing (ICS) 2005.

IEEE Computer Society's 2004 Seymour Cray Award Committee Member, Supercomputing 2004 (SC04), November 2004.

Technical Papers Program Committee Member, Supercomputing 2002 (SC02), November 2002.

Technical Program Committee Member, 2001 IEEE International Performance, Computing, and Communication Conference, Phoenix, AZ, February 2001.

Technical Program Committee Member, 1999 IEEE International Performance, Computing, and Communication Conference, Scottsdale, AZ, February 16-18, 1999.

Technical Program Committee Member, 1998 IEEE International Performance, Computing, and Communication Conference, Tempe/Phoenix, AZ, February 1998.

Technical Program Committee Member, 4th International Conference on High Performance Computing, December 1997.

Technical Papers Program Committee Member and Tutorial Program Committee Member, Supercomputing '97, November 1997.

Technical Papers Program Committee Member and Tutorial Program Committee Member, Supercomputing '96, November 1996.

Technical Program Committee Member, 14th International Conference on Distributed Computing Systems, June 1994.

Technical Program Committee Member, 1993 Computational Science Workshop, sponsored by Los Alamos National Laboratory.

Technical Program Committee Member, 20th Annual International Symposium on Computer Architecture, May 1993.

Technical Program Committee Member, Frontiers of Massively Parallel Computation, October 1992.

Technical Program Committee Member, 19th Annual International Symposium on Computer Architecture, May 1992.

SELECTED TRACK/SESSION CHAIR

Session Chair, Richard Tapia Celebration of Diversity in Computing Conference 2005, Albuquerque, NM,

Session Chair, 10th International Conference on Parallel and Distributed Systems (ICPADS) 2004, Newport Beach, CA, July 2004.

Session Chair, The Sun Conference on Teaching and Learning, Center of Effective Teaching and Learning (CETaL), UTEP, El Paso, TX, March 2004, March 7-8, 2003, and March 8-9, 2002.

Plenary Chair, SC 2001, Denver, CO.

Session Chair, Supercomputing 2000, Dallas, TX, November 4-10, 2000.

Session Chair, 2000 Frontiers in Education Conference (FIE 2000), Kansas City, MO, October 18-21, 2000.

Session Chair, Supercomputing '99, Orlando, FLA, November 1999.

Track and Session Chair, 1999 IEEE International Performance, Computing, and Communication Conference, Scottsdale, AZ, February 1999.

Track and Session Chair, 1998 IEEE International Performance, Computing, and Communication Conference, Tempe/Phoenix, AZ, February 16-18, 1998.

Session Chair, 1997 Frontiers in Education Conference, Pittsburgh, PA, November 1997.

Session Chair, Supercomputing '96, November 1996.

Session Chair, International Phoenix Conference on Computers and Communication, Phoenix, AZ, April 1994.

Session Chair, 19th Annual International Symposium on Computer Architecture, May 1992.

SELECTED PROPOSAL/PROGRAM REVIEWER

SciDAC2 Review Panel Member, Centers for Enabling Technologies (CET), Department of Energy, Office of Advanced Scientific Computing Research, April 17, 2006.

CISE Remote Reviewer for Jose Munoz, National Science Foundation, June 2005.

CISE Next Generation Software (NGS) Review Panel Member, National Science Foundation, February 2004.

CISE PACI Program Reviewer, National Science Foundation, October 2002.

ITR Medium Review Panel Member, National Science Foundation, February 12-13, 2002.

CISE PACI Program Reviewer, National Science Foundation, October 22-23, 2001.

CSEMS Panel Reviewer, National Science Foundation, May 30-June 2, 2001.

CISE CAREER Program Reviewer, National Science Foundation, 2000.

CISE PACI Program Reviewer, National Science Foundation, July 1999.

Panelist for National Science Foundation, CCR Panel, Instrumentation Grants for Research in Computer and Information Science and Engineering (CISE/CDA), October 1998.

Reviewer for Department of Energy Defense Programs Accelerated Strategic Computing Initiative (ASCI) - ASCI Alliance Level II Reviewer, Proposal Review Team met June 14-16, 1997.

Reviewer for Department of Energy Defense Programs Accelerated Strategic Computing Initiative (ASCI) - ASCI Alliance Level I Reviewer, Preproposal Review Team met January 1997.

Reviewer for Master's Program of the Division of Computer Science at The University of Texas at San Antonio, March 25-26, 1997.

Panelist for the National Science Foundation, CISE/OCDA Educational Innovation Program, April 16, 1996.

INVITED WORKSHOP/CONFERENCE PARTICIPANT

The Conference on High Speed Computing – I/O and Data at the Grand Scale (The Salishan Conference), sponsored by Lawrence Livermore, Los Alamos, and Sandia National Laboratories, April 2006, Glendon Beach, Oregon. This invited-only Conference brings together experts in computer architectures, languages, and algorithms to improve communications, develop collaborations, solve problems of mutual interest and provide effective leadership in the field of high speed computing. Leading experts from the National Labs, Industry, and Academia address and discuss major issues relevant to High Performance computing.

The Conference on High Speed Computing – Paths to Petaflops (The Salishan Conference), sponsored by Lawrence Livermore, Los Alamos, and Sandia National Laboratories, April 2005, Gleneden Beach, Oregon.

The Conference on High Speed Computing – Applications, Algorithms, and Architectures (The Salishan Conference), sponsored by Lawrence Livermore, Los Alamos, and Sandia National Laboratories, April 2004, Gleneden Beach, Oregon.

The Conference on High Speed Computing – Extreme Scale Computing (The Salishan Conference), sponsored by Lawrence Livermore, Los Alamos, and Sandia National Laboratories, April 2003, Gleneden Beach, Oregon. Two Ph.D. candidates, Ricardo Portillo and Diana Villa, were invited to attend the conference all expenses paid. Diana presented a poster of her IBM-related research.

DARPA High Productivity Computing Workshop, Arlington, VA, July 15, 2002.

The Conference on High Speed Computing (The Salishan Conference), sponsored by Lawrence Livermore, Los Alamos, and Sandia National Laboratories, April 2002, Gleneden Beach, Oregon. A Ph.D. candidate, Diana Villa, was invited to attend the conference all expenses paid.

The Conference on High Speed Computing (The Salishan Conference), sponsored by Lawrence Livermore, Los Alamos, and Sandia National Laboratories, April 23-26, 2001, Gleneden Beach, Oregon.

Performance Workshops, sponsored by Los Alamos National Laboratory, November 1995, 1996, 1997.

REFEREE

Refereed for many publishers, publications, and conferences including: IEEE Computer, IEEE Computer Society Press, IEEE Concurrency, IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Systems, Frontiers in Education, Parallel Computing, The Journal of Parallel and Distributed Computing, The Journal of Supercomputing, HPCA, MICRO, MASCOTS, ACM International Conference on Supercomputing, International Parallel and Distributed Processing Symposium, IEEE International Performance, Computing, and Communication Conference, Frontiers in Education Conference, International Conference on Distributed Computer Systems, International Conference on Parallel Processing, International Conference of Supercomputing, International Symposium on Computer Architecture, Supercomputing Conference, Richard Tapia Conference, Prentice Hall, and Kluwer Academic Publishers.

PROFESSIONAL ORGANIZATIONS

Association for Computing Machinery (ACM), member since 1979.

The Institute of Electrical and Electronic Engineers, Inc. (IEEE), member since 1985.

OUTREACH

Elected Chair/Past Chair/Leadership Team Member, The Coalition to Diversify Computing (CDC), July 1, 2004-June 30, 2005/July 1, 2005-June 30, 2006. While chair, partnered with the EPIC team to secure \$45,000 for CDC projects and with CRA-W on an NSF Broadening Participation grant proposal, which was awarded. (CDC is a project-based organization that has as its primary goal the enhancement and diversification of the available pool of highly-trained scientists and engineers in computer-related fields. It is a joint organization of the Association of Computing Machinery (ACM), Computer Research Association (CRA), and Institute of Electrical and Electronic Engineering Computer Society (IEEE-CS).)

Project Lead, Coalition to Diversify Computing, “Conference Support for Minority Students in CSE,” \$35,000 budget. This program offers support for minority students to attend technical conferences with their mentors. 2000-present.

Scholarship Committee Member, Tapia Symposium 2001, Houston, TX, October 2001.

In cooperation with the Kellogg Foundation-sponsored Learning Community Partnership (in coordination with the Institute for Community-Based Teaching and EPiSO, an El Paso-based community organization), which provides the framework for faculty and university students to mentor elementary-school students

and serve in an advisory capacity, worked with A. Gates as mentors to Ascarate school. In this capacity, we supervised students to 1) provide a Spanish-language URL that provides UTEP and Department of Computer Science information to student and parents and 2) develop teaching materials and tutorials for faculty and student members of Ascarate's computer club to allow them to design and develop a URL for their school. During the Fall 2000 and Spring 2001 semesters we will facilitate the design and development of the URL at Ascarate. We plan to disseminate the materials for making a URL and provide teaching assistance to other El Paso schools with the help of the local student chapter of the ACM (Association for Computer Machinery). Attended and participated in a parents/teachers meeting with the goal of demonstrating to parents, via sharing of my own background, that college is within their children's grasp and that college professors are just regular people.

UTEP Engineering EXPO 2000 (with A. Gates), The University of Texas at El Paso, supervised students who developed and facilitated the "Wacky Website World," which allowed visitors to design and develop home pages using various tools and techniques.

UTEP Engineering EXPO '99 (with A. Gates), The University of Texas at El Paso, supervised students who developed and facilitated three modules that took visitors on an electronic tour of a day in various computer-science related careers, provided visitors with web-based information on career and educational opportunities in computer science, and permitted visitors to participate in a "treasure hunt" that introduced them to a variety of applications such as an editor, a spread sheet, and a browser, Spring 1999.

UTEP Engineering EXPO '98 (with A. Gates and R. Bell), The University of Texas at El Paso, supervised students who developed and facilitated three modules that taught visitors how to make home pages and develop computer animations via two software packages, and allowed them to participate in an electronic "scavenger hunt" on the internet, Spring 1998.

Department of Computer Science Summer Animation Workshop (with R. Bell), The University of Texas at El Paso, supervised students who developed and facilitated three two-week long computer animation workshops for middle- and high-school students, The University of Texas at El Paso, Summer 1998.

UTEP Engineering EXPO '97 (with A. Gates), University of Texas at El Paso, supervised students who developed and facilitated a module that taught visitors how to effectively "Surf the Net," make home pages, and generate and visualize fractals understand how to "Surf the Net," Spring 1997.

Expanding Your Horizons, New Mexico State University, introduced young women to computer science, March 1994.

Designed, developed, and facilitated a day-long series of activities that introduced ten high-school honors students to computer science.

FACULTY SERVICE

UNIVERSITY COMMITTEES

The University of Texas at El Paso

Member, Centennial Committee, Research Task Force, 2004.

Member, Computational Science Task Force, 2004.

Member, Faculty Senate, 2004-2006.

Member, Bioinformatics Research Committee, 2004.

Member, CARPE, since 2003.

Member, Dean's Search Committee, 2003

Member, Instructional Technology Task Force, 2001.

Member, Futurists Committee, Spring 2001-present.

Member, Maui Supercomputing Center Proposal Committee, Fall 2000.

Member, Academic Affairs Information Technology (AAIT) Committee (alternate for L. Longpre), Fall 2000.

Member, Internet2 Committee, participated in and helped organize pre-proposal activities, in particular helped organize and run a related workshop, 1999-2000.

Member, Colleges of Science and Engineering Seminar Committee, 1999.

Member, MIE Undergraduate Curriculum Task Force, identify changes to engineering and science curriculum that are needed to realize the MIE vision, and define a method to implement the changes, Spring 1997-1998.

COLLEGE COMMITTEES

The University of Texas at El Paso

Chair, Task Force on Strengthening the Graduate Programs, 2005.

Member, Integrated Curriculum, 2004/2005.

Member, Sustainable Engineering Committee, 2001-2002.

Member, Dean's Advisory Board for Quality Management, 2001-2002.

Member, College of Engineering Scholarship Committee, Spring 2000-Present.

Member, Hewlett Packard/Agilent Technologies Scholarship Committee, 1999 and 2000.

Member, College of Engineering Curriculum Committee, consider and approve changes to curriculum, Fall 1998.

Member, College of Engineering Outreach Committee, 1997.

DEPARTMENT COMMITTEES

The University of Texas at El Paso

Member, Graduate Committee, 2004-2006.

Chair, Graduate Committee, 2004-2005.

Member, Facilities Committee, 2005/2006.

Chair, Undergraduate Curriculum Committee, 2004/2006.

Member, CQI, 2004-2005.

CS Undergraduate Curriculum Evaluation Committee, Summer 2004. Report generated.

Chair, Computational Science Program, 2002-present.

Member, Accreditation Committee, 2000.

Chair, Facilities Committee, 2000, instrumental in establishing sufficient disk storage and an automatic backup facility, procedures, and policies.

Coordinator, Departmental Advisory Board, 2000-2004, established a 12-member departmental advisory board that has grown to 16 members from such organization as UT-Austin, Oregon State University, Microsoft, IBM-Austin, Intel, Hewlett-Packard, Texas Instruments, and Raytheon.

In May/June 2000 traveled to Mexico to visit the following institutions with the purpose of establishing a relationship that will lead to recruiting students from these institutions to study at UTEP towards their Master's or Ph.D. degrees: Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Estado de Mexico, Division de Ingenieria y Arquitectura, The Computer Science Department.

Member, Faculty Search Committee.

Member, Facilities/Equipment Committee, identified equipment to be purchased by department, Fall 1998.

Chair, Colloquium/Seminar Committee, organized and advertised departmental colloquia, Fall 1997.

New Mexico State University

Member, Colloquia Committee, 1993-1994.

Member, Recruitment Committee.

Member, Curriculum Committee.

Chair, Advisory Committee.

Member, Graduate Committee.

Chair, Teaching Assistants Committee, 1996.

Member, Women's Studies Steering Committee.