Microsoft's Opposition to Motorola's Motion to Exclude Testimony of Howard Jay Siegel, Ex 1

EXHIBIT C

VITA – HOWARD JAY SIEGEL

February 4, 2011

VITA – HOWARD JAY SIEGEL

Personal Information

Contact Information

Office Address:
Electrical and Computer Engineering Department
Colorado State University
Fort Collins, CO 80523-1371

Home Address:
1969 Davis Ranch Road
P.O. Box 295
Bellvue, CO 80512-0295

Office Phone: 970-491-7982

Home Phone: 970-416-9062

Office Fax: 970-491-2249

Electronic Mail: HJ@ColoState.edu

Web Page: www.engr.colostate.edu/~hj

Present Professional Appointments

[1]	Aug. 2001 – Present	George T. Abell Endowed Chair Distinguished Professor of Electrical and Computer Engineering, Colorado State University, Fort Collins, CO
[2]	Aug. 2001 – Present	Full Professor of Computer Science (courtesy joint appointment), Colorado State University, Fort Collins, CO
[3]	Dec. 2002 – Present	Director, Information Science and Technology Center (ISTeC), Colorado State University, Fort Collins, CO (ISTeC is a university-wide organization for promoting, facilitating, and enhancing CSU's research, education, and outreach activities pertaining to the design and innovative application of computer, communication, and information systems)

Education

Degree	*Date*	*School*
High School	1967	Stuyvesant High School, New York, NY
B.S.E.E.	1972	Massachusetts Institute of Technology (MIT), Cambridge, MA Bachelor of Science Degree in Electrical Engineering
B.S. in Management	1972	Massachusetts Institute of Technology (MIT), Cambridge, MA Bachelor of Science Degree in Management
M.A.	1974	Princeton University, Princeton, NJ Master of Arts Degree, Electrical Engineering Dept.
M.S.E.	1974	Princeton University, Princeton, NJ Master of Science and Engineering Degree, Electrical Engineering Dept.
Ph.D.	1977	Princeton University, Princeton, NJ Ph.D. Degree, Electrical Engineering and Computer Science Dept.

Doctoral Dissertation:
"Interconnection Networks and Masking Schemes for
Single Instruction Stream – Multiple Data Stream Machines"
Advisor: Jeffrey D. Ullman

Fellow

[1] Elected a Fellow of the IEEE, "for contributions to the analysis and design of interconnection networks for highly parallel processors," Jan. 1990.

[2] Elected a Fellow of the ACM, "in recognition of outstanding technical and professional achievements in the field of information technology," Jan. 1998.

Past Professional Appointments
(ordered by date activity ended)

[1]	June 1968 – Sep. 1968	Programming Analyst, Computer Property Corp., NJ.
[2]	June 1969 – Sep. 1969	Programming Analyst, Computer Property Corp., NJ.
[3]	June 1970 – Sep. 1970	Researcher, Programming Linguistics group at Project MAC, MIT, Cambridge, MA.
[4]	June 1971 – Sep. 1971	Researcher, Advanced Interactive Management Systems group at Project MAC, MIT, Cambridge, MA.
[5]	Sep. 1972 – Aug. 1976	Assistantships in Research and Teaching, Princeton University, Princeton, NJ.
[6]	Aug. 1976 – Aug. 1981	Assistant Professor, Electrical Engineering, Purdue University, West Lafayette, IN.
[7]	Jan. 1979 – Nov. 1981	Research Staff at LARS, Purdue University, West Lafayette, IN.
[8]	Aug. 1981 – Aug. 1985	Associate Professor, Electrical Engineering, Purdue University, West Lafayette, IN.
[9]	June 1987 – June 1988	Research Project Leader, Supercomputing Research Center, Lanham, MD (on leave from Purdue).
[10]	May 1989 – Dec. 1998	Coordinator, Parallel Processing Laboratory, School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN.
[11]	Aug. 1985 – Aug. 2001	Full Professor, Electrical and Computer Engineering, Purdue University, West Lafayette, IN.
[12]	Mar. 1998 – Oct. 2002	Member, Scientific Advisory Board, NOEMIX, Inc., San Diego, CA.
[13]	Oct. 2002 – Sep. 2003	Member, Scientific Advisory Board, Grid IQ, Poway, CA.

Consulting Activities
(ordered by date activity ended)

[1] 1979 TRW, Huntsville, AL.

[2] 1979 Xerox Corp., Rochester, NY.

[3] 1980 General Motors Research Laboratory, Dearborn, MI.

[4] 1981 – 1982 Arvin/Calspan, Advanced Technology Center, Buffalo, NY.

[5] 1982 Dynamic Computer Architecture Inc., Lincoln, NB.

[6] 1984 Hewlett-Packard, Fort Collins, CO.

[7] 1984 Westinghouse Electric Corp., Baltimore, MD.

[8] 1985 KLA Instruments Corp., Santa Clara, CA.

[9] 1985 Ball Aerospace, Boulder, CO.

[10] 1986 MCC (Microelectronics and Computer Technology Corp.), Austin, TX.

[11] 1986 Citicorp/TTI, Santa Monica, CA.

[12] 1986 General Dynamics, Forth Worth, TX.

[13] 1983 – 1987 IBM Federal Systems Division, Manassas, VA.

[14] 1988 NCR Corp., Minneapolis, MN.

[15] 1988 – 1989 Sandia National Laboratories, Livermore, CA.

[16] 1990 NCR Corp., San Diego, CA.

[17] 1990 Cray Research, Inc., Mendota Heights, MN.

[18] 1991 – 1992 SAIC, San Diego, CA.

[19] 1994 – 1995 Computer Simulation Technologies, Inc., Naperville, IL.

[20] 1996 United Nations Development Program through the China International Center for Economic and Technical Exchanges, Beijing, China.

[21] 1994 – 1998 Architecture Technology Corp., Eden Prairie, MN.

[22] 1998 Latham & Watkins, Attorneys at Law, Chicago, IL (expert witness for SGI/Cray, Mountain View, CA).

[23] 1996 – 1999 Brobeck Phleger & Harrison LLP, Attorneys-at-Law, Palo Alto, CA (expert witness for Mentor Graphics, Wilsonville, OR).

[24] 2006 University of Central Florida, College of Engineering and Computer Science, Orlando, FL

[25] 2004 – 2007 IBM Printing Services, Boulder, CO

[26] 2006 – 2007 Finnegan & Henderson, Attorneys at Law, Palo Alto, CA (expert consultant for Sony Computer Entertainment America).

Honor Society Memberships

[1] Sigma Xi science honor society, 1976

[2] Eta Kappa Nu electrical engineering honor society, 1976

[3] Upsilon Pi Epsilon computing sciences honor society, Jan. 2002

Honors and Awards

[1] 3rd Biennial Conference on Computing in Indiana Award for the paper "Preliminary Design of a Versatile Parallel Image Processor System" as the "Outstanding Submission," Apr. 1978.

[2] Appointed an IEEE Computer Society Distinguished Visitor, to give invited research lectures for IEEE Computer Society chapters nationwide, Aug. 1979 to July 1982.

[3] Certificate from the Central Indiana Section of the IEEE "in recognition and appreciation of his valued services and contributions as Chairman of IEEE Computer Society Central Indiana Chapter," 1979.

[4] Listed in 15th edition of American Men and Women of Science, 1980.

[5] 14th Annual Hawaii International Conference on System Sciences Award for the paper, "The Use of the Augmented Data Manipulator Network in PASM," as the "Best Paper" (there were two "Best Paper" awards given), Jan. 1981. (This paper was co-authored by Robert J. McMillen.)

[6] Awarded Senior Member status, IEEE, July 1982.

[7] Invited Lecturer, NATO Advanced Study Institute on Computer Architecture for Spatially Distributed Data, June 1983.

[8] Certificate of Appreciation from IEEE Computer Society "for dedicated service as a (IEEE Computer Society) Distinguished Visitor 1979-1982," Nov. 1983.

[9] Certificate of Appreciation from IEEE Computer Society "for serving as the Chairperson of the (IEEE) Computer Society's TC (Technical Committee) on Computer Architecture," Nov. 1983.

[10] 17th Annual Hawaii International Conference on System Sciences Award for the paper, "A Distributed Operating System for PASM," as the "Best Paper" in the Hardware (Computer Systems) Track of the conference, Jan. 1984. (This paper was co-authored by David L. Tuomenoksa.)

[11] Certificate of Appreciation from IEEE Computer Society "for contributions to the 4th International Conference on Distributed Computing Systems," May 1984.

[12] Award (clock with engraved plaque) from the International Conference on Parallel Processing "Presented to H. J. Siegel in appreciation of his outstanding services to the conference," awarded Aug. 1984.

[13] Certificate from the ACM: "Recognition of Service Award Presented to Howard J. Siegel In Appreciation For His Contribution To The Association For Computing Machinery, SIGARCH, Chair, 1983 - 1985," Feb. 1986.

[14] Plaque with the citation: "International Conference on Parallel Processing Best Presentation Award presented to Thomas Schwederski, Howard Jay Siegel, Thomas L. Casavant, for their presentation, Task Migration Transfers in Multistage Cube Based Parallel Systems, 1989," awarded Aug. 1990.

[15] Plaque with the citation: "International Conference on Parallel Processing Best Presentation Award presented to Thomas Schwederski, Howard Jay Siegel, Thomas L. Casavant, for their presentation, Optimizing Task Migration Transfers Using Multistage Cube Networks, 1990," awarded Aug. 1991.

[16] Plaque awarded by the 4th Symposium on the Frontiers of Massively Parallel Computation, sponsored by the IEEE Computer Society and the NASA Goddard Space Flight Center, with the citation: "Frontiers '92, H. J. Siegel, In Appreciation for an Outstanding Job as Program Chair," awarded Oct. 1992.

[17] Appointed a Lecturer in the ACM Distinguished Lecturer Program, to give invited research lectures to ACM chapters nationwide, Aug. 1993 to Dec. 2000.

[18] Plaque awarded by the 8th International Parallel Processing Symposium, sponsored by IEEE Computer Society, with the citation: "Program Chair, In Recognition of H. J. Siegel for His Contributions to IPPS 1994, April 26-29, 1994," awarded Apr. 1994.

[19] "Technical Contribution Award: Presented to Professor Howard Jay Siegel for Your Outstanding Technical Lecture (Keynote) Delivered at the 1994 International Symposium on Parallel Architectures, Algorithms and Networks (ISPAN '94) held on December 14-16, 1994 in Kanazawa, Japan," awarded Dec. 1994.

[20] Plaque awarded by the 1994 International Conference on Parallel and Distributed Systems, sponsored by National Chiao Tung University, Hsinchu, Taiwan, with the citation: "In Recognition of Outstanding Contributions of Prof. H. J. Siegel to the Success of the 1994 International Conference on Parallel and Distributed Systems as Conference General Co-Chair," awarded Dec. 1994.

[21] "IEEE Computer Society Outstanding Paper Award presented to James B. Armstrong and H. J. Siegel for the paper `Dynamic Task Migration from SIMD to SPMD Virtual Machines' in the

category of Best Paper at the 1995 International Conference on Engineering of Complex Computer Systems," awarded Nov. 1995.

[22] Plaque with the citation: "To Professor H. J. Siegel in appreciation of his contribution to the Distinguished Lectures in Engineering, December 6, 1995, School of Engineering, The Hong Kong University of Science & Technology," awarded Dec. 1995.

[23] Certificate with the citation: "Technical Contribution Award; June 14, 1996; Howard Jay Siegel; Purdue University; Computing with Heterogeneous Parallel Machines: Advantages and Challenges; Presented to Professor Howard Jay Siegel for Your Outstanding Keynote Speech Delivered at The Second International Symposium on Parallel Architectures, Algorithms, and Networks held on June 12-14, 1996 in Beijing, China; ISPAN'96 General Chair: Xiao Xiang Zhang," awarded June 1996.

[24] Award (clock with engraved plaque) with the citation "Presented to H. J. Siegel in appreciation of his distinguished service as workshop chairman of the 1996 International Conference on Parallel Processing," awarded Aug. 1996.

[25] IEEE Computer Society Certificate of Appreciation "For service to the IEEE Computer Society and to the profession as a member of the Editorial Board of IEEE Transactions on Parallel and Distributed Systems," presented at the 11th International Parallel Processing Symposium, Apr. 1997.

[26] Plaque with the citation: "Outstanding Achievement Award, The 1997 International Conference On Parallel And Distributed Processing Techniques and Applications (PDPTA '97/CSREA), The PDPTA Program Committee Presents This Outstanding Achievement Award To Howard Jay Siegel In Recognition and Appreciation of His Dedicated and Outstanding Contributions To The Fields of Parallel and Distributed Computing and Applications, June 1997, Hamid R. Arabnia, Chair, PDPTA Committee," awarded June 1997.

[27] Invited "Tamkang University Chair"; spent a week at Tamkang University, Tamsui, Taiwan, giving three two-hour lectures about my research and meeting with their administrators and faculty, Apr. 2000.

[28] Awarded a medal and associated certificate from the International Technology Institute stating: "Diploma certifying that Dr. Howard Jay Siegel, Purdue University, was elected into the World Level of the Hall of Fame for Engineering, Science, and Technology," presented at the 2000 International Conference on Parallel and Distributed Processing Technologies and Applications, June 2000.

[29] Plaque with the citation: "Presented to Howard J. Siegel, Keynote Speaker, International Conference on High Performance Computing, December 20, 2001, Hyderabad, India, Meeting Sponsored by IEEE Computer Society, ACM," awarded Dec. 2001.

[30] Certificate with the citation: "In recognition of your outstanding achievements and contributions to the international research community, ISI presents you with this certificate. Highly Cited Researchers, Original member, Highly Cited Researchers database, Howard Jay Siegel. ISI honors your accomplishments as one of the most highly cited, influential researchers in your field." Awarded May 2002.

[31] Plaque awarded at the joint meeting of the 3rd International Symposium on Parallel and Distributed Computing (ISPDC 2004) and 3rd International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar 2004), sponsored by Enterprise Ireland, Cork, Ireland, with the citation "ISPDC/HeteroPar 2004, Professor H. J. Siegel, In appreciation of your invited talk at University College Cork. July 5th, 2004."

[32] Plaque with the citation: "NPC 2004 General Chair, Professor H. J. Siegel, Colorado State University, IFIP International Conference on Network and Parallel Computing, October 18-20, 2004 in Wuhan, China," awarded Oct. 2004.

[33] Silver dish engraved with "H. J. Siegel, AICCSA '05," awarded in recognition of my keynote talk at the ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2005), cosponsors: Arab Computer Society (ACS) and IEEE Computer Society, Cairo, Egypt, Jan. 2005.

[34] Plaque with the citation: "IPDPS 2005, IEEE International Parallel & Distributed Processing Symposium, April 4-8 – Denver; Presented To H.J. Siegel, Host General Co-Chair, With Grateful Appreciation for Efforts on Behalf of IPDPS 2005; For the IPDPS Steering Committee: Viktor K. Prasanna & George Westrom, Steering Co-Chairs; Sponsored by the IEEE Computer Society, Technical Committee on Parallel Processing," awarded Apr. 2005.

[35] Certificate with the citation: "ARCS '06 Architecture of Computing Systems 2006; Certificate of Honour; The ARCS 2006 organizing committee is deeply indebted to H.J. Siegel, Colorado State University, for his valuable contribution [keynote talk] to the 19th International Conference on Architecture of Computing Systems held in Frankfurt/Main, Germany, March 13-16, 2006," awarded Mar. 2006.

[36] Plaque with the citation: "College of Engineering; Presented to Dr. H. J. Siegel; In appreciation for your lecture; Dean's Seminar Series; April 17, 2006; University of Florida," awarded Apr. 2006.

[37] Plaque with the citation: "IPDPS 2006, IEEE International Parallel & Distributed Processing Symposium, April 25-29 – Rhodes, Greece; Presented To H.J. Siegel, General Co-Chair, With Grateful Appreciation for Efforts on Behalf of IPDPS 2006; For the IPDPS Steering Committee: Viktor K. Prasanna & George Westrom, Steering Co-Chairs; Sponsored by the IEEE Computer Society, Technical Committee on Parallel Processing," awarded Apr. 2006.

[38] Plaque for a keynote presentation with the citation: "International Society for Computers and Their Applications; Howard J. Siegel; Colorado State University; In appreciation for your presentation "Robust Resource Management in Heterogeneous Parallel and Distributed Computing Systems"; PDCS-2007 (Parallel and Distributed Computing Systems 2007); Las Vegas, Nevada USA; September 24, 2007"; signed by the conference Chair and Program Co-Chairs; awarded Sep. 2007.

[39] Plaque with the citation: "Presented to Dr. H.J. Siegel In appreciation for your Collqquium Generale 'Making parallel and distributed computing systems robust' Universite du Luxembourg, May 22nd 2008," awarded May 2008.

[40] Certificate with the citation: "Computing Research & Education 2009 Best Paper; The Thirty-Second Australasian Computer Science Conference (ACSC); Awarded to H. J. Siegel of Colorado State University; for the paper 'Scheduling Parallel Applications on Utility Grids: Time and Cost Trade-off management'(I was a co-author), awarded Jan. 2009.

[41] Plaque with the citation: "Heterogeneity in Computing Workshop; The HCW Top Hand Award; IPDPS 2009; May 25th; Rome, Italy; Presented to H.J. Siegel With Grateful Appreciation for Riding, Cutting and Roping Required to Organize The Annual HCW Roundups," awarded May 2009.

[42] Certificate with the citation: "Keynote Speaker of I-SPAN 2009; Certificate of Recognition; Presented to H. J. Siegel. Dept. of Electrical and Computer Engineering, Colorado State University, USA; This certificate is presented to the Keynote Speaker in recognition of his involvement in the International Symposium on Pervasive Architectures, Algorithms, and Networks 2009; Kaohsiung, Taiwan; December 14-16, 2009," awarded Dec. 2009.

[43] Plaque with the citation: "IEEE Computer Society Continuous Service Award Presented to Howard Jay Siegel For 10+ years of service on the International Parallel and Distributed Processing Symposium (IPDPS) Steering Committee; 21 April 2010"; signed by the 2010 IEEE President, awarded Apr. 2010.

Research Activities

Research Grants and Contracts Received
(ordered by date grant/contract ended)

[1] Principal Investigator: 1977 Summer Faculty XL Grant from the Purdue Research Foundation, June 1977 to Aug. 1977, $2,700.

[2] Principal Investigator: from the Air Force Office of Scientific Research, "A Versatile Parallel Image Processor System," Grant No. AFOSR 78-3581, Mar. 1, 1978 to Feb. 28, 1979, $30,000.

[3] Principal Investigator: from the Defense Mapping Agency, monitored by the United States Air Force Rome Air Development Center Information Sciences Division, "Image Processing/Feature Extraction Architecture Emulation," Contract No. F30602-78-C-0025 (through the University of Michigan), Apr. 1, 1979 to Sep. 30, 1979, $28,000.

[4] Participant: from the National Aeronautics and Space Administration, principal investigator - David A. Landgrebe, "Research in Remote Sensing of Agriculture, Earth Resources and the Environment," Contract No. NAS9-15466, Dec. 1, 1978 to Nov. 30, 1979, $1,642,000. I participated in the subproject: "Multispectral Data Analysis Research," $115,074.

[5] Principal Investigator: from the Air Force Office of Scientific Research, renewal, "A Versatile Parallel Image Processor System," Grant No. AFOSR 78-3581, Mar. 1, 1979 to Feb. 28, 1980, $42,000.

[6] Principal Investigator: from the Defense Mapping Agency, monitored by the United States Air Force Rome Air Development Center Information Sciences Division, renewal, "Parallel Image Processing/Feature Extraction Algorithms and Architecture Emulation," Contract No. F30602-78-C-0025 (through the University of Michigan), Oct. 1, 1979 to Sep. 30, 1980, $50,000.

[7] Participant: from the National Aeronautics and Space Administration, principal investigator - David A. Landgrebe, renewal, "Research in Remote Sensing of Agriculture, Earth Resources and the Environment," Contract No. NAS9-15466, Dec. 1, 1979 to Nov. 30, 1980, $1,700,000. I participated in the subproject: "Advanced Classification Methods," $121,578.

[8] Principal Investigator: from the Ballistic Missile Defense Agency, "Parallel/Distributed Multimicroprocessor Systems for Ballistic Missile Defense," Contract No. DASG60-80-C-0022, Feb. 8, 1980 to Feb. 7, 1981, $50,000.

[9] Principal Investigator: from the Air Force Office of Scientific Research, renewal, "A Versatile Parallel Image Processor System," Grant No. AFOSR 78-3581, Mar. 1, 1980 to Feb. 28, 1981, $50,402.

[10] Principal Investigator: from the Defense Mapping Agency, monitored by the United States Air Force Rome Air Development Center Information Sciences Division, renewal, "Parallel Image Processing/Feature Extraction Algorithms and Architecture Emulation," Contract No. F30602-78-C-0025 (through the University of Michigan), Oct. 1, 1980 to Sep. 30, 1981, $82,500.

[11] Participant: from the National Aeronautics and Space Administration, principal investigator - Marvin Bauer, renewal, "Research in Remote Sensing of Agriculture, Earth Resources, and the Environment," Contract No. NAS-15466, Dec. 1, 1980 to Nov. 30, 1981, $2,575,000. I participated in the subproject: "Area Estimation Research," $64,367.

[12] Co-Principal Investigator: from the National Science Foundation, principal investigator - Leah J. Siegel, "Parallelism in Speech Processing," Grant No. ECS-7909016, Dec. 1, 1979 to Nov. 30, 1981, $80,984.

[13] Principal Investigator: from the Air Force Office of Scientific Research, renewal, "A Versatile Parallel Image Processor System," Grant No. AFOSR 78-3581, Mar. 1, 1981 to Feb. 28, 1982, $56,264.

[14] Participant: from the National Science Foundation, co-principal investigators - K. S. Fu, Kai Hwang, and Faye Briggs, "VLSI Multiprocessor Architecture and Relational Database for Analysis and Management of Imagery Data," Grant No. ECS-8016580, May 1, 1981 to Apr. 30, 1982, $144,226.

[15] Co-Principal Investigator: from the Defense Mapping Agency, monitored by the United States Air Force Rome Air Development Center Information Sciences Division, principal investigator - Leah J. Siegel, "Parallel Processing Approaches to Scenarios for Mapping Applications," Contract No. F30602-81-C-0193, Mar. 9, 1982 to Sep. 30, 1982, $44,793.

[16] Principal Investigator: from the Air Force Office of Scientific Research, renewal, "A Versatile Parallel Image Processor System," Grant No. AFOSR 78-3581, Mar. 1, 1982 to Dec. 31, 1982, $32,330.

[17] Principal Investigator: from the Defense Mapping Agency, monitored by the United States Air Force Rome Air Development Center, Information Sciences Division, "Design and Simulation of a Multimicroprocessor System for Mapping Applications," Contract No. F30602-81-C-0193, Sep. 1, 1982 to Dec. 31, 1982, $44,795.

[18] Co-Principal Investigator: from the Army Research Office, principal investigator - Leah J. Siegel, "Distributed Computing for Signal Processing: Modeling of Asynchronous Parallel Computing," Grant No. DA820101, Apr. 1, 1982 to Mar. 31, 1983, $90,335.

[19] Participant: from the National Science Foundation, co-principal investigators - K. S. Fu, Kai Hwang, and Faye Briggs, continuation, "VLSI Multiprocessor Architecture and Relational Database for Analysis and Management of Imagery Data," Grant No. ECS-8016580, May 1, 1982 to Apr. 30, 1983, $111,602.

[20] Co-Principal Investigator: from the National Science Foundation, other co-principal investigators - Lawrence Snyder, Leah J. Siegel, and Dennis Gannon, "Workshop on Algorithmically-specialized Computer Organizations," Grant No. ECS-8206181, July 1, 1982 to June 30, 1983, $28,164.

[21] Co-Principal Investigator: from the National Science Foundation, principal investigator - Leah J. Siegel, continuation, "Parallelism in Speech Processing," Grant No. ECS-81-20896, Apr. 1, 1982 to Mar. 31, 1984, $169,149.

[22] Principal Investigator: from IBM, Federal Systems Division, Manassas, VA, "Distributed System Interconnection Study," Contract No. 289662B-YD, July 7, 1983 to Dec. 31, 1983, $25,000.

[23] Co-Principal Investigator: from the Army Research Office, principal investigator - Leah J. Siegel, renewal, "Distributed Computing for Signal Processing: Modeling of Asynchronous Parallel Computing," Grant No. DA820101, Apr. 1, 1983 to Mar. 31, 1984, $95,967.

[24] Participant: from the National Science Foundation, co-principal investigators - K. S. Fu and Kai Hwang, continuation, "VLSI Multiprocessor Architecture and Relational Database for Analysis and Management of Imagery Data," Grant No. ECS-8016580, May 1, 1983 to Apr. 30, 1984, $121,864.

[25] Principal Investigator: from IBM, Federal Systems Division, Manassas, VA, "Distributed System Interconnection Study," Contract No. 294671B-YA, June 27, 1984 to Dec. 31, 1984, $25,000.

[26] Principal Investigator: from the Purdue Research Foundation, David Ross Grant, "Study of Interconnection Network Topology for Parallel/Distributed Processing," Contract No. PRF-0857, May 1, 1984 to Apr. 30, 1985, $6,600.

[27] Principal Investigator: from the Purdue Research Foundation, XL International Travel Grant, May 1985, $850.

[28] Co-Principal Investigator: from the Army Research Office, principal investigator - Leah J. Siegel, renewal, "Distributed Computing for Signal Processing: Modeling of Asynchronous Parallel Computing," Grant No. DA820101, Apr. 1, 1984 to Sep. 30, 1985, $102,167.

[29] Principal Investigator: from IBM, Federal Systems Division, Manassas, VA, "Distributed System Interconnection Study," Contract No. 294671B-YA, Jan. 1, 1985 to Dec. 31, 1985, $25,000.

[30] Principal Investigator: from the Naval Research Laboratory, "Performance of PASM on ATR Algorithms," Contract No. N00014-85-C-2182, Apr. 1, 1985 to Dec. 31, 1985, $24,500.

[31] Principal Investigator: from the Purdue Research Foundation, David Ross Grant, renewal, "Study of Interconnection Network Topology for Parallel/Distributed Processing," Contract No. PRF-0857, May 1, 1985 to Apr. 30, 1986, $6600.

[32] Principal Investigator: from the Institute for Defense Analyses, Supercomputing Research Center, "PASM: A Reconfigurable Parallel Processing System," Contract No. 6925, Jan. 1, 1986 to May 31, 1986, $31,492.

[33] Co-Principal Investigator: from the Defense Mapping Agency, monitored by the United States Air Force Rome Air Development Center Information Sciences Division, other co-principal investigators - Leah J. Siegel and Philip H. Swain, "Reconfigurable Parallel Architectures for Mapping Applications," Contract No. F30602-83-K-0119, Sep. 1, 1983 to Aug. 31, 1986, $417,600.

[34] Principal Investigator: from IBM, Thomas J. Watson Research Center, Yorktown Heights, NY, "PASM Prototype," Contract No. 073257, Dec. 15, 1983 to Dec. 31, 1986, $150,000.

[35] Principal Investigator: from IBM, Federal Systems Division, Manassas, VA, "Distributed System Interconnection Study," Contract No. 294671B-YA, Jan. 1, 1986 to Dec. 31, 1986, $25,000.

[36] Principal Investigator: from the Institute for Defense Analyses, Supercomputing Research Center, "PASM: A Reconfigurable Parallel Processing System," Contract No. 6925, Aug. 18, 1986 to Jan. 4, 1987, $18,294.

[37] Principal Investigator: from the Institute for Defense Analyses, Supercomputing Research Center, "PASM: A Reconfigurable Parallel Processing Systems," Contract No. 6925, Jan. 5, 1987 to May 31, 1987, $26,267.

[38] Principal Investigator: from the Air Force Office of Scientific Research, "Using a Reconfigurable Parallel Processing System for Automatic Target Recognition," Grant No. F49620-86-K-0006, Jan. 1, 1986 to Dec. 31, 1987, $198,327.

[39] Principal Investigator: from the Naval Ocean Systems Center, subcontracted through SAIC, "Parallel Algorithm Development Using SIMD, MIMD, and PASM Architectures," Contract No. 19-910017-31, Jan. 2, 1990 to May 13, 1990, $25,817.

[40] Co-Principal Investigator: from the Office of Naval Research, Computer Science Division, other co-principal investigator - Jose A. B. Fortes, "Adaptive Mixed-Mode Computation Systems for Fault-Tolerant Parallel Processing," Grant No. N00014-90-J-1483, Jan. 1, 1990 to Dec. 31, 1990, $50,000.

[41] Principal Investigator: from the Naval Ocean Systems Center, subcontracted through SAIC, "Evaluation and Validation of Mixed-Mode Processing," Contract No. 19-910158-31, Aug. 13, 1990 to Dec. 31, 1990, $27,085.

[42] Principal Investigator: from the Purdue Research Foundation, XL International Travel Grant, Feb. 1991, $1,120.

[43] Co-Principal Investigator: from the National Science Foundation, Division of Computer and Computation Research, Computer Systems Program, other co-principal investigator - Seth Abraham, "NSF/Purdue Workshop on Grand Challenges in Computer Architecture for the Support of High Performance Computing," Grant No. CCR-9200735, Dec. 1, 1991 to May 31, 1992, $29,080.

[44] Principal Investigator: from the Office of Naval Research, Defense Sciences Division, "Mapping Image and Signal Processing Tasks onto Large-Scale Parallel Processing Systems," Grant No. N00014-90-J-1937, June 1, 1990 to Sep. 30, 1992, $208,309.

[45] Principal Investigator: from the Office of Naval Research, Computer Science Division, "Computer Architecture Symposium Panels on the Design and Use of Massively Parallel Systems," Grant No. N00014-92-J-1599, May 1, 1992 to Feb. 28, 1993, $15,000.

[46] Principal Investigator: from the National Aeronautics and Space Administration, NASA Fellowship for James B. Armstrong, "Task Scheduling and Fault-Tolerant Functionality Considerations for Massively Parallel Processing Systems," Grant No. NGT-50961, Aug. 15, 1992 to Aug. 14, 1993, $22,000.

[47] Co-Principal Investigator: from Rome Laboratory, subcontracted through Syracuse University, other co-principal investigator - Henry G. Dietz, "A Virtual Machine Programming Model for High-Performance Computing," Contract No. F30602-92-C-0150, Sep. 1, 1992 to Aug. 31, 1993, $30,000.

[48] Principal Investigator: from the National Aeronautics and Space Administration, renewal, NASA Fellowship for James B. Armstrong, "Task Scheduling and Fault-Tolerant Functionality Considerations for Massively Parallel Processing Systems," Grant No. NGT-50961, Aug. 15, 1993 to Aug. 14, 1994, $22,000.

[49] Co-Principal Investigator: from Rome Laboratory, Expert Science and Engineering Program, other co-principal investigator - John K. Antonio, "Methodologies for Mapping Tasks onto Heterogeneous Processing Systems," Contract No. F30602-94-C-0022, Jan. 27, 1994 to Jan. 26, 1995, $99,000.

[50] Co-Principal Investigator: from the NRaD Naval Laboratory, subcontracted through SAIC, other co-principal investigator - John K. Antonio, "Supercomputer Computer Support for the FPC - Mixed Mode Algorithm Analysis," Subcontract No. 20-950001-70, Feb. 22, 1994 to Feb. 28, 1995, $34,960.

[51] Co-Principal Investigator: from the National Science Foundation, Directorate for Computer and Information Science and Engineering, Research Instrumentation Grants Program, principal investigator - Arif Ghafoor, other co-principal investigators - John K. Antonio, Edward J. Coyle, and Tony Hsiao, "A High Speed Optical Network Testbed for Research in Telecommunication and Massive Parallel Computation," Grant No. CDA-9121771, Apr. 1, 1992 to Mar. 31, 1996, $150,667.

[52] Principal Investigator: from the NRaD Naval Laboratory, "Research on Data Staging Techniques," Contract No. N66001-96-M-2277, July 1, 1996 to Sep. 30, 1996, $24,999.

[53] Participant: from the Dept. of Defense, Small Business Innovative Research (SBIR) Program, Phase I SBIR, funded by the Army Research Laboratory, principal investigator - Ranga S. Ramanujan (Architecture Technology Corp.), "Artificial Intelligence Enhanced Parallel Computing Environment for Real-Time Information Processing," Contract No. DAAL01-96-C-0031, Apr. 22, 1996 to Oct. 21, 1996, $69,000.

[54] Principal Investigator: from the National Science Foundation, CISE Institutional Infrastructure Program, "Infrastructure for Parallel Processing Research," Grant No. CDA-9015696, Jan. 1, 1991 to Dec. 31, 1996, $1,421,968.

[55] Participant: from the Naval Surface Warfare Center, Small Business Innovative Research (SBIR) Program, Phase I SBIR, principal investigator - Ranga S. Ramanujan (Architecture Technology Corp.), "Object-Oriented Parallel Processing in Distributed Computing Environments," Contract No. N00178-97-C-3020, Dec. 13, 1996 to May 12, 1997, $70,000.

[56] Principal Investigator: from Architecture Technology Corp., "Innovative Computing and Communication Techniques," Contract No. 6005, Aug. 12, 1996 to May 31, 1997, $23,727.

[57] Participant: from the National Science Foundation, Small Business Innovative Research (SBIR) Program, Phase II SBIR, principal investigator - Ranga S. Ramanujan (Architecture Technology Corp.), "Parallel Processing with Clustered Workstations," Contract No. DMI-9509060, Oct. 1, 1995 to Sep. 30, 1997, $298,277.

[58] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "A Workshop on Heterogeneous Computing," Grant No. N00014-97-1-0121, Nov. 1, 1996 to Sep. 30, 1997, $13,246.

[59] Principal Investigator: from the Naval Postgraduate School (subcontract for jointly funded DARPA contract - see contract [70]), "Management System for Heterogeneous Networks Project," Contract No. N62271-97-M-0900, June 1, 1997 to Dec. 31, 1997, $88,264.

[60] Co-Principal Investigator: part of an Intel/Purdue equipment grant, principal investigator of this part - Henry G. Dietz, other co-principal investigators of this part - Peter Doerschuk, Carol Post, Satish Ramadhyani, and Ahmed Sameh, "SuperCluster Architecture and Systems Software," part A.02 of parent Intel equipment grant to Purdue University (entitled "Utilization of Advanced Intel Based Platforms in Computationally Demanding Tasks"), July. 1, 1997 to June 30, 1998, $399,914.

[61] Co-Principal Investigator: part of an Intel/Purdue equipment grant, principal investigator of this part - Dan C. Marinescu, "Research in Network Computing," part B.02 of parent Intel equipment grant to Purdue University (entitled "Utilization of Advanced Intel Based Platforms in Computationally Demanding Tasks"), July 1, 1997 to June 30, 1998, $158,409.

[62] Co-Principal Investigator: from the Purdue University Program for Stimulating Competitive Proposals, principal investigators - W. Kent Fuchs and Ahmed Sameh, other co-principal investigator - Dan C. Marinescu, "A Feasibility Study for Establishing a Computer Systems Research Institute at Purdue University," July 23, 1997 to July 22, 1998, $20,000.

[63] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "A 1998 Workshop on Heterogeneous Computing," Grant No. N00014-98-1-0122, Nov. 1, 1997 to Sep. 30, 1998, $8,722.

[64] Principal Investigator: from the Naval Postgraduate School (subcontract for jointly funded DARPA contract - see contract [70]), "Development of Dynamic Matching and Scheduling Algorithms for C4I Meta-Applications to Be Executed on Heterogeneous Computing Systems," Contract No. N62271-98-M-0217, Jan. 1, 1998 to Dec. 31, 1998, $75,000.

[65] Principal Investigator: from the Naval Postgraduate School (subcontract for jointly funded DARPA contract - see contract [70]), "Scheduling Tasks with Priorities and Deadlines in a Heterogeneous Computing Environment," Contract No. N62271-98-M-0448, June 1, 1998 to Dec. 31, 1998, $75,000.

[66] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, supported by the Office of Naval Research and the DARPA Information Systems Office (ISO) Battlefield Awareness and Data Dissemination (BADD) Program, "Development of a Data Staging Model, Heuristic, and Simulator for BADD," Grant No. N00014-97-1-0804, June 1, 1997 to May 31, 1999, $500,624.

[67] Collaborator: from the Research Grant Council of Hong Kong, principal investigator - Ishfaq Ahmad (Hong Kong University of Science and Technology (HKUST)), "Mapping Applications to Heterogeneous Computing Systems Using Artificial Genetic Life and State-Space Pruning," Sept. 1, 1997 to Aug. 31, 1999, HK$360,000 (US$47,000).

[68] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "A 1999 Workshop on Heterogeneous Computing," Grant No. N00014-99-1-0117, Nov. 1, 1998 to Sep. 30, 1999, $11,104.

[69] Principal Investigator: from the Naval Postgraduate School (through US General Services Administration) (subcontract for jointly funded DARPA contract - see contract [70]), "A Performance Measure and Mapping Heuristic for a Management System for Heterogeneous Networks," Contract No. GS09K99BH0250, Jan. 1, 1999 to Mar. 31, 2000, $167,115.

[70] Co-Investigator: from the DARPA Information Technology Office (ITO) Quorum Program, co-principal investigators - Richard F. Freund (NRaD Naval Laboratory), Debra Hensgen (Naval Postgraduate School), and Taylor Kidd (Naval Postgraduate School), "MSHN: Management System for Heterogeneous Networks," ARPA Order No. E583-01, Apr. 1, 1997 to Mar. 31, 2000, $3,148,000. Purdue's share was $405,379 (see subcontracts [59], [64], [65], [69] above).

[71] Co-Principal Investigator: from The Johns Hopkins University Applied Physics Laboratory (subcontract for jointly funded DARPA contract - see contract [72]), other co-principal investigator

- Edwin K. P. Chong, "Intelligent MetaNet Framework for the Agile Information Control Environment," Contract No. 810994, Jan. 11, 1999 to May 8, 2000, $360,389.

[72] Co-Principal Investigator: from the DARPA Information Systems Office (ISO) Agile Information Control Environment (AICE) Program, principal investigator - Steven D. Jones (The Johns Hopkins University Applied Physics Laboratory), other co-principal investigators - I-Jeng Wang (The Johns Hopkins University Applied Physics Laboratory), and Edwin K. P. Chong, "An Intelligent MetaNet Controller," Contract No. DABT63-99-C-0012, Jan. 11, 1999 to May 8, 2000, $1,468,201. Purdue's share was $360,389 (see subcontract [71]).

[73] Co-Principal Investigator: from The Johns Hopkins University Applied Physics Laboratory (subcontract for jointly funded DARPA contract - see contract [74]), other co-principal investigator - Edwin K. P. Chong, "Dynamic Channel Building and Global QoS Optimization for the Agile Information Control Environment," Contract No. 810993, Jan. 11, 1999 to Sep. 10, 2000, $348,140.

[74] Co-Principal Investigator: from the DARPA Information Systems Office (ISO) Agile Information Control Environment (AICE) Program, principal investigator - I-Jeng Wang (The Johns Hopkins University Applied Physics Laboratory), other co-principal investigators - Steven D. Jones (The Johns Hopkins University Applied Physics Laboratory), Edwin K. P. Chong, and Michael Jurczyk (University of Missouri-Columbia), "Adaptive Information Control Techniques for the Agile Information Control Environment," Contract No. DABT63-99-C-0010, Jan. 11, 1999 to Sep. 10, 2000, $1,081,043. Purdue's share was $348,140 (see subcontract [73]).

[75] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "The Ninth Workshop on Heterogeneous Computing: HCW 2000," Grant No. N00014-00-1-0189, Jan. 1, 2000 to Sep. 30, 2000, $11,341.

[76] Principal Investigator: from the Purdue Center for Education and Research in Information Assurance and Security (CERIAS), other principal investigator - Edwin K. P. Chong, "A Framework for Flexible Secure Network Services," CERIAS Award No. 1419991431A, July 1, 2000 to Aug. 30, 2001, $50,000.

[77] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "The Tenth Workshop on Heterogeneous Computing: HCW 2001," Grant No. N00014-01-1-0537, Mar. 1, 2001 to Sep. 30, 2001, $4,589.

[78] Principal Investigator: from the DARPA Information Technology Office (ITO) Quorum Program through the Office of Naval Research, Math, Computer, and Information Sciences Division, other principal investigator - Anthony A. Maciejewski, "Adapting MSHN Scheduling Technology for HiPer-D," Grant No. N00014-00-1-0599, May 1, 2000 to Oct. 31, 2001, $758,997.

[79] Principal Investigator: from the Purdue Center for Education and Research in Information Assurance and Security (CERIAS), other principal investigator - Edwin K. P. Chong, "A Framework for Flexible Secure Network Services," continuation, Aug. 1, 2001 to Dec. 31, 2001, $30,000.

[80] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "The 11th Workshop on Heterogeneous Computing: HCW 2002," Grant No. N00014-02-1-0394, Apr. 1, 2002 to Oct. 30, 2002, $4,753.

[81] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "The 12th Workshop on Heterogeneous Computing: HCW 2003," Grant No. N00014-03-1-0557, Mar. 15, 2003 to Dec. 31, 2003, $6,587.

[82] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "The 13th Workshop on Heterogeneous Computing: HCW 2004," Grant No. N000140410425, Apr. 5, 2004 to Oct. 31, 2004, $7,094.

[83] Principal Investigator: from The Johns Hopkins University Applied Physics Laboratory (subcontract for jointly funded DARPA contract - see contract [84]), co-principal investigator - Anthony A. Maciejewski, "Adaptive and Reflective Middleware Systems ARMS," Contract No. 876378, Oct. 30, 2003 to Mar. 29, 2005, $195,000.

[84] Investigator: from the DARPA Information Exploitation Office (IXO) Adaptive and Reflective Middleware Systems (ARMS) Program, co-principal investigators – Rose Daly and I-Jeng Wang (The Johns Hopkins University Applied Physics Laboratory), other Investigators – Puck-Fai Yan (JHU Applied Physics Lab), Edwin K. P. Chong (Colorado State University), Anthony A. Maciejewski (Colorado State University), Dan C. Marinescu (University of Central Florida), and Behrooz A. Shirazi (University of Texas – Arlington), "Mission-Oriented Cooperative Resource Management," Contract No. NBCHC030137, Oct. 1, 2003 to Mar. 31, 2005, $800,000. Colorado State University's share was $195,000 (see subcontract [83]).

[85] Principal Investigator: Colorado Institute of Technology (CIT) "Equipment Program Solicitation," co-principal investigators - Patrick J. Burns and Ralph H. Castain, "The Colorado Grid Computing Initiative Equipment Grant," May 1, 2004 to Apr. 30, 2005, approximately $2,000,00 in equipment and $50,000 in staff support funds.

[86] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "The 14th Workshop on Heterogeneous Computing: HCW 2005," Grant No. N000140510555, Mar. 1, 2005 to Sep. 1, 2005, $4,686.

[87] Co-Principal Investigator: from the Colorado Commission on Higher Education (CCHE) Technology Advancement Group (TAG), through the Colorado Institute of Technology (CIT), principal investigator – Anthony A. Maciejewski, other co-principal investigator - Ralph H. Castain, "Center for Robustness in Computer Systems," Aug. 16, 2004 to June 1, 2006, $250,000.

[88] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "The 15th Workshop on Heterogeneous Computing: HCW 2006," Grant No. N000140510555, Feb. 1, 2006 to Sep. 1, 2006, $6,662.

[89] Principal Investigator: from The Johns Hopkins University Applied Physics Laboratory (subcontract for jointly funded DARPA contract - see contract [90]), co-principal investigator - Anthony A. Maciejewski, "Allocation Algorithm Support for System Fault Tolerance," Contract No. 901410, Sep. 12, 2005 to Sep. 30, 2006, $75,000.

[90] Investigator: from the DARPA Information Exploitation Office (IXO) Adaptive and Reflective Middleware Systems (ARMS) Program, co-principal investigators - Rose Daley and I-Jeng Wang (The Johns Hopkins University Applied Physics Laboratory), other Investigators - Jessica Pistole and Robert Holder (JHU Applied Physics Lab), Edwin K. P. Chong (Colorado State University), Anthony A. Maciejewski (Colorado State University), Dan C. Marinescu (University of Central Florida), "Mission-Oriented Cooperative Resource Management, Phase 2," Contract No. NBCHC030137, Apr. 1, 2005 to Sep. 30, 2006, $700,000. Colorado State University's share was $75,000 (see subcontract [89]).

[91] Principal Investigator: from IBM Corporation, the IBM Ph.D. Fellowship Program for the 2006-2007 academic year for Vladimir V. Shestak (acceptance ratio was 4% of 475 applicants), Aug. 2006 to Aug. 2007, $28,000 for stipend, tuition, and fees.

[92] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "HCW 2007: International Heterogeneity in Computing Workshop," Grant No. N000140710688, Mar. 1, 2007 to Sep. 1, 2007, $6,603.

[93] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "HCW 2008: The Seventeenth International Heterogeneity in Computing Workshop," Grant No. N000140810847, Apr. 14, 2008 to Sep. 1, 2008, $7,600.

[94] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "HCW 2009: The Eighteenth International Heterogeneity in Computing Workshop," Grant No. N000140910643, Mar. 15, 2009 to Sep. 1, 2009, $8,349.

[95] Principal Investigator: from the National Science Foundation, Division of Computer and Network Systems (CNS), co-principal investigator - Anthony A. Maciejewski, "Robust Parallel and Distributed Computing Systems," Grant No. CNS-0615170, June 15, 2006 to Aug. 31, 2009, $585,821.

[96] Principal Investigator: from Oak Ridge National Laboratory, for the Department of Energy (DoE), co-principal investigator - Anthony A. Maciejewski, "Research on Resource Management Models and Methods for Heterogeneous Parallel and Distributed Computing Systems," Subcontract Number 4000094858, June 10, 2010 to Jan. 31, 2011, $150,000.

[97] Principal Investigator: from the National Science Foundation, Division of Computer and Network Systems (CNS), co-principal investigators - Anthony A. Maciejewski, Arnold Rosenberg, and Jay Smith, "Stochastically Robust Resource Allocation for Computing," Grant No. CNS-0905399, Sep. 1, 2009 to Aug. 31, 2012, $1,042,470.

[98] Principal Investigator: from the National Science Foundation, Division of Computer and Network Systems (CNS), co-principal investigator - Patrick Burns, "MRI: Acquisition of the ISTeC High Performance Computing Infrastructure for Science and Engineering Research Projects," Grant No. CNS- 0923386, Sep. 1, 2009 to Aug. 31, 2012, $627,326.

[99] Principal Investigator: from the Office of Naval Research, Math, Computer, and Information Sciences Division, "The International Heterogeneity in Computing Workshop," Grant No. N000141010326, Jan. 1, 2010 to Sep. 30, 2012, $19,283.

Journal Articles

[1] Howard Jay Siegel, "Analysis Techniques for SIMD Machine Interconnection Networks and the Effects of Processor Address Masks," *IEEE Transactions on Computers*, Vol. C-26, No. 2, pp. 153-161, Feb. 1977.

[2] Howard Jay Siegel, "Interconnection Networks for SIMD Machines," *Computer*, Special Issue on Circuit Switching, Vol. 12, No. 6, pp. 57-65, June 1979 (reprinted in: (1) *Tutorial: Distributed Processor Communication Architecture*, edited by K. J. Thurber, IEEE, New York, NY, pp. 379-387, 1979, and (2) *Tutorial on Parallel Processing*, edited by R. Kuhn and D. A. Padua, IEEE Computer Society Press, New York, NY, pp. 110-119, 1981).

[3] Howard Jay Siegel, Robert J. McMillen, and Philip T. Mueller, Jr., "A Survey of Interconnection Methods for Reconfigurable Parallel Processing Systems," *Nikkei Electronics* (Japanese publication), No. 228, pp. 49-83, Dec. 1979 (translated into Japanese from 1979 National Computer Conference paper).

[4] Howard Jay Siegel, "A Model of SIMD Machines and a Comparison of Various Interconnection Networks," *IEEE Transactions on Computers*, Vol. C-28, No. 12, pp. 907-917, Dec. 1979.

[5] Philip H. Swain, Howard Jay Siegel, and Bradley W. Smith, "Contextual Classification of Multispectral Remote Sensing Data Using a Multiprocessor System," *IEEE Transactions on Geoscience and Remote Sensing*, Vol. GE-18, No. 2, pp. 197-203, Apr. 1980.

[6] Howard Jay Siegel, "The Theory Underlying the Partitioning of Permutation Networks," *IEEE Transactions on Computers*, Special Issue on Parallel Processing, Vol. C-29, No. 9, pp. 791-801, Sep. 1980 (reprinted in *Interconnection Networks for Parallel and Distributed Processing*, edited by C. L. Wu and T. Y. Feng, IEEE Computer Society Press, New York, NY, pp. 558-567, 1984).

[7] Howard Jay Siegel and Robert J. McMillen, "Using the Augmented Data Manipulator Network in PASM," *Computer*, Special Issue on Advances in Hardware - Chips to Systems, Vol. 14, No. 2, pp. 25-33, Feb. 1981.

[8] Howard Jay Siegel, Leah J. Siegel, Frederick Kemmerer, Philip T. Mueller, Jr., Harold E. Smalley, Jr., and S. Diane Smith, "PASM: A Partitionable SIMD/MIMD System for Image Processing and Pattern Recognition," *IEEE Transactions on Computers*, Vol. C-30, No. 12, pp. 934-947, Dec. 1981 (reprinted in *Advanced Computer Architecture*, edited by D. P. Agrawal, IEEE Computer Society Press, New York, NY, pp. 339-352, 1986).

[9] Howard Jay Siegel and Robert J. McMillen, "The Multistage Cube: A Versatile Interconnection Network," *Computer*, Special Issue on Interconnection Networks, Vol. 14, No. 12, pp. 65-76, Dec. 1981.

[10] Leah J. Siegel, Howard Jay Siegel, and Arthur E. Feather, "Parallel Processing Approaches to Image Correlation," *IEEE Transactions on Computers*, Vol. C-31, No. 3, pp. 208-218, Mar. 1982.

[11] George B. Adams III and Howard Jay Siegel, "On the Number of Permutations Performable by the Augmented Data Manipulator Network," *IEEE Transactions on Computers*, Vol. C-31, No. 4, pp. 270-277, Apr. 1982.

[12] George B. Adams III and Howard Jay Siegel, "The Extra Stage Cube: A Fault Tolerant Interconnection Network for Supersystems," *IEEE Transactions on Computers*, Special Issue on Supersystems, Vol. C-31, No. 5, pp. 443-454, May 1982 (reprinted in *Interconnection Networks for Parallel and Distributed Processing*, edited by C. L. Wu and T. Y. Feng, IEEE Computer Society Press, New York, NY, pp. 397-408, 1984).

[13] Leah J. Siegel, Howard Jay Siegel, and Philip H. Swain, "Performance Measures for Evaluating Algorithms for SIMD Machines," *IEEE Transactions on Software Engineering*, Vol. SE-8, No. 4, pp. 319-331, July 1982.

[14] Robert J. McMillen and Howard Jay Siegel, "Routing Schemes for the Augmented Data Manipulator Network in an MIMD System," *IEEE Transactions on Computers*, Vol. C-31, No. 12, pp. 1202-1214, Dec. 1982 (reprinted in *Interconnection Networks for Parallel and Distributed Processing*, edited by C. L. Wu and T. Y. Feng, IEEE Computer Society Press, New York, NY, pp. 184-196, 1984).

[15] Amitava Dutta, Howard Jay Siegel, and Andrew B. Whinston, "On the Application of Parallel Architectures to a Class of Operations Research Problems," *Revue Francaise d'Automatique, d'Informatique, et de Recherche Operationnelle* (French Review of Automation, Information Processing, and Operations Research), Vol. 17, No. 4, pp. 317-341, Nov. 1983.

[16] Robert R. Seban and Howard Jay Siegel, "Shuffling with the Illiac and PM2I SIMD Networks," *IEEE Transactions on Computers*, Vol. C-32, No. 7, pp. 619-625, July 1984.

[17] David Lee Tuomenoksa and Howard Jay Siegel, "Task Preloading Schemes for the Reconfigurable Parallel Processing Systems," *IEEE Transactions on Computers*, Vol. C-33, No. 10, pp. 895-905, Oct. 1984.

[18] David Lee Tuomenoksa and Howard Jay Siegel, "Task Scheduling on the PASM Parallel Processing System," *IEEE Transactions on Software Engineering*, Vol. SE-11, No. 2, pp. 145-157, Feb. 1985.

[19] Robert J. McMillen and Howard Jay Siegel, "Evaluation of Cube and Data Manipulator Networks," *Journal of Parallel and Distributed Computing*, Vol. 2, No. 1, pp. 79-107, Feb. 1985.

[20] Carolyn Cline and Howard Jay Siegel, "Augmenting Ada for SIMD Parallel Processing," *IEEE Transactions on Software Engineering*, Vol. SE-11, No. 9, pp. 970-977, Sep. 1985.

[21] Nathaniel J. Davis IV, William Tsun-yuk Hsu, and Howard Jay Siegel, "Fault Location Techniques for Distributed Control Interconnection Networks," *IEEE Transactions on Computers*, Special Issue on Parallel Processing, Vol. C-34, No. 10, pp. 902-910, Oct. 1985 (reprinted in *Interconnection Networks for High-Performance Parallel Computers*, edited by I. D. Scherson and A. S. Youssef, IEEE Computer Society Press, Los Alamitos, CA, pp. 752-760, 1994).

[22] David Lee Tuomenoksa and Howard Jay Siegel, "Determining an Optimal Secondary Storage Service Rate for the PASM Control System," *IEEE Transactions on Computers*, Vol. C-35, No. 1, pp. 43-53, Jan. 1986.

[23] Thomas Schwederski and Howard Jay Siegel, "Adaptable Software for Supercomputers," *Computer*, Special Issue on Design for Adaptability, Vol. 19, No. 2, pp. 40-48, Feb. 1986.

[24] Leah H. Jamieson, Phillip T. Mueller, Jr., and Howard Jay Siegel, "FFT Algorithms for SIMD Parallel Processing Systems," *Journal of Parallel and Distributed Computing*, Vol. 3, No. 1, pp. 48-71, Mar. 1986.

[25] Howard Jay Siegel, Thomas Schwederski, David G. Meyer, and William Tsun-yuk Hsu, "Large-Scale Parallel Processing Systems," *Microprocessors and Microsystems*, 10th Anniversary Special

Issue: Past, Present and Future, Vol. 11, No. 1, pp. 3-20, Jan./Feb. 1987 (solicited paper which underwent review).

[26] George B. Adams III, Dharma P. Agrawal, and Howard Jay Siegel, "A Survey and Comparison of Fault-Tolerant Multistage Interconnection Networks," *Computer*, Special Issue on Interconnection Networks for Parallel and Distributed Processing, Vol. 20, No. 6, pp. 14-27, June 1987 (reprinted in: (1) *Interconnection Networks for Large-Scale Parallel Processing: Theory and Case Studies, 2nd Edition*, by H. J. Siegel, McGraw-Hill, New York, NY, pp. 285-312, 1990; (2) *Interconnection Networks for Multiprocessors and Multicomputers: Theory and Practice*, edited by A. Varma and C. S. Raghavendra, IEEE Computer Society Press, Los Alamitos, CA, pp. 329-342, 1994; and (3) *Interconnection Networks for High-Performance Parallel Computers*, edited by I. D. Scherson and A. S. Youssef, IEEE Computer Society Press, Los Alamitos, CA, pp. 654-667, 1994).

[27] Howard Jay Siegel, William Tsun-yuk Hsu, and Menkae Jeng, "An Introduction to the Multistage Cube Family of Interconnection Networks," *The Journal of Supercomputing*, Vol. 1, No. 1, pp. 13-42, 1987. Invited.

[28] Menkae Jeng and Howard Jay Siegel, "Design and Analysis of Dynamic Redundancy Networks," *IEEE Transactions on Computers*, Vol. C-37, No. 9, pp. 1019-1029, Sep. 1988 (reprinted in *Interconnection Networks for Large-Scale Parallel Processing: Theory and Case Studies, 2nd Edition*, by H. J. Siegel, McGraw-Hill, New York, NY, pp. 257-284, 1990).

[29] C. Henry Chu, Edward J. Delp, Leah H. Jamieson, Howard Jay Siegel, Francis J. Weil, and Andrew B. Whinston, "A Model for an Intelligent Operating System for Executing Image Understanding Tasks on a Reconfigurable Parallel Architecture," *Journal of Parallel and Distributed Computing*, Vol. 6, No. 3, pp. 598-622, June 1989.

[30] Howard Jay Siegel, Wayne G. Nation, Clyde P. Kruskal, and Leonard M. Napolitano, Jr., "Using the Multistage Cube Network Topology in Parallel Supercomputers," *Proceedings of the IEEE*, Special Issue on Supercomputer Technology, Vol. 77, No. 12, pp. 1932-1953, Dec. 1989 (reprinted in *Interconnection Networks for Large-Scale Parallel Processing: Theory and Case Studies, 2nd Edition*, by H. J. Siegel, McGraw-Hill, New York, NY, pp. 313-364, 1990).

[31] Menkae Jeng and Howard Jay Siegel, "A Distributed Management Scheme for Partitionable Parallel Computers," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 1, No. 1, pp. 120-126, Jan. 1990.

[32] Dan C. Marinescu, James E. Lumpp, Jr., Thomas L. Casavant, and Howard Jay Siegel, "Models for Monitoring and Debugging Tools for Parallel and Distributed Software," *Journal of Parallel and Distributed Computing*, Special Issue on Software Tools for Parallel Programming and Visualization, Vol. 9, No. 2, pp. 171-184, June 1990 (reprinted in *Monitoring and Debugging of Distributed Real-Time Systems*, edited by J. J. P. Tsai and S. J. H. Yang, IEEE Computer Society Press, Los Alamitos, CA, pp. 64-76, 1995).

[33] Wayne G. Nation and Howard Jay Siegel, "Disjoint Path Properties of the Data Manipulator Network Family," *Journal of Parallel and Distributed Computing*, Vol. 9, No. 4, pp. 419-423, Aug. 1990.

[34] Samuel A. Fineberg, Thomas L. Casavant, and Howard Jay Siegel, "Experimental Analysis of a Mixed-Mode Parallel Architecture Using Bitonic Sequence Sorting," *Journal of Parallel and Distributed Computing*, Vol. 11, No. 3, pp. 239-251, Mar. 1991.

[35] Mark A. Nichols, Howard Jay Siegel, Henry G. Dietz, Russell W. Quong, and Wayne G. Nation, "Eliminating Memory Fragmentation within Partitionable SIMD/SPMD Machines," *IEEE Transactions on Parallel and Distributed Systems*, Special Issue on Parallel Languages and Compilers, Vol. 2, No. 3, pp. 290-303, July 1991.

[36] Shin-Dug Kim, Mark A. Nichols, and Howard Jay Siegel, "Modeling Overlapped Operation Between the Control Unit and Processing Elements in an SIMD Machine," *Journal of Parallel and Distributed Computing*, Special Issue on Modeling of Parallel Computers, Vol. 12, No. 4, pp. 329-342, Aug. 1991.

[37] Thomas B. Berg, Shin-Dug Kim, and Howard Jay Siegel, "Limitations Imposed on Mixed-Mode Performance of Optimized Phases Due to Temporal Juxtaposition," *Journal of Parallel and Distributed Computing*, Special Issue on Massively Parallel Computation, Vol. 13, No. 2, pp. 154-169, Oct. 1991.

[38] James E. Lumpp, Samuel A. Fineberg, Wayne G. Nation, Thomas L. Casavant, Edward C. Bronson, Howard Jay Siegel, Pierre H. Pero, Thomas Schwederski, and Dan C. Marinescu, "CAPS - A Coding Aid Used with the PASM Parallel Processing System," *Communications of the ACM*, Vol. 34, No. 11, pp. 104-117, Nov. 1991.

[39] Howard Jay Siegel, James B. Armstrong, and Daniel W. Watson, "Mapping Computer-Vision-Related Tasks onto Reconfigurable Parallel-Processing Systems," *Computer*, Special Issue on Parallel Processing for Computer Vision and Image Understanding, Vol. 25, No. 2, pp. 54-63, Feb. 1992.

[40] Darwen Rau, Jose A. B. Fortes, and Howard Jay Siegel, "Destination Tag Routing Techniques Based on a State Model for the IADM Network," *IEEE Transactions on Computers*, Vol. C-41, No. 3, pp. 274-285, Mar. 1992.

[41] Howard Jay Siegel, Seth Abraham, William L. Bain, Kenneth E. Batcher, Thomas L. Casavant, Doug DeGroot, Jack B. Dennis, David C. Douglas, Tse-yun Feng, James R. Goodman, Alan Huang, Harry F. Jordan, J. Robert Jump, Yale N. Patt, Alan Jay Smith, James E. Smith, Lawrence Snyder, Harold S. Stone, Russ Tuck, and Benjamin W. Wah, "Report of the Purdue Workshop on Grand Challenges in Computer Architecture for the Support of High Performance Computing," *Journal of Parallel and Distributed Computing*, Vol. 16, No. 3, pp. 199-211, Nov. 1992. Invited.

[42] Mikhail J. Atallah, Christina Lock Black, Dan C. Marinescu, Howard Jay Siegel, and Thomas L. Casavant, "Models and Algorithms for Co-Scheduling Compute-Intensive Tasks on a Network of Workstations," *Journal of Parallel and Distributed Computing*, Special Issue on Scheduling and Load Balancing, Vol. 16, No. 4, pp. 319-327, Dec. 1992.

[43] Mark A. Nichols, Howard Jay Siegel, and Henry G. Dietz, "Data Management and Control-Flow Aspects of an SIMD/SPMD Parallel Language/Compiler," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 4, No. 2, pp. 222-234, Feb. 1993.

[44] Gene Saghi, Howard Jay Siegel, and Jeffery L. Gray, "Predicting Performance and Selecting Modes of Parallelism: A Case Study Using Cyclic Reduction on Three Parallel Machines," *Journal of Parallel and Distributed Computing*, Special Issue on Performance of Supercomputers, Vol. 19, No. 3, pp. 219-233, Nov. 1993.

[45] Wayne G. Nation, Anthony A. Maciejewski, and Howard Jay Siegel, "A Methodology for Exploiting Concurrency Among Independent Tasks in Partitionable Parallel Processing Systems," *Journal of Parallel and Distributed Computing*, Special Issue on Performance of Supercomputers, Vol. 19, No. 3, pp. 271-278, Nov. 1993.

[46] Mu-Cheng Wang, Wayne G. Nation, James B. Armstrong, Howard Jay Siegel, Shin-Dug Kim, Mark A. Nichols, and Michael Gherrity, "Multiple Quadratic Forms: A Case Study in the Design of Data-Parallel Algorithms," *Journal of Parallel and Distributed Computing*, Special Issue on Data-Parallel Algorithms and Programming, Vol. 21, No. 1, pp. 124-139, Apr. 1994.

[47] Daniel W. Watson, Howard Jay Siegel, John K. Antonio, Mark A. Nichols, and Mikhail J. Atallah, "A Block-Based Mode Selection Model for SIMD/SPMD Parallel Environments," *Journal of Parallel and Distributed Computing*, Special Issue on Heterogeneous Processing, Vol. 21, No. 3, pp. 271-288, June 1994.

[48] Mu-Cheng Wang, Howard Jay Siegel, Mark A. Nichols, and Seth Abraham, "Using a Multipath Network for Reducing the Effects of Hot Spots," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 6, No. 3, pp. 252-268, Mar. 1995.

[49] Howard Jay Siegel, Henry G. Dietz, and John K. Antonio, "Software Support for Heterogeneous Computing," *ACM Computing Surveys*, Vol. 28, No. 1, pp. 237-239, Mar. 1996.

[50] Howard Jay Siegel, Daniel W. Watson, and John K. Antonio, "What Will it Take to Sell a Massive Number of Massively Parallel Machines?" *IEEE Parallel & Distributed Technology*, Vol. 4, No. 3, pp. 63-69, Fall 1996.

[51] Howard Jay Siegel and Craig B. Stunkel, "Inside Parallel Computers: Trends in Interconnection Networks," *IEEE Computational Science and Engineering*, Vol. 3, No. 3, pp. 69-71, Fall 1996. Invited.

[52] Yan Alexander Li, John K. Antonio, Howard Jay Siegel, Min Tan, and Daniel W. Watson, "Determining the Execution Time Distribution for a Data Parallel Program in a Heterogeneous Computing Environment," *Journal of Parallel and Distributed Computing*, Vol. 44, No. 1, pp. 35-52, July 10, 1997.

[53] Min Tan, Howard Jay Siegel, John K. Antonio, and Yan Alexander Li, "Minimizing the Application Execution Time Through Scheduling of Subtasks and Communication Traffic in a Heterogeneous Computing System," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 8, No. 8, pp. 857-871, Aug. 1997.

[54] Kathy J. Liszka, John K. Antonio, and Howard Jay Siegel, "Problems with Comparing Interconnection Networks: Is an Alligator Better Than an Armadillo?" *IEEE Concurrency*, Vol. 5, No. 4, pp. 18-28, Oct.-Dec. 1997.

[55] Stephen L. Ambrosius, Richard F. Freund, Stephen L. Scott, and Howard Jay Siegel, "Work-Based Performance Measurement and Analysis of Virtual Heterogeneous Machines," *The International Journal of Systems Science*, Special Issue on Distributed Systems, Vol. 28, No. 11, pp. 1057-1067, Nov. 1997.

[56] Lee Wang, Howard Jay Siegel, Vwani P. Roychowdhury, and Anthony A. Maciejewski, "Task Matching and Scheduling in Heterogeneous Computing Environments Using a Genetic-Algorithm-Based Approach," *Journal of Parallel and Distributed Computing*, Special Issue on Parallel Evolutionary Computing, Vol. 47, No. 1, pp. 8-22, Nov. 25, 1997.

[57] James A. Armstrong, Muthucumaru Maheswaran, Mitchell D. Theys, Howard Jay Siegel, Mark A. Nichols, and Kenneth H. Casey, "Parallel Image Correlation: Case Study to Examine Trade-Offs in Algorithm-to-Machine Mappings," *The Journal of Supercomputing*, Special Issue on High-Performance Computing and Applications in Computer Graphics, Image Processing, and Computer Vision, Vol. 12, Nos. 1 and 2, pp. 7-35, Jan. 1998.

[58] Michael Jurczyk, Thomas Schwederski, Howard Jay Siegel, Seth Abraham, and Richard M. Born, "Strategies for the Implementation of Interconnection Network Simulators on Parallel Computers," *International Journal of Computer Systems Science and Engineering*, Special Issue on Simulation in Parallel and Distributed Computing Environments, Vol. 13, No. 1, pp. 5-16, Jan. 1998.

[59] Mitchell D. Theys, Tracy D. Braun, and Howard Jay Siegel, "Widespread Acceptance of General-Purpose, Large-Scale Parallel Machines: Fact, Future, or Fantasy?" *IEEE Concurrency*, Vol. 6, No. 1, pp. 79-83, Jan.-Mar. 1998.

[60] John John E. So, Thomas J. Downar, Raghunandan Janardhan, and Howard Jay Siegel, "Mapping Conjugate Gradient Algorithms for Neutron Diffusion Applications onto SIMD, MIMD, and Mixed-Mode Machines," *International Journal of Parallel Programming*, Vol. 26, No. 2, pp. 183-207, Apr. 1998.

[61] Brent R. Carter, Daniel W. Watson, Richard F. Freund, Elaine Keith, Francesco Mirabile, and Howard Jay Siegel, "Generational Scheduling for Dynamic Task Management in Heterogeneous Computing Systems," *Information Sciences*, Special Issue on Parallel and Distributed Processing, Vol. 106, Nos. 3-4, pp. 219-236, May 1998.

[62] John R. Budenske, Ranga S. Ramanujan, and Howard Jay Siegel, "A Method for the On-Line Use of Off-Line Derived Remappings of Iterative Automatic Target Recognition Tasks onto a Particular Class of Heterogeneous Parallel Platforms," *The Journal of Supercomputing*, Vol. 12, No. 4, pp. 387-406, Oct. 1998.

[63] Min Tan and Howard Jay Siegel, "A Stochastic Model for Heterogeneous Computing and Its Application in Data Relocation Scheme Development," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 9, No. 11, pp. 1088-1101, Nov. 1998.

[64] Nicholas Giolmas, Daniel W. Watson, David M. Chelberg, Peter V. Henstock, June Ho Yi, and Howard Jay Siegel, "Aspects of Computational Mode and Data Distribution for Parallel Range Image Segmentation," *Parallel Computing*, Vol. 25, No. 5, pp. 449-523, May 1999.

[65] Min Tan, Janet M. Siegel, and Howard Jay Siegel, "Parallel Implementations of Block-Based Motion Vector Estimation for Video Compression on Four Parallel Processing Systems," *International Journal of Parallel Programming*, Vol. 27, No. 3, pp. 195-225, June 1999.

[66] Muthucumaru Maheswaran, Shoukat Ali, Howard Jay Siegel, Debra Hensgen, and Richard F. Freund, "Dynamic Mapping of a Class of Independent Tasks onto Heterogeneous Computing Systems," *Journal of Parallel and Distributed Computing*, Special Issue on Software Support for Distributed Computing, Vol. 59, No. 2, pp. 107-131, Nov. 1999.

[67] Muthucumaru Maheswaran, Kevin J. Webb, and Howard Jay Siegel, "MCGS: A Modified Conjugate Gradient Squared Algorithm for Nonsymmetric Linear Systems," *The Journal of Supercomputing*, Vol. 14, No. 3, pp. 257-280, Nov./Dec. 1999.

[68] Howard Jay Siegel and Shoukat Ali, "Techniques for Mapping Tasks to Machines in Heterogeneous Computing Systems," *Journal of Systems Architecture*, The EUROMICRO Journal, Special Issue on Heterogeneous Distributed and Parallel Architectures: Hardware, Software and Design Tools, Vol. 46, No. 8, pp. 627-639, June 2000. Invited "keynote paper."

[69] Mitchell D. Theys, Min Tan, Noah B. Beck, Howard Jay Siegel, and Michael Jurczyk, "A Mathematical Model and Scheduling Heuristics for Satisfying Prioritized Data Requests in an Oversubscribed Communication Network," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 11, No. 9, pp. 969-988, Sep. 2000.

[70] Shoukat Ali, Howard Jay Siegel, Muthucumaru Maheswaran, Debra Hensgen, and Sahra Ali, "Representing Task and Machine Heterogeneities for Heterogeneous Computing Systems," *Tamkang Journal of Science and Engineering*, Special Tamkang University 50th Anniversary Issue, Vol. 3, No. 3, pp. 195-207, Nov. 2000. Invited.

[71] Tracy D. Braun, Howard Jay Siegel, Noah Beck, Ladislau L. Boloni, Muthucumaru Maheswaran, Albert I. Reuther, James P. Robertson, Mitchell D. Theys, Bin Yao, Debra Hensgen, and Richard F. Freund, "A Comparison of Eleven Static Heuristics for Mapping a Class of Independent Tasks onto Heterogeneous Distributed Computing Systems," *Journal of Parallel and Distributed Computing*, Vol. 61, No. 6, pp. 810-837, June 2001.

[72] Mitchell D. Theys, Howard Jay Siegel, and Edwin K. P. Chong, "Heuristics for Scheduling Data Requests Using Collective Communications in a Distributed Communication Network," *Journal of Parallel and Distributed Computing*, Special Issue on Routing in Computer and Communication Systems, Vol. 61, No. 9, pp. 1337-1366, Sep. 2001.

[73] Mitchell D. Theys, Shoukat Ali, Howard Jay Siegel, Mani Chandy, Kai Hwang, Ken Kennedy, Lui Sha, Kang G. Shin, Marc Snir, Larry Snyder, and Thomas Sterling, "What are the Top Ten Most Influential Parallel and Distributed Processing Concepts of the Last Millennium?" *Journal of Parallel and Distributed Computing*, Vol. 61, No. 12, pp. 1827-1841, Dec. 2001. Invited.

[74] Tracy D. Braun, Renard Ulrey, Anthony A. Maciejewski, and Howard Jay Siegel, "Parallel Approaches for Singular Value Decomposition as Applied to Robotic Manipulator Jacobians," *International Journal of Parallel Programming*, Vol. 30, No. 1, pp. 1-35, Feb. 2002.

[75] Shoukat Ali, Jong-Kook Kim, Yang Yu, Shriram B. Gundala, Sethavidh Gertphol, Howard Jay Siegel, Anthony A. Maciejewski, and Viktor Prasanna, "Utilization-based Techniques for Statically Mapping Heterogeneous Applications onto the HiPer-D Heterogeneous Computing System," *Parallel and Distributed Computing Practices*, Special Issue on Parallel Numeric Algorithms on Faster Computers, Vol. 5, No. 4, Dec. 2002.

[76] Jung Min Park, Edwin K. P. Chong, and Howard Jay Siegel, "Efficient Multicast Stream Authentication Using Erasure Codes," *ACM Transactions on Information and System Security (TISSEC)*, Vol. 6, No. 2, pp. 258-285, May 2003.

[77] Shoukat Ali, Anthony A. Maciejewski, Howard Jay Siegel, and Jong-Kook Kim, "Measuring the Robustness of a Resource Allocation," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 15, No. 7, pp. 630-641, July 2004.

[78] Jung Min Park, Uday R. Savagaonkar, Edwin K. P. Chong, Howard Jay Siegel, and Steven D. Jones, "Allocation of QoS Connections in MF-TDMA Satellite Systems: A Two-Phase Approach," *IEEE Transactions on Vehicular Technology*, Vol. 54, No. 1, pp. 177-190, Jan. 2005.

[79] Sameer Shivle, Prasanna Sugavanam, Howard Jay Siegel, Anthony A. Maciejewski, Tarun Banka, Kiran Chindam, Steve Dussinger, Andrew Kutruff, Prashanth Penumarthy, Prakash Pichumani, Praveen Satyasekaran, David Sendek, Jay Smith, J. Sousa, Jayashree Sridharan, and Jose Velazco, "Mapping Subtasks with Multiple Versions on an *Ad Hoc* Grid," *Parallel Computing*, Special Issue on Heterogeneous Computing, Vol. 31, No. 7, pp. 671-690, July 2005.

[80] Lee Wang, Anthony A. Maciejewski, Howard Jay Siegel, Vwani P. Roychowdhury, and Bryce D. Eldrige, "A Study of Five Parallel Approaches in a Genetic Algorithm for the Traveling Salesman Problem," *Intelligent Automation and Soft Computing*, Vol. 11, No. 4, pp. 217-234, 2005.

[81] Han Yu, Dan C. Marinescu, Annie S. Wu, and Howard Jay Siegel, "Genetic-Based Planning with Recursive Subgoals," *International Journal of Computational Intelligence*, Vol. 2, No. 3, pp. 192-198, 2005.

[82] Yu-Kwong Kwok, Anthony A. Maciejewski, Howard Jay Siegel, Ishfaq Ahmad, and Arif Ghafoor, "A Semi-Static Approach to Mapping Dynamic Iterative Tasks onto Heterogeneous Computing Systems," *Journal of Parallel and Distributed Computing*, Vol. 66, No. 1, pp. 77-98, Jan. 2006.

[83] Sameer Shivle, Howard Jay Siegel, Anthony A. Maciejewski, Prasanna Sugavanam, Tarun Banka, Ralph Castain, Kiran Chindam, Steve Dussinger, Prakash Pichumani, Praveen Satyasekaran, William Saylor, David Sendek, J. Sousa, Jayashree Sridharan, and José Velazco, "Static Allocation of Resources to Communicating Subtasks in a Heterogeneous *Ad Hoc* Grid Environment," *Journal of Parallel and Distributed Computing*, Special Issue on Algorithms for Wireless and Ad-hoc Networks, Vol. 66, No. 4, pp. 600-611, Apr. 2006.

[84] Mitchell D. Theys, Noah Beck, Howard Jay Siegel, and Michael Jurczyk, "An Analysis of Procedures and Objective Functions for Heuristics to Perform Data Staging in Distributed Systems," *Journal of Interconnection Networks*, Vol. 7, No. 2, pp. 257-293, June 2006.

[85] Jong-Kook Kim, Debra A. Hensgen, Taylor Kidd, Howard Jay Siegel, David St. John, Cynthia Irvine, Tim Levin, N. Wayne Porter, Viktor K. Prasanna, and Richard F. Freund, "A Flexible Multi-Dimensional QoS Performance Measure Framework for Distributed Heterogeneous Systems," *Cluster Computing*, Special Issue on Cluster Computing in Science and Engineering, Vol. 9, No. 3, pp. 281-296, July 2006.

[86] Jong-Kook Kim, Sameer Shivle, Howard Jay Siegel, Anthony A. Maciejewski, Tracy Braun, Myron Schneider, Sonja Tideman, Ramakrishna Chitta, Raheleh B. Dilmaghani, Rohit Joshi, Aditya Kaul, Ashish Sharma, Siddhartha Sripada, Praveen Vangari, and Siva Sankar Yellampalli, "Dynamically Mapping Tasks with Priorities and Multiple Deadlines in a Heterogeneous Environment," *Journal of Parallel and Distributed Computing*, Vol. 67, No. 2, pp. 154-169, Feb. 2007.

[87] Prasanna Sugavanam, Howard Jay Siegel, Anthony A. Maciejewski, Mohana Oltikar, Ashish Mehta, Ron Pichel, Aaron Horiuchi, Vladimir Shestak, Mohammad Al-Otaibi, Yogish Krishnamurthy, Syed Ali, Junxing Zhang, Mahir Aydin, Panho Lee, Kumara Guru, Michael Raskey, and Alan Pippin, "Robust Static Allocation of Resources for Independent Tasks under Makespan and Dollar Cost Constraints," *Journal of Parallel and Distributed Computing*, Vol. 67, No. 4, pp. 400-416, Apr. 2007.

[88] Ashish M. Mehta, Jay Smith, Howard Jay Siegel, Anthony A. Maciejewski, Arun Jayaseelan, and Bin Ye, "Dynamic Resource Allocation Heuristics that Manage Tradeoff Between Makespan and

Robustness," *Journal of Supercomputing*, Special Issue on Grid Technology, Vol. 42, No. 1, pp. 33-58, 2007.

[89] Xin Bai, Dan C. Marinescu, Ladislau Boloni, Howard Jay Siegel, Rose A. Daley, and I-Jeng Wang, "A Macro-Economic Model for Resource Allocation in Large-Scale Distributed Systems," *Journal of Parallel and Distributed Computing*, Vol. 68, No. 2, pp. 182-199, Feb. 2008.

[90] Vladimir Shestak, Edwin K. P. Chong, Howard Jay Siegel, Anthony A. Maciejewski, Lotfi Benmohamed, I-Jeng Wang, and Rose Daley, "A Hybrid Branch-and-Bound and Evolutionary Approach for Allocating Strings of Applications to Heterogeneous Distributed Computing Systems," *Journal of Parallel and Distributed Computing*, Vol. 68, No. 4, pp. 410-426, Apr. 2008.

[91] Shoukat Ali, Jong-Kook Kim, Howard Jay Siegel, and Anthony A. Maciejewski, "Static Heuristics for Robust Resource Allocation of Continuously Executing Applications," *Journal of Parallel and Distributed Computing*, Vol. 68, No. 8, pp. 1070-1080, Aug. 2008.

[92] Vladimir Shestak, Jay Smith, Anthony A. Maciejewski, and Howard Jay Siegel, "Stochastic Robustness Metric and its Use for Static Resource Allocations," *Journal of Parallel and Distributed Computing*, Vol. 68, No. 8, pp. 1157-1173, Aug. 2008.

[93] Jong-Kook Kim, Howard Jay Siegel, Anthony A. Maciejewski, and Rudolf Eigenmann, "Dynamic Resource Management in Energy Constrained Heterogeneous Computing Systems using Voltage Scaling," *IEEE Transactions on Parallel and Distributed Systems*, Special Issue on Power-Aware Parallel and Distributed Systems, Vol. 19, No. 11, pp. 1445-1457, Nov. 2008.

[94] Tracy D. Braun, Howard Jay Siegel, Anthony A. Maciejewski, and Ye Hong, "Static Resource Allocation for Heterogeneous Computing Environments with Tasks Having Dependencies, Priorities, Deadlines, and Multiple Versions," *Journal of Parallel and Distributed Computing*, Vol. 68, No. 11, pp. 1504-1516, Nov. 2008.

[95] Jay Smith, Vladimir Shestak, Howard Jay Siegel, Suzy Price, Larry Teklits, and Prasanna Sugavanam, "Robust Resource Allocation in a Cluster Based Imaging System," *Parallel Computing*, Vol. 35, No. 7, pp. 389-400, July 2009.

[96] Young Choon Lee, Albert Y. Zomaya, and Howard Jay Siegel, "Robust Task Scheduling for Volunteer Computing Systems," *The Journal of Supercomputing*, Special Issue on Network-Based High Performance Computing, Vol. 53, No. 1, pp. 163-181, July 2010.

[97] Saurabh Garg, Rajkumar Buyya, and Howard Jay Siegel, "Time and Cost Trade-off Management for Scheduling Parallel Applications on Utility Grids," *Future Generation Computer Systems*, Special Section: P2P and Internet Computing, Vol. 26, No. 8, pp. 1344-1355, Oct. 2010.

[98] Luis Briceno, Howard Jay Siegel, Anthony Maciejewski, Mohana Oltikar, Jeff Brateman, Joe White, Jon Martin, and Keith Knapp, "Heuristics for Robust Resource Allocation of Satellite Weather Data Processing onto a Heterogeneous Parallel System," *IEEE Transactions on Parallel and Distributed Systems*, accepted to appear.

[99] Abdulla M. Al-Qawasmeh, Anthony A. Maciejewski, Haonan Wang, Jay Smith, Howard Jay Siegel, and Jerry Potter, "Statistical Measures for Quantifying Task and Machine Heterogeneities," *The Journal of Supercomputing*, Special Issue on Advances in Parallel and Distributed Computing, accepted to appear.

Conference Papers and Presentations
(asterisk indicates refereed conference with an acceptance rate of approximately 35% or less)

[1] Howard Jay Siegel, "Analysis Techniques for SIMD Machine Interconnection Networks and the Effects of Processor Address Masks," *1975 Sagamore Computer Conference on Parallel Processing*, sponsor: Syracuse University, pp. 106-109, Sagamore, NY, Aug. 1975.*

[2] Howard Jay Siegel, "Single Instruction Stream - Multiple Data Stream Machine Interconnection Network Design," *1976 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 273-282, Bellaire, MI, Aug. 1976.*

[3] Howard Jay Siegel, "The Universality of Various Types of SIMD Machine Interconnection Networks," *4th Annual Symposium on Computer Architecture*, cosponsors: IEEE Computer Society and ACM, pp. 70-79, Silver Spring, MD, Mar. 1977.*

[4] Howard Jay Siegel, "Controlling the Active/Inactive Status of SIMD Machine Processors," *1977 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, p. 183, Bellaire, MI, Aug. 1977.*

[5] Howard Jay Siegel and S. Diane Smith, "Study of Multistage SIMD Interconnection Networks," *5th Annual Symposium on Computer Architecture*, cosponsors: IEEE Computer Society and ACM, pp. 223-229, Palo Alto, CA, Apr. 1978.*

[6] Howard Jay Siegel and Julius Bogdanowicz, "A Partitionable Multi-Microprogrammable-Microprocessor System for Image Processing," *IEEE Computer Society Workshop on Pattern Recognition and Artificial Intelligence*, sponsor: IEEE Computer Society, pp. 141-144, Princeton, NJ, Apr. 1978.

[7] Howard Jay Siegel, "Preliminary Design of a Versatile Parallel Image Processing System," *3rd Biennial Conference on Computing in Indiana*, sponsor: Indiana University ACM Student Chapter, pp. 11-25, Bloomington, IN, Apr. 1978. Selected as the "Outstanding Submission."

[8] S. Diane Smith and Howard Jay Siegel, "Recirculating, Pipelined, and Multistage SIMD Interconnection Networks," *1978 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 206-214, Bellaire, MI, Aug. 1978.*

[9] Howard Jay Siegel, Philip T. Mueller, Jr., and Harold E. Smalley, Jr., "Control of a Partitionable Multimicroprocessor System," *1978 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 9-17, Bellaire, MI, Aug. 1978.*

[10] Howard Jay Siegel and Philip T. Mueller, Jr., "The Organization and Language Design of Microprocessors for an SIMD/MIMD System," *2nd Rocky Mountain Symposium on Microcomputers: Systems, Software, Architecture*, cosponsors: Office of Naval Research and IEEE Computer Society, pp. 311-340, Pingree Park, CO, Aug. 1978.

[11] Howard Jay Siegel, "Partitionable SIMD Computer System Interconnection Network Universality," *16th Annual Allerton Conference on Communication, Control, and Computing*, sponsor: University of Illinois-Urbana, pp. 586-595, Monticello, IL, Oct. 1978.

[12] S. Diane Smith and Howard Jay Siegel, "An Emulator Network for SIMD Machine Interconnection Networks," *6th Annual International Symposium on Computer Architecture*, cosponsors: IEEE Computer Society and ACM, pp. 232-241, Philadelphia, PA, Apr. 1979.*

[13] Howard Jay Siegel, Robert J. McMillen, and Philip T. Mueller, Jr., "A Survey of Interconnection Methods for Reconfigurable Parallel Processing Systems," *AFIPS Conference Proceedings Volume 48: 1979 National Computer Conference*, sponsor: AFIPS (American Federation of Information Processing Societies), pp. 529-542, New York, NY, June 1979.* (Translated into Japanese and reprinted in *Nikkei Electronics*, No. 228, pp. 49-83, Dec. 1979.)

[14] Philip H. Swain, Howard Jay Siegel, and Bradley W. Smith, "A Method for Classifying Multispectral Remote Sensing Data Using Context," *Symposium on Machine Processing of Remote Sensing Data*, sponsor: Purdue University Laboratory for Applications of Remote Sensing, pp. 343-353, West Lafayette, IN, June 1979.

[15] Howard Jay Siegel, Leah J. Siegel, Robert J. McMillen, Philip T. Mueller, Jr., and S. Diane Smith, "An SIMD/MIMD Multimicroprocessor System for Image Processing and Pattern Recognition," *1979 IEEE Computer Society Conference on Pattern Recognition and Image Processing (PRIP 79)*, sponsor: IEEE Computer Society, pp. 214-224, Chicago, IL, Aug. 1979.

[16] Howard Jay Siegel, "Partitioning Permutation Networks: The Underlying Theory," *1979 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 175-184, Bellaire, MI, Aug. 1979.*

[17] Howard Jay Siegel, Frederick Kemmerer, and Mark Washburn, "Parallel Memory System for a Partitionable SIMD/MIMD Machine," *1979 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 212-221, Bellaire, MI, Aug. 1979.*

[18] Howard Jay Siegel and S. Diane Smith, "An Interconnection Network for Multimicroprocessor Emulator Systems," *1st International Conference on Distributed Computing Systems*, sponsor: US Army Ballistic Missile Defense Advanced Technology Center, in cooperation with the IEEE Computer Society, pp. 772-782, Huntsville, AL, Oct. 1979. Invited.

[19] Leah J. Siegel, Philip T. Mueller, Jr., and Howard Jay Siegel, "FFT Algorithms for SIMD Machines," *17th Annual Allerton Conference on Communication, Control, and Computing*, sponsor: University of Illinois-Urbana, pp. 1006-1015, Monticello, IL, Oct. 1979.

[20] Robert J. McMillen and Howard Jay Siegel, "MIMD Machine Communications Using the Augmented Data Manipulator Network," *7th Annual International Symposium on Computer Architecture*, cosponsors: IEEE Computer Society and ACM, pp. 51-58, La Baule, France, May 1980.*

[21] Howard Jay Siegel, Philip H. Swain, and Bradley W. Smith, "Parallel Processing Implementation of a Contextual Classifier for Multispectral Remote Sensing Data," *Symposium on Machine Processing of Remotely Sensed Data*, sponsor: Purdue University Laboratory for Applications of Remote Sensing, pp. 19-29, West Lafayette, IN, June 1980.

[22] Howard Jay Siegel, "PASM: A Reconfigurable Multimicroprocessor System for Image Processing," *Workshop on New Computer Architectures and Image Processing*, cosponsors: seven Italian organizations, Ischia, Italy, June 1980. Invited.

[23] S. Diane Smith, Howard Jay Siegel, Robert J. McMillen, and George B. Adams III, "Use of the Augmented Data Manipulator Multistage Network for SIMD Machines," *1980 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 75-78, Harbor Springs, MI, Aug. 1980.*

[24] Leah J. Siegel, Howard Jay Siegel, Robert J. Safranek, and Mark A. Yoder, "SIMD Algorithms to Perform Linear Predictive Coding for Speech Processing Applications," *1980 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 193-196, Harbor Springs, MI, Aug. 1980.*

[25] Robert J. McMillen, George B. Adams III, and Howard Jay Siegel, "Permuting with the Augmented Data Manipulator Network," *18th Annual Allerton Conference on Communication, Control, and Computing*, sponsor: University of Illinois-Urbana, pp. 544-553, Monticello, IL, Oct. 1980.

[26] Philip T. Mueller, Jr., Leah J. Siegel, and Howard Jay Siegel, "A Parallel Language for Image and Speech Processing," *COMPSAC '80: 4th International Computer Software and Applications Conference*, sponsor: IEEE Computer Society, pp. 476-483, Chicago, IL, Oct. 1980.

[27] Robert J. McMillen and Howard Jay Siegel, "The Hybrid Cube Network," *Distributed Data Acquisition, Computing, and Control Symposium*, sponsor: IEEE Computer Society, pp. 11-22, Miami Beach, FL, Dec. 1980.

[28] Arthur E. Feather, Leah J. Siegel, and Howard Jay Siegel, "Image Correlation Using Parallel Processing," *5th International Conference on Pattern Recognition*, cosponsors: IAPR (International Association for Pattern Recognition) and IEEE Computer Society, pp. 503-507, Miami Beach, FL, Dec. 1980.

[29] Philip T. Mueller, Jr., Leah J. Siegel, and Howard Jay Siegel, "Parallel Algorithms for the Two-Dimensional FFT," *5th International Conference on Pattern Recognition*, cosponsors: IAPR (International Association for Pattern Recognition) and IEEE Computer Society, pp. 497-502, Miami Beach, FL, Dec. 1980.

[30] Philip H. Swain, Howard Jay Siegel, and Joseph El-Achkar, "Multiprocessor Implementation of Image Pattern Recognition: A General Approach," *5th International Conference on Pattern Recognition*, cosponsors: IAPR (International Association for Pattern Recognition) and IEEE Computer Society, pp. 309-317, Miami Beach, FL, Dec. 1980.

[31] Howard Jay Siegel and Robert J. McMillen, "The Use of the Augmented Data Manipulator Network in PASM," *14th Annual Hawaii International Conference on System Sciences*, cosponsors: University of Hawaii and University of Southwestern Louisiana, pp. 228-237, Honolulu, HI, Jan. 1981. Received one of two "best paper" awards given.

[32] Howard Jay Siegel and Robert J. McMillen, "The Cube Network as a Distributed Processing Test Bed Switch," *2nd International Conference on Distributed Computing Systems*, cosponsors: two French organizations, pp. 377-387, Versailles, France, Apr. 1981.*

[33] Robert J. McMillen and Howard Jay Siegel, "Dynamic Rerouting Tag Schemes for the Augmented Data Manipulator Network," *8th Annual International Symposium on Computer Architecture*, cosponsors: IEEE Computer Society and ACM, pp. 505-516, Minneapolis, MN, May 1981.*

[34] Howard Jay Siegel, Philip H. Swain, and Bradley W. Smith, "Remote Sensing on PASM and CDC Flexible Processors," *Workshop on Applications of Non-Conventional Computers in Image Processing: Algorithms and Programs*, sponsor: University of Wisconsin, Madison, WI, May 1981. Invited.

[35] Leah J. Siegel, Howard Jay Siegel, and Philip H. Swain, "Performance Measures for Evaluating Parallel Algorithms," *Workshop on Applications of Non-Conventional Computers in Image Processing: Algorithms and Programs*, sponsor: University of Wisconsin, Madison, WI, May 1981. Invited.

[36] Howard Jay Siegel, "Advanced Digital Systems," *Workshop on Key Issues in the Analysis of Remote Sensing Data*, sponsor: NASA and Purdue University Laboratory for Applications of Remote Sensing, West Lafayette, IN, June 1981. Invited.

[37] Bradley W. Smith, Howard Jay Siegel, and Philip H. Swain, "Contextual Classification on a CDC Flexible Processor," *Symposium on Machine Processing of Remotely Sensed Data*, sponsor: Purdue University Laboratory for Applications of Remote Sensing, pp. 283-291, West Lafayette, IN, June 1981.

[38] Robert J. McMillen, George B. Adams III, and Howard Jay Siegel, "Performance and Implementation of 4x4 Switching Nodes in an Interconnection Network for PASM," *1981 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 229-233, Bellaire, MI, Aug. 1981.*

[39] Leah J. Siegel, Howard Jay Siegel, and Arthur E. Feather, "Parallel Image Correlation," *1981 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 190-198, Bellaire, MI, Aug. 1981.*

[40] Howard Jay Siegel and Philip H. Swain, "Contextual Classification on PASM," *IEEE Computer Society Conference on Pattern Recognition and Image Processing (PRIP 81)*, sponsor: IEEE Computer Society, pp. 320-325, Dallas, TX, Aug. 1981.

[41] Leah J. Siegel, Edward J. Delp, Trevor N. Mudge, and Howard Jay Siegel, "Block Truncation Coding on PASM," *19th Annual Allerton Conference on Communication, Control, and Computing*, sponsor: University of Illinois-Urbana, pp. 891-900, Monticello, IL, Oct. 1981.

[42] David L. Tuomenoksa and Howard Jay Siegel, "Application of Two-Dimensional Bin Packing Algorithms for Task Scheduling in the PASM Multimicrocomputer System," *19th Annual Allerton*

Conference on Communication, Control, and Computing, sponsor: University of Illinois-Urbana, p. 542, Monticello, IL, Oct. 1981.

[43] James T. Kuehn and Howard Jay Siegel, "Simulation Studies of PASM in SIMD Mode," *1981 IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management*, sponsor: IEEE Computer Society, pp. 43-50, Hot Springs, VA, Nov. 1981.

[44] George B. Adams III and Howard Jay Siegel, "A Multistage Network with an Additional Stage for Fault Tolerance," *15th Annual Hawaii International Conference on System Sciences, cosponsors: University of Hawaii and University of Southwestern Louisiana*, pp. 333-342, Honolulu, HI, Jan. 1982.

[45] Robert J. McMillen and Howard Jay Siegel, "Performance and Fault Tolerance Improvements in the Inverse Augmented Data Manipulator Network," *9th Annual International Symposium on Computer Architecture*, cosponsors: IEEE Computer Society and ACM, pp. 63-72, Austin, TX, Apr. 1982.*

[46] George B. Adams III and Howard Jay Siegel, "Properties of the Extra Stage Cube Under Multiple Faults," *14th Southeastern Symposium on System Theory*, sponsor: IEEE Computer Society, pp. 3-6, Blacksburg, VA, Apr. 1982. Invited.

[47] Edward J. Delp, Trevor N. Mudge, Leah J. Siegel, and Howard Jay Siegel, "Parallel Processing for Computer Vision," *Society of Photo-Optical Instrumentation Engineers Proceedings Vol. 336: Robot Vision*, sponsor: SPIE (Society of Photo-Optical Instrumentation Engineers), pp. 161-167, Arlington, VA, May 1982.

[48] Howard Jay Siegel, "Progress Report on the PASM Multimicroprocessor System," *Workshop on Multicomputers and Image Processing*, sponsor: British Science and Engineering Research Council, Abingdon, England, May 1982. Invited.

[49] Trevor N. Mudge, Edward J. Delp, Leah J. Siegel, and Howard Jay Siegel, "Image Coding Using the Multimicroprocessor System PASM," *1982 IEEE Computer Society Conference on Pattern Recognition and Image Processing*, sponsor: IEEE Computer Society, pp. 200-207, Las Vegas, NV, June 1982.

[50] Bradley W. Smith, Howard Jay Siegel, and Philip H. Swain, "Parallel Processing Concepts for Remote Sensing Applications," *Symposium on Machine Processing of Remotely Sensed Data*, sponsor: Purdue University Laboratory for Applications of Remote Sensing, pp. 520-526, West Lafayette, IN, July 1982.

[51] David Lee Tuomenoksa and Howard Jay Siegel, "Analysis of the PASM Control System Memory Hierarchy," *1982 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 363-370, Bellaire, MI, Aug. 1982.*

[52] James T. Kuehn, Howard Jay Siegel, and Peter D. Hallenbeck, "Design and Simulation of an MC68000-Based Multimicroprocessor System," *1982 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 353-362, Bellaire, MI, Aug. 1982.*

[53] Robert J. McMillen and Howard Jay Siegel, "A Comparison of Cube Type and Data Manipulator Type Networks," *3rd International Conference on Distributed Computing Systems*, sponsor: IEEE Computer Society, pp. 614-621, Hollywood, FL, Oct. 1982.*

[54] David Lee Tuomenoksa and Howard Jay Siegel, "Analysis of Multiple-Queue Task Scheduling Algorithms for Multiple-SIMD Machines," *3rd International Conference on Distributed Computing Systems*, sponsor: IEEE Computer Society, pp. 114-121, Hollywood, FL, Oct. 1982.*

[55] Howard Jay Siegel, O. Robert Mitchell, and Leah J. Siegel, "PASM: A Large-Scale System for Studying Parallel Image Processing," *1982 Government Microcircuits Applications Conference Digest of Papers (GOMAC-82)*, sponsor: GOMAC, pp. 186-189, Orlando, FL, Nov. 1982.

[56] Howard Jay Siegel, "PASM," *1983 Parallel Architecture Workshop*, sponsor: Dept. of Energy, Boulder, CO, Jan. 1983. Invited.

[57] James C. Browne, Bruce Arden, Arvind, Forest Baskett, Bill Buzbee, Mark Franklin, Robert M. Keller, H. T. Kung, Duncan Lawrie, Fred Ris, Herbert Schorr, Howard Jay Siegel, Lawrence Snyder, and Robert Voigt, "Highly Parallel Computing: An Assessment of the State-of-the-Art and Recommendations for Future Directions," *NSF Information Technology Workshop*, sponsor: National Science Foundation, pp. 81-92, Leesburg, VA, Jan. 1983.

[58] Howard Jay Siegel, "The Use and Design of PASM," *Workshop on Image Processing: From Computation to Integration,* cosponsors: several Italian organizations, Polignamo, Italy, June 1983. Invited.

[59] David Lee Tuomenoksa, George B. Adams, III, Howard Jay Siegel, and O. Robert Mitchell, "A Parallel Algorithm for Contour Extraction: Advantages and Architectural Implications," *1983 IEEE Computer Society Symposium on Computer Vision and Pattern Recognition (CVPR)*, sponsor: IEEE Computer Society, pp. 336-374, Arlington, VA, June 1983.

[60] Howard Jay Siegel, "Position Statement on Multiprocessors for High Performance Parallel Computation," *Workshop on Multiprocessors for High Performance Parallel Computation*, cosponsors: Carnegie-Mellon University and National Science Foundation, Seven Springs, PA, June 1983. Invited.

[61] Robert R. Seban and Howard Jay Siegel, "Performing the Shuffle with the PM2I and Illiac SIMD Interconnection Networks," *1983 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 117-125, Bellaire, MI, Aug. 1983.*

[62] David Lee Tuomenoksa and Howard Jay Siegel, "Preloading Schemes for the PASM Parallel Memory System," *1983 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 407-415, Bellaire, MI, Aug. 1983.*

[63] Carolyn Cline and Howard Jay Siegel, "Extensions of Ada for SIMD Parallel Processing," *COMPSAC '83: 7th International Computer Software and Applications Conference*, sponsor: IEEE Computer Society, pp. 366-372, Chicago, IL, Nov. 1983.

[64] James T. Kuehn, Howard Jay Siegel, and Martin Grosz, "A Distributed Memory Management System for PASM," *1983 IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management*, sponsor: IEEE Computer Society, pp. 101-108, Pasadena, CA, Oct. 1983.

[65] Howard Jay Siegel, "Position Statement on Industry/University/Government Cooperative Research in Parallel Processing," *Workshop on Resources for Cooperative Research in Parallel Processing*, sponsor: National Science Foundation, Arlington, VA, Nov. 1983. Invited.

[66] Howard Jay Siegel, "Position Statement on the Taxonomy of Parallel Algorithms," *Taxonomy of Parallel Algorithms Workshop*, sponsor: Los Alamos National Laboratory, Los Alamos, NM, Dec. 1983. Invited.

[67] George B. Adams III and Howard Jay Siegel, "A Survey of Fault-Tolerant Multistage Networks and Comparison to the Extra Stage Cube," *17th Hawaii International Conference on System Sciences*, cosponsors: University of Hawaii and University of Southwestern Louisiana, pp. 268-277, Honolulu, HI, Jan. 1984.

[68] David L. Tuomenoksa and Howard Jay Siegel, "A Distributed Operating System for PASM," *17th Hawaii International Conference on System Sciences*, cosponsors: University of Hawaii and University of Southwestern Louisiana, pp. 69-77, Honolulu, HI, Jan. 1984. Received "best paper" award for Hardware (Computer Systems) Track.

[69] Howard Jay Siegel, "Brief Progress Report on PASM - Partitionable SIMD/MIMD System," *1984 Parallel Architectures Workshop*, sponsor: Dept. of Energy, Mt. Kisco, NY, Apr. 1984. Invited.

[70] Carolyn Cline and Howard Jay Siegel, "A Comparison of Parallel Language Approaches to Data Representation and Data Transferral," *Computer Data Engineering Conference (COMPDEC)*, sponsor: IEEE Computer Society, pp. 60-66, Los Angeles, CA, Apr. 1984. Invited.

[71] Howard Jay Siegel and Leah Jamieson Siegel, "The PASM Parallel Processing System," *Abstracts of Presentations at the Computer Architecture for Vision Workshop*, sponsor: DARPA, pp. 14-17, Baltimore, MD, May 1984. Invited.

[72] Howard Jay Siegel, "The Extra Stage Cube Fault Tolerant Interconnection Network," *Workshop on Fault Tolerant Multiprocessor Systems*, cosponsors: United States Air Force Rome Air Development Center and Westinghouse Electric Corp. Defense and Electronic Center, Baltimore, MD, May 1984. Invited.

[73] Robert R. Seban and Howard Jay Siegel, "Theoretical Modeling and Analysis of Special Purpose Interconnection Networks," *4th International Conference on Distributed Computer Systems*, sponsor: IEEE Computer Society, pp. 256-265, San Francisco, CA, May 1984.*

[74] Howard Jay Siegel, "The PASM Prototype," *Workshop on Multicomputers and Image Processing: Evaluation, Architecture, and Applications*, sponsor: National Science Foundation, Tucson, AZ, May 1984. Invited.

[75] George B. Adams III and Howard Jay Siegel, "The Use of 4x4 Switching Elements in the Multistage Cube Network," *1st International Conference on Computers and Applications*, cosponsors: CIE (Chinese Institute of Electronics) Computer Society and IEEE Computer Society, pp. 585-592, Beijing, China, June 1984.

[76] Howard Jay Siegel, Thomas Schwederski, Nathaniel J. Davis IV, and James T. Kuehn, "PASM: A Reconfigurable Parallel Processing System for Image Processing," *Workshop on Algorithm-guided Parallel Architectures for Automatic Target Recognition*, cosponsors: DARPA, Naval Research Laboratory, and Army Night Vision and Electro-Optics Laboratory, pp. 263-291, Leesburg, VA, July 1984 (reprinted in *ACM SIGARCH Computer Architecture News*, Vol. 12, No. 4, pp. 7-19, Sep. 1984). Invited.

[77] James T. Kuehn and Howard Jay Siegel, "Simulation Studies of a Parallel Histogramming Algorithm for PASM," *7th International Conference on Pattern Recognition*, cosponsors: IAPR (International Association of Pattern Recognition) and IEEE Computer Society, pp. 646-649, Montreal, Canada, July 1984.

[78] George B. Adams III and Howard Jay Siegel, "A Modification to Improve the Fault Tolerance of the Extra Stage Cube Interconnection Network," *1984 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 169-173, Bellaire, MI, Aug. 1984.*

[79] Robert R. Seban, Howard Jay Siegel, and David G. Meyer, "Data Communications in a Real-Time Distributed Signal Processing System: A Case Study," *Real-Time Systems Symposium*, sponsor: IEEE Computer Society, pp. 263-272, Austin, TX, Dec. 1984.*

[80] David G. Meyer, Howard Jay Siegel, Thomas Schwederski, Nathaniel J. Davis IV, and James T. Kuehn, "The PASM Parallel System Prototype," *Digest of Papers Compcon Spring 85*, sponsor: IEEE Computer Society, pp. 429-434, San Francisco, CA, Feb. 1985. Invited.

[81] Veljko M. Milutinovic, J. J. Crnkovic, L. Y. Chang, and Howard Jay Siegel, "The LOCO Approach to Task Allocation in AIDA by VERDI," *5th International Conference on Distributed Computer Systems*, sponsor: IEEE Computer Society, pp. 359-368, Denver, CO, May 1985* (reprinted in Computers for Artificial Intelligence Applications, edited by B. Wah and G.-J. Li, IEEE Computer Society Press, Washington, D.C., pp. 522-532, 1986).

[82] Robert R. Seban and Howard Jay Siegel, "Analysis of Partitionability Properties of Topologically Arbitrary Interconnection Networks," *5th International Conference on Distributed Computer Systems*, sponsor: IEEE Computer Society, pp. 173-181, Denver, CO, May 1985.*

[83] Howard Jay Siegel, "PASM Progress Report," *7th Workshop on Languages, Architectures, and Algorithms for Image Processing*, Castera-Verduzan, France, May 1985. Invited.

[84] James T. Kuehn, Jeff A. Fessler, and Howard Jay Siegel, "Parallel Image Thinning and Vectorization on PASM," *1985 IEEE Computer Society Symposium on Computer Vision and Pattern Recognition (CVPR)*, sponsor: IEEE Computer Society, pp. 368-374, San Francisco, CA, June 1985.

[85] Bradley W. Smith and Howard Jay Siegel, "Models for Use in the Design of Macro-Pipelined Parallel Processors," *12th Annual International Symposium on Computer Architecture*, cosponsors: IEEE Computer Society and ACM, pp. 116-123, Boston, MA, June 1985.*

[86] Nathaniel J. Davis IV and Howard Jay Siegel, "The Performance Analysis of Partitioned Circuit Switched Multistage Interconnection Networks," *12th Annual International Symposium on Computer Architecture*, cosponsors: IEEE Computer Society and ACM, pp. 387-394, Boston, MA, June 1985.*

[87] Nathaniel J. Davis IV and Howard Jay Siegel, "The PASM Prototype Interconnection Network," *AFIPS Conference Proceedings Volume 54: 1985 National Computer Conference*, sponsor: AFIPS (American Federation of Information Processing Societies), pp. 183-190, Chicago, IL, July 1985.

[88] Nathaniel J. Davis IV, William Tsun-yuk Hsu, and Howard Jay Siegel, "Fault Location in Distributed Control Interconnection Networks," *1985 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 403-410, St. Charles, IL, Aug. 1985.*

[89] James T. Kuehn and Howard Jay Siegel, "Extensions to the C Programming Language for SIMD/MIMD Parallelism," *1985 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 232-235, St. Charles, IL, Aug. 1985.*

[90] Edward J. Delp, Howard Jay Siegel, Andrew Whinston, and Leah H. Jamieson, "An Intelligent Operating System for Executing Image Understanding Tasks on a Reconfigurable Parallel Architecture," *IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management*, sponsor: IEEE Computer Society, pp. 217-224, Miami Beach, FL, Nov. 1985. Invited.

[91] James T. Kuehn, Thomas Schwederski, and Howard Jay Siegel, "Design of a 1024-Processor PASM System," *1st International Conference on Supercomputing Systems*, sponsor: IEEE Computer Society, pp. 603-612, St. Petersburg, FL, Dec. 1985.

[92] Howard Jay Siegel, "Multistage Cube Interconnection Networks," *Workshop on Interconnection Networks*, sponsor: MCC (Microelectronics and Computer Technology Corp.), Austin, TX, Jan. 1986. Invited.

[93] Howard Jay Siegel, William Tsun-yuk Hsu, and Menkae Jeng, "Interconnection Networks: The Multistage Cube, the Extra Stage Cube, and the Dynamic Redundancy Networks," *New Frontiers in Computer Architecture Conference*, sponsor: Citicorp/TTI, pp. 1-21, Los Angeles, CA, Mar. 1986. Invited.

[94] Leah H. Jamieson, Howard Jay Siegel, Edward J. Delp, and Andrew Whinston, "The Mapping of Parallel Algorithms to Reconfigurable Parallel Architectures," *Workshop on Future Directions in Computer Architecture and Software*, sponsor: Army Research Office, pp. 147-154, Charleston, SC, May 1986.

[95] Menkae Jeng and Howard Jay Siegel, "A Fault-Tolerant Multistage Interconnection Network for Multiprocessor Systems Using Dynamic Redundancy," *6th International Conference on Distributed Computer Systems*, sponsor: IEEE Computer Society, pp. 70-77, Cambridge, MA, May 1986.*

[96] Thomas Schwederski, Howard Jay Siegel, Edward J. Delp, Andrew Whinston, and Leah H. Jamieson, "Modeling the PASM Parallel Processing System," *SIAM 1986 National Meeting*, sponsor: SIAM (Society for Industrial and Applied Mathematics), abstract, p. A86, Boston, MA, July 1986.

[97] Nathaniel J. Davis IV and Howard Jay Siegel, "Performance Analysis of Multiple-Packet Multistage Cube Networks and Comparison to Circuit Switching," *1986 International Conference on Parallel Processing*, cosponsor: IEEE Computer Society, pp. 108-114, St. Charles, IL, Aug. 1986. *

[98] Howard Jay Siegel, "Integrating Machine Intelligence into the Parallel Programming Paradigm for Efficiency," *Workshop on Performance Efficient Parallel Programming*, cosponsors:

Carnegie-Mellon University and National Science Foundation, p. 85, Seven Springs, PA, Sep. 1986. Invited.

[99] Menkae Jeng and Howard Jay Siegel, "Implementation Approach and Reliability Estimation of Dynamic Redundancy Networks," *Real-Time Systems Symposium*, sponsor: IEEE Computer Society, pp. 79-88, New Orleans, LA, Dec. 1986.

[100] Thomas Schwederski and Howard Jay Siegel, "Performance Measurements on the PASM Prototype," *Workshop on Instrumentation for Distributed Computing Systems*, cosponsors: IEEE Computer Society and ACM, pp. 49-50, Sanibel Island, FL, Jan. 1987.

[101] Thomas Schwederski, Wayne G. Nation, Howard Jay Siegel, and David G. Meyer, "The Implementation of the PASM Prototype Control Hierarchy," *2nd International Conference on Supercomputing, Vol. I*, sponsor: International Supercomputing Institute, pp. 418-427, Santa Clara, CA, May 1987. Invited.

[102] C. Henry Chu, Edward J. Delp, and Howard Jay Siegel, "Image Understanding on PASM: A User's Perspective," *2nd International Conference on Supercomputing, Vol. I*, sponsor: International Supercomputing Institute, pp. 440-449, Santa Clara, CA, May 1987. Invited.

[103] Thomas L. Casavant, Henry G. Dietz, Thomas Schwederski, Phillip C.-Y. Sheu, and Howard Jay Siegel, "Software Plans for PASM," *2nd International Conference on Supercomputing, Vol. I*, sponsor: International Supercomputing Institute, pp. 428-439, Santa Clara, CA, May 1987. Invited.

[104] Menkae Jeng and Howard Jay Siegel, "The Use of a Dynamic Redundancy Network to Enhance the Reliability of PASM," *2nd International Conference on Supercomputing, Vol. I*, sponsor: International Supercomputing Institute, pp. 311-320, Santa Clara, CA, May 1987.

[105] Howard Jay Siegel, William Tsun-yuk Hsu, Menkae Jeng, and Wayne G. Nation, "Communication Techniques in Parallel Processing," *Conference on Parallel Computing in Science and Engineering, 4th International DFVLR Seminar on Foundations of Engineering Sciences*, sponsor: DFVLR - the Aerospace Research Establishment of West Germany, Bonn, West Germany, June 1987 (proceedings published as Volume 295 of Lecture Notes in Computer Science, Springer-Verlag, Berlin, pp. 35-60, Germany, 1988). Invited.

[106] Thomas Schwederski, Howard Jay Siegel, and Thomas L. Casavant, "Task Migration in a Partitionable Parallel Processing System," *3rd SIAM Conference on Parallel Processing for Scientific Computing*, sponsor: SIAM (Society for Industrial and Applied Mathematics), abstract, p. A48, Los Angeles, CA, Dec. 1987.

[107] Darwen Rau, Jose A. B. Fortes, and Howard Jay Siegel, "Destination Tag Routing Techniques Based on a State Model for the IADM Network," *15th Annual International Symposium on Computer Architecture*, cosponsors: IEEE Computer Society and ACM, pp. 318-324, Honolulu, HI, May 1988.*

[108] Menkae Jeng and Howard Jay Siegel, "Dynamic Partitioning in a Class of Parallel Systems," *8th International Conference on Distributed Computing Systems*, sponsor: IEEE Computer Society, pp. 33-40, San Jose, CA, June 1988.*

[109] Samuel A. Fineberg, Thomas L. Casavant, Thomas Schwederski, and Howard Jay Siegel, "Non-Deterministic Instruction Time Experiments on the PASM System Prototype," *1988 International Conference on Parallel Processing*, Vol. I, sponsor: The Pennsylvania State University, pp. 444-451, St. Charles, IL, Aug. 1988.*

[110] Wayne G. Nation and Howard Jay Siegel, "An Analysis of Disjoint Path Properties in Data Manipulator Networks," *Frontiers '88: The 2nd Symposium on the Frontiers of Massively Parallel Computation*, cosponsors: IEEE Computer Society and the NASA Goddard Space Flight Center, pp. 69-76, Fairfax, VA, Oct. 1988.*

[111] Thomas Schwederski, Howard Jay Siegel, and Thomas L. Casavant, "A Model of Task Migration in Partitionable Parallel Processing Systems," *Frontiers '88: The 2nd Symposium on the Frontiers*

of Massively Parallel Computation, cosponsors: IEEE Computer Society and the NASA Goddard Space Flight Center, pp. 211-214, Fairfax, VA, Oct. 1988.*

[112] Howard Jay Siegel and Jose A. B. Fortes, "Position Statement on Future Directions in the Fault Tolerance of Multicomputer Systems," *ONR Workshop on Future Directions in the Fault Tolerance of Multicomputer Systems*, sponsor: Office of Naval Research, Chicago, IL, Oct. 1988. Invited.

[113] Howard Jay Siegel, "Directions in Parallel Computing Research," *1989 ACM 17th Annual Computer Science Conference*, sponsor: ACM, Louisville, KY, Feb. 1989. Invited plenary presentation.

[114] Thomas L. Casavant, Henry G. Dietz, Phillip C-Y. Sheu, and Howard Jay Siegel, "The PARSE Approach to Programming Non-Shared Memory, Reconfigurable, Parallel Computers," *4th International Conference on Supercomputing*, Vol. I, sponsor: International Supercomputing Institute, pp. 380-389, Santa Clara, CA, May 1989. Invited.

[115] Thomas Schwederski, Howard Jay Siegel, and Thomas L. Casavant, "Task Migration Transfers in Multistage Cube Based Parallel Systems," *1989 International Conference on Parallel Processing, Vol. I*, sponsor: The Pennsylvania State University, pp. 296-305, St. Charles, IL, Aug. 1989.*

[116] Menkae Jeng and Howard Jay Siegel, "A Distributed Management Scheme for Partitionable Parallel Computers," *1989 International Conference on Parallel Processing, Vol. II*, sponsor: The Pennsylvania State University, pp. 57-64, St. Charles, IL, Aug. 1989.*

[117] Howard Jay Siegel, "The PASM Parallel Processing System and Fault Tolerant Multistage Cube Networks," *Conference on Parallel Processing for SDS (Strategic Defense System) Applications*, sponsor: SDIO (Strategic Defense Initiative Organization), McLean, VA, Aug. 1989. Invited.

[118] Victor M. Mendoza-Grado, Leah H. Jamieson, and Howard Jay Siegel, "Logic Control Strategies for Parallel/Distributed Intelligent Systems," *IEEE Mexicon '89*, sponsor: IEEE, Mexico City, Mexico, Sep. 1989.

[119] Dan C. Marinescu, James E. Lumpp, Jr., Thomas L. Casavant, and Howard Jay Siegel, "A Model for Monitoring and Debugging Parallel and Distributed Software," *COMPSAC '89: 13th Annual International Computer Software and Applications Conference*, sponsor: IEEE Computer Society, pp. 81-88, Orlando, FL, Sep. 1989.*

[120] James E. Lumpp, Jr., Samuel A. Fineberg, Wayne G. Nation, Thomas L. Casavant, Edward C. Bronson, Howard Jay Siegel, Pierre H. Pero, Thomas Schwederski, and Dan C. Marinescu, "CAPS - A Coding Aid Used with the PASM Parallel Processing System," *Workshop on Experiences with Building Distributed and Multiprocessor Systems*, cosponsor: USENIX Association, pp. 269-288, Fort Lauderdale, FL, Oct. 1989.

[121] Henry G. Dietz, Howard Jay Siegel, Will Cohen, Matt O'Keefe, Abderaazek Zaafrani, Michael Phillip, and Chi-Hung Chi, "A Compiler-Oriented Architecture: The CARP Machine," *4th SIAM Conference on Parallel Processing for Scientific Computing*, sponsor: SIAM (Society for Industrial and Applied Mathematics), abstract, p. A37, Chicago, IL, Dec. 1989.

[122] Howard Jay Siegel, "Reconfigurable Mixed-Mode Parallel Systems: Where We Are and Where We Need To Go," *ONR Workshop on Highly Parallel Computing for Scientific Problems in Chemical Physics and Combustion Phenomena*, sponsor: Office of Naval Research, Princeton, NJ, Jan. 1990. Invited.

[123] Howard Jay Siegel, Wayne G. Nation, and Mark D. Allemang, "The Organization of the PASM Reconfigurable Parallel Processing System," *1990 Parallel Computing Workshop*, sponsor: the Dept. of Computer and Information Science at The Ohio State University, pp. 1-12, Columbus, OH, Mar. 1990 (reprinted in the *Kyoto International Software Symposium: KISS91*, pp. 43-54, Sep. 1991). Invited - one of three "Featured Speakers."

[124] Howard Jay Siegel, James B. Armstrong, and Daniel W. Watson, "Mapping Tasks onto the PASM Reconfigurable Parallel Processing System," *1990 Parallel Computing Workshop*, sponsor: the Dept. of Computer and Information Science at The Ohio State University, pp. 13-24,

Columbus, OH, Mar. 1990 (reprinted in the *Kyoto International Software Symposium: KISS91*, pp. 55-66, Sep. 1991). Invited - one of three "Featured Speakers."

[125] James E. Lumpp, Jr., Thomas L. Casavant, Howard Jay Siegel, and Dan C. Marinescu, "Specification and Identification of Events for Debugging and Performance Monitoring of Distributed Multiprocessor Systems," *10th International Conference on Distributed Computing Systems*, sponsor: IEEE Computer Society, pp. 476-483, Paris, France, May 1990.*

[126] Thomas Schwederski, Howard Jay Siegel, and Thomas L. Casavant, "Optimizing Task Migration Transfers Using Multistage Cube Networks," *1990 International Conference on Parallel Processing, Vol. I*, sponsor: The Pennsylvania State University, pp. 51-58, St. Charles, IL, Aug. 1990 (reprinted in *Interconnection Networks for High-Performance Parallel Computers*, edited by I. D. Scherson and A. S. Youssef, IEEE Computer Society Press, Los Alamitos, CA, pp. 636-643, 1994).*

[127] Samuel A. Fineberg, Thomas L. Casavant, and Howard Jay Siegel, "Experimental Analysis of a Mixed-Mode Parallel Architecture Performing Sequence Sorting," *1990 International Conference on Parallel Processing, Vol. III*, sponsor: The Pennsylvania State University, pp. 370-371, St. Charles, IL, Aug. 1990.

[128] Mark A. Nichols, Howard Jay Siegel, Henry G. Dietz, Russell W. Quong, and Wayne G. Nation, "Minimizing Memory Requirements for Partitionable SIMD/SPMD Machines," *1990 International Conference on Parallel Processing, Vol. I*, sponsor: The Pennsylvania State University, pp. 84-91, St. Charles, IL, Aug. 1990.*

[129] Wayne G. Nation, Samuel A. Fineberg, Mark D. Allemang, Thomas Schwederski, Thomas L. Casavant, and Howard Jay Siegel, "Efficient Masking Techniques for Large-Scale SIMD Architectures," *Frontiers '90: The 3rd Symposium on the Frontiers of Massively Parallel Computation*, cosponsors: IEEE Computer Society and NASA Goddard Space Flight Center, pp. 259-264, College Park, MD, Oct. 1990.

[130] Mark A. Nichols, Howard Jay Siegel, and Henry G. Dietz, "Data Management and Control-Flow Constructs in a SIMD/SPMD Parallel Language/Compiler," *Frontiers '90: The 3rd Symposium on the Frontiers of Massively Parallel Computation*, cosponsors: IEEE Computer Society and NASA Goddard Space Flight Center, pp. 397-406, College Park, MD, Oct. 1990.

[131] Howard Jay Siegel, "PASM: A Reconfigurable Parallel Processing System," *Workshop on Parallel Processors*, cosponsors: University of Maryland Institute for Advanced Computer Studies (UMIACS) and DARPA Graduate Research Assistantships in Parallel Processing Program, College Park, MD, Oct. 1990. Invited.

[132] Samuel A. Fineberg, Thomas L. Casavant, and Howard Jay Siegel, "Experimental Analysis of Communication/Synchronization Aspects of a Mixed-Mode Parallel Architecture via Synthetic Computations," *Supercomputing `90*, cosponsors: IEEE Computer Society and ACM, pp. 637-646, New York, NY, Nov. 1990.

[133] Thomas B. Berg and Howard Jay Siegel, "Instruction Execution Trade-Offs for SIMD vs. MIMD vs. Mixed-Mode Parallelism," *5th International Parallel Processing Symposium (IPPS '91)*, sponsor: IEEE Computer Society, pp. 301-308, Anaheim, CA, May 1991.*

[134] Mikhail J. Atallah, Christina Lock, Dan C. Marinescu, Howard Jay Siegel, and Thomas L. Casavant, "Co-Scheduling Compute-Intensive Tasks on a Network of Workstations: Model and Algorithm," *11th International Conference on Distributed Computing Systems*, sponsor: IEEE Computer Society, pp. 344-352, Arlington, TX, May 1991.*

[135] Howard Jay Siegel, "Infrastructure for Parallel Processing Research," *NSF/CISE Institutional Infrastructure Workshop*, sponsor: National Science Foundation, Purdue University, West Lafayette, IN, May 1991. Invited.

[136] Thomas B. Berg, Shin-Dug Kim, and Howard Jay Siegel, "Impact of Temporal Juxtaposition on the Isolated Phase Optimization Approach to Mapping an Algorithm to Mixed-Mode Architectures," *1991 International Conference on Parallel Processing (ICPP '91), Vol. I*, sponsor: The Pennsylvania State University, pp. 110-118, St. Charles, IL, Aug. 1991.*

[137] Thomas Schwederski, Eduard Bernath, Gerhard Roos, Wayne G. Nation and Howard Jay Siegel, "Fault Side-Effects in Fault-Tolerant Multistage Interconnection Networks," *1991 International Conference on Parallel Processing (ICPP '91), Vol. I*, sponsor: The Pennsylvania State University, pp. 313-317, St. Charles, IL, Aug. 1991.*

[138] Howard Jay Siegel, "The PASM Reconfigurable Parallel Processing System," *Kyoto International Software Symposium: KISS91*, cosponsors: Advanced Software Technology and Mechatronics Research Institute of Kyoto and the Ritsumeikan University Institute of Science and Engineering, pp. 43-66, Kyoto, Japan, Sep. 1991 (proceedings entry was reprints of "The Organization of the PASM Reconfigurable Parallel Processing System" and "Mapping Tasks onto the PASM Reconfigurable Parallel Processing System," from the *1990 Parallel Computing Workshop*). Invited.

[139] Mark A. Nichols, Howard Jay Siegel, and Henry G. Dietz, "Execution Mode Management and CU/PE Overlap in an SIMD/SPMD Parallel Language/Compiler," *COMPSAC '91: 15th Annual International Computer Software and Applications Conference*, cosponsors: IEEE Computer Society and the Information Processing Society of Japan, pp. 392-397, Tokyo, Japan, Sep. 1991.*

[140] Howard Jay Siegel, James B. Armstrong, Daniel W. Watson, Wayne G. Nation, and Mark D. Allemang, "Aspects of Mapping Tasks onto Parallel Processing Systems," *COMPSAC '91: 15th Annual International Computer Software and Applications Conference*, cosponsors: IEEE Computer Society and the Information Processing Society of Japan, pp. 84-89, Tokyo, Japan, Sep. 1991. Invited.

[141] James B. Armstrong, Mark A. Nichols, Howard Jay Siegel, and Leah H. Jamieson, "Examining the Effects of CU/PE Overlap and Synchronization Overhead when Using the Complete Sums Approach to Image Correlation," *3rd IEEE Symposium on Parallel and Distributing Processing (SPDP '91)*, cosponsors: IEEE Computer Society and ACM, pp. 224-232, Dallas, TX, Dec. 1991.*

[142] John K. Antonio and Howard Jay Siegel, "Research Issues for Interconnection Networks for Electronic MIMD Architectures," *Workshop on Reconfigurable, Free-Space Optical Interconnects*, cosponsors: Air Force Office of Scientific Research and the National Science Foundation, pp. 144-149, Boulder, CO, Mar. 1992. Invited.

[143] Mu-Cheng Wang, Shin-Dug Kim, Mark A. Nichols, Richard F. Freund, Howard Jay Siegel, and Wayne G. Nation, "Augmenting the Optimal Selection Theory for Superconcurrency," *Workshop on Heterogeneous Processing*, sponsor: Oak Ridge National Laboratory (Dept. of Energy), pp. 13-22, Beverly Hills, CA, Mar. 1992.

[144] Wayne G. Nation, Anthony A. Maciejewski, and Howard Jay Siegel, "Exploiting Concurrency Among Tasks in Partitionable Parallel Processing Systems," *6th International Parallel Processing Symposium (IPPS '92)*, sponsor: IEEE Computer Society, pp. 30-38, Beverly Hills, CA, Mar. 1992.*

[145] Nicholas Giolmas, Daniel W. Watson, David M. Chelberg, and Howard Jay Siegel, "A Parallel Approach to Hybrid Range Image Segmentation," *6th International Parallel Processing Symposium (IPPS '92)*, sponsor: IEEE Computer Society, pp. 334-342, Beverly Hills, CA, Mar. 1992.*

[146] Howard Jay Siegel and Daniel W. Watson, "PASM -- Status and Goals," Parallel System Fair at the *6th International Parallel Processing System*, sponsor: IEEE Computer Society, pp. 4-10, Beverly Hills, CA, Mar. 1992. Invited.

[147] Howard Jay Siegel and James Armstrong, "Mapping Tasks onto Reconfigurable Parallel Processing Systems," *NATO Advanced Research Workshop on Software for Parallel Computation*, sponsor: NATO, Cetraro, Italy, June 1992. Invited.

[148] Gene Saghi, Howard Jay Siegel, and Jose A. B. Fortes, "On the Viability of a Quantitative Model of System Reconfiguration Due to a Fault," *1992 International Conference on Parallel Processing (ICPP '92), Vol. I*, sponsor: The Pennsylvania State University, pp. 233-242, St. Charles, IL, Aug. 1992.*

[149] Howard Jay Siegel, John K. Antonio, and Kathy J. Liszka, "Metrics for Metrics: Why It Is Difficult to Compare Interconnection Networks OR How Would You Compare an Alligator to an Armadillo?" *The New Frontiers: A Workshop on Future Directions of Massively Parallel Processing*, cosponsors: IEEE Computer Society and NASA Goddard Space Flight Center, pp. 97-106, McLean, VA, Oct. 1992. Invited.

[150] Howard Jay Siegel, Seth Abraham, William L. Bain, Kenneth E. Batcher, Thomas L. Casavant, Doug DeGroot, Jack B. Dennis, David C. Douglas, Tse-yun Feng, James R. Goodman, Alan Huang, Harry F. Jordan, J. Robert Jump, Yale N. Patt, Alan Jay Smith, James E. Smith, Lawrence Snyder, Harold S. Stone, Russ Tuck, and Benjamin W. Wah, "Summary of the Report of the NSF-Sponsored Purdue Workshop on Grand Challenges in Computer Architecture for the Support of High Performance Computing," *Frontiers '92: The 4th Symposium on the Frontiers of Massively Parallel Computation*, cosponsors: IEEE Computer Society and NASA Goddard Space Flight Center, pp. 76-82, McLean, VA, Oct. 1992. Invited.

[151] Howard Jay Siegel, "Parallel Algorithm Mapping Techniques," *4th IEEE Symposium on Parallel and Distributed Processing (SPDP '92)*, sponsor: IEEE Computer Society, Arlington, TX, Dec. 1992. Invited – I was one of three keynote speakers.

[152] Howard Jay Siegel, "Mixed-Mode Parallelism," *The Conference on High Speed Computing*, cosponsors: Lawrence Livermore National Laboratory and Los Alamos National Laboratory, Gleneden Beach, OR, Mar./Apr. 1993. Invited.

[153] Daniel W. Watson, Howard Jay Siegel, John K. Antonio, Mark A. Nichols, and Mikhail J. Atallah, "A Framework for Compile-Time Selection of Parallel Modes in an SIMD/SPMD Heterogeneous Environment," *2nd Workshop on Heterogeneous Processing*, sponsor: IEEE Computer Society, pp. 57-64, Newport Beach, CA, Apr. 1993.

[154] Gene Saghi, H. J. Siegel, and Jeffrey L. Gray, "Mapping onto Three Classes of Parallel Machines: A Case Study Using the Cyclic Reduction Algorithm," *7th International Parallel Processing Symposium (IPPS '93)*, sponsor: IEEE Computer Society, pp. 238-247, Newport Beach, CA, Apr. 1993.*

[155] James B. Armstrong and Howard Jay Siegel, "Multiple Quadratic Forms: A Case Study in the Design of Scalable Algorithms," *NASA Graduate Student Researchers Program 1993 Annual Symposium*, sponsor: NASA, abstract, p. 5, Washington, D.C., May 1993.

[156] Wayne G. Nation, Gene Saghi, and Howard Jay Siegel, "Properties of Interconnection Networks for Large-Scale Parallel Processing Systems," *ISIPCALA '93: International Summer Institute on Parallel Computer Architectures, Languages, and Algorithms*, cosponsors: University of Iowa, the Czech Technical University, and the Czech ACM Chapter, pp. 51-82, Prague, Czech Republic, July 1993.

[157] Mu-Cheng Wang, Howard Jay Siegel, Mark A. Nichols, and Seth Abraham, "Reducing the Effect of Hot Spots by Using a Multipath Network," *1993 International Conference on Parallel Processing (ICPP '93)*, Vol. I, sponsor: The Pennsylvania State University, pp. 274-281, St. Charles, IL, Aug. 1993.*

[158] Mu-Cheng Wang, Wayne G. Nation, James B. Armstrong, Howard Jay Siegel, Shin-Dug Kim, Mark A. Nichols, and Michael Gherrity, "Multiple Quadratic Forms: A Case Study in the Design of Scalable Algorithms," *1993 International Conference on Parallel Processing (ICPP '93), Vol. III*, sponsor: The Pennsylvania State University, pp. 37-46, St. Charles, IL, Aug. 1993.*

[159] Gene Saghi, Howard Jay Siegel, and Jose A. B. Fortes, "On the Practical Application of a Quantitative Model of System Reconfiguration Due to a Fault," *1993 International Conference on Parallel Processing (ICPP '93), Vol. III*, sponsor: The Pennsylvania State University, pp. 248-252, St. Charles, IL, Aug. 1993.*

[160] Henry G. Dietz and Howard Jay Siegel, "Purdue University Research Toward a Virtual Machine Programming Model for High-Performance Computing," *Rome Laboratory Workshop on Virtual Machine Concepts*, sponsor: Rome Laboratory, Rome, NY, Oct. 1993. Invited.

[161] Richard M. Born, Howard Jay Siegel, Michael Jurczyk, and Thomas Schwederski, "Massively Parallel Simulation of Multistage Interconnection Networks," *2nd German Workshop on Interconnection Networks for Parallel Computers and Broadband Communication Systems*, cosponsors: German Society for Information Technology and the German Computer Science Society, pp. 13-19, Stuttgart, Germany, Oct. 1993.

[162] Robert G. Palmer, Jr., John K. Antonio, Janet McWaid, and Howard Jay Siegel, "Parallel Algorithm for a Tree Structured Vector Quantizer for Image Compression," *DCC '94: Data Compression Conference*, sponsor: IEEE Computer Society, abstract, p. 507, Snowbird, UT, Mar. 1994.

[163] Daniel W. Watson, John K. Antonio, Howard Jay Siegel, and Mikhail J. Atallah, "Static Program Decomposition Among Machines in an SIMD/SPMD Heterogeneous Environment with Non-Constant Mode Switching Costs," *3rd Heterogeneous Computing Workshop (HCW '94)*, sponsor: IEEE Computer Society, pp. 58-65, Cancun, Mexico, Apr. 1994.

[164] Renard R. Ulrey, Anthony A. Maciejewski, and Howard Jay Siegel, "Parallel Algorithms for Singular Value Decomposition," *8th International Parallel Processing Symposium (IPPS '94)*, sponsor: IEEE Computer Society, pp. 524-533, Cancun, Mexico, Apr. 1994.*

[165] James B. Armstrong and Howard Jay Siegel, "Dynamic Task Migration Between SIMD and SPMD Virtual Machines," *NASA Graduate Student Researchers Program 1994 Annual Symposium*, sponsor: NASA, abstract, p. 5, Washington, D.C., May 1994.

[166] James B. Armstrong, Mark A. Nichols, Howard Jay Siegel, and Kenneth H. Casey, "Parallel Image Correlation: A Case Study to Examine SIMD/MIMD Trade-offs for Scalable Parallel Algorithms," *1994 International Conference on Parallel Processing (ICPP '94), Vol. I*, sponsor: The Pennsylvania State University, pp. 241-245, St. Charles, IL, Aug. 1994.*

[167] Michael Jurczyk, Thomas Schwederski, Richard M. Born, Howard Jay Siegel, and Seth Abraham, "Strategies for the Massively Parallel Simulation of Interconnection Networks," *1994 International Conference on Parallel Processing (ICPP '94), Vol. I*, sponsor: The Pennsylvania State University, pp. 21-25, St. Charles, IL, Aug. 1994.*

[168] James B. Armstrong, Howard Jay Siegel, William Cohen, Min Tan, Henry G. Dietz, and Jose A. B. Fortes, "Dynamic Task Migration from SPMD to SIMD Virtual Machines," *1994 International Conference on Parallel Processing (ICPP '94), Vol. II*, sponsor: The Pennsylvania State University, pp. 160-169, St. Charles, IL, Aug. 1994.*

[169] Howard Jay Siegel, "High-Performance Heterogeneous Computing," *7th International Conference on Parallel and Distributed Computing Systems*, sponsor: ISCA (International Society for Computers and Their Applications), Las Vegas, NV, Oct. 1994. Invited – I was one of four keynote speakers.

[170] Howard Jay Siegel, John K. Antonio, Richard C. Metzger, Min Tan, and Yan Alexander Li, "The Goals of and Open Problems in High-Performance Heterogeneous Computing," *The 23rd Applied Imagery Pattern Recognition Workshop - Image and Information Systems: Applications and Opportunities*, sponsor: SPIE (Society of Photo-Optical Instrumentation Engineers), pp. 205-217, Washington, DC, Oct. 1994. Invited.

[171] Howard Jay Siegel and John K. Antonio, "Views of Mixed-Mode Computing and Network Evaluation," *International Symposium on Parallel Architectures, Algorithms, and Networks (ISPAN '94)*, sponsor: Japan Advanced Institute of Science and Technology, pp. 1-8, Kanazawa, Japan, Dec. 1994. Invited – I was one of five keynote speakers.

[172] Robert G. Palmer, Jr., Howard Jay Siegel, Janet M. Siegel, and John K. Antonio, "Implementation of a Tree-Structured Vector Quantizer for Image Compression on the MasPar MP-1 Parallel Machine," *1994 International Conference on Parallel and Distributed Systems (ICPADS '94)*, sponsor: National Chiao Tung University, pp. 242-247, Hsinchu, Taiwan, Dec. 1994.*

[173] Howard Jay Siegel, John K. Antonio, Min Tan, Richard C. Metzger, Richard F. Freund, and Yan A. Li, "Heterogeneous Computing: One Approach to Sustained Petaflops Performance," *The*

Petaflops Frontier Workshop at the 5th Symposium on the Frontiers of Massively Parallel Computation, sponsor: NASA Goddard Space Flight Center, pp. 27-39, McLean, VA, Feb. 1995.

[174] Howard Jay Siegel, "Interconnect Issues in Future High-Performance Computing Architectures: Parallel and Heterogeneous Systems," *NEC Research Institute Workshop on Optical Interconnects for High-Speed Digital Systems*, sponsor: NEC Research Institute, Princeton, NJ, Feb. 1995. Invited.

[175] Raghunandan Janardha, Thomas J. Downar, John John E. So, Howard Jay Siegel, and Ariel Sharon, "The Application of SIMD, MIMD, and Mixed-Mode Parallel Computing to Nuclear Reactor Simulation," *High Performance Computing Symposium 1995, part of the 1995 Simulation MultiConference*, sponsor: The Society for Computer Simulation, pp. 175-182, Phoenix, AZ, Apr. 1995.

[176] Min Tan, John K. Antonio, Howard Jay Siegel, and Yan Alexander Li, "Scheduling and Data Relocation for Sequentially Executed Subtasks in a Heterogeneous Computing System," *4th Heterogeneous Computing Workshop (HCW '95)*, sponsor: IEEE Computer Society, pp. 109-120, Santa Barbara, CA, Apr. 1995.

[177] Yan Alexander Li, John K. Antonio, Howard Jay Siegel, Min Tan, and Daniel W. Watson, "Estimating the Distribution of Execution Times for SIMD/SPMD Mixed-Mode Programs," *4th Heterogeneous Computing Workshop (HCW '95)*, sponsor: IEEE Computer Society, pp. 35-46, Santa Barbara, CA, Apr. 1995.

[178] Gene Saghi and Howard Jay Siegel, "Compiler Techniques for Increasing CU/PE Overlap in SIMD Machines," *9th International Parallel Processing Symposium (IPPS '95)*, sponsor: IEEE Computer Society, pp. 369-375, Santa Barbara, CA, Apr. 1995.*

[179] Nirav Kapadia, Bernd Lichtenberg, Jose A. B. Fortes, Jeffery L. Gray, Howard Jay Siegel, and Kevin J. Webb, "Parallel Solution of Unstructured Sparse Finite Element Equations," *1995 IEEE Antennas and Propagation Society International Symposium*, sponsor: IEEE Antennas and Propagation Society, pp. 1330-1333, Newport Beach, CA, June 1995.

[180] Min Tan, Janet M. Siegel, and Howard Jay Siegel, "Parallel Implementation of Block-Based Motion Vector Estimation for Video Compression on the MasPar MP-1 and PASM," *1995 International Conference on Parallel Processing (ICPP '95)*, Vol. III, sponsor: The Pennsylvania State University, pp. 21-24, Oconomowoc, WI, Aug. 1995.*

[181] Howard Jay Siegel, John K. Antonio, Muthucumaru Maheswaran, and Min Tan, "High-Performance Heterogeneous Computing: Goals and Open Problems," *2nd Australasian Conference on Parallel and Real-Time Systems (PART '95)*, sponsor: Curtin University of Technology, pp. 3-10, Fremantle, Western Australia, Australia, Sep. 1995. Invited - one of two speakers.

[182] Howard Jay Siegel, "Mixed-Mode and Mixed-Machine Heterogeneous Computing," *7th IASTED - ISMM International Conference on Parallel and Distributed Computing and Systems*, cosponsors: The International Associated of Science and Technology for Development and The International Society for Mini and Microcomputers, Washington, DC, Oct. 1995. Invited – I was the keynote speaker.

[183] James B. Armstrong and Howard Jay Siegel, "Dynamic Task Migration from SIMD to SPMD Virtual Machines," *1st IEEE International Conference on Engineering of Complex Computer Systems (ICECCS '95), sponsor: IEEE Computer Society*, pp. 326-333, Fort Lauderdale, FL, Nov. 1995. Received "Best Paper" award.*

[184] Mitchell D. Theys, Richard M. Born, Mark D. Allemang, and Howard Jay Siegel, "Morphological Image Processing on Parallel Machines," *1st Midwest Meeting on High Performance Systems*, sponsor: Northwestern University, Evanston, IL, Mar. 1996.

[185] Lee Wang, Howard Jay Siegel, and Vwani Roychowdhury, "A Genetic-Algorithm-Based Approach for Task Matching and Scheduling in Heterogeneous Environments," *5th Heterogeneous Computing Workshop (HCW '96)*, sponsor: IEEE Computer Society, pp. 72-85, Honolulu, HI, Apr. 1996.

[186] Daniel W. Watson, John K. Antonio, Howard Jay Siegel, Rohit Gupta, and Mikhail J. Atallah, "Static Matching of Ordered Program Segments to Dedicated Machines in a Heterogeneous Computing Environment," *5th Heterogeneous Computing Workshop (HCW '96)*, sponsor: IEEE Computer Society, pp. 24-37, Honolulu, HI, Apr. 1996.

[187] Stephen L. Ambrosius, Richard F. Freund, Stephen L. Scott, and Howard Jay Siegel, "Work-Based Performance Measurement and Analysis of Virtual Heterogeneous Machines," *5th Heterogeneous Computing Workshop (HCW '96)*, sponsor: IEEE Computer Society, pp. 46-55, Honolulu, HI, Apr. 1996.

[188] Howard Jay Siegel, Lee Wang, Vwani P. Roychowdhury, and Min Tan, "Computing with Heterogeneous Parallel Machines: Advantages and Challenges," *2nd International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN '96)*, sponsor: Chinese National Research Center for Intelligent Computing Systems (NCIC), pp. 368-374, Beijing, China, June 1996. Invited – I was one of four keynote speakers.

[189] Howard Jay Siegel, Tracy D. Braun, Henry G. Dietz, Mark B. Kulaczewski, Muthucumaru Maheswaran, Pierre H. Pero, Janet M. Siegel, John John E. So, Min Tan, Mitchell D. Theys, and Lee Wang, "The PASM Project: A Study of Reconfigurable Parallel Computing," *2nd International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN '96)*, sponsor: Chinese National Research Center for Intelligent Computing Systems (NCIC), pp. 529-536, Beijing, China, June 1996. Invited.

[190] Ranga S. Ramanujan, Jordan C. Bonney, Kenneth J. Thurber, Rakesh Jha, and Howard Jay Siegel, "A Framework for Automated Software Partitioning and Mapping for Distributed Multiprocessors," *2nd International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN '96)*, sponsor: Chinese National Research Center for Intelligent Computing Systems (NCIC), pp. 138-145, Beijing, China, June 1996. Invited.

[191] John John E. So, Raghunandan Janardhan, Thomas J. Downar, and Howard Jay Siegel, "Mapping the Preconditioned Conjugate Gradient Algorithm for Neutron Diffusion Applications onto Parallel Machines," *1996 International Conference on Parallel Processing (ICPP '96), Vol. II*, cosponsors: International Association for Computers and Communications and The Pennsylvania State University, pp. 1-10, Bloomingdale, IL, Aug. 1996.*

[192] Howard Jay Siegel, "Introduction to the 1996 ICPP Workshop on Challenges for Parallel Processing," *1996 ICPP Workshop on Challenges for Parallel Processing (held in conjunction with the 1996 International Conference on Parallel Processing)*, cosponsors: International Association for Computers and Communications and The Pennsylvania State University, pp. 1-6, Bloomingdale, IL, Aug. 1996. Invited.

[193] Howard Jay Siegel, "Domain-Specific Processing in the Context of Heterogeneous Computing," *Workshop on Domain Specific Systems*, sponsors: IEEE Computer Society, Annapolis, MD, Oct. 1996. Invited.

[194] Mitchell D. Theys, Richard M. Born, Mark D. Allemang, and Howard Jay Siegel, "Morphological Image Processing on Three Parallel Machines," *Frontiers '96: The 6th Symposium on the Frontiers of Massively Parallel Computation*, sponsor: IEEE Computer Society, pp. 327-334, Annapolis, MD, Oct. 1996.*

[195] John R. Budenske, Ranga S. Ramanujan, and Howard Jay Siegel, "On-Line Use of Off-Line Derived Mappings for Iterative Automatic Target Recognition Tasks and a Particular Class of Hardware Platforms," *6th Heterogeneous Computing Workshop (HCW '97)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 96-110, Geneva, Switzerland, Apr. 1997.

[196] Min Tan and Howard Jay Siegel, "A Stochastic Model of a Dedicated Heterogeneous Computing System for Establishing a Greedy Approach to Developing Data Relocation Heuristics," *6th Heterogeneous Computing Workshop (HCW '97)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 122-134, Geneva, Switzerland, Apr. 1997.

[197] Lee Wang, Ranga S. Ramanujan, James A. Newhouse, Maher Kaddoura, Atiq Ahamad, Kenneth J. Thurber, and Howard Jay Siegel, "An Objective Approach to Assessing Relative Perceptual

Quality of MPEG-Encoded Video Sequences," *1997 IEEE International Conference on Multimedia Computing Systems (IEEE Multimedia Systems '97)*, sponsor: IEEE Computer Society, pp. 622-623, Ottawa, Canada, June 1997.

[198] Howard Jay Siegel, "Off-Line, On-Line, and Front-Line Heterogeneous Computing," *1997 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '97), Volume III*, sponsor: CSREA (Computer Science Research, Education, and Applications), pp. 1174-1183, Las Vegas, NV, June/July 1997. Invited – I was one of two keynote speakers.

[199] Rohit Gupta, Mitchell D. Theys, and Howard Jay Siegel, "Background Compensation and an Active-Camera Motion Tracking Algorithm," *1997 International Conference on Parallel Processing (ICPP '97)*, cosponsors: International Association for Computers and Communications and The Ohio State University, pp. 422-430, Bloomingdale, IL, Aug. 1997.*

[200] Mark B. Kulaczewski and Howard Jay Siegel, "Implementations of a Feature-Based Visual Tracking Algorithm on Two MIMD Machines," *1997 International Conference on Parallel Processing (ICPP '97)*, cosponsors: International Association for Computers and Communications and The Ohio State University, pp. 431-440, Bloomingdale, IL, Aug. 1997.*

[201] Howard Jay Siegel and Muthucumaru Maheswaran, "Mapping Tasks onto Heterogeneous Computing Systems," *IX Simposio Brasileiro de Arquitetura de Computadores - Processamento de Alto Desempenho (SBAC-PAD '97) (IX Brazilian Symposium on Computer Architectures - High Performance Computing)*, sponsor: SBC - Sociedade Brasileria de Computacao (Brazilian Computing Society), pp. 3-17, Campos do Jordao, Sao Paulo, Brazil, Oct. 1997. Invited – I was one of two keynote/tutorial speakers.

[202] John R. Budenske, Ranga S. Ramanujan, and Howard Jay Siegel, "Modeling ATR Applications for Intelligent Execution upon a Heterogeneous Computing Platform," *1997 IEEE International Conference on Systems, Man, and Cybernetics (SMC `97)*, sponsor: IEEE, pp. 649-656, Orlando, FL, Oct. 1997.

[203] Muthucumaru Maheswaran, Tracy D. Braun, and Howard Jay Siegel, "High-Performance Mixed-Machine Heterogeneous Computing," *6th Euromicro Workshop on Parallel and Distributed Processing*, sponsor: Euromicro, pp. 3-9, Madrid, Spain, Jan. 1998. Invited – I was one of two keynote speakers.

[204] Min Tan, Mitchell D. Theys, Howard Jay Siegel, Noah B. Beck, and Michael Jurczyk, "A Mathematical Model, Heuristic, and Simulation Study for a Basic Data Staging Problem in a Heterogeneous Networking Environment," *7th Heterogeneous Computing Workshop (HCW '98)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 115-129, Orlando, FL, Mar. 1998.

[205] Muthucumaru Maheswaran and Howard Jay Siegel, "A Dynamic Matching and Scheduling Algorithm for Heterogeneous Computing Systems," *7th Heterogeneous Computing Workshop (HCW '98)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 57-69, Orlando, FL, Mar. 1998.

[206] Richard F. Freund, Michael Gherrity, Stephen Ambrosius, Mark Campbell, Mike Halderman, Debra Hensgen, Elaine Keith, Taylor Kidd, Matt Kussow, John D. Lima, Francesca Mirabile, Lantz Moore, Brad Rust, and Howard Jay Siegel, "Scheduling Resources in Multi-User, Heterogeneous, Computing Environments with SmartNet," *7th Heterogeneous Computing Workshop (HCW '98)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 184-199, Orlando, FL, Mar. 1998. Invited.

[207] Mark B. Kulaczewski and Howard Jay Siegel, "SIMD and Mixed-Mode Implementations of a Visual Tracking Algorithm," *Merged 12th International Parallel Processing Symposium & 9th Symposium on Parallel and Distributed Processing (IPPS/SPDP '98)*, sponsor: IEEE Computer Society, pp. 716-720, Orlando, FL, Apr. 1998.*

[208] Lee Wang, Anthony A. Maciejewski, Howard Jay Siegel, and Vwani P. Roychowdhury, "A Comparative Study of Five Parallel Genetic Algorithms Using The Traveling Salesman

Problem," *Merged 12th International Parallel Processing Symposium & 9th Symposium on Parallel and Distributed Processing (IPPS/SPDP '98)*, sponsor: IEEE Computer Society, pp. 345-349, Orlando, FL, Apr. 1998.*

[209] Muthucumaru Maheswaran, Kevin J. Webb, and Howard Jay Siegel, "Reducing the Synchronization Overhead in Parallel Nonsymmetric Krylov Algorithms on MIMD Machines," *1998 International Conference on Parallel Processing (ICPP '98)*, cosponsors: International Association for Computers and Communications and The Ohio State University, pp. 405-413, Minneapolis, MN, Aug. 1998.*

[210] Tracy D. Braun, Howard Jay Siegel, Noah Beck, Ladislau Boloni, Muthucumaru Maheswaran, Albert I. Reuther, James P. Robertson, Mitchell D. Theys, and Bin Yao, "A Taxonomy for Describing Matching and Scheduling Heuristics for Mixed-Machine Heterogeneous Computing Systems," *Workshop on Advances in Parallel and Distributed Systems (APADS)*, in the proceedings of the *17th IEEE Symposium on Reliable Distributed Systems*, sponsor: IEEE Computer Society, pp. 330-335, West Lafayette, IN, Oct. 1998.

[211] Muthucumaru Maheswaran, Shoukat Ali, Howard Jay Siegel, Debra Hensgen, and Richard F. Freund, "Dynamic Matching and Scheduling of a Class of Independent Tasks onto Heterogeneous Computing Systems," *8th Heterogeneous Computing Workshop (HCW '99)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 30-44, San Juan, Puerto Rico, Apr. 1999.

[212] Tracy D. Braun, Howard Jay Siegel, Noah Beck, Ladislau Boloni, Richard F. Freund, Debra Hensgen, Muthucumaru Maheswaran, Albert I. Reuther, James P. Robertson, Mitchell D. Theys, and Bin Yao, "A Comparison Study of Static Mapping Heuristics for a Class of Meta-tasks on Heterogeneous Computing Systems," *8th Heterogeneous Computing Workshop (HCW '99)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 15-29, San Juan, Puerto Rico, Apr. 1999.

[213] Debra A. Hensgen, Taylor Kidd, David St. John, Matthew C. Schnaidt, Howard Jay Siegel, Tracy D. Braun, Muthucumaru Maheswaran, Shoukat Ali, Jong-Kook Kim, Cynthia Irvine, Tim Levin, Roger Wright, Richard F. Freund, Matt Kussow, Michael Godfrey, Alpay Duman, Paul Carff, Shirley Kidd, Viktor Prasanna, Prashanth Bhat, and Ammar Alhusaini, "An Overview of MSHN: The Management System for Heterogeneous Networks," *8th Heterogeneous Computing Workshop (HCW '99)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 184-198, San Juan, Puerto Rico, Apr. 1999. Invited.

[214] Tracy D. Braun, Anthony A. Maciejewski, and Howard Jay Siegel, "Parallel Algorithms for Singular Value Decomposition as Applied to Failure Tolerant Manipulators," *Merged 13th International Parallel Processing Symposium & 10th Symposium on Parallel and Distributed Processing (IPPS/SPDP '99)*, sponsor: IEEE Computer Society, pp. 343-349, San Juan, Puerto Rico, Apr. 1999.*

[215] Jong-Kook Kim, Debra A. Hensgen, Taylor Kidd, Howard Jay Siegel, David St. John, Cynthia Irvine, Tim Levin, N. Wayne Porter, Viktor K. Prasanna, and Richard F. Freund, "QoS Measure Framework for Distributed Heterogeneous Networks," *The Fourth Midwest Meeting on High Performance Systems*, Ann Arbor, MI, May 1999.

[216] Yu-Kwong Kwok, Anthony A. Maciejewski, Howard Jay Siegel, Arif Ghafoor, and Ishfaq Ahmad, "Evaluation of A Semi-Static Approach to Mapping Dynamic Iterative Tasks onto Heterogeneous Computing Systems," *1999 International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN '99)*, pp. 204-209, Fremantle, Australia, June 1999.

[217] Surjamukhi Chatterjea, Edwin K. P. Chong, Howard Jay Siegel, Steven D. Jones, Michael Jurczyk, and I-Jeng Wang, "Quality of Service Attributes in a Hierarchical System for Global Information Dissemination: A Preliminary Study," *1999 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA '99), Volume II*, cosponsors: CSREA, KIPS, et al., Special Session on Quality of Service in High-Performance Distributed Systems, pp. 1076-1082, Las Vegas, NV, June/July 1999.*

[218] Jong-Kook Kim, Debra A. Hensgen, Taylor Kidd, Howard Jay Siegel, David St. John, Cynthia Irvine, Tim Levin, N. Wayne Porter, Viktor K. Prasanna, and Richard F. Freund, "A QoS Performance Measure Framework for Distributed Heterogeneous Networks," *8th Euromicro Workshop on Parallel and Distributed Processing (PDP 2000)*, sponsor: Euromicro, pp. 18-27, Rhodes, Greece, Jan. 2000.

[219] Mitchell D. Theys, Noah B. Beck, Howard Jay Siegel, Michael Jurczyk, and Min Tan, "Scheduling Heuristics for Data Requests in an Oversubscribed Network with Priorities and Deadlines," *20th International Conference on Distributed Computing Systems (ICDCS 2000)*, sponsor: IEEE Computer Society, pp. 97-109, Taipei, Taiwan, Apr. 2000.

[220] Shoukat Ali, Howard Jay Siegel, Muthucumaru Maheswaran, Debra Hensgen, and Sahra Ali, "Task Execution Time Modeling for Heterogeneous Computing Systems," *9th Heterogeneous Computing Workshop (HCW 2000)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 185-199, Cancun, Mexico, May 2000.

[221] Mitchell D. Theys, Noah B. Beck, Howard Jay Siegel, and Michael Jurczyk, "Evaluation of Expanded Heuristics in a Heterogeneous Distributed Data Staging Network," *9th Heterogeneous Computing Workshop (HCW 2000)*, cosponsors: IEEE Computer Society and Office of Naval Research, pp. 75-89, Cancun, Mexico, May 2000.

[222] Mitchell D. Theys, Howard Jay Siegel, and Edwin K. P. Chong, "A Model and Heuristics for Scheduling Data Traffic at the Application Level in a Distributed Computing Environment," *2000 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2000), Volume III*, cosponsors: CSREA, IPSJ, et al., pp. 1239-1245, Las Vegas, NV, June 2000.*

[223] Jung Min Park, Uday R. Savagaonkar, Edwin K. P. Chong, Howard Jay Siegel, and Steven D. Jones, "Efficient Resource Allocation for QoS Channels in MF-TDMA Satellite Systems," *IEEE Military Communications Conference (MILCOM 2000)*, cosponsors: IEEE Communications Society and the Armed Forces Communications and Electronics Association (AFCEA), pp. U19.6.1-U19.6.5, Los Angeles, CA, Oct. 2000.

[224] Mitchell D. Theys, Noah B. Beck, Howard Jay Siegel, Michael Jurczyk, and Min Tan, "Heuristics for Scheduling Prioritized Data Requests with Deadlines in an Overloaded Distributed Computing Network," *International Symposium on Multimedia Software Engineering (MSE 2000)*, cosponsors: IEEE Computer Society and Tamkang University, pp. 33-40, Tamsui, Taiwan, Dec. 2000. Invited – I was one of six keynote speakers.

[225] Howard Jay Siegel, "Scheduling Heuristics for Satisfying Prioritized Data Requests in an Oversubscribed Distributed Computing Environment," *WorkWorks - Workshop on Networks: Architectures, Algorithms, and Applications*, sponsor: Fordham University, New York, NY, Apr. 2001. Invited presentation.

[226] Pranav Dharwadkar, Howard Jay Siegel, and Edwin K. P. Chong, "A Heuristic for Dynamic Bandwidth Allocation with Preemption and Degradation for Prioritized Requests," *21st International Conference on Distributed Computing Systems (ICDCS 2001)*, sponsor: IEEE Computer Society, pp. 547-556, Phoenix, AZ, Apr. 2001.*

[227] Jong-Kook Kim, Taylor Kidd, Howard Jay Siegel, Cynthia Irvine, Tim Levin, Debra A. Hensgen, David St. John, Viktor K. Prasanna, Richard F. Freund, and N. Wayne Porter, "Collective Value of QoS: A Performance Measure Framework for Distributed Heterogeneous Networks," *10th Heterogeneous Computing Workshop (HCW 2001)*, cosponsors: IEEE Computer Society and Office of Naval Research, paper HCW_08 in the proceedings of the 15th International Parallel and Distributed Processing Symposium (IPDPS 2001), San Francisco, CA, Apr. 2001.

[228] Dong-won Shin, Edwin K. P. Chong, and Howard Jay Siegel, "Survivable Multipath Routing Schemes for Connection-Oriented Communications," *Purdue CERIAS (Center for Education and Research in Information Assurance and Security) Annual Research Symposium*, poster, West Lafayette, IN, Apr. 2001.

[229] Jung Min Park, Howard Jay Siegel, and Edwin K. P. Chong, "Efficient Source Authentication Schemes for Multicast Communications," *Purdue CERIAS (Center for Education and Research in Information Assurance and Security) Annual Research Symposium*, poster, West Lafayette, IN, Apr. 2001.

[230] Dong-won Shin, Edwin K. P. Chong, and Howard Jay Siegel, "A Multiconstraint QoS Routing Scheme Using the Depth-First Search Method with Limited Crankbacks," *2001 IEEE Workshop on High Performance Switching and Routing (HPSR 2001)*, sponsor: IEEE Communications Society, pp. 385-389, Dallas, TX, May 2001.

[231] Tracy D. Braun, Howard Jay Siegel, and Anthony A. Maciejewski, "Heterogeneous Computing: Goals, Methods, and Open Problems," *2001 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2001), Vol. I*, cosponsors: CSREA, KIPS, et al., pp.1-12, Las Vegas, NV, June 2001. Invited – I was the keynote speaker for "The 2001 International Multiconference" that included PDPTA 2001.

[232] Amit Naik, Howard Jay Siegel, and Edwin K. P. Chong, "Dynamic Resource Allocation for Classes of Prioritized Session and Data Requests in Preemptive Heterogeneous Networks," *2001 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2001), Vol. II*, cosponsors: CSREA, KIPS, et al., pp. 787-796, Las Vegas, NV, June 2001.*

[233] Tracy D. Braun, Shoukat Ali, Howard Jay Siegel, and Anthony. A. Maciejewski, "Using the Min-Min Heuristic to Map Tasks onto Heterogeneous High-Performance Computing Systems," *2nd Annual Los Alamos Computer Science Institute (LACSI) Symposium*, sponsor: Los Alamos Computer Science Institute (Dept. of Energy), poster, Sante Fe, NM, Oct. 2001.

[234] Steven D. Jones, I-Jeng Wang, Edwin K. P. Chong, and Howard Jay Siegel, "A MetaNet Architecture for End-to-end Quality of Service (QoS) Over Disparate Networks," *IEEE Military Communications Conference (MILCOM 2001)*, cosponsors: IEEE Communications Society and the Armed Forces Communications and Electronics Association (AFCEA), paper no. 285, Tysons Corner, VA, Oct. 2001.

[235] Tracy D. Braun, Howard Jay Siegel, and Anthony A. Maciejewski, "Heterogeneous Computing: Goals, Methods, and Open Problems," *8th International Conference on High Performance Computing (HiPC 2001)*, cosponsors: Indian Institute of Information Technology (Hyderabad), Eurpoean Association for Theoretical Computer Science, IEEE Computer Society, and ACM SIGARCH; in *High Performance Computing – HiPC 2001*, Lecture Notes in Computer Science 2228, edited by Burkhard Monien, Viktor K. Prasanna, and Sriram Vajapeyam, Springer-Verlog, Berlin, 2001, pp. 307-318, Hyderabad, India, Dec. 2001. Invited – I was one of five keynote speakers.

[236] Howard Jay Siegel, "Research Issues for Parallel and Distributed Heterogeneous Computing," *SoCal (Southern California) Parallel Processing and Computer Architecture Workshop*, Irvine, CA, Mar. 2002. Invited – I was the keynote speaker.

[237] Shoukat Ali, Jong-Kook Kim, Yang Yu, Shriram B. Gundala, Sethavidh Gertphol, Howard Jay Siegel, Anthony A. Maciejewski, and Viktor Prasanna, "Utilization-Based Heuristics for Statically Mapping Real-Time Applications onto the HiPer-D Heterogeneous Computing System," *11th Heterogeneous Computing Workshop (HCW 2002)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 16th International Parallel and Distributed Processing Symposium (IPDPS 2002), Fort Lauderdale, FL, Apr. 2002.

[238] Sethavidh Gertphol, Yang Yu, Shriram B. Gundala, Viktor K. Prasanna, Shoukat Ali, Jong-Kook Kim, Anthony A. Maciejewski, and Howard Jay Siegel, "A Metric and Mixed-Integer-Programming-Based Approach for Resource Allocation in Dynamic Real-Time Systems," *16th International Parallel and Distributed Processing Symposium (IPDPS 2002)*, sponsor: IEEE Computer Society, Fort Lauderdale, FL, Apr. 2002.*

[239] Tracy D. Braun, Howard Jay Siegel, and Anthony A. Maciejewski, "Static Mapping Heuristics for Tasks with Dependencies, Priorities, Deadlines, and Multiple Versions in Heterogeneous

Environments," *16th International Parallel and Distributed Processing Symposium (IPDPS 2002)*, sponsor: IEEE Computer Society, Fort Lauderdale, FL, Apr. 2002.*

[240] Jung Min Park, Edwin K. P. Chong, and Howard Jay Siegel, "Efficient Multicast Packet Authentication Using Signature Amortization," *2002 IEEE Symposium on Security and Privacy (SSP 2002)*, sponsor: IEEE Computer Society, pp. 227-240, Oakland, CA, May 2002.*

[241] Shoukat Ali, Jong-Kook Kim, Howard Jay Siegel, Anthony A. Maciejewski, Yang Yu, Shiram B. Gundala, Sethavidth Gertphol and Viktor Prasanna, "Greedy Heuristics for Resource Allocation in Dynamic Distributed Real-Time Heterogeneous Computing Systems," *2002 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2002)*, cosponsors: CSREA et al., Vol. II, pp. 519-530, Las Vegas, NV, June 2002.*

[242] Dong-won Shin, Edwin K. P. Chong, and Howard Jay Siegel, "A Multiconstraint QoS Routing Scheme Using a Modified Dijkstra's Algorithm," *Networks 2002* (as a joint conference of the *2002 IEEE International Conference on Networking (ICN 2002)* and the *2002 IEEE International Conference on Wireless LANs and Home Networks (ICWLHN 2002))*, cosponsors: IEEE Communications Society and PCIA (Personal Communications Industry Association), pp. 65-76, Atlanta GA, Aug. 2002.*

[243] Howard Jay Siegel, "Research Issues for Heterogeneous Computing Systems," *Yugoslavian Informatics Conference (YU-INFO-2003)*, Kopaonik, Yugoslavia, Mar. 2003. Invited – I was one of the two keynote speakers.

[244] Dan C. Marinescu, Gabriela M. Marinescu, Yongchang Ji, Ladislau Boloni, and Howard Jay Siegel, "Ad Hoc Grids: Communication and Computing in a Power Constrained Environment," *Workshop on Energy-Efficient Wireless Communications and Networks 2003 (EWCN 2003)*, cosponsors: IEEE Computer Society and IEEE Communications Society, in the proceedings of the 22nd International Performance, Computing, and Communications Conference (IPCCC), pp. 113-122, Phoenix, Arizona, Apr. 2003.

[245] Jong-Kook Kim, Sameer Shivle, Howard Jay Siegel, Anthony A. Maciejewski, Tracy Braun, Myron Schneider, Sonja Tideman, Ramakrishna Chitta, Raheleh B. Dilmaghani, Rohit Joshi, Aditya Kaul, Ashish Sharma, Siddhartha Sripada, Praveen Vangari, and Siva Sankar Yellampalli, "Dynamic Mapping in a Heterogeneous Environment with Tasks Having Priorities and Multiple Deadlines," *12th Heterogeneous Computing Workshop (HCW 2003)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 17th International Parallel and Distributed Processing Symposium (IPDPS 2003), Nice, France, Apr. 2003.

[246] Han Yu, Dan C. Marinescu, Annie S. Wu, and Howard Jay Siegel, "A Genetic Approach to Planning in Heterogeneous Computing Environments," *12th Heterogeneous Computing Workshop (HCW 2003)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 17th International Parallel and Distributed Processing Symposium (IPDPS 2003), Nice, France, Apr. 2003.

[247] Shoukat Ali, Anthony A. Maciejewski, Howard Jay Siegel, and Jong-Kook Kim, "Definition of a Robustness Metric for Resource Allocation," *17th International Parallel and Distributed Processing Symposium (IPDPS 2003)*, sponsor: IEEE Computer Society, Nice, France, Apr. 2003.*

[248] Shoukat Ali, Anthony A. Maciejewski, Howard Jay Siegel, and Jong-Kook Kim, "On the Robustness of Resource Allocation for Parallel and Distributed Computing and Communications," *The 2003 International Multiconference in Computer Science and Computer Engineering*, cosponsors: CSREA et al., in the proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '03), Vol. I, pp. 1-14, Las Vegas, NV, June 2003. Invited – I was the keynote speaker.

[249] Jung Min Park, Edwin K. P. Chong, Howard Jay Siegel, and Indrajit Ray, "Constructing Fair-Exchange Protocols for E-Commerce Via Distributed Computation of RSA Signatures," *22nd ACM Symposium on Principles of Distributed Computing (PODC 2003)*, special track on Security in Distributed Computing, sponsor: ACM, pp. 172-181, Boston, MA, July 2003.*

[250] Jung Min Park, Indrajit Ray, Edwin K. P. Chong, and Howard Jay Siegel, "A Certified E-Mail Protocol Suitable for Mobile Environments," *IEEE 2003 Global Communications Conference (GLOBECOM 2003),* Communications Security Symposium, sponsor: IEEE, pp. 1394-1398, San Francisco, CA, Dec. 2003.*

[251] Shoukat Ali, Anthony A. Maciejewski, and Howard Jay Siegel, "Measuring Robustness for Distributed Computing Systems," *International Workshop on Frontiers of Information Technology*, cosponsors: National Science Foundation and Committee on Science and Technology for the Sustainable Development in the South (COMSATS), Islamabad, Pakistan, Dec. 2003.

[252] Howard Jay Siegel, "The Colorado Grid Computing (COGrid) Initiative - Use of CIT Sponsor Donated Equipment in Colorado Education," *Catalyst 2004 Conference,* sponsor: Colorado Institute of Technology, Apr. 2004.

[253] Dong-won Shin, Edwin K. P. Chong, and Howard Jay Siegel, "Survivable Multipath Routing Using Link Penalization," *23rd IEEE International Performance, Computing, and Communications Conference (IPCCC 2004)*, cosponsors: IEEE and IEEE Computer Society, Phoenix, Arizona, Apr. 2004.

[254] Sameer Shivle, Ralph Castain, Howard Jay Siegel, Anthony A. Maciejewski, Tarun Banka, Kiran Chindam, Steve Dussinger, Prakash Pichumani, Praveen Satyasekaran, William Saylor, David Sendek, J. Sousa, Jayashree Sridharan, Prasanna Sugavanam, and Jose Velazco, "Static Mapping of Subtasks in a Heterogeneous Ad Hoc Grid Environment," *13th Heterogeneous Computing Workshop (HCW 2004)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 18th International Parallel and Distributed Processing Symposium (IPDPS 2004), Santa Fe, NM, Apr. 2004.

[255] Ralph Castain, William W. Saylor, and Howard Jay Siegel, "Application of Lagrangian Receding Horizon Techniques to Resource Management in Ad Hoc Grid Environments," *13th Heterogeneous Computing Workshop (HCW 2004)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 18th International Parallel and Distributed Processing Symposium (IPDPS 2004), Santa Fe, NM, Apr. 2004.

[256] Howard Jay Siegel, "The Robustness of Resource Allocations in Parallel and Distributed Computing Systems," *18th International Symposium on High Performance Computing Systems and Applications (HPCS 2004)*, sponsor: Canadian High Performance Computing Collaboratory, Winnipeg, Manitoba, Canada, May 2004. Invited – I was one of three keynote speakers.

[257] Sameer Shivle, Howard Jay Siegel, Anthony A. Maciejewski, Tarun Banka, Kiran Chindam, Steve Dussinger, Andrew Kutruff, Prashanth Penumarthy, Prakash Pichumani, Praveen Satyasekaran, David Sendek, Julio C. Sousa1, Jayashree Sridharan, Prasanna Sugavanam, and Jose Velazco, "Mapping of Subtasks with Multiple Versions in a Heterogeneous Ad Hoc Grid Environment," *3rd International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar 2004)*, in the proceedings of "ISPDC 2004: Third International Symposium on Parallel and Distributed Computing, and HeteroPar '04: Third International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks," sponsor: Enterprise Ireland, pp. 380-387, Cork, Ireland, July 2004.

[258] Shoukat Ali, Howard Jay Siegel, and Anthony A. Maciejewski, "The Robustness of a Resource Allocation in Parallel and Distributed Computing Systems," joint meeting of *ISPDC 2004: Third International Symposium on Parallel and Distributed Computing,* and *HeteroPar '04: Third International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks*, sponsor: Enterprise Ireland, pp. 2-10, Cork, Ireland, July 2004. Invited – I was one of two keynote speakers.

[259] Shoukat Ali, Anthony A. Maciejewski, Howard Jay Siegel, and Jong-Kook Kim, "Robust Resource Allocation for Sensor-Actuator Distributed Computing Systems," *2004 International Conference on Parallel Processing (ICPP 2004)*, cosponsors: International Association for Computers and Communications and The Ohio State University, pp. 178–185, Montreal, Canada, Aug. 2004.*

[260] Han Yu, Dan C. Marinescu, Annie S. Wu, and Howard Jay Siegel, "Planning with Recursive Subgoals," *8th International Conference on Knowledge-Based Intelligent Information and Engineering Systems (KES 2004)*, cosponsors: The Royal Society of New Zealand, IPENZ, Telecom New Zealand, Allied Telesyn, and Positively Wellington Business, pp. 17-27, Wellington, New Zealand, Sep. 2004.

[261] Howard Jay Siegel, "The Robustness of Resource Allocation in Computer Systems," *ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2005)*, cosponsors: Arab Computer Society (ACS) and IEEE Computer Society, Cairo, Egypt, Jan. 2005. Invited – I was one of two keynote speakers.

[262] Prasanna V. Sugavanam, Howard Jay Siegel, Anthony A. Maciejewski, Syed Amjad Ali, Mohammad Al-Otaibi, Mahir Aydin, Kumara Guru, Aaron Horiuchi, Yogish G. Krishnamurthy, Panho Lee, Ashish Mehta, Mohana Oltikar, Ron Pichel, Alan J. Pippin, Michael Raskey, Vladimir Shestak, and Junxing Zhang, "Processor Allocation for Tasks that is Robust Against Errors in Computation Time Estimates," *14th Heterogeneous Computing Workshop (HCW 2005)*, cosponsors: IEEE Computer Society, INRIA, and Office of Naval Research, in the proceedings of the 19th International Parallel and Distributed Processing Symposium (IPDPS 2005), Denver, CO, Apr. 2005.

[263] Vladimir Shestak, Edwin K. P. Chong, Anthony A. Maciejewski, Howard Jay Siegel, Lotfi Bemohamed, I-Jeng Wang, and Rose Daley, "Resource Allocation for Periodic Applications in a Shipboard Environment," *14th Heterogeneous Computing Workshop (HCW 2005)*, cosponsors: IEEE Computer Society, INRIA, and Office of Naval Research, in the proceedings of the 19th International Parallel and Distributed Processing Symposium (IPDPS 2005), Denver, CO, Apr. 2005.

[264] Jong-Kook Kim, Howard Jay Siegel, Anthony A. Maciejewski, and Rudolf Eigenmann, "Dynamic Mapping in Energy Constrained Heterogeneous Computing Systems," *19th International Parallel and Distributed Processing Symposium (IPDPS 2005)*, sponsor: IEEE Computer Society, Denver, CO, Apr. 2005.*

[265] Vladimir Shestak, Edwin K. P. Chong, Anthony A. Maciejewski, H. J. Siegel, Lotfi Benmohamed, I-Jeng Wang, and Rose Daley, "Resource Allocation for Periodic Applications in a Shipboard Environment," *CSU Information Science and Technology Colloquium*, cosponsors: CSU Vice President for Research and Information Technology (VPRIT), CSU Research Foundation (CSURF), CSU Information Science and Technology Center (ISTeC), and CSU Electrical and Computer Engineering Dept., poster, Fort Collins, CO, Apr. 2005.

[266] Prasanna V. Sugavanam, Syed Amjad Ali, Mohammad Al-Otaibi, Mahir Aydin, Kumara Guru, Aaron Horiuchi, Yogish G. Krishnamurthy, Panho Lee, Ashish Mehta, Mohana Oltikar, Ron Pichel, Alan J. Pippin, Michael Raskey, Vladimir Shestak, Junxing Zhang, Howard Jay Siegel, and Anthony A. Maciejewski, "Processor Allocation for Tasks that is Robust Against Errors in Computation Time Estimates," *CSU Information Science and Technology Colloquium*, cosponsors: CSU Vice President for Research and Information Technology (VPRIT), CSU Research Foundation (CSURF), CSU Information Science and Technology Center (ISTeC), and CSU Electrical and Computer Engineering Dept., poster, Fort Collins, CO, Apr. 2005.

[267] Joseph P. White, Jeffrey A. Brateman, Jonathan R. Martin, Anthony A. Maciejewski, and Howard Jay Siegel, "Robustness in Weather Data Processing," *CSU Information Science and Technology Colloquium*, cosponsors: CSU Vice President for Research and Information Technology (VPRIT), CSU Research Foundation (CSURF), CSU Information Science and Technology Center (ISTeC), and CSU Electrical and Computer Engineering Dept., poster, Fort Collins, CO, Apr. 2005.

[268] Prasanna V. Sugavanam, Howard Jay Siegel, Anthony A. Maciejewski, Junxing Zhang, Vladimir Shestak, Michael Raskey, Alan Pippin, Ron Pichel, Mohana Oltikar, Ashish Mehta, Panho Lee, Yogish Krishnamurthy, Aaron Horiuchi, Kumara Guru, Mahir Aydin, Mohammad Al-Otaibi, and Syed Ali, "Robust Mapping of Independent Tasks When Dollar Cost for Processors is a Constraint," *4th International Workshop on Algorithms, Models, and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar-05)*, sponsor: IEEE Computer Society, in the

Proceedings of the 2005 International Conference on Cluster Computing (Cluster 2005), Boston, MA, Sep. 2005.

[269] Vladimir Shestak, Howard Jay Siegel, Anthony A. Maciejewski, and Shoukat Ali, "Robust Resource Allocations in Parallel Computing Systems: Model and Heuristics," *8th International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN 2005)*, cosponsors: University of Nevada, Las Vegas, and the Center for the Advanced Study of Algorithms (CASA), pp. 2-9, Las Vegas, NV, Dec. 2005. Invited – I was one of three keynote speakers.

[270] Vladimir Shestak, Howard Jay Siegel, Anthony A. Maciejewski, and Shoukat Ali, "The Robustness of Resource Allocations in Parallel and Distributed Computing Systems," *Architecture of Computing Systems - ARCS 2006, 19th International Conference Proceedings*, Lecture Notes in Computer Science 3894, Springer-Verlag, Berlin, Germany, organizers: GI (German Informatics Society) and ITG (Information Technology Society), pp. 17-30, Frankfurt, Germany, Mar. 2006. Invited – I was one of four keynote speakers.

[271] Xin Bai, Ladislau Boloni, Dan C. Marinescu, Howard Jay Siegel, Rose A. Daley, and I-Jeng Wang, "A Brokering Framework for Large-Scale Heterogeneous Systems," *15th Heterogeneous Computing Workshop (HCW 2006)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 20th International Parallel and Distributed Processing Symposium (IPDPS 2006), Rhodes Island, Greece, Apr. 2006.

[272] Han Yu, Dan C. Marinescu, Annie S. Wu, Howard Jay Siegel, Rose A. Daley, and I-Jeng Wang, "Plan Switching: An Approach to Plan Execution in Changing Environments," *15th Heterogeneous Computing Workshop (HCW 2006)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 20th International Parallel and Distributed Processing Symposium (IPDPS 2006), Rhodes Island, Greece, Apr. 2006.

[273] Xin Bai, Ladislau Boloni, Dan C. Marinescu, Howard Jay Siegel, Rose A. Daley, and I-Jeng Wang, "Are Utility, Price, and Satisfaction Resource Allocation Models Suitable for Large-Scale Distributed Systems?" *3rd International Workshop on Grid Economics & Business Models (GECON 2006)*, cosponsors: NG (National Grid) Singapore and SMU (Singapore Management University), pp. 113-122, Singapore, May 2006.

[274] Ashish M. Mehta, Jay Smith, Howard Jay Siegel, Anthony A. Maciejewski, Arun Jayaseelan, and Bin Ye, "Dynamic Resource Allocation Heuristics for Maximizing Robustness with an Overall Makespan Constraint in an Uncertain Environment," *2006 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2006)*, cosponsors: World Academy of Science and Computer Science Research, Education, and Applications Press (CSREA), Vol. 1, pp. 24-30, Las Vegas, NV, June 2006.*

[275] Vladimir Shestak, Jay Smith, Robert Umland, Jennifer Hale, Patrick Moranville, Anthony A. Maciejewski, and Howard Jay Siegel, "Greedy Approaches to Static Stochastic Robust Resource Allocation for Periodic Sensor Driven Distributed Systems" *2006 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2006)*, cosponsors: World Academy of Science and Computer Science Research, Education, and Applications Press (CSREA), Vol. 1, pp. 3-9, Las Vegas, NV, June 2006.*

[276] Ashish M. Mehta, Jay Smith, Howard Jay Siegel, Anthony A. Maciejewski, Arun Jayaseelan, and Bin Ye, "Dynamic Resource Management Heuristics for Minimizing Makespan while Maintaining an Acceptable Level of Robustness in an Uncertain Environment," *12th International Conference on Parallel and Distributed Systems (ICPADS 2006)*, sponsor: IEEE Computer Society, pp. 107-114, Minneapolis, MN, July 2006.*

[277] Vladimir Shestak, Jay Smith, Howard Jay Siegel, and Anthony A. Maciejewski, "A Stochastic Approach to Measuring the Robustness of Resource Allocations in Distributed Systems," *2006 International Conference on Parallel Processing (ICPP 2006)*, sponsor: The International Association for Computers and Communications (IACC), pp. 459-467, Columbus, OH, Aug. 2006.*

[278] Mohana Oltikar, Jeff Brateman, Joe White, Jon Martin, Keith Knapp, Anthony A. Maciejewski, Howard Jay Siegel, "Robust Resource Allocation in Weather Data Processing Systems," *8th*

Workshop on High Performance Scientific and Engineering Computing (HPSEC 2006), sponsor: The International Association for Computers and Communications (IACC), in the Proceedings of the 2006 International Conference on Parallel Processing Workshops, pp. 445-454, Columbus, OH, Aug. 2006.

[279] Vladimir Shestak, Jay Smith, Howard Jay Siegel, and Anthony A. Maciejewski, "Iterative Algorithms for Stochastically Robust Static Resource Allocation in Periodic Sensor Driven Clusters," *18th IASTED International Conference on Parallel and Distributed Computing and Systems (PDCS 2006)*, sponsor: The International Association of Science and Technology for Development (IASTED), pp. 166-174, Dallas, TX, Nov. 2006.

[280] Jay Smith, Luis D. Briceño, Anthony A. Maciejewski, Howard Jay Siegel, Timothy Renner, Vladimir Shestak, Joshua Ladd, Andrew Sutton, David Janovy, Sudha Govindasamy, Amin Alqudah, Rinku Dewri, and Puneet Prakash, "Measuring the Robustness of Resource Allocations in a Stochastic Dynamic Environment," *21st International Parallel and Distributed Processing Symposium (IPDPS 2007)*, sponsor: IEEE Computer Society, Long Beach, CA, Mar. 2007.*

[281] Luis Diego Briceño, Mohana Oltikar, Howard Jay Siegel, and Anthony A. Maciejewski, "Study of an Iterative Technique to Minimize Completion Times of Non-Makespan Machines," *16th Heterogeneous Computing Workshop (HCW 2007)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 21st International Parallel and Distributed Processing Symposium (IPDPS 2007), Long Beach, CA, Mar. 2007.

[282] David L. Janovy, Jay Smith, Howard Jay Siegel, and Anthony A. Maciejewski, "Models and Heuristics for Robust Resource Allocation in Parallel and Distributed Computing Systems," *NSF Next Generation Software Program Workshop (NSFNGS 2007)*, sponsor: NSF, in the proceedings of the 21st International Parallel and Distributed Processing Symposium (IPDPS 2007), Long Beach, CA, Mar. 2007, invited.

[283] Chen Yu, Dan C. Marinescu, Howard Jay Siegel, and John Morrison, "A Simulation Study of Data Partitioning Algorithms for Multiple Clusters," *7th IEEE International Symposium on Cluster Computing and the Grid (CCGrid 2007)*, sponsor: IEEE, Rio de Janeiro, Brazil, May 2007.

[284] Jay Smith, Vladimir Shestak, Howard Jay Siegel, Suzy Price, Larry Teklits, and Prasanna V. Sugavanum, "Resource Allocation in a Cluster Based Imaging System," *2007 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2007)*, cosponsors: World Academy of Science and Computer Science Research, Education, and Applications Press (CSREA), Las Vegas, NV, June 2007.

[285] Jerry Potter and Howard Jay Siegel, "Software Support for Non-Numerical Computing on Multi-core Chips," *2007 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2007)*, cosponsors: World Academy of Science and Computer Science Research, Education, and Applications Press (CSREA), Las Vegas, NV, June 2007.

[286] Jerry Potter and Howard Jay Siegel, "Prose as a Model of Computation," *2007 International Conference on Foundations of Computer Science (FCS '07)*, cosponsors: World Academy of Science and Computer Science Research, Education, and Applications Press (CSREA), Las Vegas, NV, June 2007.

[287] Dong-won Shin, Edwin K. P. Chong, and Howard Jay Siegel, "Multi-postpath-based Lookahead Multiconstraint QoS Routing," presented at the *Minisymposium on Advanced Topics in Communications*, part of the 8th Hellenic European Research on Computer Mathematics and its Applications Conference, cosponsors: ACM, SIAM, et al., Athens, Greece, Sep. 2007.

[288] Howard Jay Siegel, "Robust Resource Management in Heterogeneous Parallel and Distributed Computing Systems," presented at the *20th International Conference on Parallel and Distributed Computing Systems (PDCS-2007)*, sponsor: International Society for Computers and Their Applications (ISCA), Las Vegas, NV, Sep. 2007. Invited – I was the keynote speaker.

[289] Samee Ullah Khan, Anthony A. Maciejewski, Howard Jay Siegel, and Ishfaq Ahmad, "A Game Theoretical Data Replication Technique for Mobile Ad Hoc Networks," *22nd International*

Parallel and Distributed Processing Symposium (IPDPS 2008), sponsor: IEEE Computer Society, Miami, FL, Apr. 2008.*

[290] Jay Smith, Edwin K. P. Chong, Anthony A. Maciejewski, and Howard Jay Siegel, "Decentralized Market-Based Resource Allocation in a Heterogeneous Computing System," *22nd International Parallel and Distributed Processing Symposium (IPDPS 2008)*, sponsor: IEEE Computer Society, Miami, FL, Apr. 2008.*

[291] Luis Diego Briceño, Howard Jay Siegel, Anthony A. Maciejewski, Ye Hong, Brad Lock, Mohammad Nayeem Teli, Fadi Wedyan, Charles Panaccione, and Chen Zhang, "Resource Allocation in a Client/Server Hybrid Network for Virtual World Environments," *17th Heterogeneous Computing Workshop (HCW 2008)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 22nd International Parallel and Distributed Processing Symposium (IPDPS 2008), Miami, FL, Apr. 2008.

[292] Jay Smith, Howard Jay Siegel, and Anthony A. Maciejewski, "A Stochastic Model for Robust Resource Allocation in Heterogeneous Parallel and Distributed Computing Systems," *NSF Next Generation Software Program Workshop (NSFNGS 2008)*, sponsor: NSF, in the 22nd International Parallel and Distributed Processing Symposium (IPDPS 2008), Miami, FL, Apr. 2008, invited.

[293] Christoffer Norvik, John P. Morrison, Dan C. Marinescu, Chen Yu, Gabriela M. Marinescu and Howard Jay Siegel, "Managing Contracts in Pleiades using Trust Management," *The 5th International Conference on Autonomic and Trusted Computing (ATC-08)*, sponsor: University of Stavanger, Oslo, Norway, June 2008.*

[294] Jay Smith, Howard Jay Siegel, and Anthony A. Maciejewski, "Iterative Techniques for Maximizing Stochastic Robustness of a Static Resource Allocation in Periodic Sensor Driven Clusters," *2008 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2008)*, cosponsors: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), Vol. 1, pp.3-9, Las Vegas, NV, July 2008.*

[295] Dan C. Marinescu, John P. Morrison, Chen Yu, Christoffer Norvik, and Howard Jay Siegel, "A Self-Organization Model for Complex Computing and Communication Systems," *2nd IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2008)*, sponsor: IEEE Computer Society Technical Committee on Autonomous and Autonomic Systems, pp. 149-158, Venice, Italy, Oct. 2008.*

[296] Saurabh Kumar Garg, Rajkumar Buyya, and Howard Jay Siegel, "Scheduling Parallel Applications on Utility Grids: Time and Cost Trade-off Management," *32nd Australasian Computer Science Conference (ACSC2009)*, cosponsors: Australian Computer Society and New Zealand Computer Society, Wellington, New Zealand, Jan. 2009.* Received "Best Paper" award.

[297] Abdula M. Al-Qawasmeh, Anthony A. Maciejewski, Howard Jay Siegel, Jay Smith, and Jerry Potter, "Evaluating Workload and Machine Heterogeneity in Distributed Computing Systems," presented at the *Front Range Architecture Compilers Tools and Languages Workshop (FRACTAL)*, cosponsors: Nvidia, Intel, and CSU ISTeC, Fort Collins, CO, Apr. 2009.

[298] Luis Diego Briceño, Howard Jay Siegel, Anthony A. Maciejewski, Ye Hong, Brad Lock, Mohammad Nayeem Teli, Fadi Wedyan, Charles Panaccione, Chris Klumph, Kody Willman, and Chen Zhang, "Robust Resource Allocation in a Massive Multiplayer Online Gaming Environment," *4th International Conference on the Foundations of Digital Games (FDG 2009)*, cosponsors: Microsoft and Electronic Arts, p. 232-239, Orlando, FL, Apr. 2009.

[299] Samee Khan, Anthony Maciejewski, and Howard Siegel, "Robust CDN Replica Placement Techniques," *14th IEEE Workshop on Dependable Parallel, Distributed and Network-Centric Systems (DPDNS 2009)*, cosponsors: IEEE Computer Society Technical Committee on Parallel Processing and IRIANC (International Research Institute on Autonomic Network Computing), in the proceedings of the 23rd International Parallel and Distributed Processing Symposium (IPDPS 2009), Rome, Italy, May 2009.

[300] Vladimir Shestak, Edwin K. P. Chong, Anthony A. Maciejewski, and Howard Jay Siegel, "Robust Sequential Resource Allocation in Heterogeneous Distributed Systems with Random Compute Node Failures," *18th Heterogeneity in Computing Workshop (HCW 2009)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the 23rd International Parallel and Distributed Processing Symposium (IPDPS 2009), Rome, Italy, May 2009.

[301] Paul Maxwell, Anthony A. Maciejewski, Howard Jay Siegel, Jerry Potter, and Jay Smith, "A Mathematical Model of Robust Military Village Searches for Decision Making Purposes," *The 2009 International Conference on Information and Knowledge Engineering (IKE '09)*, sponsor: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), pp. 49-56, Las Vegas, NV, July 2009.

[302] Abdulla M. Al-Qawasmeh, Anthony A. Maciejewski, Howard Jay Siegel, Jay Smith, and Jerry Potter, "Task and Machine Heterogeneities: Higher Moments Matter," *International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '09)*, sponsor: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), pp. 3-9, Las Vegas, NV, July 2009.*

[303] Jerry Potter and Howard Jay Siegel, "Interpreting Noisy Prose Using Heterogeneous Multi-Cores," *International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '09)*, sponsor: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), Las Vegas, NV, July 2009.*

[304] Jay Smith, Edwin K. P. Chong, Anthony A. Maciejewski, and Howard Jay Siegel, "Stochastic-Based Robust Dynamic Resource Allocation in a Heterogeneous Computing System," *2009 International Conference on Parallel Processing (ICPP 2009)*, cosponsors: The International Association for Computers and Communications (IACC) and the Austrian Computer Society, Vienna, Austria, Sep. 2009.*

[305] Paul Maxwell, Howard Jay Siegel, Jerry Potter, and Anthony A. Maciejewski, "The ISTeC People-Animals-Robots Laboratory: Robust Resource Allocation," *2009 IEEE International Workshop on Safety, Security, and Rescue Robotics (SSRR 2009)*, sponsor: IEEE Robotics and Automation Society, Denver, CO, Nov. 2009. H. J. Siegel is an invited plenary speaker.

[306] Howard Jay Siegel, "Stochastically Robust Resource Management in Heterogeneous Parallel Computing Systems," *The 10th International Symposium on Pervasive Systems, Algorithms and Networks (I-SPAN 2009)*, cosponsors: Intel, Microsoft Research, Stark Technologies Inc., and Computer Society of the Republic of China, Kaohsiung, Taiwan, Dec. 2009. Invited – I was one of three keynote speakers.

[307] Ron C. Chiang, Anthony A. Maciejewski, Arnold L. Rosenberg, and Howard Jay Siegel, "Statistical Predictors of Computing Power in Heterogeneous Clusters," *19th Heterogeneity in Computing Workshop (HCW 2010)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the IPDPS 2010 Workshops & PhD Forum (IPDPSW), 9 pp., Atlanta, GA, Apr. 2010.

[308] Abdulla M. Al-Qawasmeh, Anthony A. Maciejewski, and Howard Jay Siegel, "Characterizing Heterogeneous Computing Environments using Singular Value Decomposition," *19th Heterogeneity in Computing Workshop (HCW 2010)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of IPDPS 2010 Workshops & PhD Forum (IPDPSW), 9 pp., Atlanta, GA, Apr. 2010.

[309] Luis Diego Briceno, Jay Smith, Howard Jay Siegel, Anthony A. Maciejewski, Paul Maxwell, Russ Wakefield, Abdulla Al-Qawasmeh, Ron C. Chiang, and Jiayin Li, "Robust Resource Allocation of DAGs in a Heterogeneous Multicore System," *19th Heterogeneity in Computing Workshop (HCW 2010)*, cosponsors: IEEE Computer Society and Office of Naval Research, in the proceedings of the IPDPS 2010 Workshops & PhD Forum (IPDPSW), 11 pp., Atlanta, GA, Apr. 2010.

[310] Paul Maxwell, Anthony A. Maciejewski, Howard Jay Siegel, and Jerry Potter, "A Cordon and Search Model and Simulation using Timed, Stochastic, Colored Petri Nets for Robust Decision-

Making," *Military Modeling Symposium*, part of the *2010 Spring Simulation Multiconference (SpringSim '10)*, sponsor: The Society for Modeling & Simulation International, pp. 11-18, Orlando, FL, Apr. 2010.

[311] Howard Jay Siegel, "Dynamic Robust Resource Allocation in a Heterogeneous Distributed Computing System," presented at the *3rd "Scheduling in Aussois" Workshop*, sponsor: French CNRS (Centre National de la Recherche Scientifique), Aussois, French Alps, France, June 2010. Invited.

[312] James (Jay) Smith, Jonathan Apodaca, Anthony A. Maciejewski, and Howard Jay Siegel, "Batch Mode Stochastic-Based Robust Dynamic Resource Allocation in a Heterogeneous Computing System," *International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '10)*, sponsor: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), Las Vegas, NV, July 2010.*

[313] Bernabe Dorronsoro, Pascal Bouvry, J. Alberto Canero, Anthony A. Maciejewski and Howard Jay Siegel, "Multi-objective Robust Static Mapping of Independent Tasks on Grids," *2010 IEEE Congress on Evolutionary Computation (CEC 2010)*, sponsor: IEEE Computational Intelligence Society, Barcelona, Spain, July 2010.

[314] Paul Maxwell, Ryan Friese, Anthony A. Maciejewski, Howard Jay Siegel, Jerry Potter, and James Smith, "A Demonstration of a Simulation Tool for Planning Robust Military Village Searches," *Huntsville Simulation Conference (HSC '10)*, sponsor: The Society for Modeling & Simulation International, Huntsville, AL, Oct. 2010.

[315] Sudeep Pasricha, Yong Zou, Dan Connors, and Howard Jay Siegel, "OE+IOE: A Novel Turn Model Based Fault Tolerant Routing Scheme for Networks-on-Chip," *IEEE/ACM International Conference on Hardware-Software Codesign and System Synthesis (CODES+ISSS 2010)*, cosponsors: IEEE and ACM, pp. 85-93, Scottsdale, AZ, Oct. 2010.*

[316] Howard Jay Siegel, Tony Maciejewski, Luis Briceño, and Bhavesh Khemka, "Time Utility Functions," presented at Durmstrang Team Quarterly Review, sponsor: Oak Ridge National Laboratory, Baltimore, MD, Jan. 2011.

[317] Qin Gao, Xuhui Zhang, Pei-Luen Patrick Rau, Anthony A. Maciejewski, and Howard Jay Siegel, "Performance Visualization for Large-scale Systems: A Literature Review," *14th International Conference on Human-Computer Interaction (HCII 2011)*, Orlando, FL, July 2011.

Research Books Authored or Edited

[1] Howard Jay Siegel, editor, *Proceedings of the Workshop on Interconnection Networks for Parallel and Distributed Processing*, IEEE, New York, NY, 124 pp., 1980.

[2] Howard Jay Siegel and Leah J. Siegel, editors, *Proceedings of the 1983 International Conference on Parallel Processing*, IEEE Computer Society Press, New York, NY, 553 pp., 1983.

[3] Howard Jay Siegel, author, *Interconnection Networks for Large-Scale Parallel Processing: Theory and Case Studies*, Lexington Books, a division of D. C. Heath and Company, Lexington, MA, 260 pp., 1985.

[4] Lawrence Snyder, Leah H. Jamieson, Dennis B. Gannon, and Howard Jay Siegel, editors, *Algorithmically Specialized Parallel Computers*, Academic Press, New York, NY, 252 pp., 1985.

[5] Daniel D. Gajski, Veljko M. Milutinovic, Howard Jay Siegel, and Burko P. Furht, editors, *Computer Architecture*, IEEE Computer Society Press, Washington, D.C., 593 pp., 1987.

[6] Howard Jay Siegel, author, *Interconnection Networks for Large-Scale Parallel Processing: Theory and Case Studies*, 2nd Edition, McGraw-Hill, New York, NY, 390 pp., 1990.

[7] Howard Jay Siegel, editor, *Proceedings of Frontiers '92: The 4th Symposium on the Frontiers of Massively Parallel Computation*, IEEE Computer Society Press, Los Alamitos, CA, 592 pp., 1992.

[8] Howard Jay Siegel, editor, *Proceedings of IPPS '94: The 8th International Parallel Processing Symposium*, IEEE Computer Society Press, Los Alamitos, CA, 966 pp., 1994.

[9] Howard Jay Siegel, editor, *Proceedings of the 1996 ICPP Workshop on Challenges for Parallel Processing*, held in conjunction with the 1996 International Conference on Parallel Processing, IEEE Computer Society Press, Los Alamitos, CA, 161 pp., 1996.

[10] Howard Jay Siegel, editor, *Proceedings of the Conference on Commercial Applications for High-Performance Computing*, SPIE - The International Society for Optical Engineering, Bellingham, WA, 215 pp., 2001.

Research Book Chapters

[1] Howard Jay Siegel, "PASM: A Reconfigurable Multi-microcomputer System for Image Processing," in *Languages and Architectures for Image Processing*, edited by Michael J.B. Duff and Stefano Levialdi, Academic Press, London, England, pp. 257-265, 1981.

[2] Leah J. Siegel, Howard Jay Siegel, and Philip H. Swain, "Parallel Algorithm Performance Measures," in *Multicomputers and Image Processing: Algorithms and Programs*, edited by Kendall Preston, Jr., and Leonard Uhr, Academic Press, New York, NY, pp. 241-252, 1982.

[3] Howard Jay Siegel, Philip H. Swain, and Bradley W. Smith, "Remote Sensing on PASM and CDC Flexible Processors," in *Multicomputers and Image Processing: Algorithms and Programs*, edited by Kendall Preston, Jr., and Leonard Uhr, Academic Press, New York, NY, pp. 331-342, 1982.

[4] Howard Jay Siegel, "The PASM System and Parallel Image Processing," in *Computer Architectures for Spatially Distributed Data*, edited by Herbert Freeman and Goffredo G. Pieroni, Springer-Verlag, New York, NY, pp. 95-119, 1985.

[5] James T. Kuehn, Howard Jay Siegel, George B. Adams III, and David L. Tuomenoksa, "The Use and Design of PASM," in *Integrated Technology for Parallel Image Processing*, edited by Stefano Levialdi, Academic Press, London, England, pp. 133-152, 1985.

[6] Howard Jay Siegel and James T. Kuehn, "PASM: A Partitionable SIMD/MIMD System for Parallel Image Processing Research," in *Algorithmically Specialized Parallel Computers*, edited by Lawrence Snyder, Leah H. Jamieson, Dennis B. Gannon, and Howard Jay Siegel, Academic Press, New York, NY, pp. 69-78, 1985.

[7] James T. Kuehn and Howard Jay Siegel, "Multifunction Processing with PASM," in *Intermediate-Level Image Processing*, edited by Michael J.B. Duff, Academic Press, London, England, pp. 209-229, 1986.

[8] James T. Kuehn and Howard Jay Siegel, "Simulation Based Performance Measures for SIMD/MIMD Processing," in *Evaluation of Multicomputers for Image Processing*, edited by Leonard Uhr, Kendall Preston, Jr., Stefano Levialdi, and Michael J. B. Duff, Academic Press, Orlando, FL, pp. 139-158, 1986.

[9] Howard Jay Siegel, Thomas Schwederski, James T. Kuehn, and Nathaniel J. Davis IV, "An Overview of the PASM Parallel Processing System," in *Computer Architecture*, edited by Daniel D. Gajski, Veljko M. Milutinovic, Howard Jay Siegel, and Borko P. Furht, IEEE Computer Society Press, Washington, D.C., pp. 387-407, 1987.

[10] Howard Jay Siegel and William Tsun-yuk Hsu, "Interconnection Networks," in *Computer Architecture: Concepts and Systems*, edited by Veljko M. Milutinovic, Elsevier Science Publishing Co., Inc., New York, NY, pp. 225-264, 1988.

[11] Thomas Schwederski, David G. Meyer, and Howard Jay Siegel, "Parallel Processing," in *Computer Architecture: Concepts and Systems*, edited by Veljko M. Milutinovic, Elsevier Science Publishing Co., Inc., New York, NY, pp. 178-224, 1988.

[12] James B. Armstrong, Daniel W. Watson, and Howard Jay Siegel, "Software Issues for the PASM Parallel Processing System," in *Software for Parallel Computation*, edited by Janusz S. Kowalik and Lucio Grandinetti, Springer-Verlag, Berlin, Germany, pp. 134-148, 1993.

[13] Wayne G. Nation, Gene Saghi, and Howard Jay Siegel, "Properties of Interconnection Networks for Large-Scale Parallel Processing Systems," in *Parallel Computers: Theory and Practice*, edited by Thomas L. Casavant, Pavel Tvrdik, and Frantisek Plasil, IEEE Computer Society Press, Los Alamitos, CA, pp. 107-148, 1996.

[14] Howard Jay Siegel, Thomas Schwederski, Wayne G. Nation, James B. Armstrong, Lee Wang, James T. Kuehn, Rohit Gupta, Mark D. Allemang, David G. Meyer, and Daniel W. Watson, "The Design and Prototyping of the PASM Reconfigurable Parallel Processing System," in *Parallel Computing: Paradigms and Applications*, edited by Albert Y. Zomaya, International Thomson Computer Press, London, UK, pp. 78-114, 1996.

[15] Howard Jay Siegel, Lee Wang, John John So, and Muthucumaru Maheswaran, "Data Parallel Algorithms," in *Parallel and Distributed Computing Handbook*, edited by Albert Y. Zomaya, McGraw-Hill, New York, NY, pp. 466-499, 1996.

[16] Howard Jay Siegel, John K. Antonio, Richard C. Metzger, Min Tan, and Yan Alexander Li, "Heterogeneous Computing," *in Parallel and Distributed Computing Handbook*, edited by Albert Y. Zomaya, McGraw-Hill, New York, NY, pp. 725-761, 1996.

[17] Howard Jay Siegel, Muthucumaru Maheswaran, Daniel W. Watson, John K. Antonio, and Mikhail J. Atallah, "Mixed-Mode System Heterogeneous Computing," in *Heterogeneous Computing*, edited by Mary M. Eshaghian, Artech House, Norwood, MA, pp. 19-65, 1996.

[18] Howard Jay Siegel, Henry G. Dietz, and John K. Antonio, "Software Support for Heterogeneous Computing," in *The Computer Science and Engineering Handbook*, edited by Allen B. Tucker, Jr., CRC Press, Boca Raton, FL, pp. 1886-1909, 1997.

[19] Michael Jurczyk, Howard Jay Siegel, and Craig B. Stunkel, "Interconnection Networks for Parallel Computers," in *Encyclopedia of Electrical and Electronics Engineering*, edited by John Webster, John Wiley & Sons, New York, NY, Vol. 10, pp. 555-564, 1999.

[20] Muthucumaru Maheswaran, Tracy D. Braun, and Howard Jay Siegel, "Heterogeneous Distributed Computing," in *Encyclopedia of Electrical and Electronics Engineering*, edited by John Webster, John Wiley & Sons, New York, NY, Vol. 8, pp. 679-690, 1999.

[21] Mitchell D. Theys, Tracy D. Braun, Yu-Kwong Kwok, Howard Jay Siegel, and Anthony A. Maciejewski, "Mapping of Tasks onto Distributed Heterogeneous Computing Systems Using a Genetic Algorithm Approach," in *Solutions to Parallel and Distributed Computing Problems: Lessons from Biological Sciences*, edited by Albert Y. Zomaya, John Wiley & Sons, New York, NY, pp. 135-178, 2001.

[22] Shoukat Ali, Tracy D. Braun, Howard Jay Siegel, Anthony A. Maciejewski, Noah Beck, Ladislau Boloni, Muthucumaru Maheswaran, Albert I. Reuther, James P. Robertson, Mitchell D. Theys, and Bin Yao, "Characterizing Resource Allocation Heuristics for Heterogeneous Computing Systems," in *Advances in Computers Volume 63: Parallel, Distributed, and Pervasive Computing*, edited by Ali R. Hurson, Elsevier, Amsterdam, The Netherlands, pp. 91-128, 2005.

[23] Shoukat Ali, Anthony A. Maciejewski, and Howard Jay Siegel, "Perspectives on Robust Resource Allocation for Heterogeneous Parallel Systems," in *Handbook of Parallel Computing: Models, Algorithms, and Applications*, edited by Sanguthevar Rajasekaran and John Reif, Chapman & Hall/CRC Press, Boca Raton, FL, pp. 41-1 – 41-30, 2008.

[24] Michael Jurczyk, Howard Jay Siegel, and Craig B. Stunkel, "Interconnection Networks for Parallel Computers," in *Wiley Encyclopedia of Computing*, edited by Ben Wah, John Wiley & Sons, New York, NY, Vol. 3, pp. 21613-1623, 2008.

[25] Jay Smith, Howard Jay Siegel, and Anthony A. Maciejewski, "Robust Resource Allocation in Heterogeneous Parallel and Distributed Computing Systems," in *Wiley Encyclopedia of Computing*, edited by Ben Wah, John Wiley & Sons, New York, NY, Vol. 4, pp. 2461-2470, 2008.

[26] Dan Cristian Marinescu, John Patrick Morrison, and Howard Jay Siegel, "Chapter 4: Options and Commodity Markets for Computing Resources," in *Market Oriented Grid and Utility Computing*, edited by Rajkumar Buyya and Kris Bubendorfer, John Wiley & Sons, Hoboken, NJ, pp. 89-122, 2009.

[27] Howard Jay Siegel and Bobby Dalton Young, "The PASM Parallel Processing System," in Springer Encyclopedia of Parallel Computing, edited by David Padua, Springer, New York, NY, to appear 2011.

Articles Reprinted in Books

[1] Howard Jay Siegel, "Interconnection Networks for SIMD Machines," in *Tutorial: Distributed Processor Communication Architecture*, edited by Kenneth J. Thurber, IEEE, New York, NY, pp. 379-387, 1979 (reprinted from *Computer*, Vol. 12, No. 6, pp. 57-65, June 1979).

[2] Howard Jay Siegel, "Interconnection Networks for SIMD Machines," in *Tutorial on Parallel Processing*, edited by Robert Kuhn and David A. Padua, IEEE Computer Society Press, New York, NY, pp. 110-119, 1981 (reprinted from *Computer*, Vol. 12, No. 6, pp. 57-65, June 1979).

[3] Robert J. McMillen and Howard Jay Siegel, "Routing Schemes for the Augmented Data Manipulator Network in an MIMD System," in *Interconnection Networks for Parallel and Distributed Processing*, edited by Chuan-lin Wu and Tse-yun Feng, IEEE Computer Society Press, New York, NY, pp. 184-196, 1984 (reprinted from *IEEE Transactions on Computers*, Vol. C-31, No. 12, pp. 1202-1214, Dec. 1982).

[4] George B. Adams III and Howard Jay Siegel, "The Extra Stage Cube: A Fault Tolerant Interconnection Network for Supersystems," in *Interconnection Networks for Parallel and Distributed Processing*, edited by Chuan-lin Wu and Tse-yun Feng, IEEE Computer Society Press, New York, NY, pp. 397-408, 1984 (reprinted from *IEEE Transactions on Computers*, Vol. C-31, No. 5, pp. 443-454, May 1982).

[5] Howard Jay Siegel, "The Theory Underlying the Partitioning of Permutation Networks," in *Interconnection Networks for Parallel and Distributed Processing*, edited by Chuan-lin Wu and Tse-yun Feng, IEEE Computer Society Press, New York, NY, pp. 558-567, 1984 (reprinted from *IEEE Transactions on Computers*, Vol. C-29, No. 9, pp. 791-801, Sep. 1980).

[6] Howard Jay Siegel, Leah J. Siegel, Frederick Kemmerer, Philip T. Mueller, Jr., Harold E. Smalley, Jr., and S. Diane Smith, "PASM: A Partitionable SIMD/MIMD System for Image Processing and Pattern Recognition," in *Advanced Computer Architecture*, edited by Dharma P. Agrawal, IEEE Computer Society Press, New York, NY, pp. 339-352, 1986 (reprinted from *IEEE Transactions on Computers*, Vol. C-30, No. 12, pp. 934-947, Dec. 1981).

[7] Veljko Milutinovic, J. J. Crnkovic, L. Y. Chang, and Howard Jay Siegel, "The LOCO Approach to Distributed Task Allocation in Aida by Verdi," in *Computers for Artificial Intelligence Applications*, edited by Benjamin Wah and Guo-Jie Li, IEEE Computer Society Press, Washington, D.C., pp. 522-532, 1986 (reprinted from *5th International Conference on Distributed Computing Systems*, pp. 359-368, May 1985).

[8] Howard Jay Siegel, Thomas Schwederski, Nathaniel J. Davis, IV, and James T. Kuehn, "PASM: A Reconfigurable Parallel System for Image Processing," in *Parallel Computing: Theory and Comparisons*, by G. Jack Lipovski and Miroslaw Malek, John Wiley & Sons, New York, NY, pp. 217-238, 1987 (reprinted from *ACM SIGARCH Newsletter*, Vol. 12, No. 4, pp. 7-19, Sep. 1984).

[9] Menkae Jeng and Howard Jay Siegel, "Design and Analysis of Dynamic Redundancy Networks," in *Interconnection Networks for Large-Scale Parallel Processing: Theory and Case Studies, 2nd Edition*, by Howard Jay Siegel, McGraw-Hill, New York, NY, pp. 257-284, 1990 (reprinted from *IEEE Transactions on Computers*, Vol. C-37, No. 9, pp. 1019-1029, Sep. 1988).

[10] George B. Adams III, Dharma P. Agrawal, and Howard Jay Siegel, "A Survey and Comparison of Fault-Tolerant Multistage Interconnection Networks," in *Interconnection Networks for Large-Scale Parallel Processing: Theory and Case Studies, 2nd Edition*, by Howard Jay Siegel, McGraw-Hill, New York, NY, pp. 285-312, 1990 (reprinted from *Computer*, Vol. 20, No. 6, pp. 14-27, June 1987).

[11] Howard Jay Siegel, Wayne G. Nation, Clyde P. Kruskal, and Leonard M. Napolitano, Jr., "Using the Multistage Cube Network Topology in Parallel Supercomputers," in *Interconnection Networks for Large-Scale Parallel Processing: Theory and Case Studies, 2nd Edition*, by Howard Jay Siegel, McGraw-Hill, New York, NY, pp. 313-364, 1990 (reprinted from *Proceedings of the IEEE*, Special Issue on Supercomputer Technology, Vol. 77, Nov. 12, pp. 1932-1953, Dec. 1989).

[12] George B. Adams III, Dharma P. Agrawal, and Howard Jay Siegel, "A Survey and Comparison of Fault-Tolerant Multistage Interconnection Networks," in *Interconnection Networks for Multiprocessors and Multicomputers: Theory and Practice*, edited by Anujan Varma and C. S. Raghavendra, IEEE Computer Society Press, Los Alamitos, CA, pp. 329-342, 1994 (reprinted from *Computer*, Vol. 20, No. 6, pp. 14-27, June 1987).

[13] Thomas Schwederski, Howard Jay Siegel, and Thomas L. Casavant, "Optimizing Task Migration Transfers Using Multistage Cube Networks," in *Interconnection Networks for High-Performance Parallel Computers*, edited by Isaac D. Scherson and Abdou S. Youssef, IEEE Computer Society Press, Los Alamitos, CA, pp. 636-643, 1994 (reprinted from *1990 International Conference on Parallel Processing*, Vol. I, pp. 51-58, Aug. 1990).

[14] George B. Adams III, Dharma P. Agrawal, and Howard Jay Siegel, "A Survey and Comparison of Fault-Tolerant Multistage Interconnection Networks," in *Interconnection Networks for High-Performance Parallel Computers*, edited by Isaac D. Scherson and Abdou S. Youssef, IEEE Computer Society Press, Los Alamitos, CA, pp. 654-667, 1994 (reprinted from *Computer*, Vol. 20, No. 6, pp. 14-27, June 1987).

[15] Nathaniel J. Davis IV, William Tsun-yuk Hsu, and Howard Jay Siegel, "Fault Location Techniques for Distributed Control Interconnection Networks," in *Interconnection Networks for High-Performance Parallel Computers*, edited by Isaac D. Scherson and Abdou S. Youssef, IEEE Computer Society Press, Los Alamitos, CA, pp. 752-760, 1994 (reprinted from *IEEE Transactions on Computers*, Special Issue on Parallel Processing, Vol. C-34, No. 10, pp. 902-910, Oct. 1985).

[16] Dan C. Marinescu, James E. Lumpp, Jr., Thomas L. Casavant, and Howard Jay Siegel, "Models for Monitoring and Debugging Tools for Parallel and Distributed Software," in *Monitoring and Debugging of Distributed Real-Time Systems*, edited by Jeffrey J. P. Tsai and Steve J. H. Yang, IEEE Computer Society Press, Los Alamitos, CA, pp. 64-76, 1995 (reprinted from *Journal of Parallel and Distributed Computing*, Special Issue on Software Tools for Parallel Programming and Visualization, Vol. 9, No. 2, pp. 171-184, June 1990).

Newsletter Articles

[1] Howard Jay Siegel and Robert J. McMillen, "The Multistage Cube: A Versatile Network for Distributed Processing Test Beds," *Distributed Processing Quarterly*, IEEE Computer Society Technical Committee on Distributed Processing (TCDP) newsletter, Vol. 1, No. 1, pp. 11-14, Jan. 1981. Invited.

[2] Howard Jay Siegel, Thomas Schwederski, Nathaniel J. Davis IV, and James T. Kuehn, "PASM: A Reconfigurable Parallel Processing System for Image Processing," *Computer Architecture News*, ACM Special Interest Group on Computer Architecture (SIGARCH) newsletter, Vol. 12, No. 4, pp. 7-19, Sep. 1984 (reprinted from Proceedings of the Workshop on Algorithm-guided Parallel Architectures for Automatic Target Recognition, pp. 263-291, July 1984; and reprinted in *Parallel Computing: Theory and Comparisons*, by G. J. Lipovski and M. Malek, John Wiley & Sons, New York, NY, pp. 217-238, 1987).

[3] Samuel A. Fineberg, Thomas L. Casavant, Thomas Schwederski, and Howard Jay Siegel, "Numerical Processing Benchmarks on the Distributed-Memory, PASM System Prototype,"

Distributed Processing Technical Committee Newsletter, IEEE Computer Society Technical Committee on Distributed Processing (TCDP) newsletter, Vol. 10, No. 1, pp. 50-61, Mar. 1988.

[4] Howard Jay Siegel, Seth Abraham, William L. Bain, Kenneth E. Batcher, Thomas L. Casavant, Doug DeGroot, Jack B. Dennis, David C. Douglas, Tse-yun Feng, James R. Goodman, Alan Huang, Harry F. Jordan, J. Robert Jump, Yale N. Patt, Alan Jay Smith, James E. Smith, Lawrence Snyder, Harold S. Stone, Russ Tuck, and Benjamin W. Wah, "Executive Summary of the Report of the NSF-Sponsored Purdue Workshop on Grand Challenges in Computer Architecture for the Support of High Performance Computing," *Newsletter of the Parallel Processing Technical Committee*, IEEE Computer Society Technical Committee on Parallel Processing (TCPP) newsletter, Vol. 1, No. 1, pp. 7-8, Oct. 1992.

[5] Howard Jay Siegel, Seth Abraham, William L. Bain, Kenneth E. Batcher, Thomas L. Casavant, Doug DeGroot, Jack B. Dennis, David C. Douglas, Tse-yun Feng, James R. Goodman, Alan Huang, Harry F. Jordan, J. Robert Jump, Yale N. Patt, Alan Jay Smith, James E. Smith, Lawrence Snyder, Harold S. Stone, Russ Tuck, and Benjamin W. Wah, "Executive Summary of the Report of the NSF-Sponsored Purdue Workshop on Grand Challenges in Computer Architecture for the Support of High Performance Computing," *Computer Architecture Technical Committee Newsletter*, IEEE Computer Society Technical Committee on Computer Architecture (TCCA) newsletter, pp. 5-6, Fall 1992.

[6] Howard Jay Siegel, Seth Abraham, William L. Bain, Kenneth E. Batcher, Thomas L. Casavant, Doug DeGroot, Jack B. Dennis, David C. Douglas, Tse-yun Feng, James R. Goodman, Alan Huang, Harry F. Jordan, J. Robert Jump, Yale N. Patt, Alan Jay Smith, James E. Smith, Lawrence Snyder, Harold S. Stone, Russ Tuck, and Benjamin W. Wah, "Executive Summary of the Report of the NSF-Sponsored Purdue Workshop on Grand Challenges in Computer Architecture for the Support of High Performance Computing," *Computer Architecture News*, ACM Special Interest Group on Computer Architecture (SIGARCH) newsletter, Vol. 20, No. 5, pp. 4-5, Dec. 1992.

Technical Reports

[1] Howard Jay Siegel, "PS Tree: A Data Structure for Representing Certain Types of Real World Knowledge in a Natural Language Understanding System," Rutgers University, Dept. of Computer Science, Computers in Biomedicine Technical Report No. CBM-TM-40, May 1974, 76 pp.

[2] Howard Jay Siegel, "Analysis Techniques for SIMD Machine Interconnection Networks and the Effects of Processor Address Masks," Princeton University, Dept. of Electrical Engineering, Computer Science Laboratory Technical Report No. 185, Apr. 1975, 49 pp.

[3] Howard Jay Siegel, "SIMD Machine Interconnection Network Design," Princeton University, Dept. of Electrical Engineering, Computer Science Laboratory Technical Report No. 198, Jan. 1976, 78 pp.

[4] Howard Jay Siegel, "Single Instruction Stream - Multiple Data Stream Machine Interconnection Network Universality," Princeton University, Dept. of Electrical Engineering and Computer Science, Computer Science Laboratory Technical Report No. 223, Aug. 1976, 36 pp.

[5] Howard Jay Siegel, "Masking Schemes for Determining the Active/Inactive Status of Single Instruction Stream-Multiple Data Stream Machine Processors," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 77-25, May 1977, 40 pp.

[6] Howard Jay Siegel, Philip T. Mueller, Jr., and Harold E. Smalley, "Preliminary Design Alternatives for a Versatile Parallel Image Processor," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 78-32, June 1978, 69 pp.

[7] Howard Jay Siegel, Robert J. McMillen, Philip T. Mueller, Jr., and S. Diane Smith, "A Versatile Parallel Image Processor: Some Hardware and Software Problems," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 78-43, Oct. 1978, 86 pp.

[8] S. Diane Smith and Howard Jay Siegel, "Design and Analysis of Interconnection Networks for Partitionable Parallel Processing Systems," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 79-39, Aug. 1979, 250 pp.

[9] Howard Jay Siegel, Leah J. Siegel, Frederick Kemmerer, Philip T. Mueller, Jr., and S. Diane Smith, "PASM: A Partitionable Multimicrocomputer SIMD/MIMD System for Image Processing and Pattern Recognition," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 79-40, Aug. 1979, 69 pp.

[10] Philip H. Swain, Paul E. Anuta, David A. Landgrebe, and Howard Jay Siegel, "Volume III: Processing Techniques Development, Part 2: Data Preprocessing and Information Extraction Techniques," LARS Contract Report 113079, Nov. 1979, 160 pp.

[11] Howard Jay Siegel, Philip H. Swain, Leah J. Siegel, Philip T. Mueller, Jr., and Joseph El-Achkar, "Parallel Image Processing/Feature Extraction Algorithms and Architecture Emulation: Interim Report for the Period June 1979 to Sep. 1979," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 79-51, Nov. 1979, 120 pp.

[12] Robert J. McMillen and Howard Jay Siegel, "Interconnection Networks and Operating System Considerations for PASM - A Reconfigurable Multimicroprocessor System," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 80-15, June 1980, 188 pp.

[13] Howard Jay Siegel and Robert J. McMillen, "The Use of the Multistage Cube Network in a Multimicroprocessor Test Bed System," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 80-16, June 1980, 75 pp.

[14] Bradley W. Smith, Howard Jay Siegel, and Philip H. Swain, "Multiprocessor Implementation of a Contextual Image Processing Algorithm," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 80-33, LARS Technical Report 070180, July 1980, 131 pp.

[15] Howard Jay Siegel, Leah J. Siegel, Philip H. Swain, Joseph El-Achkar, Arthur E. Feather, Philip T. Mueller, Jr., and Michael R. Warpenburg, "Parallel Image Processing/Feature Extraction Algorithms and Architecture Emulation: Interim Report for Fiscal 1980, Volume I: Algorithms," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 80-57, Oct. 1980, 287 pp.

[16] Howard Jay Siegel and James T. Kuehn, "Parallel Image Processing/Feature Extraction Algorithms and Architecture Emulation: Interim Report for Fiscal 1980, Volume II: Architecture Emulation," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 80-58, Oct. 1980, 221 pp.

[17] George B. Adams III and Howard Jay Siegel, "Properties of the Augmented Data Manipulator Network in an SIMD Environment," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE-80-51, Dec. 1980, 95 pp.

[18] Howard Jay Siegel, Philip H. Swain, George B. Adams III, and Robert J. McMillen, "Parallel/Distributed Multimicroprocessor Systems for Ballistic Missile Defense, Final Report for the Period Feb. 1980 to May 1981, Volume I: Interconnection Networks," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 81-12, June 1981.

[19] Howard Jay Siegel, Leah J. Siegel, Philip H. Swain, George B. Adams III, Gie-Ming Lin, and Michael R. Warpenburg, "Parallel Image Processing/Feature Extraction Algorithms and Architecture Emulation: Interim Report for Fiscal 1981, Volume I: Algorithms," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 81-35, Oct. 1981, 171 pp.

[20] Howard Jay Siegel and James T. Kuehn, "Parallel Image Processing/Feature Extraction Algorithms and Architecture Emulation: Interim Report for Fiscal 1981, Volume II: Architecture Emulation," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 81-36, Oct. 1981.

[21] Elizabeth C. Seed and Howard Jay Siegel, "The Use of Database Techniques in the Implementation of a Syntactic Pattern Recognition Task on a Parallel Reconfigurable Machine," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 81-49, Dec. 1981, 110 pp.

[22] Howard Jay Siegel and James T. Kuehn, "Design and Simulation of a Multimicroprocessor System for Mapping Applications," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 83-18, Dec. 1982, 334 pp.

[23] Robert R. Seban and Howard Jay Siegel, "Using the PM2I and Illiac SIMD Networks to Shuffle," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 83-6a, Mar. 1983, 33 pp.

[24] Leah J. Siegel, Howard Jay Siegel, Phillip H. Swain, George B. Adams III, William E. Kuhn III, Robert J. McMillen, Thomas A. Rice, Kirk D. Smith, and David Lee Tuomenoksa, "Distributed Computing for Signal Processing: Modeling of Asynchronous Parallel Computation, 1983 Progress Report," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 83-11, Mar. 1983, 292 pp.

[25] Howard Jay Siegel and James T. Kuehn, "Design and Simulation of a Multimicroprocessor System for Mapping Applications," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 83-18, Dec. 1983, 334 pp.

[26] Leah J. Siegel, Howard Jay Siegel, Philip H. Swain, George B. Adams III, Gie-Ming Lin, David L. Tuomenoksa, and Thomas A. Rice, "Parallel Processing Approaches to Production Scenarios for Mapping Applications," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 83-27, Aug. 1983, 265 pp.

[27] Veljko M. Milutinovic and Howard Jay Siegel, "The LOCO Approach to Distributed Task Allocation in AIDA by VERDI," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 83-49, Nov. 1983, 25 pp.

[28] Howard Jay Siegel, David Meyer, Ed Coyle, Robert R. Seban, Seth Hutchinson, and Bret Young, "Interconnection Networks for a Distributed Signal Processing System: A Case Study," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 84-40, Sep. 1984, 149 pp.

[29] Thomas L. Casavant, Henry G. Dietz, Phillip Chen-yu Sheu, and Howard Jay Siegel, "The PARSE Programming Paradigm, Part I: Software Development Methodology, Part II: Software Development Support Tools," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 87-22, June 1987, 58 pp.

[30] Darwen Rau, Jose A. B. Fortes, and Howard Jay Siegel, "Destination Tag Routing Techniques Based on a State Model for the IADM Network," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 87-39, Oct. 1987, 53 pp. (Also Supercomputing Research Center, Lanham, MD, Technical Report No. SRC-TR-87-006.)

[31] C. Henry Chu, Edward J. Delp, Leah H. Jamieson, Howard Jay Siegel, Frank J. Weil, and Andrew B. Whinston, "A Model for an Intelligent Operating System for Executing Tasks on a Reconfigurable Parallel Architecture," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 88-53, Nov. 1987, 37 pp. (Also Supercomputing Research Center, Lanham, MD, Technical Report No. SRC-TR-87-007.)

[32] Wayne G. Nation and Howard Jay Siegel, "Properties of Disjoint Paths in Data Manipulator Networks," Supercomputing Research Center, Lanham, MD, Technical Report No. SRC-TR-88-001, Jan. 1988, 25 pp.

[33] Thomas L. Casavant, Howard Jay Siegel, Thomas Schwederski, Leah H. Jamieson, Samuel A. Fineberg, Michael J. McPheters, Edward C. Bronson, W. Disch, K. Schurecht, E. H. Loh, C. Ringer, Brian Cox, and C. A. Toomey, "Experimental Benchmarks and Initial Evaluation of the Performance of the PASM System Prototype," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 88-2, Jan. 1988, 134 pp.

[34] Dan C. Marinescu, James E. Lumpp, Jr., Thomas L. Casavant, and Howard Jay Siegel, "An Event-Action Model and Associated Architecture for Monitoring Parallel and Distributed Systems," Purdue University, Computer Sciences Dept., Technical Report No. CSD-TR-817, Oct. 1988, 23 pp.

[35] Samuel A. Fineberg, Thomas L. Casavant, and Howard Jay Siegel, "Experimental Evaluation of SIMD PE-Mask Generation and Hybrid Mode Parallel Computing on Multi-Microprocessor Systems," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 88-55, Nov. 1988, revised July 1989, 37 pp.

[36] Samuel A. Fineberg, Thomas L. Casavant, and Howard Jay Siegel, "Experimental Analysis of Communication/Synchronization Aspects of a Mixed-Mode Parallel Architecture via Synthetic Computations," University of Iowa, Electrical and Computer Engineering Dept., Technical Report No. TR-ECE-900413, Apr. 1990, 27 pp.

[37] Mikhail J. Atallah, Christina Lock, Dan C. Marinescu, Howard Jay Siegel, and Thomas L. Casavant, "Models and Algorithms for Co-Scheduling Computer-Intensive Tasks on a Network of Workstations," Purdue University, Computer Sciences Dept., Technical Report No. CSD-TR-1040, Nov. 1990, 20 pp.

[38] Mu-Cheng Wang, Howard Jay Siegel, Mark A. Nickols, and Seth Abraham, "Using the Extra Stage Cube Multipath Network to Reduce the Impact of Hot Spots," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 92-25, July 1992, 34 pp.

[39] Howard Jay Siegel, Seth Abraham, William L. Bain, Kenneth E. Batcher, Thomas L. Casavant, Doug DeGroot, Jack B. Dennis, David C. Douglas, Tse-yun Feng, James R. Goodman, Alan Huang, Harry F. Jordan, J. Robert Jump, Yale N. Patt, Alan Jay Smith, James E. Smith, Lawrence Snyder, Harold S. Stone, Russ Tuck, and Benjamin W. Wah, "Report of the Purdue Workshop on Grand Challenges in Computer Architecture for the Support of High Performance Computing," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 92-26, July 1992, 45 pp.

[40] Gene Saghi, Howard Jay Siegel, and Jose A. B. Fortes, "On a Quantitative Model of Dynamic System Reconfiguration Due to a Fault," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 93-18, Apr. 1993, 48 pp.

[41] Mu-Cheng Wang, Wayne G. Nation, James B. Armstrong, Howard Jay Siegel, Shin-Dug Kim, Mark A. Nichols, and Michael Gherrity, "Computing Multiple Quadratic Forms for a Minimum Variance Distortionless Response Adaptive Beamformer Using Parallelism: Analyses and Experiments," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 93-20, May 1993, 45 pp.

[42] Howard Jay Siegel, John K. Antonio, Richard C. Metzger, Min Tan, and Yan Alexander Li, "Heterogeneous Computing," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 94-37, Dec. 1994, 80 pp.

[43] Howard Jay Siegel, Lee Wang, John John E. So, and Muthucumaru Maheswaran, "Data Parallel Algorithms," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 94-38, Dec. 1994, 65 pp.

[44] Geoffrey C. Fox, Salim Hariri, Howard Jay Siegel, Henry G. Dietz, and C. V. Ramamoorthy, "Rome Laboratory Software Engineering Cooperative Virtual Machine," Rome Laboratory, Air Force Materiel Command, Griffiss Air Force Base, NY, Technical Report No. RL-TR-94-221, Dec. 1994, 67 pp.

[45] Min Tan, John K. Antonio, Howard Jay Siegel, and Yan Alexander Li, "Impact of Data-Reuse and Multiple Data-Copies in a Heterogeneous Computing System with Sequentially Executed Subtasks," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 95-2, Jan. 1995, 34 pp.

[46] Howard Jay Siegel and John K. Antonio, "Methodologies for Mapping Tasks onto Heterogeneous Processing Systems," Rome Laboratory, Air Force Materiel Command, Griffiss Air Force Base, NY, Technical Report No. RL-TR-95-132, July 1995, 181 pp.

[47] Howard Jay Siegel and Craig B. Stunkel, "Trends in Parallel Machine Interconnection Networks," IBM Research Division, T.J. Watson Research Center, Yorktown Heights, NY, Technical Report No. RC 20454 (90434), May 1996, 5 pp.

[48] John R. Budenske, Howard Jay Siegel, Ranga S. Ramanujan, Kenneth J. Thurber, and Mark D. Pritt, "Intelligent Operating System Final Technical Report," Architecture Technology Corp., Minneapolis, MN, Technical Report ATC-RD-96-04, Oct. 1996, 91 pp.

[49] Lee Wang, Ranga S. Ramanujan, James A. Newhouse, Maher Kaddoura, Atiq Ahamad, Kenneth J. Thurber, and Howard Jay Siegel, "An Objective Approach to Assessing Relative Perceptual Quality

of MPEG-Encoded Video Sequences," Architecture Technology Corp., Minneapolis, MN, Technical Report ATC-RD-97-07, Mar. 1997, 24 pp.

[50] Mitchell D. Theys, Min Tan, Noah B. Beck, Howard Jay Siegel, and Michael Jurczyk, "Heuristics and a Mathematical Framework for Scheduling Data Requests in a Distributed Communication Network," Purdue University, School of Electrical and Computer Engineering, Technical Report No. TR-ECE 99-2, Jan. 1999, 58 pp.

[51] Noah B. Beck, Mitchell D. Theys, Howard Jay Siegel, and Michael Jurczyk, "Evaluation of Heuristics in a Distributed Data Staging Network," Purdue University, School of Electrical and Computer Engineering, Technical Report No. TR-ECE 99-7, May 1999, 141 pp.

[52] Tracy D. Braun, Howard Jay Siegel, Noah Beck, Ladislau L. Boloni, Muthucumaru Maheswaran, Albert I. Reuther, James P. Robertson, Mitchell D. Theys, Bin Yao, Debra Hensgen, and Richard F. Freund, "A Comparison Study of Eleven Static Heuristics for Mapping a Class of Independent Tasks onto Heterogeneous Distributed Computing Systems," Purdue University, School of Electrical and Computer Engineering, Technical Report No. TR-ECE 00-4, Mar. 2000, 57 pp.

[53] Pranav Dharwadkar, Howard Jay Siegel, and Edwin K.P. Chong, "A Study of Dynamic Bandwidth Allocation with Preemption and Degradation for Prioritized Requests," Purdue University, School of Electrical and Computer Engineering, Technical Report No. TR-ECE 00-9, July 2000, 108 pp.

[54] Amit D. Naik, Howard Jay Siegel, and Edwin K.P. Chong, "Dynamic Bandwidth Allocation for Requests with Classes and Priorities in Preemptive Distributed Networks," Purdue University, School of Electrical and Computer Engineering, Technical Report No. TR-ECE 00-10, July 2000, 100 pp.

[55] Yu-Kwong Kwok, Anthony A. Maciejewski, Howard Jay Siegel, Arif Ghafoor, and Ishfaq Ahmad, "Design and Analysis of A Semi-Static Approach to Mapping Dynamic Iterative Tasks onto Heterogeneous Computing Systems," The University of Hong Kong, Dept. of Electrical and Electronic Engineering, Technical Report No. TR-2001-CSN-036, Sep. 2001, 36 pp.

[56] Tracy D. Braun, Shoukat Ali, Howard Jay Siegel, and Anthony. A. Maciejewski, "Using the Min-Min Heuristic to Map Tasks onto Heterogeneous High-Performance Computing Systems," Colorado State University, Electrical and Computer Engineering Dept., Technical Report No. 2001-10-05, Oct. 2001, 26 pp.

Patents

[1] "Extra Stage Cube," Patent No. 4,523,273, issued on June 11, 1985, George B. Adams III and Howard Jay Siegel, inventors.

[2] Disclosure submitted to the U.S. Patent Office: Title: "Methods and Systems for Improved Printing System Sheet Side Dispatch in a Clustered Printer Controller," filed Sep. 1, 2006 as IBM Docket BLD9-2006-0015 in US, Suzy Price, Larry D. Teklits, Larry Ernst, Jay Smith, Howard Jay Siegel, Vladimir V. Shestak, and Prasanna V. Sugavanam, inventors.

[3] Disclosure submitted to the U.S. Patent Office: Title: "Stochastic sheet side dispatcher for clustered printing systems," filed 2007 as IPS Docket BLD9-2007-0011 in US, Suzy Price, Larry D. Teklits, Larry Ernst, Jay Smith, Howard Jay Siegel, and Vladimir V. Shestak, inventors.

Copyright Material

[1] "Dynamic Task Migration between SIMD and MIMD Virtual Machines," Purdue Disclosure No. C-95067, issued July 5, 1995, James B. Armstrong, Howard Jay Siegel, and William E. Cohen, inventors.

Invited Lectures

[1] "Computers and the Future" (with Leah J. Siegel), Purdue Women's Dinner Club, West Lafayette, IN, Mar. 1979.

[2] "PASM: A Partitionable SIMD/MIMD Multimicroprocessor System," University of Wisconsin, Madison, WI, Computer Science/Electrical Engineering Seminar, Apr. 16, 1979.

[3] "Interconnection Networks and the PASM Multimicroprocessor Systems," Ballistic Missile Defense Agency, Huntsville, AL, Aug. 1979.

[4] "PASM: A Partitionable Multimicroprocessor System for Image Processing and Pattern Recognition," University of Rochester, Rochester, NY, Seminar, Nov. 12, 1979.

[5] "PASM: A Partitionable Multimicroprocessor System for Image Processing and Pattern Recognition," Xerox Corp. Webster Research Center, Rochester, NY, Nov. 13, 1979.

[6] "Can 1,000 Processors Do It 1,000 Times Faster?" Auburn University, Auburn, AL, Electrical Engineering Dept. Computer Engineering Seminar, and local Chapter of the IEEE Computer Society - IEEE Computer Society Distinguished Visitor Seminar, Jan. 24, 1980.

[7] "PASM: A Multimicroprocessor System for Image Processing," General Motors Research Laboratory, Warren, MI, Feb. 19, 1980.

[8] "PASM: A Multimicroprocessor System for Image Processing," Huntsville, AL, local Chapter of the IEEE Computer Society, IEEE Computer Society Distinguished Visitor Seminar, Mar. 18, 1980.

[9] "PASM: A Multimicroprocessor System for Image Processing," Rice University, Houston, TX, Electrical Engineering Dept. Seminar and Student Chapter of the IEEE Computer Society - IEEE Computer Society Distinguished Visitor Seminar, Mar. 25, 1980.

[10] "Can 1,000 Processors Do It 1,000 Times Faster?" University of Houston, Houston, TX, Computer Science Dept. Seminar and Houston Chapter of the IEEE Computer Society - IEEE Computer Society Distinguished Visitor Seminar, Mar. 25, 1980.

[11] "PASM: A Multimicroprocessor System for Image Processing," University of MN, Minneapolis, MN, Electrical Engineering Dept. Seminar, Apr. 3, 1980.

[12] "Can 1,000 Processors Do It 1,000 Times Faster?" University of Missouri, Rolla, MO, local Student Chapter of the IEEE Computer Society, IEEE Computer Society Distinguished Visitor Seminar, Nov. 13, 1980.

[13] "PASM: A Multimicroprocessor System for Image Processing," State University of New York at Buffalo, Buffalo, NY, Computer Science Dept. Seminar and local Student Section of the IEEE - IEEE Computer Society Distinguished Visitor Seminar, Feb. 11, 1981.

[14] "Can 1,000 Processors Do It 1,000 Times Faster?" Rochester, NY, local Chapter of the IEEE Computer Society, IEEE Computer Society Distinguished Visitor Seminar, Feb. 12, 1981.

[15] "PASM: A Multimicroprocessor System for Image Processing," University of Michigan, Ann Arbor, MI, Electrical and Computer Engineering Dept. Seminar, Apr. 17, 1981.

[16] "PASM: A Reconfigurable Multimicroprocessor System," Purdue University, West Lafayette, IN, Computer Science - Electrical Engineering Parallel Computation Seminar Series, Oct. 1981.

[17] "PASM: A Multimicroprocessor System for Image Processing," Texas A&M, College Station, TX, Student Chapter of the IEEE Computer Society, IEEE Computer Society Distinguished Visitor Seminar, Oct. 20, 1981.

[18] "Can 1,000 Processors Do It 1,000 Times Faster?" Texas A&M, College Station, TX, Student Chapter of the IEEE Computer Society, IEEE Computer Society Distinguished Visitor Seminar, Oct. 20, 1981.

[19] "PASM: A Multimicroprocessor System for Image Processing," Rensselaer Polytechnic Institute, Troy, NY, Electrical, Computer, and Systems Engineering Dept. Seminar, Dec. 10, 1981.

[20] "Can 1,000 Processors Do It 1,000 Times Faster?" Fort Worth, TX, local Chapter of the IEEE Computer Society, IEEE Computer Society Distinguished Visitor Seminar, Mar. 25, 1982.

[21] "Dynamically Reconfigurable Multiprocessing Systems," Dallas, TX, local Chapter of the IEEE Computer Society, IEEE Computer Society Distinguished Visitor Seminar, Mar. 26, 1982.

[22] "PASM: A Partitionable Multimicroprocessor System," IBM Watson Research Center, Yorktown Heights, NY, Aug. 17, 1982.

[23] "The Extra Stage Cube: A Fault Tolerant Interconnection Network," IBM Watson Research Center, Yorktown Heights, NY, Aug. 18, 1982.

[24] "PASM: A Partitionable SIMD/MIMD System for Image Processing and Pattern Recognition," Carnegie-Mellon University, Pittsburgh, PA, Electrical Engineering Dept. Seminar, Feb. 7, 1983.

[25] "The PASM System," NATO Advanced Study Institute on Computer Architectures for Spatially Distributed Data, Cetraro, Italy, June 10, 1983.

[26] "Parallel Image Processing Algorithms," NATO Advanced Study Institute on Computer Architectures for Spatially Distributed Data, Cetraro, Italy, June 14, 1983.

[27] "PASM: A Large-Scale Multimicroprocessor System for Image Processing," Lawrence Livermore National Laboratory, Livermore, CA, Engineering Research Division Seminar, Sep. 9, 1983.

[28] "The Extra Stage Cube: A Fault Tolerant Interconnection Network for Supersystems," Hewlett-Packard, Corp., Fort Collins, CO, Feb. 10, 1984.

[29] "The PASM Parallel Processing System," Purdue University, West Lafayette, IN, Computer Science Dept. Super-Seminar Series, Oct. 24, 1984.

[30] "The PASM Parallel Processing System," Purdue University, West Lafayette, IN, Computer Science Dept. Colloquium, Mar. 4, 1985.

[31] "The PASM Parallel Processing System," Data General, Westborough, MA, July 22, 1985.

[32] "The Extra Stage Cube Interconnection Network," Columbia University, New York, NY, Center for Telecommunications Research, Seminars on Telecommunications, Feb. 14, 1986.

[33] "PASM: A Partitionable SIMD/MIMD Parallel Image Processor," NASA Space Data and Computing Division, Greenbelt, MD, Graphics and Image Science Seminar, Mar. 27, 1986.

[34] "The PASM Parallel Processing System," Supercomputing Research Center, Lanham, MD, Mar. 28, 1986.

[35] "PASM: A Partitionable Parallel Processing System," The University of Southwest Louisiana, Lafayette, LA, colloquium cosponsors: The Center for Advanced Computer Studies, and the Student Chapters of the ACM, Data Processing Management Association, and IEEE Computer Society, Feb. 3, 1987.

[36] "PASM: A Partitionable Parallel Processing System," NYU, New York, NY, NYU Courant Institute of Mathematical Sciences Seminar, Feb. 13, 1987.

[37] "PASM: A Partitionable Parallel Processing System," University of Illinois, Champaign-Urbana, IL, Center for Supercomputing Research and Development Seminar, Feb. 17, 1987.

[38] "Parallel Processing Systems," Scitex Computer Limited, Herzlia, Israel, Mar. 11, 1987.

[39] "The PASM Reconfigurable Parallel Processing System," Technion University, Haifa, Israel, Electrical Engineering Dept. Seminar, Mar. 11, 1987.

[40] "PASM and Alligators," Purdue University, West Lafayette, IN, Joint Bi-Weekly Electrical Engineering and Computer Science Parallel Processing Seminar, Apr. 16, 1987.

[41] "PASM: A Partitionable SIMD/MIMD Multiprocessor System," State University of New York at Buffalo, Buffalo, NY, Computer Science Dept. Colloquium, Oct. 22, 1987.

[42] "PASM: A Reconfigurable Parallel Processing System," University of Toronto, Toronto, Canada, Electrical Engineering Dept. Seminar, Nov. 20, 1987.

[43] "The PASM Parallel Processing System and Prototype," Bolt, Beranek, and Newman (BBN), Cambridge, MA, BNN Seminar, Nov. 1987.

[44] "PASM: A Reconfigurable Parallel Processing System," University of Maryland, College Park, MD, Computer Science Dept., Lecture Series Seminar, Feb. 22, 1988.

[45] "PASM: A Reconfigurable Parallel Processing System," Sandia National Laboratory, Livermore, CA, Seminar, Feb. 25, 1988.

[46] "Multistage Cube Networks for Parallel Processing," NCR, Minneapolis, MN, NCR Advanced Systems Seminar, Mar. 21, 1988.

[47] "Fun with Parallel Processing ... But Beware of the Alligators!" Purdue University, West Lafayette, IN, meeting of the Purdue Student Chapter of the IEEE Computer Society, Oct. 20, 1988.

[48] "PASM: A Reconfigurable Parallel Processing System," University of Southern California, Los Angeles, CA, Computer Engineering Seminar, Dec. 8, 1988.

[49] "Fun with Parallel Processing ... But Beware of the Alligators!" Purdue University, West Lafayette, IN, School of Electrical Engineering Graduate EE694 Seminar, Aug. 29, 1989.

[50] "The PASM Parallel Processing System and Alligators," University of Iowa, Iowa City, IA, Joint Bi-Weekly Electrical Engineering and Computer Science Parallel Processing Seminar, Oct. 19, 1989.

[51] "High Speed Parallel Processing: An Alternative Approach," NOSC (Naval Ocean Systems Center), San Diego, CA, NOSC Technical Seminar, Dec. 14, 1989.

[52] "PASM: A Reconfigurable Parallel Processing System," The George Washington University, Washington, DC, Dept. of Electrical Engineering and Computer Science and IEEE Student Chapter of The George Washington University Colloquium, Feb. 6, 1990.

[53] "PASM: A Reconfigurable Parallel Processing System," George Mason University, Fairfax, VA, Center for Parallel Computation Lecture Series in Parallel Computing, Feb. 7, 1990.

[54] "PASM Research Activities," NCR Corp., San Diego, CA, NCR Parallel Processing Academic Advisory Council Meeting, Aug. 23, 1990.

[55] "Multistage Cube Interconnection Networks for Parallel Processing," George Mason University, Fairfax, VA, Center for Parallel Computation and Virginia Center for Innovation Technology Lecture Series in Parallel Computing, Dec. 7, 1990.

[56] "Multistage Cube Interconnection Networks for Parallel Processing," Cray Research, Inc., Mendota Heights, MN, Dec. 18, 1990.

[57] "The PASM Reconfigurable Parallel Processing System," Cray Research, Inc., Mendota Heights, MN, Dec. 18, 1990.

[58] "The PASM Reconfigurable Parallel Processing System," Thinking Machines Corp., Cambridge, MA, Jan. 29, 1991.

[59] "Part 1: Mapping Tasks onto the PASM Reconfigurable Parallel Processing System; Part 2: Beware of the Alligators!!!," Ball State University, Muncie, IN, Dept. of Computer Science Colloquium, Apr. 18, 1991.

[60] "Part 1: The Organization and Use of the PASM Reconfigurable Parallel Processing System; Part 2: Beware of the Alligators!!!," Colgate University, Hamilton, NY, "Parallel Computing for Undergraduate Faculty" Seminar, sponsor: a National Science Foundation Enhancement Project, July 12, 1991.

[61] "Mapping Image Processing Tasks onto Reconfigurable Parallel Processing Systems," Texas Instruments, Dallas, TX, T/I Parallel and Systems Architecture Branch Special Seminar, July 26, 1991.

[62] "The PASM Reconfigurable Parallel Processing System," University of Texas at Arlington, Arlington, TX, Dept. of Computer Science and Engineering Seminar, July 26, 1991.

[63] "Parallel Methods for Computing Multiple Quadratic Forms for an MVDR Adaptive Beamformer," NOSC (Naval Ocean Systems Center), San Diego, CA, NOSC Technical Seminar, Aug. 1, 1991.

[64] "Mapping Tasks onto Reconfigurable Parallel Processing Systems," Kent State University, Kent, OH, Mathematical Sciences Dept. Seminar, Oct. 24, 1991.

[65] "The PASM Reconfigurable Parallel Processing System," Kent State University, Kent, OH, Mathematical Sciences Dept. Seminar, Oct. 24, 1991.

[66] "Fun with Parallel Processing ... But Beware of the Alligators!!!" Purdue University, West Lafayette, IN, HKN "Lunch with a Professor" Seminar, Oct. 30, 1991.

[67] "Mapping Tasks onto Reconfigurable Parallel Processing Systems," University of California at Irvine, Irvine, CA, Information and Computer Science Dept. Colloquium, Mar. 27, 1992.

[68] "The PASM Reconfigurable Parallel Processing System," NEC Research Institute, Princeton, NJ, June 8, 1992.

[69] "Part 1: The Organization and Use of the PASM Reconfigurable Parallel Processing System; Part 2: Beware of the Alligators!!!," Colgate University, Hamilton, NY, "Parallel Computing for Undergraduate Faculty" Seminar, sponsor: a National Science Foundation Enhancement Project, June 26, 1992.

[70] "Fun with Parallel Processing (But Beware of the Alligators!)," Purdue University, West Lafayette, IN, School of Electrical Engineering Senior EE400 Seminar and Graduate EE694 Seminar, Nov. 12, 1992.

[71] "Mapping Tasks onto Reconfigurable Parallel Processing Systems," Lawrence Livermore National Laboratory, Livermore, CA, Computing Research Group Seminar, Dec. 14, 1992.

[72] "The PASM Reconfigurable Parallel Processing System," University of Nevada at Las Vegas, Las Vegas, NV, Dept. of Computer Science Colloquium, Oct. 5, 1994.

[73] "The PASM Reconfigurable Parallel Processing System," Purdue University, West Lafayette, IN, School of Electrical Engineering Graduate EE694 Seminar, Oct. 20, 1994.

[74] "Heterogeneous Computing: Goals and Open Problems," University of Cincinnati, Cincinnati, OH, Computer Science Dept. Seminar, Nov. 8, 1994.

[75] "Heterogeneous Computing: Goals and Open Problems," University of Iowa, Iowa City, IA, Electrical and Computing Engineering Graduate Seminar, Mar. 9, 1995.

[76] "An Approach for Adding Subtask Parallelism to SmartNet," NRaD Naval Laboratory, San Diego, CA, 2nd Semi-Annual SmartNet PI Meeting, Aug. 2, 1995.

[77] "The PASM Reconfigurable Parallel Processing System," Curtin University of Technology, Perth, Western Australia, Australia, School of Computing Seminar, Sep. 25, 1995.

[78] "The PASM Reconfigurable Parallel Processing System," The University of Western Australia Perth, Western Australia, Australia, Dept. of Electrical and Electronic Engineering Seminar, Sep. 25, 1995.

[79] "High-Performance Heterogeneous Computing: Goals and Open Problems," The Hong Kong University of Science and Technology, Kowloon, Hong Kong, Dept. of Computer Science Seminar, Dec. 5, 1995.

[80] "An Introduction to Designing Algorithms for Parallel Computers," The Hong Kong University of Science and Technology, Kowloon, Hong Kong, School of Engineering "Distinguished Lectures in Engineering" Series, Dec. 6, 1995.

[81] "High-Performance Heterogeneous Computing: Goals and Open Problems," New York Academy of Sciences, Computer and Information Sciences Section, New York, NY, Dec. 12, 1995.

[82] "Heterogeneous Computing Systems: Goals and Open Problems," Florida Atlantic University, Boca Raton, FL, IBM/FAU Dept. of Computer Science and Engineering Distinguished Lecture Series, Feb. 26, 1996.

[83] "High-Performance Heterogeneous Computing: Goals and Open Problems," University of Nebraska-Lincoln, Lincoln, NE, Center for Communication and Information Sciences (CCIS) Colloquium Series, Mar. 5, 1996.

[84] "High-Performance Heterogeneous Computing: Goals and Open Problems," Purdue University, West Lafayette, IN, Electrical and Computer Engineering School Parallel Processing Seminar Series, Mar. 21, 1996.

[85] "Multistage Cube Interconnection Networks for Parallel Processing" Chinese National Research Center for Intelligent Computing Systems (NCIC), Beijing, China, June 10, 1996.

[86] "The PASM Project: A Study of Reconfigurable Parallel Computing," Beijing University of Aeronautics and Astronautics, Beijing, China, Dept. of Computer Science Lecture, June 17, 1996.

[87] "The PASM Reconfigurable Parallel Processing System," Fudan University, Shanghai, China, Dept. of Computer Science Institute for Parallel Processing Lecture, June 18, 1996.

[88] "Computing with Heterogeneous Parallel Machines: Advantages and Challenges," Shanghai Jiao Tong University, Shanghai, China, Dept. of Computer Science and Engineering Lecture, June 18, 1996.

[89] "The PASM Project: A Study of Reconfigurable Parallel Computing," Jiangnan Institute of Computing Technology, Shanghai, China, June 19, 1996.

[90] "Computing with Heterogeneous Parallel Machines: Advantages and Challenges," Jiangnan Institute of Computing Technology, Shanghai, China, June 19, 1996.

[91] "High-Performance Heterogeneous Computing: Goals and Open Problems," NRaD Naval Laboratory, San Diego, CA, Heterogeneous Computing Team Seminar, July 30, 1996.

[92] "High-Performance Heterogeneous Computing: Goals and Open Problems," Old Dominion University, Norfolk, VA, Dept. of Computer Science Colloquium, Nov. 13, 1996.

[93] "An Introduction to High-Performance Heterogeneous Computing: Mixed-Mode and Mixed-Machine Systems," University of Central Florida, Orlando, FL, Student Chapter of the ACM, ACM Distinguished Lecturer Seminar, Mar. 6, 1997.

[94] "An Overview of Mixed-Machine Heterogeneous Computing and the Use of a Genetic Algorithm Approach for Matching and Scheduling," University of Central Florida, Orlando, FL, Computer Science Dept. Seminar, Mar. 7, 1997.

[95] "The PASM Reconfigurable Parallel Processing System," Departamento de Engenharia Eletronica, Escola Politecnica, Universidade de Sao Paulo, Sao Paulo, Brazil, Laboratorio de Sistemas Integraveis (Laboratory of Integrated Systems) Seminar, Oct. 13, 1997.

[96] "Off-Line and On-Line Use of a Genetic Algorithm Approach to Matching and Scheduling for a Heterogeneous Suite of Machines," Purdue University, West Lafayette, IN, Electrical and Computer Engineering School Parallel Processing Seminar Series, Nov. 12, 1997.

[97] "Off-Line and On-Line Use of a Genetic Algorithm Approach to Matching and Scheduling for a Heterogeneous Suite of Machines," Texas Tech University, Lubbock, TX, Special Computer Science Seminar, Nov. 18, 1997.

[98] "Static Mapping of a Class of Tasks onto Distributed Heterogeneous Computing Systems," University of Hong Kong, Hong Kong, Computer Engineering Seminar, June 26, 1998.

[99] "Off-Line and On-Line Use of a Genetic Algorithm Approach to Matching and Scheduling for a Heterogeneous Suite of Machines," The Hong Kong University of Science and Technology, Kowloon, Hong Kong, Dept. of Computer Science Seminar, June 29, 1998.

[100] "Heuristics for Statically Mapping of a Class of Tasks onto Heterogeneous Computing Suites," University of Southern California, Los Angeles, CA, Dept. of EE-Systems Seminar, Nov. 23, 1998.

[101] "Scheduling Heuristics for Satisfying Prioritized Data Requests in an Oversubscribed Communication Network," The Aerospace Corporation, Los Angeles, CA, Computer Systems Research Dept. Seminar, Jan. 26, 1999.

[102] "Heuristics for Mapping of a Class of Independent Tasks onto Heterogeneous Computing Suites," Monash University, Caufield, Victoria, Australia, School of Computer Science and Software Engineering Seminar, July 13, 1999.

[103] "Scheduling Heuristics for Satisfying Prioritized Data Requests in an Oversubscribed Communication Network," The University of Western Australia Perth, Western Australia, Australia, Dept. of Electrical and Electronic Engineering Seminar, July 15, 1999.

[104] "Scheduling Heuristics for Satisfying Prioritized Data Requests in an Oversubscribed Communication Network," University of Oklahoma, Norman, Oklahoma School of Computer Science Colloquium, Feb. 3, 2000.

[105] "High-Performance Heterogeneous Computing: Goals and Open Problems," University of Southern California, Los Angeles, CA, Dept. of Electrical Engineering/Systems - Computer Engineering Division Seminar, Feb. 28, 2000.

[106] "High-Performance Heterogeneous Computing: Goals and Open Problems," Colorado State University, Fort Collins, CO, Dept. of Electrical and Computer Engineering Seminar, Mar. 7, 2000.

[107] "High-Performance Heterogeneous Computing: Goals and Open Problems," University of Missouri at Columbia, Columbia, MO, Dept. of Computer Engineering and Computer Science Colloquium, Mar. 9, 2000.

[108] "High-Performance Heterogeneous Computing: Goals and Open Problems," The Ohio State University, Columbus, OH, Student Chapter of the ACM and Computer and Information Science Dept. ACM Distinguished Lecturer Seminar, Mar. 29, 2000.

[109] "High-Performance Heterogeneous Computing: Goals and Open Problems," Columbus, OH, Central Ohio Chapter of the ACM, ACM Distinguished Lecturer Seminar, Mar. 29, 2000.

[110] "High-Performance Heterogeneous Computing: Goals and Open Problems," Wright State University, Dayton, OH, Student Chapter of the ACM, ACM Distinguished Lecturer Seminar, Mar. 30, 2000.

[111] "An Introduction to Distributed Heterogeneous Computing: Mapping Communicating Tasks to Machines," Tamkang University, Tamsui, Taiwan, Tamkang University Chair Lecture, Apr. 17, 2000.

[112] "Heuristics for Mapping of a Class of Independent Tasks onto Heterogeneous Computing Suites," Tamkang University, Tamsui, Taiwan, Tamkang University Chair Lecture, Apr. 18, 2000.

[113] "Scheduling Heuristics for Satisfying Prioritized Data Requests in an Oversubscribed Distributed Computing Environment," Tamkang University, Tamsui, Taiwan, Tamkang University Chair Lecture, Apr. 19, 2000.

[114] "Off-line Heuristics for Scheduling Prioritized Data Requests in an Oversubscribed Distributed Computing Environment," Colorado State University, Fort Collins, CO, Dept. of Electrical and Computer Engineering Seminar, Aug. 3, 2000.

[115] "High-Performance Heterogeneous Computing: Goals and Open Problems," University of New Mexico, Albuquerque, NM, Electrical Engineering and Computer Engineering (EECE) Distinguished Speaker Series Seminar, Nov. 16, 2000.

[116] "Heterogeneous Distributed Computing: Goals, Methods, and Open Problems," University of Colorado, Boulder, CO, Dept. of Computer Science Colloquium, Oct. 25, 2001.

[117] "Heterogeneous Distributed Computing: Goals, Methods, and Open Problems," Colorado State University, Fort Collins, CO, Dept. of Computer Science BMAC Seminar, Dec. 3, 2001.

[118] "Heterogeneous Distributed Computing: Goals, Methods, and Open Problems," University Visvesvaraya College of Engineering, Bangalore, India, Dept. of Electronics and Computer Science Engineering and the IEEE Student Branch Seminar, Dec. 14, 2001.

[119] "Research Issues in Heterogeneous Computing," University of Central Florida, Orlando, FL, School of Electrical Engineering and Computer Science Distinguished Lecture, Mar. 8, 2002.

[120] "Static Mapping Heuristics for Tasks with Dependencies, Priorities, Deadlines, and Multiple Versions in Heterogeneous Distributed Computing Systems," University of Central Florida, Orlando, FL, School of Electrical Engineering and Computer Science Colloquium, Mar. 8, 2002.

[121] "Research Issues in Heterogeneous Computing," University College Cork, Cork, Ireland, Computer Science Dept. Seminar, July 29, 2002.

[122] "Research Issues in Heterogeneous Computing," University College Dublin, Dublin, Ireland, Computer Science Dept. Seminar, Aug. 2, 2002.

[123] "Research Issues in Heterogeneous Computing," University of Texas at Arlington, Arlington, TX, Dept. of Computer Science and Engineering Colloquium, Oct. 7, 2002.

[124] "On the Robustness of Resource Allocation for Parallel and Distributed Computing and Communications," Tech-X Corporation, Boulder, CO, Sep. 12, 2003.

[125] "A Metric for the Robustness of a Resource Allocation for Tasks on Parallel and Distributed Computing Systems," Colorado State University, Fort Collins, CO, Dept. of Mathematics, Applied Math Seminar, Oct. 9, 2003.

[126] "How Robust are Resource Allocations for Tasks in Parallel and Distributed Computing Systems?" Colorado State University, Fort Collins, CO, Dept. of Computer Science BMAC Seminar, Nov. 3, 2003.

[127] "On the Robustness of Resource Allocation for Tasks on Parallel and Distributed Computing and Communication Systems," IBM Corporation, Boulder, CO, Technical Vitality Council Seminar, Jan. 13, 2004.

[128] "The Robustness of Resource Allocations in Parallel and Distributed Computing Systems," University of Central Florida, Orlando, FL, School of Electrical Engineering and Computer Science Colloquium, Mar. 18, 2004.

[129] "Off-line Resource Allocation in Heterogeneous Ad Hoc Grid Computing Systems with Communicating Subtasks," University College Dublin, Dublin, Ireland, Computer Science Dept. Seminar, July 9, 2004.

[130] "Research Issues in Heterogeneous Parallel and Distributed Computing," Xi'an Jiaotong University, Xi'an, China, The School of Electronic and Information Engineering Seminar, Oct. 21, 2004.

[131] "The Robustness of Resource Allocations in Parallel and Distributed Computing Systems," Tsinghua University, Beijing, China, Dept. of Computer Science and Technology Seminar, Oct. 25, 2004.

[132] "An Introduction to Research Issues in Heterogeneous Parallel and Distributed Computing," University of Delaware, Newark, DE, Electrical and Computer Engineering Dept. Distinguished Lecturer Series, Feb. 11, 2005.

[133] "The Robustness of Resource Allocations in Parallel and Distributed Computing Systems," University of Texas at Arlington, Arlington, TX, Dept. of Computer Science and Engineering Burlington Northern Santa Fe Distinguished Lecture, Mar. 4, 2005.

[134] "Robust Resource Allocation in Parallel and Distributed Computing Systems," Kent State University, Kent, OH, Computer Science Colloquium, Nov. 18, 2005.

[135] "Robust Resource Allocation in Parallel and Distributed Computing Systems: Model and Heuristics," University of Nevada Las Vegas, Las Vegas, NV, Electrical and Computer Engineering Dept. Seminar, Dec. 9, 2005.

[136] "The Center for Robustness in Computer Systems," co-presented with Anthony A. Maciejewski, Northrop Grumman Mission Systems Seminar, Aurora, CO, Jan. 25, 2006.

[137] "CSU Center for Robustness in Computer Systems," co-presented with Anthony A. Maciejewski, IBM Corporation, Boulder, CO, Technical Vitality Council Seminar, Feb. 2, 2006.

[138] "CSU Center for Robustness in Computer Systems," co-presented with Anthony A. Maciejewski, LSI Logic, Fort Collins, CO, Mar. 3, 2006.

[139] "Robust Resource Management in Parallel and Distributed Computing Systems," Fordham University, New York, NY, "Fordham University Interdisciplinary Faculty Seminar and Dept. of Computer and Information Science Present Distinguished Lecture Series in Computational Intelligence and Information Science," Apr. 7, 2006.

[140] "Robust Resource Management in Parallel and Distributed Computing Systems: Model and Heuristics," University of Florida, Gainesville, FL, Joint Engineering Dean's Seminar Series, and Electrical and Computer Engineering Dept. Seminar, Apr. 17, 2006.

[141] "The Information Science and Technology Center at Colorado State University," University of Central Florida, Orlando, FL, Interdisciplinary Information Science and Technology Laboratory (I^2 Lab) I^2 Forum, May 11, 2006.

[142] "CSU Center for Robustness in Computer Systems," co-presented with Anthony A. Maciejewski, Raytheon, Aurora, CO, May 23, 2006.

[143] "Colorado State's Information Science and Technology Center (ISTeC)," Louisiana State University, Baton Rouge, LA, Center for Computation & Technology Special Guest Lecture, Apr. 27, 2007.

[144] "An Introduction to Research Issues in Heterogeneous Parallel and Distributed Computing," Louisiana State University, Baton Rouge, LA, Center for Computation & Technology Colloquium Series, Apr. 27, 2007.

[145] "An Introduction to Research Issues in Heterogeneous Parallel and Distributed Computing," University of Luxembourg, Luxembourg City, Luxembourg, Computer Science and Communications Research Unit Seminar, May 21, 2008.

[146] "The Colorado State University Information Science and Technology Center," University of Luxembourg, Luxembourg City, Luxembourg, Computer Science and Communications Research Unit Seminar, May 21, 2008.

[147] "Making Parallel and Distributed Computing Systems Robust," University of Luxembourg, Luxembourg City, Luxembourg, "Thursdays of Science" Colloquium Series, sponsored by Fonds National de la Recherche Luxembourg, May 22, 2008.

[148] "Making Parallel and Distributed Computing Systems Robust," University of Sydney, Sydney, Australia, School of Information Technologies Basser Seminar Series, June 6, 2008.

[149] "An Introduction to Research Issues in Heterogeneous Parallel and Distributed Computing," Monash University, Melbourne, Australia, Information Technology Seminar, June 11, 2008.

[150] "Robust Resource Management in Parallel and Distributed Computing Systems," University of Melbourne, Melbourne, Australia, Computer Science and Software Engineering Seminar, June 19, 2008.

[151] "The Colorado State University Information Science and Technology Center," University of Melbourne, Melbourne, Australia, Computer Science and Software Engineering Seminar, June 19, 2008.

[152] "Robust Resource Management in Parallel and Distributed Computing Systems," National Center for Atmospheric Research (NCAR), Boulder, CO, CISL (Computational and Information Systems Laboratory) Seminar Series, June 30, 2008.

[153] "Making Parallel and Distributed Computing Systems Robust," Colorado State University, Fort Collins, CO, Joint Dept. of Computer Science BMAC Seminar and Dept. of Electrical and Computer Engineering Distinguished Lecture, Dec. 1, 2008.

[154] "Robust Resource Management in Heterogeneous Parallel and Distributed Computing Systems," IBM Watson Research Center, Yorktown Heights, NY, Jan. 12, 2009.

[155] "Stochastically Robust Computing Systems," University of Central Florida, Orlando, FL, School of Electrical Engineering and Computer Science Colloquium, Mar. 16, 2009.

[156] "Stochastically Robust Resource Management in Heterogeneous Parallel Computing Systems," co-presented with Anthony A. Maciejewski, LSI Logic, Fort Collins, CO, Oct. 2, 2009.

[157] "Robust Resource Management in Heterogeneous Parallel and Distributed Computing Systems," University of Denver, Denver, CO, Computer Engineering Dept. Seminar, Oct. 6, 2009.

[158] "An Introduction to Research Issues in Heterogeneous Parallel and Distributed Computing," National Cheng Kung University, Tainan, Taiwan, Dept. of Computer Science and Information Engineering, Dec. 17, 2009.

[159] "Reliability with Uncertainties: Stochastic Model of Robust Resource Management for Computing Systems," University of Luxembourg, Luxembourg City, Luxembourg, Interdisciplinary Centre for Security, Reliability and Trust Distinguished Lecture, Jan. 13, 2010.

[160] "An Introduction to Research Issues in Heterogeneous Parallel and Distributed Computing," University of Kentucky, Lexington, KY, Electrical & Computer Engineering Dept. Seminar, Mar. 1, 2010.

[161] "Collaboration on Research for Resource Management and HCI for Exascale Computing Systems," co-presented with Anthony A. Maciejewski, Tsinghua University, Beijing, China, Industrial Engineering Dept. Seminar, May 25, 2010.

[162] "Robust Resource Management for Parallel Computing Systems," Tsinghua University, Beijing, China, Computer Science and Technology Dept. Seminar, May 26, 2010.

[163] "Stochastic Robustness Metric and its Use for Static Resource Allocations in Parallel Computing Systems," Ecole Normale Superieure de Lyon, Lyon, France, LIP (Laboratoire de l'Informatique du Parallélisme) Seminar, May 31, 2010.

[164] "Stochastic Model of Robust Resource Management for Parallel Computing Systems," INRIA (Institute National de Recherche en Informatique et Automtique) Saclay and Universite de Paris Sud, Orsay, France, Alchemy (Architectures Languages and Compilers to Harness the End of Moore's Years) Research Group Seminar, June 8, 2010.

[165] "Stochastic Model of Robust Resource Management for Heterogeneous Parallel Computing Systems," Oak Ridge National Laboratory, Oak Ridge, TN, Computer Science and Mathematics Directorate Seminar, July 8, 2010.

[166] "Stochastic Model of Robust Resource Management for Heterogeneous Parallel Computing Systems," Universitat Politècnica de Catalunya, Barcelona, Spain, Departament d'Arquitectura de Computadors High Performance Group Seminar, July 21, 2010.

[167] "ISTeC Collaboration Model," Colorado State University, Fort Collins, CO, invited presentation at "Cyberinfrastructure 2010 in the Rockies: A Human-Centered Program," sponsored by the National Science Foundation, Aug. 13, 2010.

[168] "Robust Resource Management for Heterogeneous Parallel and Distributed," Agency for Science, Technology and Research (ASTAR), Singapore, IHPC (Institute of High Performance Computing) Computational Science and Engineering Seminar, Sep. 14, 2010.

[169] "Robust Resource Management for Heterogeneous Parallel and Distributed Computing Systems," Colorado State University, Fort Collins, CO, Dept. of Computer Science BMAC Seminar, Sep. 27, 2010.

Purdue Electrical and Computer Engineering Industrial Institute Workshop Activities (industrial affiliates program)

[1] Presentation - "PASM: A Dynamically Reconfigurable Multimicroprocessor System," Howard Jay Siegel, Spring 80.

[2] Presentation - "Parallel Image Processing," Philip T. Mueller, Jr., (presenter) and Howard Jay Siegel, Spring 80.

[3] Presentation - "Large-scale Parallel Processing Systems," Howard Jay Siegel, Fall 81.

[4] Presentation - "Simulation of a Multi-Microcomputer System for Image Processing," James T. Kuehn (presenter) and Howard Jay Siegel, Fall 81.

[5] Poster - "Fault Tolerant Parallel Computer Networks," Robert J. McMillen and Howard Jay Siegel, Spring 82.

[6] Presentation - "Design of the PASM Multimicroprocessor Prototype," James T. Kuehn (presenter) and Howard Jay Siegel, Fall 82.

[7] Poster - "The Extra Stage Cube Interconnection Network," George B. Adams III and Howard Jay Siegel, Fall 82.

[8] Poster - "Task Scheduling on the PASM Multimicroprocessor System," David L. Tuomenoksa and Howard Jay Siegel, Fall 82.

[9] Presentation - "A Parallel Algorithm for Image Contour Extraction Using PASM," George B. Adams III (presenter) and Howard Jay Siegel, Spring 83.

[10] Presentation - "Extensions of ADA for Parallel Signal Processing," Carolyn Cline (presenter) and Howard Jay Siegel, Spring 83.

[11] Poster - "Simulation of the PASM Parallel Processing System," James T. Kuehn and Howard Jay Siegel, Spring 83.

[12] Poster - "PASM Memory System," James T. Kuehn and Howard Jay Siegel, Fall 83.

[13] Poster - "Interconnection Networks for Parallel Machines," Robert R. Seban and Howard Jay Siegel, Fall 83.

[14] Organizer - for theme "Computer Architecture Research at Purdue," Spring 84.

[15] Presentation - "Computer Architecture Research at Purdue," Howard Jay Siegel, Spring 84.

[16] Presentation - "Simulation Studies of the PASM Prototype," James T. Kuehn (presenter) and Howard Jay Siegel, Spring 84 (received Best Presentation Award).

[17] Poster - "Parallel Programming Languages," Carolyn Cline and Howard Jay Siegel, Spring 84.

[18] Poster - "The Paths of Interconnection Networks," Nathaniel J. Davis IV and Howard Jay Siegel, Fall 84.

[19] Poster - "The PASM Parallel Processing System," Thomas Schwederski, James T. Kuehn, and Howard Jay Siegel, Fall 84 (received Best Poster Award).

[20] Poster - "The PASM Parallel Processing System Prototype," Thomas Schwederski, James T. Kuehn, David G. Meyer, and Howard Jay Siegel, Spring 85 (received Best Poster Award).

[21] Poster - "Parallel Languages for Expert Systems," Victor Mendoza-Grado, Leah H. Jamieson, and Howard Jay Siegel, Spring 85.

[22] Presentation - "An Approach to an Intelligent Parallel Image Understanding System," Thomas Schwederski (presenter) and Howard Jay Siegel, Fall 85.

[23] Poster - "Design of the Multistage Interconnection Network for the PASM Prototype," James Ott and Howard Jay Siegel, Fall 85.

[24] Presentation - "The Dynamic Redundancy Network," Menkae Jeng (presenter) and Howard Jay Siegel, Spring 86.

[25] Poster - "The PASM Parallel Processing System," Thomas Schwederski and Howard Jay Siegel, Spring 86.

[26] Poster - "Extension to the PASM Parallel Processing System," Thomas Schwederski, Wayne G. Nation, and Howard Jay Siegel, Fall 86.

[27] Poster - "The Implementation of the PASM Prototype Control Hierarchy," Thomas Schwederski, Wayne G. Nation, Howard Jay Siegel and David G. Meyer, Spring 87.

[28] Presentation - "Destination Tag Routing Techniques Based on a State Model for the IADM Network," Darwen Rau (presenter), Jose A. B. Fortes, and Howard Jay Siegel, Fall 87.

[29] Presentation - "PARSE: A Programming Environment for Non-Shared Memory Parallel Computers," Thomas L. Casavant (presenter), Henry G. Dietz, Leah H. Jamieson, Howard Jay Siegel, Edward J. Delp, David G. Meyer, and Phillip Sheu, Fall 87.

[30] Poster - "Experiments on the PASM Parallel System Prototype," Samuel Fineberg, Thomas L. Casavant, Thomas Schwederski, and Howard Jay Siegel, Fall 88.

[31] Presentation - "Image Contour Extraction on the PASM Reconfigurable Parallel Processing System," Thomas B. Berg (presenter), Shin-Dug Kim, Howard Jay Siegel, and Thomas L. Casavant, Spring 89.

[32] Presentation - "CAPS: A Coding Aid Used with the PASM Parallel Processing System," Wayne G. Nation (presenter) and Howard Jay Siegel, Fall 89 (received Best Presentation Award).

[33] Poster - "Designing Parallel Machines with Standard Components: Efficient Masking Techniques for SIMD Multi-Microprocessor Architectures," Wayne G. Nation, Samuel A. Fineberg, Mark D. Allemang, Thomas Schwederski, Thomas L. Casavant, and Howard Jay Siegel, Spring 90.

[34] Poster - "The CARP Machine: A Compiler-oriented Architecture," Henry G. Dietz, Howard Jay Siegel, William E. Cohen, Matt O'Keefe, et al., Spring 90.

[35] Organizer - for theme "Parallel Processing: Computing Power for the Future," Fall 90.

[36] Presentation - "Introduction to Workshop and Parallel Processing," Howard Jay Siegel, Fall 90.

[37] Presentation - "Data Management and Control-Flow Constructs in a Parallel Language/Compiler," Mark A. Nichols (presenter), Henry G. Dietz, and Howard Jay Siegel, Fall 90.

[38] Presentation - "A Parallel Range Data Segmentation Implementation," Nicholas Giolmas (presenter), Daniel W. Watson, David M. Chelberg, and Howard Jay Siegel, Fall 90.

[39] Poster - "A Compiler-oriented Architecture," William E. Cohen, Henry G. Dietz, and Howard Jay Siegel, Fall 90.

[40] Presentation - "The Parallel Processing Laboratory's NSF Infrastructure Grant," Howard Jay Siegel, Spring 91.

[41] Poster - "Trade-Offs Between the SIMD and MIMD Modes of Parallelism," Daniel W. Watson, James B. Armstrong, and Howard Jay Siegel, Spring 91.

[42] Poster - "Examining the Effects of CU/PE Overlap when Using the Complete Sums Approach to Image Correlation," James B. Armstrong, Mark A. Nichols, Howard Jay Siegel, and Leah H. Jamieson, Fall 91.

[43] Presentation - "Parallel Processing Laboratory Activities," Howard Jay Siegel, Henry G. Dietz, and Jeffery L. Gray, Spring 92.

[44] Poster - "Optimal Selection Theory for Superconcurrency," Mu-Cheng Wang and Howard Jay Siegel, Spring 92.

[45] Poster - "Recovery Model for Reconfigurable Parallel Processing Systems," Gene Saghi, Howard Jay Siegel, and Jose A. B. Fortes, Fall 92.

[46] Poster - "A Framework for Compile-Time Selection of Parallel Modes in an SIMD/SPMD Machine," Daniel W. Watson, Mark A. Nichols, Howard Jay Siegel, John K. Antonio, and Mikhail J. Atallah, Spring 93 (tied for Best Poster Award).

[47] Poster - "Multiple Quadratic Forms: A Case Study in the Design of Scalable Algorithms," James B. Armstrong and Howard Jay Siegel, Spring 94.

[48] Poster - "High-Performance Heterogeneous Computing: Scheduling and Data Relocation Issues," Min Tan, Yan Alexander Li, John K. Antonio, and Howard Jay Siegel, Spring 95.

[49] Poster - "Predicting Execution Times of Parallel Programs: A Probabilistic Approach," Yan Alexander Li, Min Tan, John K. Antonio, and Howard Jay Siegel, Spring 95.

[50] Poster - "Parallel Image Correlation: A Case Study on Three Parallel Machines," Muthucumaru Maheswaran, Mitchell D. Theys, Howard Jay Siegel, and Leah H. Jamieson, Spring 95 (received Second Place for Best Poster Award).

[51] Presentation - "High-Performance Heterogeneous Computing: Goals and Challenges," Howard Jay Siegel, Spring 96.

[52] Poster - "Parallel Implementation of Block-Based Motion Vector Estimation for Video Compression on the MasPar MP-1 and PASM," Min Tan, Janet M. Siegel, and Howard Jay Siegel, Spring 96.

[53] Poster - "Matching and Scheduling in a Heterogeneous Computing Environment Using a Genetic-Algorithm-Based Approach," Lee Wang, Howard Jay Siegel, and Vwani Roychowdhury, Spring 96.

[54] Poster - "Morphological Image Processing on Three Parallel Machines," Mitchell D. Theys and Howard Jay Siegel, Spring 97.

[55] Poster - "A Dynamic Matching and Scheduling Algorithm for Heterogeneous Computing Systems," Muthucumaru Maheswaran and Howard Jay Siegel, Spring 98.

[56] Poster - "A Model, Heuristic, and Simulation Study for a Basic Data Staging Problem," Mitchell D. Theys, Min Tan, Howard Jay Siegel, Noah B. Beck, and Michael Jurczyk, Spring 98.

[57] Poster - "Dynamic Mapping Heuristics for Meta-Tasks in Distributed Heterogeneous Computing Systems," Shoukat Ali, Muthucumaru Maheswaran, Howard Jay Siegel, Debra Hensgen, and Richard F. Freund, Spring 99.

[58] Poster - "Static Mapping Heuristics for Meta-Tasks in Distributed Heterogeneous Computing Systems," Tracy Braun, Noah Beck, Ladislau Boloni, Albert Reuther, James Robertson, Mitchell Theys, Bin Yao, Howard Jay Siegel, Richard F. Freund, Debra Hensgen, and Muthucumaru Maheswaran, Spring 99.

[59] Presentation - "QoS Measure for Distributed Computing and Communications Systems," Howard Jay Siegel, Spring 99.

[60] Session Co-Chair - "Session VI - Computer Engineering," Spring 99.

[61] Poster - "Measuring the Value of Tasks Completed in Distributed Computing Systems," Jong-Kook Kim and Howard Jay Siegel, Spring 2000.

[62] Poster - "Efficient Resource Allocation for QoS Channels in MF-TDMA Satellite Systems," Jung Min Park, Uday R. Savagaonkar, Edwin K. P. Chong, Howard Jay Siegel, and Steven D. Jones, Spring 2001.

[63] Poster - "A QoS Routing Scheme Using the DFS Method with Limited Crankbacks," Dong-won Shin, Edwin K. P. Chong, and Howard Jay Siegel, Spring 2001.

[64] Poster - "Representing Task and Machine Heterogeneities for Heterogeneous Computing Systems," Shoukat Ali, Howard Jay Siegel, Muthucumaru Maheswaran, Debra Hensgen, and Sahra Ali, Spring 2001.

Educational Activities

Ph.D. Thesis Supervision Completed

[1] S. Diane Smith, "Design and Analysis of Interconnection Networks for Partitionable Parallel Processing Systems," Aug. 1979, Purdue University degree. Currently a Consultant, Los Gatos, CA, and an Adjunct Professor at Santa Clara University, Santa Clara, CA, at International Technological University, Santa Clara, CA, and at Cogswell Polytechnical College, Sunnyvale, CA.

[2] Robert J. McMillen, "A Study of Multistage Interconnection Networks: Design, Distributed Control, Fault Tolerance, and Performance," Dec. 1982, Purdue University degree. Currently a Senior Consulting Engineer at AT&T Global Information Solutions, San Diego, CA.

[3] David Lee Tuomenoksa, "Design of the Operating System for the PASM Parallel Processing System," May 1983. Currently a Marketing Director at Lucent Technologies, Network Systems, Holmdel, NJ.

[4] George B. Adams III, "Fault Tolerant Interconnection Networks and Image Processing Applications for the PASM Parallel Processing System," Dec. 1984, Purdue University degree. Currently a Consultant and an Adjunct Associate Professor of Electrical and Computer Engineering at Purdue University, West Lafayette, IN.

[5] Bradley Warren Smith, "On the Design and Modeling of Special Purpose Parallel Processing Systems," May 1985, Purdue University degree. Currently a Senior Project Engineer at General Motors Corp., Milford, MI.

[6] Nathaniel Jones Davis IV, "Multistage Interconnection Networks: Modeling, Performance Analysis, Design, and Fault Location," Aug. 1985, Purdue University degree. Currently an Associate Professor of Electrical and Computer Engineering and Assistant Department Head at Virginia Tech, Blacksburg, VA.

[7] Robert R. Seban, "Topological Properties of Interconnection Networks for Parallel Processors," Dec. 1985, Purdue University degree. Currently at Software Engineering Education Consulting, Mountain View, CA.

[8] James T. Kuehn, "The PASM Parallel Processing System: Design, Simulation, and Image Processing Applications," May 1986, Purdue University degree. Currently a Research Staff Member at the Institute for Defense Analyses -- Center for Computing Sciences, Bowie, MD.

[9] Menkae Jeng, "Fault-Tolerance and Dynamic Partitioning in Large-Scale Parallel Systems," Aug. 1987, Purdue University degree. Currently a Staff Engineer at UNISYS, San Jose, CA.

[10] Thomas Schwederski, "The PASM Parallel Processing System: Hardware Design and Operating System Concepts," Dec. 1987, Purdue University degree. Was the Head of the "Special Processors and Test" Research Group at the Institute for Microectronics Stuttgart (IMS), Stuttgart, Germany.

[11] Wayne G. Nation, "Aspects of Reconfigurable Parallel Processing Systems: Architecture, Interconnection, and Task Allocation," May 1991, Purdue University degree. Currently a Senior Technical Staff Member at IBM Corp., Rochester, MN.

[12] Mark A. Nichols, "Language, Compiler, and Architectural Modeling Aspects of Reconfigurable Parallel Processing Systems," Aug. 1991, Purdue University degree. Currently a Consultant, San Diego, CA.

[13] Shin-Dug Kim, "Design and Analysis Issues for Mixed-Mode and Heterogeneous Parallel Systems," Dec. 1991, Purdue University degree. Currently an Associate Professor of Computer Science at Yonsei University, Seoul, Korea.

[14] Mu-Cheng Wang, "Network Performance Analyses and Task Mapping for Parallel Systems," Dec. 1992, Purdue University degree. Currently an Assistant Professor of Electrical Engineering at Cleveland State University, Cleveland, OH.

[15] Gene Saghi, "Compiler, Fault Tolerance, and Performance Prediction Aspects of Reconfigurable Parallel Processing Systems," May 1993, Purdue University degree. Currently Vice President of Astek Corporation, Colorado Springs, CO.

[16] Daniel W. Watson, "Compile-Time Selection of Parallel Modes in an SIMD/SPMD Heterogeneous Parallel Environment," Aug. 1993, Purdue University degree. Currently an Associate Professor of Computer Science at Utah State University, Logan, UT.

[17] James B. Armstrong, "Selected Software Issues for Mapping Tasks onto Parallel Processing Systems," Aug. 1994, Purdue University degree. Currently a Member of the Technical Staff at Sarnoff Real Time Corp., Princeton, NJ.

[18] Min Tan, "Scheduling and Data Relocation for Heterogeneous Computing Systems and Parallel Implementations of Block-Based Motion Vector Estimation for Video Compression," May 1997, Purdue University degree. First position: Senior Software Engineer at Cisco Systems, San Jose, CA.

[19] Lee Wang, "A Genetic-Algorithm-Based Approach for Subtask Matching and Scheduling in Heterogeneous Computing Environments and a Comparative Study on Parallel Genetic Algorithms," Aug. 1997, Purdue University degree. First Position: Test Lead in the Windows Division at Microsoft Corp., Redmond, WA.

[20] Muthucumaru Maheswaran, "Software Issues on Mapping Applications onto Heterogeneous Machines and the Performance of Krylov Algorithms on Parallel Machines," Dec. 1998, Purdue University degree. First position: Assistant Professor of Computer Science at University of Manitoba, Winnipeg, Manitoba, Canada.

[21] Mitchell D. Theys, "An Investigation of Models and Heuristics for Scheduling Data Requests in a Distributed Computing Environment," Aug. 1999, Purdue University degree. First position: Assistant Professor of Computer Science at the University of Illinois at Chicago, Chicago, IL.

[22] Tracy D. Braun, "Heterogeneous Distributed Computing: Off-line Mapping Heuristics for Independent Tasks and for Tasks with Dependencies, Priorities, Deadlines, and Multiple Versions," May 2001, Purdue University degree (Anthony A. Maciejewski, Co-Advisor). First position: Senior Research Scientist with Noemix, Inc., San Diego, CA.

[23] Dong-won Shin, "Multicriteria Routing for Guaranteed Performance Communications," Aug. 2003, Purdue University degree (Edwin K. P. Chong, Co-Advisor). First position: Senior Member of Technical Staff at KT (former Korea Telecom), Daejun, Korea (RoK).

[24] Jung Min Park, "Efficient Primitives for Ensuring Security in E-Commerce Transactions," Aug. 2003, Purdue University degree (Edwin K. P. Chong, Co-Advisor). First position: Assistant Professor at the Virginia Polytechnic Institute and State University, Blacksburg, VA.

[25] Shoukat Ali, "Robust Resource Allocation in Dynamic Distributed Heterogeneous Computing Systems," Aug. 2003, Purdue University degree (Anthony A. Maciejewski, Co-Advisor). First position: Assistant Professor at the University of Missouri, Rolla, MO.

[26] Jong-Kook Kim, "Resource Management in Heterogeneous Computing Systems: Continuously Running Applications, Tasks with Priority and Deadlines, and Power Constrained Mobile Devices," Aug. 2004, Purdue University degree (Anthony A. Maciejewski and Rudolf Eigenmann, Co-Advisors). First position: Senior Engineer, Samsung, Korea.

[27] James Thomas Smith II, "Robust Resource Allocation in Heterogeneous Parallel and Distributed Computing Systems," July 2008, Colorado State University degree (Anthony A. Maciejewski, Co-Advisor). First position: Senior Software Engineer, Digital Globe, Longmont, CO.

[28] Vladimir Shestak, "Robust Resource-Allocation Methods for QoS-Constrained Parallel and Distributed Computing Systems," July 2008, Colorado State University degree (Anthony A. Maciejewski, Co-Advisor). First position: Software Engineer, InfoPrint Solutions Company, Boulder, CO.

[29] Luis Diego Briceno, "Resource Allocation for Heterogeneous Computing Systems: Performance Criteria, Robustness Measures, Optimization Heuristics, and Properties," Aug. 2010, Colorado State University degree (Anthony A. Maciejewski, Co-Advisor). First position: Post Doc at CSU.

M.S.E.E. Thesis Supervision Completed at Purdue University

[1] Robert J. McMillen, "Interconnection Networks and Operating System Considerations for PASM - A Reconfigurable Multimicroprocessor System," May 1980.

[2] Bradley W. Smith, "Multiprocessor Implementation of a Contextual Classifier," May 1980.

[3] George B. Adams III, "Properties of the Augmented Data Network in an SIMD Environment," Dec. 1980.

[4] James T. Kuehn, "Emulation of SIMD Machine Architectures," May 1981.

[5] Elizabeth C. Seed, "The Use of Database Techniques in the Implementation of a Syntactic Pattern Recognition Task on a Parallel Reconfigurable Machine," Dec. 1981.

[6] Robert Safranek "Speech Processing on SIMD Computers," Aug. 1982.

[7] Arlen Overvig, "The Simulation of the Generalized Cube Interconnection Network," Aug. 1982.

[8] William Tsun-yuk Hsu, "The PASM Prototype Extra Stage Cube Network: Design and Fault Isolation," May 1985.

[9] James M. Ott, "Simulation Studies of the Generalized Cube Interconnection Network," Dec. 1985.

[10] Robert C. King, "Structural Considerations for the PASM Operating System," Dec. 1986.

[11] Wayne G. Nation, "The Network Interface Unit: An Enhancement to the PASM Parallel Processing System," Dec. 1986.

[12] Thomas B. Berg, "Mapping the Edge Guided Thresholding Algorithm to Mixed-Mode Parallel Processing Systems through Experimentation," May 1990.

[13] Mark D. Allemang, "Efficient Masking Techniques for Large-Scale SIMD Architectures," Aug. 1990.

[14] Nicholas Giolmas, "Aspects of Memory Management on a Partitionable SIMD/MIMD Architecture and an Image Processing Application Study," Dec. 1991.

[15] Richard M. Born, "Design and Simulation of Switching Elements for Large-Scale Interconnection Networks," Aug. 1993.

[16] Renard R. Ulrey, "Parallel Algorithms for Singular Value Decomposition and a Design Alternatives Study for a Network Interface Unit for PASM," Dec. 1993.

[17] Min Tan, "Aspects of Scheduling and Data Relocation for Subtasks Executed on a Heterogeneous Computing System," Dec. 1994.

[18] Rohit Gupta, "Parallel Active Camera Motion Tracking, Matching Applications to Machines in Heterogeneous Suites, and Parallel Programming Language Issues," Aug. 1995.

[19] Mitchell D. Theys, "Programming Parallel Machines: An Image Morphology Case Study and a Mixed-Mode Simulator," May 1996.

[20] Mark B. Kulaczewski, "Parallel Implementations of a Visual Tracking Algorithm, and Dynamic Partitioning for a Mixed-Mode Programming Language," Dec. 1996.

[21] Tracy D. Braun, "Parallel Algorithms for Singular Value Decomposition as Applied to Failure Tolerant Manipulators," Dec. 1997 (Anthony A. Maciejewski, Co-Advisor).

[22] Noah Beck, "Design and Evaluation of Heuristics for Data Staging in a Distributed Communication Network," May 1999.

[23] Shoukat Ali, "A Comparative Study of Dynamic Mapping Heuristics for a Class of Independent Tasks onto Heterogeneous Computing Systems," Aug. 1999.

[24] Surjamukhi Chatterjea, "Quality of Service Attributes at Multiple Levels of an Information Dissemination System," Dec. 1999 (Edwin K. P. Chong, Co-Advisor).

[25] Jong-Kook Kim, "A Multi-Dimensional Performance Measure for Distributed Computing and Communications Systems," May 2000.

[26] Amit Naik, "Bandwidth Allocation for Prioritized Session and Data Requests in Preemptive Communication Networks," Aug. 2000 (Edwin K. P. Chong, Co-Advisor).

[27] Pranav Dharwadkar, "Dynamic Bandwidth Allocation with Preemption and Degradation for Prioritized Requests," Aug. 2000 (Edwin K. P. Chong, Co-Advisor).

M.S. Thesis Supervision Completed at Colorado State University

[1] Sameer Shivle, "Resource Management for Heterogeneous Computing Systems: For Ad Hoc Grids and for Tasks with Priorities and Multiple Deadlines," May 2004.

[2] Prasanna V. Sugavanam, "Robust Resource Allocation for Independent Tasks and Resource Allocation for Communicating Subtasks on Ad Hoc Grids," May 2005.

[3] Ashish Mahendrakumar Mehta, "Robust Resource Allocation in a Dynamic Heterogeneous Environment using Deterministic Execution Time Estimates," May 2006 (Anthony A. Maciejewski, Co-Advisor).

[4] Mohana Subhash Oltikar, "Heuristics for Robust Resource Allocation in a Weather Data Processing System," May 2006 (Anthony A. Maciejewski, Co-Advisor).

Graduate Non-Thesis Research Project Supervision Completed at Purdue

[1] Harold E. Smalley, Jr., "Design and Simulation of a Multiprocessor System," May 1978.

[2] P. Allen England, "Micro Controller Communications," May 1979.

[3] Frederick Kemmerer, "The PASM Memory Management System: A Study of Some Problems Involved," May 1979.

[4] Philip T. Mueller, Jr., "Control Communications and Language Design for a Partitionable Multimicroprocessor System," May 1979.

[5] Jeremy Epstein, "Helps - A High Level PASM Simulator," Dec. 1981.

[6] Kenneth W. Saunders, "Parallel Assembler Design," May 1983.

[7] Richard M. Heidebrecht, "Parallel Loader Design," May 1983.

[8] Thomas Schwederski, "PASM Processor Design," May 1984.

[9] Michael Gilge, "PASM Prototype Interconnection Network Design," May 1984.

[10] Christopher R. Schnelle, "PASM Interconnection Network Design," May 1984.

[11] David M. Nassimi, "PASM Hardware Design," May 1985.

[12] Philippos A. Peleties, "Communications in PASM," Dec. 1985.

[13] Brian Chladny, "Parallel Compiler Development for PASM," May 1989.

[14] James B. Armstrong, "Image Template Matching on the PASM Prototype," Dec. 1989.

[15] Karim Harzallah, "Simulation of Generalized Cube Networks," Dec. 1989.

[16] Karim Harzallah, "Buffered Network Simulation," May 1990.

[17] Muthucumaru Maheswaran, "Asynchronous Communication in PASM," May 1994.

[18] Min Tan, "Software Tools for Job Decks," Aug. 1995.

[19] Lee Wang, "Video Retrieval on WANs," Aug. 1996.

[20] Min Tan, "Software for DirecTV," Aug. 1996.

[21] Shuqing Jing, "Task Matching and Scheduling Using a Sequential Genetic Algorithm," Aug. 1998.

Senior Design Project Supervision Completed at Colorado State University

[1] Jeffrey Adam Brateman, "Robustness in Weather Data Processing," May 2005.

[2] Jonathan Ross Martin, "Robustness in Weather Data Processing," May 2005.

[3] Joseph Paul White, "Robustness in Weather Data Processing," May 2005.

[4] Jennifer Alicia Hale, "Greedy and Evolutionary Approaches to Static Stochastic Robust Resource Allocation," May 2006.

[5] Patrick S. Moranville, "Greedy and Evolutionary Approaches to Static Stochastic Robust Resource Allocation," May 2006.

[6] Robert Tybalt Umland, "Greedy and Evolutionary Approaches to Static Stochastic Robust Resource Allocation," May 2006.

[7] Christopher R. Klumph, "Static Resource Allocation in Massive Multiplayer Online Gaming," May 2008.

[8] Kody Willman, "Static Resource Allocation in Massive Multiplayer Online Gaming," May 2008.

[9] Ryan Friese, "Heterogeneous Computing," May 2010.

M.S. and Ph.D. Thesis Students Currently Being Supervised

[1] Abdulla Al-Qawasmeh – Ph.D. (Anthony A. Maciejewski, Co-Advisor)

[2] Bhavesh Kemka – Ph.D. (Anthony A. Maciejewski, Co-Advisor)

[3] Paul Maxwell – Ph.D. (Anthony A. Maciejewski, Co-Advisor)

[4] Dalton Young – Ph.D. (Anthony A. Maciejewski, Co-Advisor)

[5] Ryan Friese – Ph.D (Anthony A. Maciejewski, Co-Advisor)

Senior Design Students Currently Being Supervised

Post-Doctoral Researcher Supervision

[1] Yu-Kwong Ricky Kwok, August 1997 to July 1998 (at Purdue University)

[2] Samee U. Khan, August 2007 to July 2008 (at Colorado State University)

[3] Luis Diego Briceno, August 2010 to present (at Colorado State University)

Courses Developed at Purdue University

[1] EE468 Design of Computer Systems Programs (with Leah J. Siegel) (Spring 1977)

[2] EE565 Computer Architecture (Fall 1977)

[3] EE695 Advanced Parallel Processing (one credit course) (Fall 1978)

[4] EE695 Associative Processing (one credit course) (Spring 1979)

[5] EE667 Parallel Processing (Spring 1980)

[6] EE563 Programming Parallel Machines (with Henry G. Dietz and Jeffery L. Gray) (Spring 1992)

[7] EE695 Heterogeneous Computing (Spring 1998)

[8] EE369 Discrete Mathematics for Computer Engineers - completely revised based on the latest edition of textbook (Fall 1999)

Courses Developed at Colorado State University

[1] EE674/CS674 Heterogeneous Computing (Spring 2002)

[2] EE554 Computer Architecture (completely revised Fall 2002)

[3] IU193 Freshman Seminar: Computer Engineering and Related Topics (Fall 2004)

Courses "In Charge Of" at Purdue University
(ordered by date activity ended)

[1] EE468 Design of Computer Systems Programs (with Leah J. Siegel), Spring 1977 to Fall 1986

[2] EE695 Advanced Parallel Processing (mini-course), Fall 1978 to Fall 1979

[3] EE695 Associative Processing (mini-course), Spring 1979 to Fall 1979

[4] EE565 Computer Architecture, Fall 1977 to Fall 1992

[5] EE563 Programming Parallel Machines, Spring 1992 to Fall 1998

[6] EE667 Parallel Processing, Spring 1980 to Spring 1997

[7] EE369 Discrete Mathematics for Computer Engineers, Fall 1994 to Spring 2001

[8] EE695 Heterogeneous Computing, Spring 1998 to Spring 2001

Courses "Responsible For" at Colorado State University

[1] EE554 Computer Architecture, Fall 2001 to Fall 2005

[2] EE674/CS674 Heterogeneous Computing, Spring 2002 to present

[3] IU193 Freshman Seminar: Computer Engineering and Related Topics, Fall 2004 to Fall 2005

Continuing Education Video Tape Courses Developed

[1] "Parallel Processing Networks and Systems," 11 one-hour videotapes, Purdue University, Continuing Engineering Education, May 1987.

[2] "Interconnection Networks for Parallel Processing," 12 one-hour videotapes, Purdue University, Continuing Engineering Education, May 1987.

Tutorials Presented

[1] "Parallel Processing Computer Systems," NASA, Kennedy Space Center, FL, Jan. 11, 1985 (half-day tutorial).

[2] "Interconnection Networks for Parallel Processing," NASA, Kennedy Space Center, FL, Jan. 11, 1985 (half-day tutorial).

[3] "Parallel Processing Computer Systems," Honeywell Inc., Space and Strategic Avionics Division, in Clearwater, FL, Jan. 17-18, 1985 (half-day tutorial).

[4] "Interconnection Networks for Parallel Processing," Honeywell Inc., Space and Strategic Avionics Division, in Clearwater, FL, Jan. 17-18, 1985 (half-day tutorial).

[5] "Parallel Image Processing," Ball Aerospace, in Boulder, CO, Aug. 12-16, 1985 (five-day tutorial).

[6] "Parallel Processing Networks and Systems," IEEE Computer Society Tutorial Week Washington 1985, Arlington, VA, Nov. 20, 1985 (full-day tutorial).

[7] "Parallel Processing Networks and Systems," ETH (Swiss Federal Institute of Technology) as part of the Advanced Course 1986 on New Approaches to the Architecture and the Design of Embedded Systems, Zurich, Switzerland, Mar. 6, 1986 (half-day tutorial).

[8] "Parallel Processing Networks and Systems," 6th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, Boston, MA, May 19, 1986 (full-day tutorial).

[9] "Interconnection Networks for Large-Scale Parallel Processing," 1986 International Conference on Parallel Processing, cosponsors: IEEE Computer Society, in St. Charles, IL, Aug. 19, 1986 (full-day tutorial).

[10] "Large-Scale Parallel Processing Systems and Networks," IBM Federal Systems Division, Manassas, VA, Dec. 11, 1986 (full-day tutorial).

[11] "Parallel Processing Networks and Systems," given for People and Computers Training Center, Tel Aviv, Israel, Mar. 9-10, 1987 (two-day tutorial).

[12] "Parallel Processing Network and Systems," 2nd International Conference on Supercomputing, sponsor: International Supercomputing Institute, in Santa Clara, CA, May 4, 1987 (half-day tutorial).

[13] "Interconnection Networks for Large-Scale Parallel Processing," 1987 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, in St. Charles, IL, Aug. 17, 1987 (full-day tutorial).

[14] "Parallel Processing Networks and Systems," 7th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, in West Berlin, Germany, Sep. 22, 1987 (full-day tutorial).

[15] "Parallel Processing Systems," 15th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Honolulu, HI, May 30, 1988 (half-day tutorial).

[16] "Parallel Processing Interconnection Networks and Systems," Wang Institute of Boston University, Summer Institute on Computer Science, Tyngsboro, MA, Aug. 1-5, 1988 (five-day tutorial).

[17] "Interconnection Networks for Large-Scale Parallel Processing," 1988 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 15, 1988 (full-day tutorial).

[18] "Parallel Processing Systems," given as part of the 1988 AMCEE Technical Professional Development Series, broadcast on AMCEE Satellite Network, Aug. 22, 1988 (two-hour tutorial).

[19] "Parallel Processing Networks and Systems," given as part of CEI-Europe/Elsevier Courses in Advanced Technology, Maastricht, The Netherlands, Nov. 21-25, 1988 (four and a half day tutorial).

[20] "Parallel Processing: Algorithms and Systems," 4th International Conference on Supercomputing, sponsor: International Supercomputing Institute, Santa Clara, CA, May 1, 1989 (half-day tutorial).

[21] "Parallel Processing Systems," 16th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Jerusalem, Israel, May 28, 1989 (half-day tutorial).

[22] "Parallel Processing Networks and Systems," 9th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, Newport Beach, CA, June 9, 1989 (full-day tutorial).

[23] "Parallel Processing Algorithms and Systems," 1989 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 11-12, 1989 (full-day tutorial).

[24] "Parallel Processing Networks and Systems: Design and Use of Large-Scale Parallel Computers," Supercomputing `89 Conference, cosponsors: IEEE Computer Society and ACM, Reno, NV, Nov. 13, 1989 (full-day tutorial).

[25] "Parallel Processing Algorithms and Systems," PARBASE-90 Conference, sponsor: Florida International University, Miami Beach, FL, Mar. 6, 1990 (half-day tutorial).

[26] "Parallel Processing Algorithms and Systems," 17th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Seattle, WA, May 28, 1990 (half-day tutorial).

[27] "Parallel Processing Algorithms and Systems," 1990 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 17, 1990 (full-day tutorial).

[28] "Parallel Processing: Algorithms and Systems," Supercomputing '90 Conference, cosponsors: IEEE Computer Society and ACM, New York, NY, Nov. 16, 1990 (full-day tutorial).

[29] "Parallel Processing: Algorithms and Systems," International Phoenix Conference on Computers and Communications, sponsor: IEEE Communication Society, Scottsdale, AZ, Mar. 27, 1991 (full-day tutorial).

[30] "Parallel Processing: Algorithms and Systems," 5th International Parallel Processing Symposium, sponsor: IEEE Computer Society, Anaheim, CA, May 1, 1991 (full-day tutorial).

[31] "Parallel Processing: Algorithms and Systems," 11th International Conference on Distributed Computer Systems, sponsor: IEEE Computer Society, Arlington, TX, May 20, 1991 (half-day tutorial).

[32] "Parallel Processing Algorithm and Systems," 1991 International Conference on Parallel, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 12, 1991 (full-day tutorial).

[33] "Parallel Algorithms," 4th ISMM/IASTED International Conference on Parallel and Distributed Computing and Systems, cosponsors: The International Society for Mini and Microcomputers and The International Associated of Science and Technology for Development, Ashburn, VA, Oct. 8, 1991 (half-day tutorial).

[34] "Parallel Processing Systems," 4th ISMM/IASTED International Conference on Parallel and Distributed Computing and Systems, cosponsors: The International Society for Mini and Microcomputers and The International Associated of Science and Technology for Development, Ashburn, VA, Oct. 8, 1991 (half-day tutorial).

[35] "Parallel Processing Algorithms and Systems," 3rd IEEE Symposium on Parallel and Distributed Processing, cosponsors: IEEE Computer Society and ACM, Dallas, TX, Dec. 2, 1991 (full-day tutorial).

[36] "Parallel Processing Algorithms and Systems," 1992 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 21, 1992 (full-day tutorial).

[37] "Parallel Algorithms," 3rd Annual IEEE Mohawk Valley Section Dual-Use Technologies and Applications Conference, sponsor: IEEE Mohawk Valley Section, Utica, NY, May 25, 1993 (half-day tutorial).

[38] "Properties of Interconnection Networks for Large-Scale Parallel Processing Systems," ISIPCALA '93: International Summer Institute on Parallel Computer Architectures, Languages, and Algorithms, cosponsors: University of Iowa, the Czech Technical University, and the Czech ACM Chapter, Prague, Czech Republic, July 6, 1993 (half-day tutorial).

[39] "Parallel Algorithms," 1993 International Conference on Parallel and Distributed Systems (ICPADS '93), cosponsors: National Taiwan University, Taiwan National Science Council, and Taiwan Ministry of Education, Taipei, Taiwan, Dec. 16, 1993 (half-day tutorial).

[40] "Parallel Algorithms," 8th International Parallel Processing Symposium, sponsor: IEEE Computer Society, Cancun, Mexico, Apr. 26, 1994 (half-day tutorial).

[41] "Parallel Algorithm Design," 1994 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 15, 1994 (full-day tutorial).

[42] "Heterogeneous Distributed Computing: Goals, Approaches, and Open Problems," IX Simposio Brasileiro de Arquitetura de Computadores - Processamento de Alto Desempenho (SBAC-PAD '97) (IX Brazilian Symposium on Computer Architectures - High Performance Computing), sponsor: SBC - Sociedade Brasileria de Computacao (Brazilian Computing Society), Campos do Jordao, Sao Paulo, Brazil, Oct. 7, 1997 (two-hour keynote/tutorial).

[43] "High-Performance Distributed Heterogeneous Computing," 2001 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2001), cosponsors: Computer Science Research, Education, and Applications (CSREA), IPSJ, et al., Las Vegas, NV, June 24, 2001 (half-day tutorial).

[44] "Parallel and Distributed Heterogeneous Computing," The 2002 International Multiconference in Computer Science, cosponsors: Computer Science Research, Education, and Applications (CSREA), et al., Las Vegas, NV, June 26, 2002 (half-day tutorial).

[45] "Resource Management in Heterogeneous Computing Systems," Computer Science Dept., University College Cork, Cork, Ireland, July 30, 2002 (half-day tutorial).

[46] "Parallel and Distributed Heterogeneous Computing Systems," The 2003 International Multiconference in Computer Science and Computer Engineering, cosponsors: Computer Science Research, Education, and Applications (CSREA), et al., Las Vegas, NV, June 24, 2003 (half-day tutorial).

[47] "Parallel and Distributed Heterogeneous Computing Systems," IBM, Boulder, CO, Mar. 1, 2004 (full-day tutorial).

[48] "Parallel and Distributed Heterogeneous Computing Systems," The 2004 International Multiconference in Computer Science and Computer Engineering, cosponsors: Computer Science Research, Education, and Applications (CSREA), et al., Las Vegas, NV, June 22, 2004 (half-day tutorial).

[49] "Heterogeneous Parallel and Distributed Computing Systems," The 2005 International MultiConference in Computer Science and Computer Engineering, cosponsors: Computer Science Research, Education, and Applications (CSREA), et al., Las Vegas, NV, June 28, 2005 (half-day tutorial).

[50] "Heterogeneous Parallel and Distributed Computing: Model, Resource Management, and Robustness," "Featured Tutorial" at The 2006 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP '06), cosponsors: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), Las Vegas, NV, June 27, 2006 (half-day tutorial).

[51] "Robust Resource Allocation for Heterogeneous Parallel and Distributed Computing Systems," a "Featured Tutorial" at The 2007 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP '07), cosponsors: World Academy of Science and Computer

Science Research, Education, and Applications (CSREA), Las Vegas, NV, June 25, 2007 (half-day tutorial).

[52] "Robust Resource Allocation for Heterogeneous Parallel and Distributed Computing Systems," University of Luxembourg, Luxembourg City, Luxembourg, Computer Science and Communications Research Unit, May 23, 2008 (half-day tutorial).

[53] "Resource Allocation for Parallel and Distributed Heterogeneous Computing Systems," The University of Melbourne, Melbourne, Australia, Grid Computing and Distributed Systems (GRIDS) Laboratory, June 4 and 5, 2008 (full-day tutorial).

[54] "Robust Resource Allocation for Heterogeneous Parallel and Distributed Computing Systems," University of Melbourne, Melbourne, Australia, Grid Computing and Distributed Systems (GRIDS) Laboratory, June 10, 2008 (half-day tutorial).

[55] "Robust Resource Allocation for Heterogeneous Parallel and Distributed Computing Systems," a "Featured Tutorial" at The 2008 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP '08), cosponsors: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), Las Vegas, NV, July 14, 2008 (half-day tutorial).

[56] "Robust Resource Management for Parallel and Distributed Computing Systems: Models and Methods," a "Featured Tutorial" at The 2009 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP '09), cosponsors: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), Las Vegas, NV, July 13, 2009 (half-day tutorial).

[57] "Robust Resource Management for Parallel and Distributed Computing Systems," a "Featured Tutorial" at The 2010 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP '10), cosponsors: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), Las Vegas, NV, July 12, 2010 (half-day tutorial).

[58] "Robust Resource Management for Parallel and Distributed Computing Systems: Models and Methods," Agency for Science, Technology and Research (ASTAR), Singapore, IHPC (Institute of High Performance Computing) Adaptive and Collaborative Computing Group, Sep. 15, 2010 (half-day tutorial).

Professional Service

Journal Editor and Editorial Board Positions (ordered by date activity ended)

[1] Guest Editor: IEEE Transactions on Computers, Special Issue on Interconnection Networks for Parallel and Distributed Processing, Vol. C-30, No. 4, Apr. 1981. Guest Editor's Introduction: "Interconnection Networks for Parallel and Distributed Processing: An Overview," pp. 245-246.

[2] Member Editorial Board: Journal of Digital Systems, published by Computer Science Press, from Aug. 1980 to Mar. 1983.

[3] Guest Coeditor (with Leah H. Jamieson): IEEE Transactions on Computers, Special Issue on Parallel Processing, Vol. C-32, No. 11, Nov. 1984. Guest Editors' Introduction: "Parallel Processing," pp. 949-951.

[4] Member Board of Review: The Journal of Supercomputing, published by Kluwer in cooperation with the Supercomputing Research Center, Lanham, MD, from Mar. 1986 to Dec. 1988.

[5] Subject Area (Associate) Editor: Journal of Parallel and Distributed Computing (JPDC), published by Academic Press, Subject Area (Associate) Editor for Interconnection Networks, from Nov. 1983 to Dec. 1988.

[6] Coeditor-in-Chief (with Kai Hwang): Journal of Parallel and Distributed Computing (JPDC), published by Academic Press, Editor-in-Chief for Submitted Research Papers, from Jan. 1989 to Dec. 1991.

[7] Guest Coeditor (with Richard F. Freund): IEEE Computer, Special Issue on Heterogeneous Processing, Vol. 26, No. 6, June 1993. Guest Editors' Introduction: "Heterogeneous Processing," pp. 13-17.

[8] Member of Editorial Advisory Board: Parallel and Distributed Computing Handbook, edited by A. Y. Zomaya, McGraw-Hill, New York, NY, 1996, from Nov. 1993 to Dec. 1995.

[9] Member of Editorial Board (Associate Editor): IEEE Transactions on Parallel and Distributed Systems, from Jan. 1993 to Dec. 1996.

[10] Member of Editorial Board: Tamkang Journal of Science and Engineering, published by Tamkang University, Tamsui, Taiwan, from Nov. 2000 to Aug. 2001.

[11] Guest Editor: The Journal of Supercomputing, Special Section on Commercial Applications for High-Performance Computing, Vol. 26, No. 1, Aug. 2003. Guest Editor's Introduction: "Guest Editor Introduction for the Special Section on Commercial Applications for High-Performance Computing," pp. 5-7.

[12] Member of Editorial Board (Associate Editor): IEEE Transactions on Computers, from May 1993 to Apr. 1996; from Jan. 2002 to Dec. 2004.

[13] Guest Coeditor (with Yves Robert and Henri Casanova): IEEE Transactions on Parallel and Distributed Processing, Special Section on Algorithm Design and Scheduling Techniques (Realistic Platform Models) for Heterogeneous Clusters, Vol. 17, No. 2, Feb. 2006. Guest Editors' Introduction: "Guest Editorial: Special Section on Algorithm Design and Scheduling Techniques (Realistic Platform Models) for Heterogeneous Clusters," pp. 97-98.

[14] Chair of Advisory Board: Journal of Parallel and Distributed Computing (JPDC), published by Academic Press, from May 1992 to present.

[15] Member of Advisory Board: Journal of Interconnection Networks (JOIN), published by World Scientific Publishing Co., from Mar. 1999 to present.

Conference/Workshop Organizing and Program Committees
(ordered by date activity ended)

[1] Chair, Workshop on Interconnection Networks for Parallel and Distributed Processing, cosponsors: IEEE Computer Society and ACM, Apr. 1980

[2] Member of Program Committee, The 8th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, May 1981

[3] Secretary/Treasurer of Organizing Committee, 1981 IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management, sponsor: IEEE Computer Society, Nov. 1981

[4] Member of Program Committee, The 9th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Apr. 1982

[5] Program Coordinator of Organizing Committee, Workshop on Algorithmically-specialized Computer Organizations, sponsor: National Science Foundation, Sep. 1982

[6] General Chair, 3rd International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, Oct. 1982

[7] Program Co-Chair, 1983 International Conference on Parallel Processing, cosponsor: IEEE Computer Society, Aug. 1983

[8] Member of Program Committee, 1983 IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management, sponsor: IEEE Computer Society, Oct. 1983

[9] International Associate Chair for USA and Member of Program Committee, 4th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, May 1984

[10] Member of Program Committee, The 11th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, June 1984

[11] International Associate Chair for USA, 5th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, May 1985

[12] Member of Program Committee, The 12th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, June 1985

[13] Member of International Standing Committee and Member of International Award Committee, 1st International Conference on Supercomputing Systems, sponsor: IEEE Computer Society, Dec. 1985

[14] Member of Program Committee, 1986 International Zurich Seminar (Conference) on Digital Communications: New Directions in Switching and Networks, sponsor: IEEE, Mar. 1986

[15] Coordination Committee Vice-Chair for USA, 2nd International Conference on Supercomputing, sponsor: International Supercomputing Institute, May 1987

[16] Member of Program Committee, 8th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, June 1988

[17] General Chair, The 15th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, June 1988

[18] Member of Advisory Committee, 9th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, June 1989

[19] Member of Program Committee, 10th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, June 1990

[20] Member of Program Committee, 1990 ACM Symposium on Parallel Algorithms and Architectures, sponsor: ACM, July 1990

[21] Member of Program Committee, Frontiers '90: The 3rd Symposium on the Frontiers of Massively Parallel Computation, cosponsors: IEEE Computer Society and NASA Goddard Space Flight Center, Oct. 1990

[22] Member of Program Committee, Supercomputing '90, cosponsors: IEEE Computer Society and ACM, Nov. 1990

[23] Member of Program Committee, 5th International Parallel Processing Symposium (IPPS '91), sponsor: IEEE Computer Society, Mar. 1991

[24] Member of Program Committee, COMPSAC '91: The 15th Annual International Computer Software and Applications Conference, cosponsors: IEEE Computer Society and Information Processing Society of Japan, Sep. 1991

[25] Member of Program Committee, 4th ISMM International Conference on Parallel and Distributed Computing and Systems, sponsor: International Society for Mini and Microcomputers, Oct. 1991

[26] Member of Program Committee, Supercomputing `91, cosponsors: IEEE Computer Society and ACM, Nov. 1991

[27] Member of Program Committee, The 3rd IEEE Symposium on Parallel and Distributed Processing, cosponsors: IEEE Computer Society and ACM, Dec. 1991

[28] Co-Chair, Purdue Workshop on Grand Challenges in Computer Architecture for the Support of High Performance Computing, sponsor: National Science Foundation, Dec. 1991

[29] Member of Program Committee, 6th International Parallel Processing Symposium (IPPS '92), sponsor: IEEE Computer Society, Mar. 1992

[30] Member of Program Committee, Workshop on Heterogeneous Processing (WHP '92), sponsor: Oak Ridge National Laboratory (Dept. of Energy), Mar. 1992

[31] Panels Chair (responsible for organizing panels) and Member of Advisory Committee, The 19th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, May 1992

[32] Program Chair, Frontiers '92: The 4th Symposium on the Frontiers of Massively Parallel Computation, cosponsors: IEEE Computer Society and NASA Goddard Space Flight Center, Oct. 1992

[33] Member of Program Committee, 7th International Parallel Processing Symposium (IPPS '93), sponsor: IEEE Computer Society, Apr. 1993

[34] Member of Program Committee, 2nd Workshop on Heterogeneous Processing (WHP '93), sponsor: IEEE Computer Society, Apr. 1993

[35] Member of Advisory Committee, The 20th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, May 1993

[36] Member of Advisory Board, International Summer Institute on Parallel Computer Architectures, Languages, and Algorithms (ISIPCALA '93), cosponsors: University of Iowa, Czech Technical University, and Czech ACM Chapter, July 1993

[37] Member of International Advisory Committee, 1993 International Conference on Parallel and Distributed Systems (ICPADS '93), cosponsors: National Taiwan University, Taiwan National Science Council, and Taiwan Ministry of Education, Dec. 1993

[38] Program Chair, 8th International Parallel Processing Symposium (IPPS '94), sponsor: IEEE Computer Society, Apr. 1994

[39] Member of Program Committee, 3rd Heterogeneous Computing Workshop (HCW '94), sponsor: IEEE Computer Society, Apr. 1994

[40] Member of Program Committee, 3rd International Workshop on Parallel Image Analysis: Theory and Applications, June 1994

[41] Member of Program Committee, 1994 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, Aug. 1994

[42] General Co-Chair, 1994 International Conference on Parallel and Distributed Systems (ICPADS '94), sponsor: National Chiao Tung University (Taiwan), Dec. 1994

[43] Member of Advisory Committee, 9th International Parallel Processing Symposium (IPPS '95), sponsor: IEEE Computer Society, Apr. 1995

[44] Member of Program Committee, 7th IEEE Symposium on Parallel and Distributed Processing, sponsor: IEEE Computer Society, Oct. 1995

[45] Member of Program Committee, 2nd International Conference on High Performance Computing (HiPC '95), in cooperation with IEEE Computer Society, Dec. 1995

[46] Member of Program Committee, 5th Heterogeneous Computing Workshop (HCW '96), sponsor: IEEE Computer Society, Apr. 1996

[47] Member of Program Committee, 10th International Parallel Processing Symposium (IPPS '96), sponsor: IEEE Computer Society, Apr. 1996

[48] Member of International Advisory Committee, 1996 International Conference on Parallel and Distributed Systems (ICPADS '96), sponsor: Information Processing Society of Japan (IPSJ), June 1996

[49] General Co-Chair, 2nd International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN '96), sponsor: Chinese National Research Center for Intelligent Computing Systems (NCIC), June 1996

[50] Chair, The 1996 ICPP Workshop on Challenges for Parallel Processing (held in conjunction with the 1996 International Conference on Parallel Processing), cosponsors: International Association for Computers and Communications and The Pennsylvania State University, Aug. 1996

[51] Member of Program Committee, Frontiers '96: The 6th Symposium on the Frontiers of Massively Parallel Computation, cosponsors: IEEE Computer Society and NASA Goddard Space Flight Center, Oct. 1996

[52] Member of Program Committee, 1996 Conference on Massively Parallel Processing with Optical Interconnects (MPPOI '96), sponsor: IEEE Computer Society, Oct. 1996

[53] Member of Program Committee, 3rd International Conference on High Performance Computing (HiPC '96), in cooperation with IEEE Computer Society and ACM, Dec. 1996

[54] General Chair, 6th Heterogeneous Computing Workshop (HCW '97), cosponsors: IEEE Computer Society and Office of Naval Research, Apr. 1997

[55] Member of International Advisory Committee, 1997 International Conference on Parallel and Distributed Systems (ICPADS '97), cosponsors: IEEE Computer Society and Korea Information Science Society, Dec. 1997

[56] Member of Advisory Committee, International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN '97), sponsor: National Taiwan University, Dec. 1997

[57] Member of Program Committee, 7th Heterogeneous Computing Workshop (HCW '98), cosponsors: IEEE Computer Society and Office of Naval Research, Apr. 1998

[58] Member of Program Committee, 1998 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '98), sponsor: CSREA (Computer Science Research, Education, and Applications), July 1998

[59] Member of Program Committee, Workshop on Advances in Parallel and Distributed Systems (APADS), sponsor: IEEE Computer Society, Oct. 1998

[60] Member of International Advisory Committee, 1998 International Conference on Parallel and Distributed Systems (ICPADS '98), sponsor: National Cheng-Kung University, Tainan, Taiwan, ROC, Dec. 1998

[61] Member of Program Committee, Frontiers '99: The 7th Symposium on the Frontiers of Massively Parallel Computation, cosponsors: IEEE Computer Society and NASA Goddard Space Flight Center, Feb. 1999

[62] Member of International Advisory Committee, 7th International Conference on Parallel and Distributed Systems (ICPADS 2000), cosponsors: IEEE Computer Society and Iwate Prefectural University (Japan), July 2000

[63] Member of Program Committee, 2000 International Conference on Parallel Processing (ICPP 2000), sponsor: International Association for Computers and Communications, Aug. 2000

[64] Member of Steering Committee, The Symposium on the Frontiers of Massively Parallel Computation, cosponsors: IEEE Computer Society and NASA Goddard Space Flight Center, Nov. 1992 to Dec. 2000

[65] Member of Steering Committee, Midwest Workshop on Parallel Processing (MWPP), Dec. 1998 to Dec. 2000

[66] Member of Program Committee, Workshop on Massively Parallel Processing (WMPP), sponsor: IEEE Computer Society, Apr. 2001

[67] Member of International Advisory Committee, 8th International Conference on Parallel and Distributed Systems (ICPADS 2001), cosponsors: Korea Information Science Society and IEEE Computer Society, June 2001

[68] Program Chair, Conference on Commercial Applications for High-Performance Computing, part of SPIE's International Symposium on The Convergence of Information Technologies and Communications (ITCom 2001), sponsor: SPIE (The International Society for Optical Engineering), Aug. 2001

[69] Member of Program Committee, 2nd Workshop on Massively Parallel Processing (WMPP), sponsor: IEEE Computer Society, Apr. 2002

[70] Member of Steering Committee, Workshop on Biologically Inspired Solutions to Parallel Processing Problems (BioSP3), sponsor: IEEE Computer Society, Apr. 1997 to Apr. 2002

[71] Member of Program Committee, IEEE International Conference on Pervasive Computing and Communications (PerCom 2003), sponsor: IEEE Computer Society, Mar. 2003

[72] Member of Program Committee, 3rd Workshop on Massively Parallel Processing (WMPP), sponsor: IEEE Computer Society, Apr. 2003

[73] Member of Organizing Committee (Co-Chair of Research Working Group), First Workshop on the Colorado Grid Computing Initiative (COGrid), sponsor: CSU Information and Science Technology Center (ISTeC), May 2003

[74] Member of Program Committee, International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar '03), Sep. 2003

[75] Member of Program Committee, 4th Workshop on Massively Parallel Processing (WMPP), sponsor: IEEE Computer Society, Apr. 2004

[76] Member of Program Committee, 3rd International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar 2004), sponsor: Enterprise Ireland, July 2004.

[77] Member of Program Committee, 3rd International Symposium on Parallel and Distributed Computing (ISPDC 2004), sponsor: Enterprise Ireland, July 2004

[78] General Co-Chair, IFIP International Conference on Network and Parallel Computing (NPC 2004), sponsor: International Federation for Information Processing (IFIP), Oct. 2004

[79] Member of Program Committee, 16th Symposium on Computer Architecture and High Performance Computing (SBAC-PAD 2004 - Simposio Brasileiro de Arquitetura de Computadores - Processamento de Alto Desempenho), sponsor: SBC - Sociedade Brasileria de Computacao (Brazilian Computing Society), Oct. 2004

[80] Member of Program Committee, 5th Workshop on Massively Parallel Processing (WMPP), sponsor: IEEE Computer Society, Apr. 2005

[81] General Co-Chair, 19th International Parallel and Distributed Processing Symposium (IPDPS 2005), sponsor: IEEE Computer Society, Apr. 2005

[82] Member of Steering Committee, Workshop on Massively Parallel Processing (WMPP), sponsor: IEEE Computer Society, Apr. 2005 to Mar. 2006

[83] General Co-Chair, 20th International Parallel and Distributed Processing Symposium (IPDPS 2006), sponsor: IEEE Computer Society, Apr. 2006

[84] Member of Program Committee, 5th International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar '06), sponsor: IEEE Computer Society, Sep. 2006

[85] Member of Program Committee, 18th International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD 2006 - Simposio Brasileiro de Arquitetura de Computadores - Processamento de Alto Desempenho), cosponsors: SBC - Sociedade Brasileria de Computacao (Brazilian Computing Society) and IEEE Computer Society, Oct. 2006

[86] Member of Program Committee, IFIP International Conference on Network and Parallel Computing (NPC 2006), sponsor: International Federation for Information Processing (IFIP), Oct. 2006

[87] Member of Program Committee, 3th IASTED International Conference on Advances in Computer Science and Technology (ACST 2007), sponsor: IASTED (International Association for Science and Technology for Development), Apr. 2007

[88] Member of Program Committee, 6th International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar '07), sponsor: IEEE Computer Society, Sep. 2007

[89] Member of Program Committee, Workshop on Optimization Issues in Grid and Parallel Computing Environments, part of The 2008 International Conference High Performance Computing & Simulation (HPCS'08), cosponsors: IEEE Germany, ASIM, EUROSIM, CASS, JSST, LSS, PTSK, TSS, The University of Cyprus, June 2008.

[90] Member of Program Committee, Workshop on Optimization Issues in Grid and Parallel Computing Environments, part of The 2009 International Conference High Performance Computing & Simulation (HPCS'09), cosponsors: IEEE Germany, ASIM, EUROSIM, CASS, JSST, LSS, PTSK, TSS, University of Leipzig, June 2009.

[91] Member of Program Committee, The 7th International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Platforms (HeteroPar 2009), sponsor: IFIP (International federation of Information Processing), Aug. 2009.

[92] Member of Program Committee, The 38th International Conference on Parallel Processing (ICPP 2009), cosponsors: The International Association for Computers and Communications (IACC) and The Austrian Computer Society, Sep. 2009.

[93] Member of Program Committee, The 8th International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Platforms (HeteroPar 2010), sponsor: Institute for High Performance Computing and Networking (ICAR) of the Italian National Research Council (CNR), Aug. 2010.

[94] Member of the Organizing Committee, Cyberinfrastructure 2010 in the Rockies: A Human-Centered Program, sponsor: National Science Foundation, Aug. 2010.

[95] Program Chair, 9th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA2011), co-sponsors: ACS (Arab Computer Society) and IEEE, June 2011.

[96] Chair (1998-present) and Member (1994-1998) of Steering Committee, Heterogeneity in Computing Workshop (originally called the Heterogeneous Computing Workshop) (HCW), cosponsors: IEEE Computer Society and Office of Naval Research, 1994 to present

[97] Member of Steering Committee, International Parallel and Distributed Processing Symposium (IPDPS), sponsor: IEEE Computer Society, Apr. 1996 to present (from 1996 to 1998 this was the International Parallel Processing Symposium, and from 1998 to 1999 this was the "Merged International Parallel Processing Symposium & Symposium on Parallel and Distributed Processing" (IPPS/SPDP))

[98] Member of Steering Committee (International Advisory Committee), International Symposium on Pervasive Systems, Algorithms and Networks (I-SPAN) (formerly the International Symposium on Parallel Architectures, Algorithms, and Networks), co-sponsor: IEEE Computer Society, June 1996 to May 2003, Feb. 2005 to present

[99] Member of Steering Committee, Workshop on Large-Scale Parallel Processing (LSPP), sponsor: IEEE Computer Society, July 2007 to present

Panel Organizer, Panel Moderator, and/or Panelist

[1] Panelist: "Tightly Coupled Versus Loosely Coupled Systems," 1978 International Conference on Parallel Processing, cosponsor: IEEE Computer Society, Bellaire, MI, Aug. 1978.

[2] Panelist: "Problems Searching for a Solution," 1979 International Conference on Parallel Processing, cosponsor: IEEE Computer Society, Bellaire, MI, Aug. 1979.

[3] Panel Organizer and Moderator: "A Look into the Future: Theory, Implementations, and Applications," Workshop on Interconnection Networks for Parallel and Distributed Processing, cosponsors: IEEE Computer Society and ACM, West Lafayette, IN, Apr. 1980.

[4] Panelist: "Distributed Design Issues," COMPSAC '80 (IEEE Computer Society's 4th International Computer Software and Applications Conference), sponsor: IEEE Computer Society, Chicago, IL, Oct. 1980.

[5] Panelist: "Why Parallel Algorithms?" Workshop on Applications of Non-Conventional Computers in Image Processing: Algorithms and Programs, sponsor: University of Wisconsin, Madison, WI, May 1981.

[6] Panelist: "Architecture Tutorial," Workshop on Applications of Non-Conventional Computers in Image Processing: Algorithms and Programs, sponsor: University of Wisconsin, Madison, WI, May 1981.

[7] Panel Organizer and Moderator: "Does General Purpose Mean Good for Nothing (in Particular)?" Workshop on Algorithmically-specialized Computer Organizations, sponsor: National Science Foundation, West Lafayette, IN, Sep. 1982. In the proceedings on pp. 243-252.

[8] Panel Moderator and Panelist: "People and Their Systems," Taxonomy of Parallel Algorithms Workshop, sponsor: Los Alamos National Laboratory, Los Alamos, NM, Dec. 1983.

[9] Panelist: "(N+1)th Generation Computers," 11th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Ann Arbor, MI, June 1984.

[10] Panelist: "Interconnection Networks - Future Research Problems," Workshop on Interconnection Networks sponsor: MCC (Microelectronics and Computer Technology Corp.), Austin, TX, Jan. 1986.

[11] Panelist: "Understanding Parallelism and Its Use in Supercomputers," 1986 National Computer Conference (NCC), sponsor: AFIPS (American Federation of Information Processing Societies), Las Vegas, NV, June 1986.

[12] Panelist: "Choosing a Parallel Paradigm: SIMD or MIMD?" 16th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Jerusalem, Israel, May 1989.

[13] Panelist: "Blue Sky and Potholes - Hardware," 1989 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1989.

[14] Panelist: "Explicitly Programmed Parallelism vs. Automatically Generated Parallelism," 1990 Parallel Computing Workshop, sponsor: The Ohio State University, Columbus, OH, Mar. 1990.

[15] Panelist: "Architectural Challenges to Realizing Massive Parallelism," 1990 Parallel Computing Workshop, sponsor: The Ohio State University, Columbus, OH, Mar. 1990.

[16] Panel Moderator and Panelist: "What are the Two Most Important Issues Facing the Design and Use of Massively Parallel Computers?" Frontiers `90: The 3rd Symposium on the Frontiers of Massively Parallel Computation, cosponsors: IEEE Computer Society and the NASA Goddard Space Flight Center, College Park, MD, Oct. 1990. In the proceedings on pp. 526-532.

[17] Panelist: "How Do We Make Parallel Processing A Reality? Bridging the Gap Between Theory and Practice," 5th International Parallel Processing Symposium (IPPS '91), sponsor: IEEE Computer Society, Anaheim, CA, May 1991.

[18] Panel Organizer and Moderator: "Whither Massive Parallelism?" Supercomputing '91, cosponsors: ACM and the IEEE Computer Society, Albuquerque, NM, Nov. 1991. In the proceedings on p. 40.

[19] Panel Organizer and Moderator: "How Can Models Promote Mainstream Parallelism?" 3rd IEEE Symposium on Parallel and Distributed Processing (SPDP '91), cosponsors: IEEE Computer Society and ACM, Dallas, TX, Dec. 1991. In the proceedings on p. 900.

[20] Panelist: "HPCC Initiative and the Role of Academia," 6th International Parallel Processing Symposium (IPPS '92), sponsor: IEEE Computer Society, Beverly Hills, CA, Mar. 1992.

[21] Panel Organizer: "What Problems Can Truly Justify Building a Million Processor Machine?" 19th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Queensland, Australia, May 1992.

[22] Panel Organizer and Moderator: "What Should the Architecture Be for the Processors Used in a General Purpose Teraflops Computing System?" 19th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Queensland, Australia, May 1992.

[23] Panel Organizer and Moderator: "New Generation Supercomputers," NSF/CISE Institutional Infrastructure Workshop, sponsor: National Science Foundation, Michigan State University, Lansing, MI, May 1992.

[24] Panelist: "Are Networks of Workstations Tomorrow's Multicomputers?" 1992 International Conference on Parallel Processing (ICPP '92), sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1992.

[25] Panelist: "Will Massively Parallel Processing Ever Supply General Purpose High Performance Computing?" 7th International Parallel Processing Symposium (IPPS '93), sponsor: IEEE Computer Society, Newport Beach, CA, Apr. 1993.

[26] Panelist: "Parallel Processing Issues for the 21st Century," ISIPCALA '93: International Summer Institute on Parallel Computer Architectures, Languages, and Algorithms, cosponsors: University of Iowa, the Czech Technical University, and the Czech ACM Chapter, Prague, Czech Republic, July 1993.

[27] Panel Organizer and Moderator: "The Virtual Heterogeneous Supercomputer: Can It Be Built?" 2nd International Symposium on High Performance Distributed Computing, sponsor: IEEE Computer Society, Spokane, WA, July 1993. In the proceedings on pp. 30-31.

[28] Panel Organizer and Moderator: "In Search of a Universal (But Useful) Model of Parallel Computation," 1993 International Conference on Parallel Processing (ICPP '93), sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1993. In the proceedings on pp. I-349 - I-350.

[29] Panelist: "Future Trends in PADS (Parallel and Distributed Systems) Research and Development," 1993 International Conference on Parallel and Distributed Systems (ICPADS '93), cosponsors: National Taiwan University, Taiwan National Science Council, and Taiwan Ministry of Education, Taipei, Taiwan, Dec. 1993.

[30] Panelist: "What Have We Learned?" 1993 International Conference on Parallel and Distributed Systems (ICPADS '93), cosponsors: National Taiwan University, Taiwan National Science Council, and Taiwan Ministry of Education, Taipei, Taiwan, Dec. 1993.

[31] Panelist: "Sea of Interconnection Networks: What's Your Choice?" 1994 International Conference on Parallel Processing (ICPP '94), sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1994.

[32] Panelist: "Massively Parallel Computation Toward the 21st Century," International Symposium on Parallel Architectures, Algorithms, and Networks (ISPAN '94), sponsor: Japan Advanced Institute of Science and Technology (JAIST), Kanazawa, Japan, Dec. 1994.

[33] Panel Organizer and Moderator: "Is It Possible to Fairly Compare Interconnection Networks?" 1994 International Conference on Parallel and Distributed Systems (ICPADS '94), sponsor: National Chiao Tung University, Hsinchu, Taiwan, Dec. 1994. In the proceedings on pp. 16-18.

[34] Panelist: "Parallel Processing: What Have We Done Wrong?" 1994 International Conference on Parallel and Distributed Systems (ICPADS '94), sponsor: National Chiao Tung University, Hsinchu, Taiwan, Dec. 1994.

[35] Panel Organizer and Moderator: "SIMD Machines: Do They Have a Significant Future?" Frontiers '95: The 5th Symposium on the Frontiers of Massively Parallel Computation, cosponsor: IEEE Computer Society, McLean, VA, Feb. 1995. In the proceedings on pp. 466-469.

[36] Panelist: "Outrageous Opinions," 4th Heterogeneous Computing Workshop (HCW '95), sponsor: IEEE Computer Society, Santa Barbara, CA, Apr. 1995.

[37] Panelist: "Can (Should) Academia be an Adequate Home for Experimental Computer Science Research?" NSF/CISE Institutional Infrastructure Workshop, sponsor: National Science Foundation, Duke University, Durham, NC, June 1995.

[38] Panel Moderator: "Networks and Routing," 1995 ICPP Workshop on Challenges for Parallel Processing, sponsor: The Pennsylvania State University, Oconomowoc, WI, Aug. 1995.

[39] Panelist: "Heterogeneous Computing: Is It Practical?" 1995 International Conference on Parallel Processing (ICPP '95), sponsor: The Pennsylvania State University, Oconomowoc, WI, Aug. 1995.

[40] Panel Organizer and Moderator: "For a Massive Number of Massively Parallel Machines: What are the Target Applications, Who are the Target Users, and What New R&D is Needed to Hit the Target???" 10th International Parallel Processing Symposium (IPPS '96), sponsor: IEEE Computer Society, Honolulu, HI, Apr. 1996. In the proceedings on pp. 630-634.

[41] Panel Organizer and Moderator: "The First Parallel Machine with ≤ 1,000 Processors That Sells ≤ 1,000 Copies: What Will It Look Like?" 2nd International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN '96), sponsor: Chinese National Research Center for Intelligent Computing Systems (NCIC), Beijing, China, June 1996.

[42] Panel Organizer and Moderator: "Summary of Workshop on Challenges for Parallel Processing: Are the Proposed Solutions Reasonable?" 1996 International Conference on Parallel Processing (ICPP '96), cosponsors: International Association for Computers and Communications and The Pennsylvania State University, Bloomingdale, IL, Aug. 1996.

[43] Panelist: "Petaflops Alternative Paths," Frontiers '96: The 6th Symposium on the Frontiers of Massively Parallel Computation, sponsor: IEEE Computer Society, Annapolis, MD, Oct. 1996.

[44] Panelist: "How Do We Know How Well We Are Doing?," 6th Heterogeneous Computing Workshop (HCW '97), sponsor: IEEE Computer Society and Office of Naval Research, Geneva, Switzerland, Apr. 1997.

[45] Panel Organizer and Moderator: "Widespread Acceptance of General-Purpose Large-Scale Parallel Machines: Fact, Future, or Fantasy?" 1997 International Conference on Parallel Processing (ICPP '97), cosponsors: International Association for Computers and Communications and The Ohio State University, Bloomingdale, IL, Aug. 1997.

[46] Panel Organizer and Moderator: "Convergence Points on Commercial Parallel Systems: Do We Have the Node Architecture? Do We Have the Network? Do We Have the Programming Paradigm?" 1998 International Conference on Parallel Processing (ICPP '98), cosponsors: International Association for Computers and Communications and The Ohio State University, Minneapolis, MN, Aug. 1998. In the proceedings on pp. 392-393.

[47] Panel Organizer and Moderator: "The Top Ten Most Influential Parallel and Distributed Processing Concepts in the Last Millennium," 2000 International Parallel and Distributed Processing Symposium (IPDPS 2000), sponsor: IEEE Computer Society, Cancun, Mexico, May 2000. In the proceedings on pp. 289-294.

[48] Panel Moderator: "Supercomputing's Best and Worst Ideas," Supercomputing 2001 (SC 2001), cosponsors: IEEE Computer Society and ACM, Denver, CO, Nov. 2001.

[49] Panel Organizer and Moderator: "Can Network Computing Replace Parallel Computing?" IFIP International Conference on Network and Parallel Computing (NPC 2004), sponsor: International Federation for Information Processing (IFIP), Wuhan, China, Oct. 2004.

[50] Panelist: "High-Performance Computing: Successes, Failures, and Future Directions," ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2005), cosponsors: Arab Computer Society (ACS) and IEEE Computer Society, Cairo, Egypt, Jan. 2005.

[51] Panelist: "Research Challenges Arising from Heterogeneity," 14th Heterogeneous Computing Workshop (HCW 2005), cosponsors: IEEE Computer Society, INRIA, and Office of Naval Research, Denver, CO, Apr. 2005.

[52] Panel Organizer and Moderator: "What are Strategic IS&T Initiatives for CSU?" CSU Information Science and Technology Colloquium, cosponsors: CSU Vice President for Research and Information Technology (VPRIT), CSU Research Foundation (CSURF), CSU Information Science and Technology Center (ISTeC), and CSU Electrical and Computer Engineering Dept., Fort Collins, CO, Apr. 2005.

[53] Panelist: "Parallel Processing – The First 35 Years and The Next 35 Years," 2006 International Conference on Parallel Processing (ICPP '06), sponsor: The International Association for Computers and Communications (IACC), Columbus, OH, Aug. 2006.

[54] Panelist: "Challenges of Power Management," 2009 International Conference on Parallel Processing (ICPP 2009), cosponsors: The International Association for Computers and Communications (IACC) and The Austrian Computer Society, Vienna, Austria, Sep. 2009.

Professional Society Memberships and Positions
(ordered by date activity ended)

[1] IFIP (International Federation for Information Processing): Member of Parallel Computing Task Force, Aug. 1980 to Aug. 1981

[2] IEEE Computer Society Distinguished Visitors Program: IEEE Computer Society Distinguished Visitor, Aug. 1979 to July 1982

[3] Parallel Processing Research Council (a national organization for integrating the parallel processing research efforts of universities, industries, and government): Member of Ad Hoc Organizing Committee, Nov. 1983 to Aug. 1984; Member of Nominating Committee, Aug. 1985 to Aug. 1986; Member, Aug. 1984 to Aug. 1986 (disbanded)

[4] ACM and IEEE Computer Society Eckert-Mauchly Computer Architecture Award Committee: Member, Feb. 1988 to Dec. 1991

[5] New York Academy of Sciences: Member, 1996 to 1997

[6] ACM Distinguished Lecturer Program: Lecturer, Aug. 1993 to Dec. 2000

[7] IEEE, Central Indiana Section: Member of Executive Committee, July 1978 to July 1979; Member, 1977 to Aug. 2001

[8] IEEE Computer Society, Central Indiana Chapter: Vice-Chair, May 1977 to July 1978; Chair, July 1978 to July 1979; Vice-Chair, July 1979 to July 1981; Member, 1977 to Aug. 2001

[9] Reappointment Evaluation Committee for the IEEE Transactions on Computers Editor-in-Chief: Member, Oct. 2003 to Feb. 2004

[10] 2008 IEEE Computer Society Fellows Evaluation Committee: Member, Jan. 2008 to May 2008

[11] 2010 IEEE Computer Society Fellows Evaluation Committee: Member, Jan. 2010 to May 2010

[12] ACM Special Interest Group on Computer Architecture (SIGARCH): Vice Chair, July 1979 to July 1983; Chair, July 1983 to July 1985; Member of Board of Directors, July 1987 to July 1993; Member, 1978 to 2002, 2004 to present

[13] IEEE Computer Society Technical Committee on Distributed Processing (TCDP): Vice-Chair (for Connection Networks), Jan. 1981 to Dec. 1981; Member, 1980 to 1990, 1998 to present

[14] IEEE Computer Society Technical Committee on Computer Architecture (TCCA): Vice-Chair, Apr. 1980 to Dec. 1981; Chair, Jan. 1982 to Dec. 1982; Executive Committee Member, Jan. 1983 to Dec. 1984; Advisory Committee Member, July 1992 to Dec. 1994; Member, 1980 to present

[15] IEEE Computer Society Technical Committee on Parallel Processing (TCPP): Executive Committee Member, July 1996 to June 2003; Nominating Committee Coordinator, Apr. 1995 to June 2003, Mar. 2007 to June 2007; Outstanding Service Award Committee Member, March 2009 to May 2009; Advisory Committee Member, Aug. 1992 to June 1996, July 2003 to present; Member, 1992 to present

[16] IEEE Computer Society Technical Committee on Computer Communications (TCCC): Member, 1998 to present

[17] ACM (Association for Computing Machinery): Member, 1974 to 1997; Fellow, 1998 to present

[18] IEEE (Institute of Electrical and Electronics Engineers) and IEEE Computer Society: Member, 1977 to 1982; Senior Member, 1982 to 1989; Fellow, 1990 to present

Conference Session Chair and/or Session Organizer

[1] Session Chair: "SIMD Architectures," 1978 International Conference on Parallel Processing, cosponsor: IEEE Computer Society, Bellaire, MI, Aug. 1978.

[2] Session Chair: "Interconnections II," 1980 International Conference on Parallel Processing, cosponsor: IEEE Computer Society, Harbor Springs, MI, Aug. 1980.

[3] Session Chair and Organizer: "Interconnection Networks for Future Systems," 14th Annual Hawaii International Conference on System Sciences, cosponsors: University of Hawaii and the University of Southwestern Louisiana, Honolulu, HI, Jan. 1981.

[4] Discussion Session Co-Leader: "Every Professional Woman Needs a Wife, and a Spouse Won't Do," Conference on Women in the Professions: Science, Social Science, Engineering, sponsor: Purdue University, West Lafayette, IN, Mar. 1981.

[5] Session Chair: "VLSI Architecture," 8th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Minneapolis, MN, May 1981.

[6] Session Chair: "Hardware and Techniques," 1981 IEEE Computer Society Conference on Pattern Recognition and Image Processing, sponsor: IEEE Computer Society, Dallas, TX, Aug. 1981.

[7] Session Chair: "Special Purpose Processors," 1981 International Conference on Parallel Processing, cosponsor: IEEE Computer Society, Bellaire, MI, Aug. 1981.

[8] Session Chair: "Large Scale Systems," 15th Annual Hawaii International Conference on System Sciences, cosponsors: University of Hawaii and the University of Southwestern Louisiana, Honolulu, HI, Jan. 1982.

[9] Session Chair: "Interconnection Networks II," 9th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Austin, TX, Apr. 1982.

[10] Session Chair and Organizer: "Parallel Processing/Interconnection Networks," 14th Southeastern Symposium on System Theory, sponsor: IEEE Computer Society, Blacksburg, VA, Apr. 1982.

[11] Session Chair: "MIMD Processing," 1982 International Conference on Parallel Processing, cosponsors: IEEE Computer Society, Bellaire, MI, Aug. 1982.

[12] Session "Rapporteur": "Novel Architectures," Workshop on Algorithmically-specialized Computer Organizations, sponsor: National Science Foundation, West Lafayette, IN, Sep. 1982.

[13] Session Co-Chairperson and Co-Organizer (with Leah J. Siegel): "Multicomputer Image Processing," 1983 IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management, sponsor: IEEE Computer Society, Pasadena, CA, Oct. 1983.

[14] Session Chair: "Steps Toward a Taxonomy of Parallel Algorithms," Taxonomy of Parallel Algorithms Workshop, sponsor: Los Alamos National Laboratory, Los Alamos, NM, Dec. 1983.

[15] Session Chair: "Resource Allocation," 4th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, San Francisco, CA, May 1984.

[16] Session Chair: "Interconnection," 1984 International Conference on Parallel Processing, cosponsor: IEEE Computer Society, Bellaire, MI, Aug. 1984.

[17] Session Chair: "Performance of New High-End Architectures," Compcon Spring 85, sponsor: IEEE Computer Society, San Francisco, CA, Feb. 1985.

[18] Session Chair and Organizer: "Interconnection Networks," 1985 National Computer Conference (NCC), sponsor: AFIPS (American Federation of Information Processing Societies), Chicago, IL, July 1985.

[19] Session Co-Chair and Co-Organizer (with Michael Duff), "Architectures and Algorithms for Digital Image Processing," Image Processing Symposium presented as part of the 2nd International Technical Symposium on Optical and Electro-Optical Applied Science and Engineering, cosponsors: ANRT (Association Nationale de la Recherche Technique) and SPIE (Society of Photo-Optical Instrumentation Engineers), Cannes, France, Dec. 1985.

[20] Session Chair: "Interconnection Networks-I," 1985 International Conference on Parallel Processing, cosponsor: IEEE Computer Society, St. Charles, IL, Aug. 1985.

[21] Session Chair: "Supercomputer Memory Systems: Hierarchy, Analysis, Organization of Mass Storage," 1st International Conference on Supercomputing Systems, sponsor: IEEE Computer Society, St. Petersburg, FL, Dec. 1985.

[22] Session Chair: "Miscellaneous," Workshop on Future Directions in Computer Architecture and Software, sponsor: Army Research Office, Charleston, SC, May 1986.

[23] Session Chair: "Interconnection Networks II," 1986 International Conference on Parallel Processing, cosponsor: IEEE Computer Society, St. Charles, IL, Aug. 1986.

[24] Session Chair and Organizer: "The PASM Parallel Processing Systems," 2nd International Conference on Supercomputing, sponsor: International Supercomputing Institute, Santa Clara, CA, May 1987.

[25] Session Chair: "Architecture 2," 1987 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1987.

[26] Session Chair: "Support for Distributed Applications," 7th International Conference on Distributed Computing Systems, sponsor: IEEE Computer Society, West Berlin, Germany, Sep. 1987.

[27] Session Chair: "Dataflow 1," 1988 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1988.

[28] Session Chair: "Applications II," Frontiers '88: The 2nd Symposium on the Frontiers of Massively Parallel Computation, cosponsors: IEEE Computer Society and the NASA Goddard Space Flight Center, Fairfax, VA, Oct. 1988.

[29] Session Co-Chair and Co-Organizer (with Henry G. Dietz), "Programming Support for Parallel Computers," 4th International Conference on Supercomputing, sponsor: International Supercomputing Institute, Santa Clara, CA, May 1989.

[30] Session Chair: "Networks," 16th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Jerusalem, Israel, June 1989.

[31] Session Chair: "Virtual Shared Memory," 1989 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1989.

[32] Session Chair: "Scheduling and Allocation Issues," 13th Annual International Conference on Computer Software and Applications (COMPSAC '89), sponsor: IEEE Computer Society, Orlando, FL, Sep. 1989.

[33] Session Chair: "Networks," Frontiers `90: The 3rd Symposium on the Frontiers of Massively Parallel Computation, cosponsors: IEEE Computer Society and the NASA Goddard Space Flight Center, College Park, MD, Oct. 1990.

[34] Session Chair: "Interconnection Networks," Supercomputing '90 Conference, cosponsors: IEEE Computer Society and ACM, New York, NY, Nov. 1990.

[35] Session Chair: "Register Sets," 18th Annual International Conference on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Toronto, Canada, May 1991.

[36] Session Chair: "Memory Systems," 1991 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1991.

[37] Session Chair: "Systems in Research & Industry," Parallel Systems Fair at the 6th International Parallel Processing Symposium, sponsor: IEEE Computer Society, Beverly Hills, CA, Mar. 1992.

[38] Session Chair: "Message Routing Networks," 19th Annual International Symposium on Computer Architecture, cosponsors: IEEE Computer Society and ACM, Queensland, Australia, May 1992.

[39] Session Chair: "Sorting," 1992 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1992.

[40] Session Chair and Organizer: "Special Invited Presentations: Perspectives on Massively Parallel Computation," Frontiers '92: The 4th Symposium on the Frontiers of Massively Parallel Computation, cosponsors: IEEE Computer Society and the NASA Goddard Space Flight Center, McLean, VA, Oct. 1992.

[41] Session Chair: "Networks-I," 7th International Parallel Processing Symposium, sponsor: IEEE Computer Society, Newport Beach, CA, Apr. 1993.

[42] Session Chair: "Wormhole Routing," 1994 International Conference on Parallel Processing, sponsor: The Pennsylvania State University, St. Charles, IL, Aug. 1994.

[43] Session Chair: "Parallel Processing," 7th International Conference on Parallel and Distributed Computing Systems, sponsor: ISCA (International Society for Computers and Their Applications), Las Vegas, NV, Oct. 1994.

[44] Session Chair: "Parallel Algorithms II," 7th International Conference on Parallel and Distributed Computing Systems, sponsor: ISCA (International Society for Computers and Their Applications), Las Vegas, NV, Oct. 1994.

[45] Session Chair: "Image Processing High Performance Computers," The 23rd Applied Imagery Pattern Recognition Workshop - Image and Information Systems: Applications and Opportunities, sponsor: SPIE, Washington, DC, Oct. 1994.

[46] Session Chair: "Networks II," 1996 International Conference on Parallel Processing, cosponsors: International Association for Computers and Communications and The Pennsylvania State University, Bloomingdale, IL, Aug. 1996.

[47] Session Chair: "Networks," Frontiers '96: The 6th Symposium on the Frontiers of Massively Parallel Computation, sponsor: IEEE Computer Society, Annapolis, MD, Oct. 1996.

[48] Session Chair: "Compilers I," 11th International Parallel Processing Symposium (IPPS '97), sponsor: IEEE Computer Society, Geneva, Switzerland, Apr. 1997.

[49] Session Chair: "Session 3," Workshop on Advances in Parallel and Distributed Systems (APADS), sponsor: IEEE Computer Society, West Lafayette, IN, Oct. 1998.

[50] Session Chair: "Scheduling and Mapping," 8th Euromicro Workshop on Parallel and Distributed Processing (PDP 2000), sponsor: Euromicro, Rhodes, Greece, Jan. 2000.

[51] Session Chair: "Partitioning and Mapping," 2000 International Conference on Parallel and Distributed Processing Technologies and Applications (PDPTA 2000), cosponsors: CSREA, IPSJ, et al., Las Vegas, NV, June 2000.

[52] Session Chair: "Network Management," 21st International Conference on Distributed Computing Systems (ICDCS 2001), sponsor: IEEE Computer Society, Phoenix, AZ, Apr. 2001.

[53] Session Chair: "Communication Protocols," 16th International Parallel and Distributed Processing Symposium (IPDPS 2002), sponsor: IEEE Computer Society, Fort Lauderdale, FL, Apr. 2002.

[54] Session Chair: "Algorithms: Scheduling Task Systems," 17th International Parallel and Distributed Processing Symposium (IPDPS 2003), sponsor: IEEE Computer Society, Nice, France, Apr. 2003.

[55] Session Chair: "Algorithms and Models," 13th Heterogeneous Computing Workshop (HCW 2004), cosponsors: IEEE Computer Society and Office of Naval Research, Santa Fe, NM, Apr. 2004.

[56] Session Chair: "Are We Entering the Golden Age of Parallel Processing? Finally?" 18th International Parallel and Distributed Processing Symposium (IPDPS 2004), sponsor: IEEE Computer Society, Santa Fe, NM, Apr. 2004.

[57] Session Chair: "Computer Architecture: The Road Ahead," The 2003 International Multiconference in Computer Science and Computer Engineering, cosponsors: CSREA et al., Las Vegas, NV, June 2004.

[58] Session Chair: "Theory of Heterogeneous Parallel Computing," 3rd International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar 2004), sponsor: Enterprise Ireland, Cork, Ireland, July 2004.

[59] Session Chair: "Towards Memory Oriented Scalable Computer Architecture and High Efficiency Petaflops Computing," IFIP International Conference on Network and Parallel Computing (NPC 2004), sponsor: International Federation for Information Processing (IFIP), Wuhan, China, Oct. 2004.

[60] Session Chair: "In-VIGO: Making the Grid Virtually Yours," IFIP International Conference on Network and Parallel Computing (NPC 2004), sponsor: International Federation for Information Processing (IFIP), Wuhan, China, Oct. 2004.

[61] Session Chair: "The Microprocessor of the Year 2014: Do Pentium 4, Pentium M, and Power 5 Provide any Hints?" ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2005), cosponsors: Arab Computer Society (ACS) and IEEE Computer Society, Cairo, Egypt, Jan. 2005.

[62] Session Chair: "A Unifying Theory of Distributed Processing," 19th International Parallel and Distributed Processing Symposium (IPDPS 2005), sponsor: IEEE Computer Society, Denver, CO, Apr. 2005.

[55] Session Chair: "Information Science and Technology in the 21st Century," CSU Information Science and Technology Colloquium, cosponsors: CSU Vice President for Research and Information Technology (VPRIT), CSU Research Foundation (CSURF), CSU Information Science and Technology Center (ISTeC), and CSU Electrical and Computer Engineering Dept., Fort Collins, CO, Apr. 2005.

[63] Session Chair: "DreamWorks Animation," Future Vision 2010, cosponsors: CSU Information Science and Technology Center (ISTeC) and Hewlett-Packard Company (HP), Fort Collins, CO, Sep. 2005.

[64] Session Chair: "Scheduling," 15th Heterogeneous Computing Workshop (HCW 2006), cosponsors: IEEE Computer Society and Office of Naval Research, Rhodes Island, Greece, Apr. 2006.

[65] Session Chair: "ParalleX: An Asynchronous Execution Model for Scalable Heterogeneous Computing," 16th Heterogeneous Computing Workshop (HCW 2007), cosponsors: IEEE Computer Society and Office of Naval Research, Long Beach, CA, Mar. 2007.

[66] Session Chair: "The Future of Innovation in IT," FutureVisions 2007, sponsor: CSU ISTeC (Information Science and Technology Center), Fort Collins, CO, Sep. 2007.

[67] Session Chair: "P2P II," 38th International Conference on Parallel Processing, cosponsors: The International Association for Computers and Communications (IACC) and the Austrian Computer Society, Vienna, Austria, Sep. 2009.

[68] Session Chair: "Architectural Considerations for a 500 TFLOPS Heterogeneous HPC," 19th Heterogeneity in Computing Workshop (HCW 2010), cosponsors: IEEE Computer Society and Office of Naval Research, Atlanta, GA, Apr. 2010.

[69] Session Chair: "Working Across Boundaries/Human Dimensions: Models for Collaboration," Cyberinfrastructure 2010 in the Rockies: A Human-Centered Program, sponsor: National Science Foundation, Colorado State University, Fort Collins, CO, Aug. 2010.

Service for Other Universities
(ordered by date activity ended)

[1] External Reviewer for the Doctoral Program in Computer Science at Kent State University, Kent, OH, Apr. 1995.

[2] Evaluator for Interdisciplinary Information Science and Technology (I^2) Laboratory, University of Central Florida, Orlando, FL, Jan. 2006

[3] Member of Advisory Board for the Interdisciplinary Information Science and Technology (I^2) Laboratory, University of Central Florida, Orlando, FL, Jan. 2005 to Dec. 2008.

[4] Member of the Dean's Executive Board (Advisory Committee) for the College of Engineering and Computer Science, University of Central Florida, Orlando, FL, Nov. 2004 to Dec. 2009.

[5] Associate of the Centre for Distributed and High Performance Computing at the University of Sydney, Sydney, Australia, June 2010.

Activities as a Referee

Journals:

Acta Informatica
ACM Computing Surveys
ACM Transactions on Computer Systems
ACM Transactions on Programming Languages and Systems
Communications of the ACM
Concurrency: Practice and Experience
IEEE Computer
IEEE Transactions on Automatic Control
IEEE Transactions on Computers
IEEE Transactions on Parallel and Distributed Systems
IEEE Transactions on Pattern Analysis and Machine Intelligence
IEEE Transactions on Software Engineering
IEE Proceedings on Computers and Digital Techniques
International Journal of Computers and Applications
Journal of the ACM
Journal of Digital Systems
Journal of Parallel and Distributed Computing
Proceedings of the IEEE
The International Journal of High Performance Computing Applications
The Journal of Supercomputing
Theoretical Computer Science

Conferences:

Annual International Symposium on Computer Architecture
Australian Computer Science Conference
Euro-Par
Frontiers of Massively Parallel Computation
Hawaii International Conference on System Sciences
Heterogeneous Computing Workshop

International Conference on Distributed Computing Systems
International Conference on Massively Parallel Processing Using Optical Interconnections
International Conference on Parallel Processing
International Conference on Supercomputing
International Conference on Parallel Architectures and Compilation Techniques
International Journal of Computers and Applications
International Parallel Processing Symposium
International Parallel and Distributed Processing Symposium
International Symposium on Fault-Tolerant Computing
International Symposium on High Performance Computer Architecture
International Symposium on High Performance Distributed Computing
National Computer Conference
Real-Time Systems Symposium
Workshop on Computer Architecture for Pattern Analysis and Image Database Management

Funding Agencies:
Army Research Office
National Science Foundation
Purdue Research Foundation, Summer XL Grants

University Service

Purdue University Electrical and Computer Engineering School Committee Activities (ordered by date activity ended)

[1] Computer Engineering Undergraduate Curriculum Committee: Member, Sep. 1976 to Jan. 1977

[2] Computer Science/Electrical Engineering Colloquium Series: Electrical Engineering School Coordinator, July 1977 to June 1978

[3] Electrical Engineering School Curriculum Committee: Member, Aug. 1978 to Aug. 1979

[4] Electrical Engineering School Remedial Requirements Committee: Member, Aug. 1977 to Dec. 1980

[5] Computer Engineering Degree Program Committee: Member, Sep. 1980 to Feb. 1981

[6] Computer Science - Electrical Engineering Parallel Computation Seminar Series: Electrical Engineering School Coordinator, Sep. 1981 to Dec. 1981

[7] Purdue Chapter of Eta Kappa Nu: Advisory Committee Member, Aug. 1979 to Apr. 1985

[8] Electrical Engineering School Loading Policy Committee: Member, Aug. 1985 to Dec. 1985

[9] Electrical Engineering School Research Committee: Member, Aug. 1982 to Aug. 1984; Member, Aug. 1985 to May 1987

[10] Electrical Engineering School Distinguished Chaired Professor Search Committee: Member, Aug. 1986 to May 1987

[11] Purdue Electrical Engineering Industrial Institute (School of Electrical Engineering's industrial affiliates program): Liaison for Data General Corp., May 1982 to May 1987; Liaison for TRW Defense Systems Division, June 1989 to June 1990

[12] PDE (Pre-Doctoral Examination) Review Committee: Alternate Member, Aug. 1989 to Jan. 1990; Chair, Feb. 1990 to Sep. 1991

[13] Electrical Engineering School Social Committee: Member, Aug. 1991 to Aug. 1992

[14] BS in Computer Engineering Degree Program: Member, Sep. 1991 to Oct. 1992

[15] Electrical and Computer Engineering School Head Search Committee: Member, Feb. 1983 to Aug. 1983; Member, Apr. 1985 to Aug. 1985; Member, June 1995 to May 1996

[16] Graduate Student Recruiting Committee: Computer Engineering Area Co-Coordinator for Tours, Dec. 1996 to Aug. 1997; Computer Engineering Area Representative, Aug. 1997 to Feb. 1998

[17] Computer Engineering Area Distinguished Chaired Professor Search Committee: Chair, Jan. 1995 to Aug. 1999

[18] Computer Engineering Area Faculty Recruiting Committee: Member, Aug. 1989 to Aug. 2000

[19] Computer Engineering Area Weekly Lunches: Organizer, Aug. 1989 to Dec. 1999

[20] Computer Engineering Area Seminar Series: Advisor, May 1989 to Dec. 2000

[21] Computer Engineering Area Teaching Assignments Committee: Chair, Jan. 1993 to Dec. 2000

[22] Electrical and Computer Engineering School Graduate Committee: Member, Aug. 1979 to Aug. 1982; Member, Aug. 1983 to Aug. 1986; Member, Aug. 1994 to Aug. 1997; Chair, Aug. 1998 to Aug. 2001

[23] Computer Engineering Area Committee: Chair, Jan. 1985 to Dec. 1986; Member, Aug. 1976 to Aug. 2001

[24] Electrical and Computer Engineering School Promotion and Tenure Committee: Member, Aug. 1985 to Aug. 2001.

[25] Head's Advisory Committee: Member, July 1986 to Aug. 2001

[26] Electrical and Computer Engineering Administrative Committee: Member, Aug. 1998 to Aug. 2001

Purdue University School of Engineering Committee Activities

[1] IDE Counselor for Computer Engineering: Counselor, Aug. 1978 to May 1981

[2] 1997 Summer Faculty Grant Evaluation Committee: Member, Dec. 1996 to Jan. 1997

[3] Academic Personnel Grievance Committee: Member, Aug. 1982 to Aug. 1984, June 1997 to May 1999

Purdue University-wide Committee Activities

[1] Computer Research Institute (CRI): Co-Coordinator of the Steering Committee, July 1997 to July 1999

[2] Computer Research Institute (CRI) Director Search Committee: Member, Aug. 1999 to Aug. 2000

[3] Research Computing and Communications Advisory Committee (RCCAC): Member, Apr. 1999 to June 2001

[4] Faculty Senate: elected in Spring ‘97 as Alternate Electrical and Computer Engineering Dept. Representative, Aug. 1997 to July 2000; elected in Spring ‘98 as Alternate Electrical and Computer Engineering Dept. Representative, Aug. 1998 to July 2001

Indiana State-wide Committee Activities

[1] Indiana Corp. for Science and Technology, Artificial Intelligence Advisory Committee: Member, Aug. 1984 to May 1985

Colorado State University Electrical and Computer Engineering Department Committee Activities (ordered by date activity ended)

[1] Electrical and Computer Engineering Dept. BS in Information Science and Technology Degree Committee, Member, Jan. 2002 to Dec. 2002

[2] Electrical and Computer Engineering Dept. Faculty Search Committee: Member, Sep. 2001 to Mar. 2002, Sep. 2003 to May 2004, Sep. 2005 to May 2006, Sep. 2006 to May 2007

[3] Electrical and Computer Engineering Dept. Grade Appeals Committee: Member, Fall 2008

[4] Electrical and Computer Engineering Dept. Head's Advisory Committee: Member, Fall 2008 to Spring 2012

[5] Electrical and Computer Engineering Dept. BS in Computer Engineering Degree Committee: Member, May 2002 to Aug. 2002; Chair, Dec. 2002 to present

[6] Electrical and Computer Engineering Dept. Promotion and Tenure Committee: Member, Aug. 2001 to present

[7] Electrical and Computer Engineering Dept. Weekly Lunch: Organizer, Sep. 2001 to present

[8] Electrical and Computer Engineering Dept. Computer Engineering Area Committee: Chair, Dec. 2002 to present

[9] Abell Distinguished Lectures in Computer Engineering seminar series: Originator, Chair, and Host, Jan. 2004 to present

[10] Electrical and Computer Engineering Dept. Graduate Committee: Member, Fall 2009 to present

[11] Tiger Team (to enhance ECE undergraduate retention and recruiting): Member, Oct. 2009 to present

Colorado State University Computer Science Department Committee Activities (ordered by date activity ended)

[1] Parallel and Distributed System PhD Qualification Exam Committee: Member, Spring 2005

Colorado State University College of Engineering Committee Activities

[1] Economic Development Internal Advisory Group: Member, Oct. 2005 to Dec. 2007

[2] Systems Engineering Degree Program: Member, Nov. 2007 to Aug. 2008

Colorado State University College of Natural Science Committee Activities

[1] Computer Science Dept. Chair Search Committee: Member, Sep. 2001 to Apr. 2002

Colorado State University-wide Committee Activities (ordered by date activity ended)

[1] Strategic Planning Committee for the CSU Virtual College of Information Science and Technology (including ISTeC, the Information Science and Technology Center): Chair, Oct. 2001 to Oct. 2002

[2] CSU National Laboratory for Information Technology Proposal Team: Member, Sep. 2003 to May 2004

[3] CSU Information Science and Technology (IS&T) Super Cluster Proposal Committee: Coordinator, Sep. 2004 to present Dec. 2004

[4] CSU Vice President for Research Information Science and Technology Colloquium Technical Program and Technical Poster Committees: Member, Jan. 2005 to Apr. 2005

[5] Environmental Disaster Mitigation Super Cluster Pre-Proposal Committee: Co-Coordinator, July 2006 to Oct. 2006

[6] CSU Faculty Council: Elected Representative for the Electrical and Computer Engineering Dept., Feb. 2004 to June 2007

[7] Computer Science and ISTeC Building Design Advisory Committee: Member, Mar. 2006 to Jan. 2009

[8] 1870 Club: Member, Dec. 2002 to present

Colorado State University Information Science and Technology Center (ISTeC) Activities (ordered by date activity ended)

ISTeC is a university-wide organization for promoting, facilitating, and enhancing CSU's research, education, and outreach activities pertaining to the design and innovative application of computer, communication, and information systems.

[1] ISTeC Luncheon for the Chairs of CSU Departments: Chair, Apr. 2004 (to discuss CSU IS&T issues that involve interaction among departments)

[2] ISTeC Workshop on CSU Computing Resources: Organizer, Mar. 2006

[3] ISTeC 2007 Research Retreat: breakout group on "Environmental Disaster Mitigation" Organizer, Nov. 2006 to Feb. 2007

[4] ISTeC Bridges (partnering with Poudre School District to design new curriculum for the 6th grade computer technology): Member, Computer Programming Module Team, Nov. 2008 to Aug. 2009

[5] ISTeC Cray High Performance Computing System Procurement Committee: Member, Sep. 2009 to Dec. 2010

[6] ISTeC: Director, Dec. 2002 to present

[7] ISTeC Executive Committee: Chair, Dec. 2002 to present (meets twice monthly)

[8] ISTeC Research Advisory Committee (RAC):
Ex officio Member, May 2003 to present (meets monthly)

[9] ISTeC Education Advisory Committee (EAC):
Ex officio Member, May 2003 to present (meets monthly)

[10] ISTeC Industrial Advisory Council (IAC):
Coordinator, Dec. 2002 to present (meets each Fall and Spring semester)

[11] ISTeC Distinguished Lecturer Series: Coordinator, Dec. 2002 to present

[12] ISTeC Workshop Series: Coordinator, Dec. 2002 to present

[13] ISTeC PAR (People-Animals-Robots) Laboratory Proposal Team: Co-Principal Investigator, Sep. 2007 to present

[14] ISTeC Organizing and Evaluation Committee for CSU/CSIA (Computer Software and Internet Association) "Inspire to Innovate" Scholarship Fund: Member, June 2007 to present

[15] ISTeC CSU Information Science and Technology Brochure Committee for Vice President for Research Office: Member, March 2007 to present

[16] ISTeC FutureVisions Symposium Technical Program Committee: Member, Apr. 2007 to present

[17] ISTeC FutureVisions Symposium Fund Raising from the ISTeC Industrial Advisory Board: Chair, Apr. 2007 to present

[18] ISTeC High School Day Fund Raising from the ISTeC Industrial Advisory Board: Chair, Apr. 2007 to present

[19] ISTeC Cray High Performance Computing System Management and Allocation Committee: Chair, Dec. 2010 to present

Other Activities

(ordered by date activity ended)

[1] Participant, "NSF Workshop on Remote Sensing," sponsor: National Science Foundation, West Lafayette, IN, Feb. 1984 (invited participation).

[2] Faculty Advisor to Purdue Tae Kwon Do (Korean Karate) Club, Aug. 1977 to May 1987, Aug. 1988 to Dec. 1988.

[3] Purdue University Electrical and Computer Engineering Dept. Faculty Softball Team, July 1989 to June 2001.

[4] Faculty Advisor to Purdue Goju Ryu Karate Club, Aug. 1993 to June 2001.