

## DANIEL W. LEWIS

(408) 554-4449

[dlewis@scu.edu](mailto:dlewis@scu.edu)

### **BIOGRAPHY**

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Prior to joining Santa Clara University (SCU) in 1975, Lewis worked for six years at General Electric's Aerospace Division where he designed a fault-tolerant clocking system for one of the first triple-redundant automatic landing systems for commercial aircraft. He has consulted for a number of Bay Area companies, including the Singer-Link Company, where his design of new algorithms and a corresponding modular array of VLSI circuits became the basis of a new product line of real-time computer graphics systems.

Dr. Lewis' efforts led to the creation of SCU's Computer Engineering department in 1988 and served as its department chair for the first 18 years. During his tenure, Lewis established unique co-op and study abroad options for engineering students that fit within their normal undergraduate four-year plan, certificate programs for working professionals, an interdisciplinary major in Web Design and Engineering that has attracted greater numbers of female students to computing, and an interdisciplinary minor in Information Technology and Society that became one of the most popular minors on campus.

Since 2004, Lewis has focused on K-12 outreach in engineering and computing, supporting his work by raising more than \$2.5M in funding provided by National Science Foundation (NSF) grants and private sources. Over this period, Lewis provided professional development workshops in computing for more than 250 K-12 teachers and hosted summer camps for more than 2,000 K-12 students. From 2010 until 2014, he led an NSF-funded project to establish a new inquiry-based *Exploring Computer Science* course in San Jose area high schools that engages students through a culturally-relevant introduction to the breadth of computing.

Lewis is a founding member and steering committee member of the Alliance for California Computing Education for Students and School (ACCESS) that is working to improve California K-12 education policy for computer science. He is the 2010 recipient of SCU's Brutacao Family Foundation Award for Curriculum Innovation, and author of three books, *Fundamentals of Embedded Software: Where C and Assembly Meet*, which has been published in four languages and received national recognition in the 2003 Alpha Sigma Nu book competition, *Fundamentals of Embedded Software with the ARM® Cortex-M3*, which has been published in two languages and cited more than 60 times according to Google Scholar, and *ARM Assembly for Embedded Applications*.

### **EDUCATION**

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PhD, Electrical Engineering, Syracuse University, 1975. Dissertation: "Conditional Opcode Interpretation in Various Computer Architectures", Advisor: Dr. Edward P. Stabler.

Engineer's Degree, Electrical Engineering, Syracuse University, 1974.

M.S., Electrical Engineering, Syracuse University, 1972. Thesis: "Hazard Detection by a Quinary Simulation of Logic Devices with Bounded Propagation Delays", Advisor: Dr. Edward P. Stabler.

B.S., Electrical Engineering, Georgia Institute of Technology, 1968.

### **TRAINING**

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Certificate in Computer Forensics, High-Tech Crime Investigation Association (HTCIA), San Mateo, CA., May 2003.

Faculty Development Workshop V, Software Engineering Institute, Carnegie-Mellon University, Scottsdale, AZ., January 1989

Logic Symposium XI, University Associates Program, Hewlett-Packard, Colorado Springs, CO., May 1987. (Training on the use of software for hardware simulation and development.)

Application Development Seminar for Microsoft Windows, Microsoft Corporation, Santa Clara, CA., Oct. 20-22, 1986.

Two-day short course on CMOS for faculty teaching Mead & Conway's VLSI design methodology, SynMos Corp., Dec. 21-22, 1981.

"Designing and Manufacturing Integrated Circuits – The Total Solution", sponsored by Digital Equipment Corporation, Xerox, VLSI Technology, VALID Logic Systems, Apple Computer, COMSAT, NCA Corporation, and SynMos, Sunnyvale, CA., Oct. 26, 1981.

Logic Symposium II, University Associates Program, Hewlett-Packard, Colorado Springs, CO., May 1978. (Training on the use of hardware logic analyzers.)

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***ACADEMIC POSITIONS***

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Summer 2006 Associate Dean for Undergraduate Programs, School of Engineering, Santa Clara University  
1991-2006 Chair, Computer Engineering Department, Santa Clara University  
1988-91 Associate Chair for Computer Engineering, EECS Department, Santa Clara University  
1981-present Associate Professor of Computer Engineering, Santa Clara University  
1975-81 Assistant Professor of Computer Engineering, Santa Clara University  
1974-75 Instructor, Syracuse University  
1973-74 Teaching Assistant, Syracuse University

***INDUSTRIAL EXPERIENCE***

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1987-96 Owner, **Key Software Products**, Menlo Park, CA.

Developed and marketed several commercial software products for personal computers.

1988-89 Consultant, **Talking Technology Inc.**, Oakland, CA.

Developed substantial portions of a touch-tone driven voice mail application.

1986-88 Engineering Consultant, **Microspec Corp.**, Fremont, CA.

Directed team of programmers to replace character-based user interface with GUI interface on control and data acquisition software for spectrometer attached to scanning electron microscope.

1985-86 Member of Technical Staff, **Singer/Link Division**, Sunnyvale, CA.

Developed new algorithms for an extensible two-dimensional systolic array of VLSI circuits for pixel processor of real-time raster-scan computer graphics system.

1982-83 Engineering Consultant, **ADAC Laboratories**, Sunnyvale, CA.

Designed 16x16 VLSI multiplier chip for window-limiting of video data at pixel rates.

1981-82 Engineering Consultant, **Bell Northern Research**, Mountain View, CA.

Provided market survey and forecasts regarding local area networks and their relation to digital PBX. Proposed modification of BNR/Northern Telecom's SL-1 PBX to allow switching voice using a static allocation of bandwidth combined with a demand-based allocation for data.

1979-80 No Fee Consultant, **XEROX Palo Alto Research Center**, Palo Alto, CA.

Studied VLSI design methodologies developed by Mead and Conway; brought the technology back to SCU by developing new course and CAD tools on VLSI design.

1977-79 Engineering Consultant, **Singer/Link Division**, Sunnyvale, CA.

Developed architecture specification for a new hidden-surface removal algorithm; provided feasibility study for real-time hardware implementation of anti-aliasing and bicubic patch algorithms.

1968-75 Development Engineer/Engineering Consultant, **General Electric Co.**, Binghamton, N.Y.

Designed micro-programmed display processor and significant portions of fail-operational hardware for triple-redundant flight control computer; supervised development of assembler, linker, and loader for same. Sole engineer responsible for hardware during three-month flight test of triple-redundant automatic landing system at the Boeing Company, Seattle.

***TEXTBOOKS***

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Lewis, D., *ARM Assembly for Embedded Applications*, BookBaby, July 7, 2016.

Lewis, D., *Fundamentals of Embedded Software: with the ARM Cortex-M3*, 2<sup>nd</sup> ed., Pearson Higher Education, 2012. (Published in English and Mandarin Chinese; cited more than 49 times according to Google Scholar.)

Lewis, D., *Fundamentals of Embedded Software: Where C and Assembly Meet*, Prentice-Hall, 2002. (Published in English, Polish, Korean and Chinese; honorable mention, Alpha Sigma Nu book competition, 2003.)

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***JOURNAL ARTICLES***

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- Lewis, D., "A Review of Approaches to Teaching FORTRAN", IEEE Transactions on Education, Vol. E-22, No. 1, Feb. 1979, p. 23-25.
- Langdon, G., and Lewis, D., "An Approach to a Modest Digital Laboratory Adjunct for Logic Design Courses," IEEE Transactions on Education, Vol. E-21, No.1, Feb. 1978, p. 35-36.

***CONFERENCE PAPERS AND POSTER SESSIONS***

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- J. Cooper, C. Hunter, R. Mehra, R. Meswani, P. Reddy, D. Lewis and S. Figueira, "Housing4All, Helping the Housing Process in Silicon Valley", ACM DEV 2016, Nov 18-20, 2016, Nairobi, Kenya (poster and short paper)
- E. Song, P. Maheshwari, D. Lewis and S. Figueira, "ClickHealth, App to Provide Info on Healthcare to the Homeless", ACM DEV 2016, Nov 18-20, 2016, Nairobi, Kenya (poster and short paper)
- Lewis, D., Khone, L., Mechlinski, T., and Schmalstig, M. (2014). "The Exploring Computer Science Course, Attendance, and Math Achievement". ITiCSE 2015, Vilnius, Lithuania, July 6-8, 2015.
- Lewis, D., Khone, L., Mechlinski, T., and Schmalstig, M. (2014). "The Exploring Computer Science Course and Math Achievement". SIGCSE 2015, Kansas City, March 5-8, 2015 (poster presentation).
- Lewis, D. and Figueira, S., "Attracting a New Generation of Students to Computing", 16<sup>th</sup> Annual Conference of the Consortium for Computer Science in Colleges (Northwestern Region), Spokane, WA, October 10-11, 2014.
- Lewis, D., "A Rationale for Interdisciplinary Programs that Combine Engineering and the Liberal Arts", 4th Annual Interdisciplinary Engineering Design Education Conference (IEDEC 2014), Santa Clara, CA, March 3, 2014.
- Lewis, D. and Davis, R., "Exploring Computer Science and a High School Program of Study in Computing", FECS'13: The 9th International Conference on Frontiers in Education: Computer Science and Computer Engineering, Las Vegas, NV, July 22-25, 2013. Available online at <http://world-comp.org/p2013/FEC2493.pdf>
- Lewis, D. and Davis, R., "Exploring Computer Science in Silicon Valley High Schools", (poster presentation), Computing Education for the 21st Century (CE21) Meeting, Portland, OR, January 14-16, 2013.
- Lewis, D., Bhatnagar, S., Snow, E., "Exploring Computer Science", 4<sup>th</sup> Annual Career Technical Education Conf., Santa Clara County Office of Education, San Jose, CA., Sept 27, 2012.
- Lewis, D., Davis, R., Hernandez-Ramos, P., and Blackburn, C., "A Symbiotic Exploration of Computer Science in High School Classrooms", poster presentation at NSF GK-12 2012 Conference, Washington, DC., Mar 16-18, 2012.
- Lewis, D., Davis, R., Hernandez-Ramos, P., and Blackburn, C., "Establishing the Exploring Computer Science Course in Silicon Valley High Schools", poster presentation at SIGCSE 2012, Raleigh, NC, Feb 29 through Mar 3, 2012.
- Lewis, D., Davis, R., Hernandez-Ramos, P., and Blackburn, C., "Expanding the Impact of Computer Science in Silicon Valley High Schools and Facilitating Adoption of the ECS Curriculum Elsewhere and A Symbiotic Exploration of Computer Science in High School Classrooms", unposter presentation at CE21 meeting, Feb 1-3, Washington, D.C.
- Lewis, D., Bhatnagar, S., Chapman, G., "Revitalizing High School Computer Science", 3rd Annual Career Technical Education Conf., Santa Clara County Office of Education, San Jose, CA., Sept 29, 2011
- Cooper, S., Dann, W., Lewis, D., Lawhead, P., Rodger, S., Schep, M., and Stavley, R., "A Pre-College Professional Development Program", ITiCSE 2011, June 27-29, Darmstadt, Germany.
- Ketabchi, M., Lewis, D., et al, "Object-Oriented Database Management Support for Software Maintenance and Reverse Engineering," p. 257-260, Proc. COMPCON '89, San Francisco, Feb. 27 – Mar. 3, 1989.
- Pesic, I. and Lewis, D., "Three Heuristics for Improving Centralized Routing in Large Long-Haul Computer Communications Networks", Proc. National Computer Conference (NCC), May 16-19, 1983, Anaheim, CA., p. 691-704. (Reprinted by DataPro as a significant work in the area of long-haul computer communications networks.)
- Lewis, D., "A Hardware Compiler for Mano's RTL", Proc. 1979 Int'l. Symp. On Computer Hardware Description Languages and Their Applications, Palo Alto, CA., Oct. 8-9, 1979.
- Lewis, D. and Carl Fussell, "Enhancement of Interactive Computer Systems by Distributed Intelligence", Proc. 2nd Annual Symp. On Small Systems, Dallas, TX, Oct. 1-3, 1979.
- Lewis, D., "An Inexpensive I/O Processor for the PDP-11 Minicomputer", Proc. Int'l. Symp. On Mini and Microcomputers, Montreal, Quebec, Sept. 26-28, 1979.
- Lewis, D., "A Fault-Tolerant Clock Using Standby Sparing", Proc. 9th Int'l. Symp. On Fault-Tolerant Computing, Madison, WI, June 20-22, 1979, p. 33-39.

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***UNREFEREED PAPERS***

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- Margolis, J., Chapman, G., Goode, J., Dettori, L., and Lewis, D., "A Tale of Three ECS Partnerships and Why Scalability  $\neq$  Sustainability", Exploring Computer Science Working Papers, November 20, 2013 (Paper #1), <http://www.exploringcs.org/>
- Lewis, D., "Interdisciplinary Degree Program in Computing Attracts 57% Female Students", NCWIT Blog, March 10, 2010. [http://ncwit.org/news.blog.php?source=calendar&action=display&editorial\\_id=537&year=2010&month=3](http://ncwit.org/news.blog.php?source=calendar&action=display&editorial_id=537&year=2010&month=3)
- Lewis, D., "What's Different About Boys' and Girls' Interest in Computing?", CSTA Blog, May 3, 2010. [http://blog.acm.org/archives/csta/2010/05/whats\\_different.html](http://blog.acm.org/archives/csta/2010/05/whats_different.html)
- Lewis, D., "College Connection: Santa Clara University", An interview with Dan Lewis about SCU's Computer Engineering program, CSTA Voice, Vol. 5, Issue 6 (Jan 2010), p. 7. [http://csta.acm.org/Communications/sub/CSTAVoice\\_Files/csta\\_voice\\_01\\_2010.pdf](http://csta.acm.org/Communications/sub/CSTAVoice_Files/csta_voice_01_2010.pdf)
- Lewis, D., "Attracting the Next Generation of Students to Computing", CSTA Voice, published in two parts: Vol. 5, Issue 2 (May 2009), pp. 1-2, and Vol. 5, Issue 3 (July 2009), pp. 4-5.
- Lewis, D., "Just-In-Time Graduate Education", Computing Research News, Vol. 5, No. 4, Sept. 1993. (Describes the creation of graduate-level certificate programs earning academic credit.)
- Lewis, D., "A Hierarchical Microprocessor Laboratory Facility", SIGSMALL, Vol. 6, No. 2, June-August, 1980. (I was Guest Editor of this issue, featuring articles written exclusively by SCU students and faculty.)
- Lewis, D., "General Purpose Emulation on the Hewlett-Packard 2100 Minicomputer", SIGMICRO, Vol. 10, No. 1, March 1979, p. 24-31.

***TECHNICAL REPORTS***

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- Bernier, D., Stephenson, C., Richardson, D., and Chapman, G. (2012), "In Need of repair: The State of K-12 Computer Science Education in California", January 2012. (Lewis is acknowledged in the report for his contributions to the preparation of the report.)
- Lewis, D., "Point Lights, Anti-Aliasing and Interlace Effects", Internal report, Singer/Link Division, Sunnyvale, CA., Sept. 7, 1979. (Suggested an inexpensive method for improving the dynamic representation of point light sources in real-time raster-scan graphics.)
- Lewis, D., "A New Priority Circuit", Internal report, Singer/Link Division, Sunnyvale, CA., August 1979. (Describes a new computer graphics circuit which may be used in processing hidden surfaces to determine the nearest surface, next nearest surface, etc.)
- Lewis, D., "Bicubic Patches: Final Report", Internal report, Singer/Link Division, Sunnyvale, CA., Sept. 13, 1978. (Investigated feasibility of implementing bicubic path models of solid surfaces in real-time raster-scan graphics.)
- Lewis, D., "Blending: An Implementation Study", Internal report, Singer/Link Division, Sunnyvale, CA., Aug. 30, 1977. (Outlined the first known hardware for real-time anti-aliasing for raster-scan graphics.)

***PRESENTATIONS***

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- Lewis, D., "Teacher Supply and Training: What Are Some Options?", Invited presentation, Computer Science in K-12 Roundtable, Silicon Valley Education Foundation, San Jose, CA., August 26, 2014.
- Lewis, D., interviewed for an article, "Coding classes: Students, dogged teachers overcome obstacles to add computer science classes", San Jose Mercury News, July 21, 2014. [http://www.mercurynews.com/education/ci\\_26192415/coding-classes-students-dogged-teachers-overcome-obstacles-add](http://www.mercurynews.com/education/ci_26192415/coding-classes-students-dogged-teachers-overcome-obstacles-add)
- Lewis, D. and Davis, R., "Computer Science and Engineering", Invited presentation to high school students, Los Gatos High School, Los Gatos, CA., April 1, 2014.
- Lewis, D., "Computer Science and Engineering", Invited presentation to high school students, Harker Programming Invitational, The Harker School, San Jose, CA., Mar. 15, 2014.
- Lewis, D., "A Rationale for Interdisciplinary Programs that Combine Engineering and the Liberal Arts", 4<sup>th</sup> Annual Interdisciplinary Engineering Design Education Conference (IEDEC 2014), Santa Clara, CA, March 3, 2014. (Invited presentation)
- Lewis, D., "My Career in Computing: 46 years and Counting", AcademiCon 2014, Santa Teresa High School, San Jose, CA, January 27, 2014. (Invited presentation)

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- Lewis, D., "K-12 Computer Science and Our Future Workforce Needs", Invited presentation to the Industrial Advisory Board, School of Engineering, Santa Clara University, Santa Clara, CA., Jan. 9, 2014.
- Richardson, D., Lewis, D., et al, "What's Missing From STEM? Computer Science Education for All Students", 1st Annual STEM Symposium, California Department of Education, Sacramento, CA., Nov. 19, 2013.
- Lewis, D., Interviewed for a podcast by Dale Hahn, as part of his "Seeing Into the Future" series of interviews with experts in STEM in order to understand future developments, September 14, 2013.  
<http://www.blogtalkradio.com/s3production/2013/09/14/dan-lewis>
- Margolis, J., Chapman, G., Dettori, L., Lewis, D., Goode, J. (moderator), "Scaling the ECS PD Model to Additional School Districts and States", (panel presentation), Computing Education for the 21st Century (CE21) Meeting, Portland, OR, January 14-16, 2013.
- Lewis, D., "Exploring Computer Science", 4<sup>th</sup> Annual Career Technical Education Conf., Santa Clara County Office of Education, San Jose, CA., Sept 27, 2012. (Invited presentation)
- Lewis, D., "Exploring Computer Science in Silicon Valley High Schools", A presentation about NSF BPC and GK-12 projects to a group of educators from Indonesia, sponsored by the US Department of State's International Visitor Leadership Program. Santa Clara University, April 18, 2012.
- Lewis, D., "Revitalizing High School Computer Science", Career Technical Education Conference, Santa Clara County Office of Education, September 29, 2011. (Invited presentation)
- Lewis, D. Interviewed for a podcast by Bill Cullifer, the Executive Director the World Organization of Webmasters about the new Bachelor of Science Degree in Web Design and Engineering, August 26, 2009.
- Lewis, D., "Developing K-12 Curricula Using Alice", The Alice Symposium, Duke University, June 16-18, 2009. (Invited presentation)
- Lewis, D., Engineering Educators Panel at the Higher Education Consultants Association (HECA) Conference, Santa Clara, CA, June 23, 2006. (Invited presentation)
- Lewis, D., "Uses of LSI in Computer Graphics", Universite de Nantes, France, Dec. 10, 1980. (Invited lecture)
- Lewis, D., "VLSI Circuits for Computer Graphics", Institut National de Recherche en Informatique et en Automatique (INRIA), Rocquencourt, France, Oct. 24-28, 1983. (Invited lecture)
- Lewis, D., "Applications of LSI Circuits to Real-Time Raster-Scan Computer Graphics", Centre Commun d'Etudes de Television et Telecommunication (CCETT), Rennes, France, Dec. 5, 1980. (Invited lecture)
- Lewis, D., "Applications of LSI Circuits to Real-Time Raster-Scan Computer Graphics", Centre National d'Etudes des Telecommunications (CNET), Grenoble, France, Dec. 2, 1980. (Invited lecture)
- Lewis, D., "Applications of LSI Circuits to Real-Time Raster-Scan Computer Graphics", Institut National de Recherche en Informatique et en Automatique (IRISA), Universite de Rennes, France, Nov. 7, 1980.
- Lewis, D., "Trends in Computer Hardware", The Leadership Center, Santa Clara University, Apr. 23, 1980. (Invited lecture)
- Lewis, D., "Occupational Opportunities in Computer Science Education", ACM Computer Careers Day, Tandem Computers, Cupertino, CA., Apr. 19, 1980.
- Lewis, D., "Microcomputer Networks", SEMICRO II, sponsored by Nucleo de Computacao Electronica da Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, Nov. 1981. (Invited lecture)

***FOUNDATION GRANTS***

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- NSF GK-12 Program (DGE #1045434), "A Symbiotic Exploration of Computer Science in High School Classrooms", \$851,778, September 1, 2011.
- NSF BPC Program (CNS #1019217), "Special Project: Expanding the Impact of Computer Science in Silicon Valley High Schools and Facilitating Adoption of the ECS Curriculum Elsewhere", \$988,593, August 1, 2010.
- NSF S-STEM program (DUE #0850097), "Attracting a New Generation of Students to Computing", \$597,781, Jan. 2009. (Provides \$520K in scholarships to students in computing over a five year period.)
- NSF ITEST program (DRL #0624479), "An Innovative Approach for Attracting Students to Computing: A Comprehensive Proposal", \$102,209, June 2007.
- NSF and Centre National de la Recherche Scientifique (CNRS). U.S.-France Exchange of Scientists to conduct research on applications of VLSI methodology to real-time raster-scan computer graphics. Universite de Rennes, France, 1980.

***OTHER GRANTS AND GIFTS***

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- Google, "Summer Institute for Humanitarian Computing" (to provide summer workshop and publications for high school juniors and seniors interested in computer science), \$5,500. Awarded April 12, 2015.

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Payne Family Foundation (via Carnegie-Mellon), “2010 Alice Summer Program” (to provide professional development for 14 high school computer science teachers), \$20,000.

Payne Family Foundation (via Carnegie-Mellon) and Local Private Donations, “2009 Alice Summer Program” (to provide professional development for 40 high school computer science teachers), \$41,250.

Private Donations, “2006 ACM/TECS Workshop” (to provide professional development for 25 high school computer science teachers), \$5,000 in cash, \$3,000 in textbooks.

Private Donations, “2005 ACM/JETT Workshop” (to provide professional development for 25 high school computer science teachers), \$12,000 in cash, \$3,000 in textbooks.

IBM Corporation, Santa Teresa Lab, “Student Cooperative Testing Services,” \$16,568, Nov. 1993.

IBM Corporation, Santa Teresa Lab, “Curriculum Development and Student Cooperative Testing Services,” \$189,907, Mar. 1993.

U.S. West Advanced Technologies, Inc., “Development of a Software Analysis and Maintenance System Using Automatically Generated Object-Oriented Databases,” \$83,975, October 1989. (Co-PI)

U.S. West Advanced Technologies, Inc., “Developing and Prototyping Object-Oriented Database Systems for Software Maintenance”, \$45,225, May, 1989. (Co-PI)

North Atlantic Treaty Organization (NATO). Subsistence grant to attend NATO Advanced Study Institute on Design Methodologies for VLSI Circuits, July 1980, Universite Catholique de Louvain, Louvain-la-Neuve, Belgium.

Santa Clara University, President’s Fund Grant, “Investigation of a Common-Carrier Based Computer Communications Network to Provide Portable Computing Access”, \$900, 1979.

Teledyne Semiconductor Corp., Mountain View, CA., “Architectural Constraints of Analog-to-Digital Conversion”, \$22,908, January 1979. (PI)

University of Santa Clara, President’s Fund Grant, “Enhancement of Interactive Computer Systems by Distributed Intelligence”, \$2,000, September 1978.

Hewlett-Packard, Colorado Springs, CO., Logic Analyzers valued at \$10,000 February 1978.

***HONORS AND AWARDS***

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ISQED Quality Educator Award, presented at the 4<sup>th</sup> Annual Interdisciplinary Engineering Design Education Conference (IEDEC 2014), Santa Clara, CA, March 3, 2014. The ISQED Quality Educator Award was established to honor educators who exemplify excellence in interdisciplinary engineering education.

Brutocao Family Foundation Award for Curriculum Innovation, Santa Clara University, September 2010. The award recognizes faculty who have improved the quality of education at Santa Clara University through significant innovations in pedagogy or curriculum development—particularly when those innovations affect a significant number of students—and who have exhibited general excellence in teaching.

*“This year’s award recipient has exhibited curricular leadership in three major initiatives. First, he created a new interdisciplinary Bachelor’s program. This program, which reaches across disciplinary, school and college boundaries to involve Computer Engineering, Communication, and Art and Art History, is attracting a growing enrollment, including a large number of women students, who remain underrepresented in engineering fields. Second, he has developed outreach programs to K-12 students to encourage them to pursue the study of computing. His innovative summer camps have reached more than 2,000 local K-12 students. To accomplish that goal, he secured about \$700,000 in external grants, mostly from NSF. Third, he has led efforts to develop summer training programs for high-school computer science teachers, again with external funding and again extending opportunity beyond the University community in significant numbers. More than 200 local teachers have reinvigorated and updated their course offerings in computer science under our awardee’s guidance. For three years he has served as the campus coordinator for the Sally Ride Festival, attracting young women to science and engineering. His work in curriculum innovation and outreach exemplifies dedication to student learning and community service.”*

Honorable Mention, 2003 Alpha Sigma Nu National Jesuit Book Awards (category: Mathematics/Computer Science), October, 2003. (There were a total 49 entries from 20 Jesuit colleges and universities. Entries were submitted to one of four categories. Six awards were made: four category winners and two honorable mentions.)

Recognition for Twenty-Five Years of Service, Santa Clara University, May 2000.

President’s Faculty Recognition Award, Santa Clara University, April 20, 1998.

National Defense Education Act (NDEA) Title IV Fellowship, 1972-73.

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***PROFESSIONAL AND COMMUNITY SERVICE***

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Steering Committee Member, Alliance for California Computing Education for Students and Schools (ACCESS), February 2010 to present.  
Member, Career Technical Education Advisory Committee, San Jose Unified School District, 2011-12.  
National Science Foundation S-STEM Review Panel, September, 2011.  
National Science Foundation CE-21 Review Panel, July, 2011.  
National Science Foundation S-STEM Review Panel, November, 2009.  
Pacesetter Member, National Center for Women & Information Technology (NCWIT), 2009-present  
Foreign Students Workgroup (Administrators), U.S. Commission on Immigration Reform, San Francisco, CA., Nov. 16, 1995.  
Member, Software Industry Coalition, Joint Venture Silicon Valley, 1992-94.  
Conference Chair, ACM SIGSMALL Conference, Colorado Springs, CO, Aug. 2-4, 1982.  
Member, IEEE/CS Standards Subcommittee on Interface Terminology, 1982.  
Program Chair, ACM SIGSMALL Conference, Orlando, FL, 1981.  
Guest Editor, Special Issue of SIGMINI, Vol. 6, No. 2, June-August 1980.  
Vice Chairman, ACM SIGSMALL, 1981.  
Board of Directors, ACM SIGSMALL, 1980-82.  
University Liason, National Science Foundation (NSF) CSNET project, 1981.

***SANTA CLARA UNIVERSITY SERVICE***

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Member, Brutacao Awards Committee for Teaching Excellence and Curriculum Innovation, 2012-2014  
Member, University Core Curriculum Committee on Pathways, 2011-14.  
Chair, University Academic Affairs Committee, 2008-11.  
Member, University Assessment Committee, 2009-11.  
Chair, Outcomes Assessment Committee, School of Engineering, 2009-11.  
Member, Grievance Committee, School of Engineering, 2009-10.  
Member, Faculty Search Committee, Department of Computer Engineering, 2009-10.  
Vice-Chair, University Academic Affairs Committee, 2007-08.  
University Task Force on Course Evaluation, 2007-08  
Coordinator, ABET preparations for the School of Engineering, 2008-10.  
Chair, School of Engineering Rank and Tenure Committee, 2006-07  
Member, University Ad Hoc Committee on Lecturers, 2006-07  
Faculty Salary Committee, 2003-2005.  
Chair, University Academic Affairs Committee, 1998-2001.  
Ad Hoc Committee to form Interdisciplinary Minor in Information Technology and Society, 1998-99.  
Academic Computing and Technology Committee, 1993-97.  
University Honors Council, 1990-92.  
University Valedictorian Committee, 1989.  
Search Committee for Dean, School of Engineering, 1988-89.  
University Faculty Affairs Board, 1987-90.  
University Teaching and Learning Committee, 1986-88.  
University Task Force on Office Automation, 1982-83.  
University Financial Planning Committee, 1981-82.  
University Valedictorian Committee, 1981-82.  
University Computer Committee, 1981-82.  
University Word Processing Committee, 1981-82.  
University Library Committee, 1979-81.  
University Educational Programs Committee, 1977-79.  
University Ad Hoc Computer Committee, 1977-79.

***NEWSPAPER ARTICLES AND OP EDs***

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“Computer science: It’s where the jobs are, but schools don’t teach it”, San Jose Mercury News, September 12, 2014.  
[http://www.mercurynews.com/opinion/ci\\_26510658/computer-science-its-where-jobs-are-but-schools](http://www.mercurynews.com/opinion/ci_26510658/computer-science-its-where-jobs-are-but-schools)

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“Statewide Computer Science Roundtable Tackles Challenges of Imposing Standards for K-12 Instruction”, Silicon Valley Education Foundation Newsletter, September 10, 2014.

<http://hosted.verticalresponse.com/882587/b315168330/1474647725/99d005cfac/>

“Round Table Discussion Focused on Getting More Computer Science Into Schools”, San Jose Mercury News, September 10, 2014. [http://www.mercurynews.com/News/ci\\_26509104/Round-table-discussion-focused-on-getting-more-computer-science-into-schools](http://www.mercurynews.com/News/ci_26509104/Round-table-discussion-focused-on-getting-more-computer-science-into-schools)

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### ***K-12 OUTREACH ACTIVITIES***

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**Summer Institute for Humanitarian Computing**, Frugal Innovation Hub, Santa Clara University, July 11 – August 5, 2016. Funded by a grant from Google Education, this month-long workshop provided a research experience for ten high school students who developed cell phone apps for underserved populations, and helped them write conference papers and posters that were submitted to ACM DEV 2016. Two of the three papers submitted were accepted for publication.

**NSF Graduate Fellow Training Workshop on Exploring Computer Science (ECS) Curriculum** (September 2011 and summers 2012 and 2013): Organized and ran a workshop for graduate students who will support San Jose area high school teachers in their classrooms.

**NSF Reflection Workshops on Exploring Computer Science (ECS) Curriculum** (Summer 2011 and 2012) A two-day meeting with high school teachers who taught the ECS curriculum the preceding year to review and discuss their experience.

**NSF Professional Development Workshops on Exploring Computer Science (ECS) Curriculum** (Summer 2010, 2011, 2012, 2013 and 2014) Organized and ran workshops for high school computer science teachers on the ECS curriculum. The workshops were endorsed as part of the Teacher Enrichment in Computer Science (TECS) program of the ACM.

**Alice Summer Program** (Summer 2010): Raised \$20,000 to organize and offer a one-week educators’ workshop attended by 14 high school teachers.

**Alice Summer Program** (Summer 2009): Raised \$43,000 to organize and offer two one-week educators’ workshops attended by 40 high school teachers, two one-week summer day camps attended by 89 high school students, and one two-day reflection meeting for 15 teachers who participated in the 2008 Alice Workshop and have been teaching Alice during the 2008-09 academic year.

**NSF Adventures in Alice Workshop** (Summer 2008): Organized and ran one of five NSF-funded collaborative sites running three-week workshops for high school and middle school teachers. The Santa Clara University site included 15 teachers who were taught Alice in the first week, developed curriculum materials in the second week, and ran five practice teaching sessions at five different locations, teaching Alice to more than 100 children. This three-year project was funded by a \$103,000 NSF grant ESI-0624479, "An innovative approach for attracting students to computing: A comprehensive proposal," and co-sponsored as an ACM Teacher Engagement for Computer Science (TECS) workshop.

**Tech Academy of Silicon Valley** (Summer 2007-11): Liaison for the SCU School of Engineering, recruiting faculty guest speakers and lab tours, and making all local arrangements.

**Sally Ride Science Festival** (Spring 2007, Spring 2008, Fall 2009): Campus Coordinator, recruiting faculty presenters and student volunteers, managing local advertising and making all local arrangements for facilities, food, electrical support, security, etc.

**Acting Associate Dean for Undergraduate Programs** (Summer 2006): Responsible for several summer outreach programs offered by the School of Engineering, including NYLF/TECH, ACM/TECS Workshop, Summer Engineering Seminar, and the SWE Get SET Program.

**ACM Teacher Engagement for Computer Science (TECS) Summer Workshop** (2006): Raised \$12,000 in cash and \$3,500 in textbook donations, organized, and ran this summer workshop for 25 high school computer science



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teachers. The goal was to help high school teachers create a variety of “magnet” courses that will increase high school student interest in computing. The workshop included one day each on Alice, Media Computation, and Using XML and Javascript to create custom skins for the Windows Media Player. Teachers attending came from all over the western United States.

**ACM Java Engagement for Teacher Training (JETT) Summer Workshop (2005):** Raised \$10,000 in cash and \$4,500 in textbook donations, organized, and ran this summer workshop for high school computer science teachers who teach the AP course in CS. The goal was to improve their advanced-level skills in Java programming. A total of 26 teachers came from all over the West Coast to attend this workshop.

**National Youth Leadership Forum on Technology (NYLF/TECH):** Member, Advisory Board (2004-2007). Organized 2004 and 2006 site visits to Santa Clara University

Member, **Parent-Teacher Advisory Committee on Technology**, The Harker School, San Jose, CA. (2003-04)

Instructor, **Lego Mindstorm Robotics Club**, Stevens Creek Elementary School, Cupertino, CA., 2005-06.