

HOWARD JAY SIEGEL - BRIEF PROFESSIONAL BIOGRAPHY

June 22, 2009

H. J. Siegel was appointed the George T. Abell Endowed Chair Distinguished Professor of Electrical and Computer Engineering at Colorado State University (CSU) in August 2001, where he is also a Professor of Computer Science. In December 2002, he became the first Director of the CSU Information Science and Technology Center (ISTeC). ISTE C 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. At CSU, Prof. Siegel developed and teaches a dual level (senior and graduate) course on computer architecture and a graduate level course on heterogeneous computing.

From 1976 to 2001, he was a professor in the School of Electrical and Computer Engineering at Purdue University (Assistant Professor 1976-1981, Associate Professor 1981-1985, Full Professor 1985-2001). At Purdue, Prof. Siegel developed/co-developed and taught a junior level course on discrete mathematics for computer engineering, a senior level course on systems programming, a dual level course on computer architecture, a dual level course on parallel programming, a graduate level course on parallel processing, and a graduate level course on heterogeneous computing.

Prof. Siegel received a B.S. degree in electrical engineering and a B.S. degree in management (1972) from the Massachusetts Institute of Technology (MIT), and the M.A. (1974), M.S.E. (1974), and Ph.D. degrees (1977) from the Department of Electrical Engineering and Computer Science at Princeton University. He is a Fellow of the IEEE (Institute of Electrical and Electronics Engineers) professional society (since 1990) and a Fellow of the ACM (Association for Computing Machinery) professional society (since 1998).

Prof. Siegel has co-authored over 370 published technical papers on parallel and distributed computing and communications, has edited/co-edited eight volumes, and wrote the book *Interconnection Networks for Large-Scale Parallel Processing* (second edition 1990). He has supervised 32 Ph.D. students and 31 M.S. thesis students. He is an international tutorial presenter, keynote speaker, and invited lecturer: 55 tutorials at conferences and companies; 20 keynote talks at conferences and workshops; and 155 invited lectures for academic, industry, government, and professional groups. He has been the invited moderator or an invited panelist for 53 conference and workshop panels. He has served as a consultant for 26 industry, government, and academic organizations.

Prof. Siegel's research interests include heterogeneous parallel and distributed computing, communication networks, parallel algorithms, parallel machine interconnection networks, and reconfigurable parallel computer systems. In the area of heterogeneous computing, he is examining ways to allocate the varied compute and communication resources of a collection of different interconnected machines to applications to be executed on the system, with the goal of maximizing some given performance criterion; one of his focus areas is on robust resource allocation. His activities in communication networks include designing efficient methodologies for

scheduling communications in oversubscribed networks and developing multi-constraint QoS routing heuristics. His algorithm work has involved minimizing execution time by exploiting architectural features of parallel machines. Topological properties and fault tolerance have been the focus of his research on interconnection networks for large-scale parallel machines. In his reconfigurable system studies, he has analytically and experimentally investigated the utility of the three dimensions of dynamic reconfigurability supported by the PASM parallel system design ideas and the small-scale proof-of-concept prototype: mixed-mode parallelism, switchable inter-processor communications, and system partitionability. Agencies that have supported his research include the Air Force Office of Scientific Research, Army Research Office, Ballistic Missile Defense Agency, Colorado Commission on Higher Education, DARPA, Defense Mapping Agency, IBM, NASA, Naval Ocean Systems Center, Naval Research Laboratory, National Science Foundation, NRaD, Office of Naval Research, and Rome Laboratory.

Prof. Siegel was a Coeditor-in-Chief of the Journal of Parallel and Distributed Computing (1989-1991), and was on the Editorial Boards of the IEEE Transactions on Parallel and Distributed Systems (1993-1996) and the IEEE Transactions on Computers (1993-1996, 2002-2004). He is currently Chair of the Advisory Board for the Journal of Parallel and Distributed Computing and a member of the Advisory Board for the Journal of Interconnection Networks.

Prof. Siegel was Program Co-Chair of the 1983 International Conference on Parallel Processing (ICPP '83, IEEE co-sponsor), Program Chair of the 4th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '92, IEEE and NASA sponsors), and Program Chair of the 8th International Parallel Processing Symposium (IPPS '94, IEEE sponsor). He was General Chair/Co-Chair of seven international conferences (1982, 1988, 1994, 1996, 2004, 2005, 2006) and Chair/Co-Chair of five workshops (1980, 1991, 1996, 1997, 2001). He is on the Steering Committees of two annual conferences and two annual workshops. He has served as a member of 52 conference and workshop program committees. He was Chair of the IEEE Computer Society Technical Committee on Computer Architecture (TCCA) in 1982 and Chair of the ACM Special Interest Group on Computer Architecture (SIGARCH) from 1983 to 1985.

Prof. Siegel was an "IEEE Computer Society Distinguished Visitor" (1979-1982) and an "ACM Distinguished Lecturer" (1993-2000), giving invited seminars about his research around the country. He is a member of the Eta Kappa Nu electrical engineering honor society, the Sigma Xi science honor society, and the Upsilon Pi Epsilon computing sciences honor society.

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