

San José State University
The Department of Computer Science and
The Department of Computer Engineering jointly present
THE HISTORY OF COMPUTING SPEAKER SERIES

Robert Garner

Tales of CISC and RISC from Xerox PARC and Sun

Wednesday, December 7

6:00 – 7:00 PM

Auditorium ENGR 189

Engineering Building

CISCs emerged in the dawn of electronic digital computers, evolved flourishes, and held sway over the first half of the computing revolution. As transistors shrank and memories became faster, larger, and cheaper, fleet-footed RISCs dominated in the second half. In this talk, I'll describe the paradigm shift as I experienced it from Xerox PARC's CISC (Mesa STAR) to Sun's RISC (SPARC Sun-4). I'll also review the key factors that affected microprocessor performance and appraise how well I predicted its growth for the next 12 years back in 1996. I'll also share anecdotes from PARC and Sun in the late 70s and early 80s.

Robert's Silicon Valley career began with a Stanford MSEE in 1977 as his bike route shifted slightly eastward to Xerox's Palo Alto Research facility to work with Bob Metcalfe on the 10-Mbps Ethernet and the Xerox STAR workstation, shipped in 1981. He subsequently joined Lynn Conway's VLSI group at Xerox PARC. In 1984, he jumped to the dazzling start-up Sun Microsystems, where with Bill Joy and David Patterson, he led the definition of Sun's RISC (SPARC) while co-designing the Sun-4/200 workstation, shipped in 1986. He subsequently co-managed several engineering product teams: the SunDragon/SPARCCenter multiprocessor, the UltraSPARC-I microprocessor, the multi-core/threaded Java MAJC microprocessor, and the JINI distributed devices project. In 1998, he joined Fibre Channel switch start-up Brocade Communications as its director of hardware engineering. In 2001, he joined IBM's Almaden Research Center in San Jose to co-design IceCube, which integrated compute, storage, and distributed switching into a brick-based 3D scalable server. He currently manages a group that developed a new declustered RAID software stack for IBM's General Parallel File System (GPFS). Since 2002, he has led a volunteer team at the Computer History Museum that has restored two 50-year-old IBM 1401 mainframes.