

Patricia Ryaby Backer Resume

Educational Background

- 1987 Ph.D., The Ohio State University. Focus Area: Neurocognition with emphases in industrial technology, neuroscience, learning theory, and special education
- 1986 MA in Education, The Ohio State University
- 1982 MA in Teaching Mathematics, Tennessee Temple University (TTU)
MS in School Administration, TTU
- 1977 BS in Chemical Engineering, Rutgers University

Academic Work Experience

- 1990-present Full, Associate, and Assistant Professor, Department of Aviation and Technology, San Jose State University. *Tenure granted 1996; Promotion to Associate Professor granted 1997. Promotion to Full Professor granted 2003.* Classes taught include Technical Illustration for the Global Marketplace, Multimedia Production Seminar, Manufacturing Organization & Communication, Technology & Civilization, Technology & Gender Issues, Advanced Concepts in TQM (Graduate), Research Methods (Graduate), Computer Applications (Graduate), Statistical Quality Control and Experimentation and Investigation Techniques in Science (for the College of Science).

Since 1995, I have served as course coordinator for Tech 198 (Technology and Civilization) which is an Advanced General Education course serving hundreds of students each year. I also serve as course coordinator for Engr 195A and Engr 195B (Global and Social Issues in Engineering)

In 2011, I received SJSU's Distinguished Service Award. I also received the College of Engineering's McCoy Family Faculty Award for Excellence in Service in 2015

- Spring 2017 Acting coPI, SJSU's First in the World grant
- 2016-present PI, SJSU's Title III Strengthening Institutions grant
- 2016-2017 PI, SJSU's AANAPISI grant
- 2006-2016 I served four terms (ten years) as a member of SJSU's Academic Senate. For two years, I served as chair of the Organization & Government Committee. As chair, I worked with the committee and constituents across the university in revising several policies including: the Strategic Planning Policy (with the Director of Institutional Planning), the Athletics Board policy, and the Campus Planning Board Policy. The Organization & Government Committee was also responsible for the creation of a SJSU Task Force on Sustainability. In AY 2009-2010, I served as chair of the Professional Standards Committee. From 2014-2016, I served as Associate Vice Chair and Chair of the Committee on Committees.
- Fall 2011-2016 Evaluator, SJSU's AANAPISI grant
- Fall 2013-2014 I worked as a 0.4 faculty administrator on special projects for the Dean of the SJSU College of Engineering.

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Fall 2010-Fall 2017

I led a writing team for the Office of the Provost in developing and writing university-wide grants for SJSU. Under my leadership, SJSU received four grants.

- Lead writer: U.S. Department of Education, Asian American and Native American Pacific Islander-Serving Institutions Program (Grant awarded \$1.978 Million over 5 years)
- Lead writer: NSF grant under NSF 13-1: The Future of MOOCs and Turbocharged Technologies in STEM Education (Grant Received, amount \$49,987, Award No: 1355101, PI: Hsu)
- Lead writer: Project SUCCEED Title III STRENGTHENING INSTITUTIONS PROPOSAL (U.S. Department of Education Grant awarded \$2.2 million over 5 years).
- Lead writer: First in the World: Promoting Active Learning Strategies Through the Flipped Classroom Model in STEM Gateway Courses at San José State University, California State University-Los Angeles, and Cal Poly Pomona (Grant awarded 2015, \$3 Million over 4 years).

Writer on several Federal grants for the College of Engineering:

- NSF grant under the IUSE program. I assisted with the writing: Collaborative Research: A Technology Pathway Program in Data Technology and Applications (PI: Belle Wei, grant received, \$600K)
- NSF grant under the NSF 07-548--Broadening Participation in Computing (BPC) Program (Award No: CNS-0837821, Amount: \$149,999, PI: Belle Wei, grant received).

2013-2015, 2016-present

I worked part-time for the College of Engineering dean on special projects for the college. Below are my achievements related to my work in this position.

- I worked with faculty from departments in the College of Engineering to create Engr 195A and Engr 195B. These two courses are part of the senior-level General Education (GE) course for engineering students. To receive credit for GE Areas S and V, students must complete both Engr 195A and Engr 195B, each with a grade of C or better. In addition, they must complete their senior project course sequence and earn a grade of C or better in each course. I worked with the engineering faculty to get the courses approved by SJSU's Board of General Studies.
- From 2014-2015 and 2016-present, I serve as the course coordinator for Engr 195A and 195B. As course coordinator, I am responsible for scheduling the classes, selecting GE faculty to teach in the course, training engineering faculty in GE content and requirements, creating grading rubrics for the Engr 195A/B courses as well as providing rubrics for the associated engineering courses, and hiring and managing the ISAs for the course sequence.
- I worked with interim Dean Ping Hsu in writing the Joint PhD proposal with UC Santa Cruz.
- I worked with a faculty team in developing and implementing Project EXCEED (Excellence in Your Engineering Education), a summer program that provides a group of incoming engineering frosh with an introduction to San José State University and the College of Engineering. I served on the faculty team from 2012-2014 and as lead in summer 2015. More details are available at <https://engineering.sjsu.edu/student-resources/success-center/exceed>.

2007-2013 Director of General Engineering (effective Fall 2007)

- Lead faculty for the development of green engineering programs, curriculum, and initiatives for the College of Engineering
 - Worked on an interdisciplinary CSU team to write the Energy IQ Smart Grid Demonstration Project (Submitted 8/25/09, Department of Energy, Amount Requested from DOE: \$74 million).
 - Created a new green engineering minor including two new courses under General Engineering: Engr 102 (Renewable Energy Engineering) and Engr 103 (Life-cycle Engineering)

- Created two new SJSU Studies (Advanced GE) courses for the College of Engineering: Engr 108 – Green Electronics and EnvS/Engrs 119 Energy and the Environment (in conjunction with ENVs faculty).
 - Worked with faculty from across SJSU on a new interdisciplinary six-unit GE course (UNVS 109), Climate Solutions Initiative, which is cross-listed between Undergraduate Studies, Engineering and Humanities & the Arts
 - Worked with three faculty teams to develop proposals for the National Science Foundation NSF 08-610—Innovations in Engineering Education, Curriculum, and Infrastructure (IEECI) program. Two of these proposals were funded. I was the lead writer for one of these project teams (Gregory Young, PI)
 - Worked on a team to develop a new option in Green Technology under the Masters of Science in Engineering
 - Managed the submissions and edited the papers for the U.S. China Green Energy conference proceedings
 - Provided support and scheduled interviews for the Global Green documentary sponsored by the College of Engineering
 - Created and maintained a WIKI for the CSU Engineering Deans on Green Engineering
- Curriculum Development for General Engineering
 - Developed four new General Education courses for the College of Engineering: Engr 5—Science of High Technology, Engr 108—Green Electronics, Tech 98—Technology and Women, and EnvS/Engrs 119 Energy and the Environment (in conjunction with ENVs faculty).
 - Developed the greensheets for four new General Engineering courses: Engr 8, Engr 81W, Engr 195C and Engr 195D
 - Worked with the College of Business in management of the special Business Minor for Engineers
 - Developed assessment plans for the College of Engineering’s internal programs including: Engr 10, MEP, GTI, ELCAS, CELL, COE Scholarships, Faculty Development Grants, External Grants, Green Engineering Minor, Business Minor for Engineering
 - Developed and served as the coordinator for special sections of Tech 198 for the GTI program: Technology & Civilization in India and Technology & Civilization in China
- Financial Planning and Budgeting for the College of Engineering
 - Worked with the Office of the Provost budget office to give updates about the Engineering budget and expenditures
 - Worked with the chairs of the departments to create Fall 2010 budget scenarios
 - Worked with the chairs of the departments to create and revise budgets for AY 09-10
 - Reviewed the Miscellaneous Course Fee Expenditure Plans submitted by the department
 - Monitored department expenses and created summary reports for the Dean
 - Managed the budget transfers from the College to the individual departments
 - Created department budget binders with detailed information on budget allocations, college/department agreements, miscellaneous course fees, split funding, and final reports
- Management of General Engineering
 - Created and managed course schedule for General Engineering program
 - Creating advising forms for the minors and undergraduate majors in General Engineering
 - Advised students in the BS General Engineering and minors in green engineering, Business minor for Engineers, and bioengineering minor
- Outreach Efforts
 - Program Director of the Hispanic Computing Brigade (HCB) initiative
 - Director, the Silicon Valley Computer Camp (SVCC), held June 22-26, 2009, with a total of 24 students from two local high schools (Silver Creek and Mount Pleasant).
 - Created a WIKI for the College of Engineering: Technology for Engineering Education
 - Worked on outreach with the Society of Women Engineers and Engineering Open Houses each semester
- Grant Efforts

- Track RFPs weekly from Grants.gov, the Departments of Education and Energy, the National Science Foundation, and the EPA. I forward relevant RFPs to faculty in the College of Engineering. I have also created sublistings of grant opportunities in the areas of STEM education (shared with the Deans of Education and Science), green engineering and sustainability, and university-wide grant opportunities (shared with the IE Fellows)
- Served as project manager for the NSF-funded project, Hispanic Computer Brigades.

2008-2009 Inclusive Excellence/Diversity Fellow. I represented the College of Engineering on a university team to incorporate a campus-wide diversity master plan. The team members engage different academic colleges (and encompassing departments) on notions of diversity, interculturalism, and inclusive excellence via curricular innovations, teaching practices, student engagement activities, and research projects.

2002-07 Chair, Department of Aviation and Technology

2001-02 Chair, Department of Aviation and Department of Technology. These two departments were merged in July 2002.

As chair, I was responsible for the management of the department including scheduling, budgets, outreach, hiring and review of adjunct faculty. Tasks included: preparing, updating, and monitoring the annual department budget; submit annual reports to the College and SJSU; facilitating departmental curriculum revisions and implementation; developing class schedules and teaching assignments; scheduling and presiding over department meetings; serving as the primary departmental contact for institutional advancement, recruitment, and retention efforts; coordinating the efforts of faculty search/screen committees; facilitating implementation of revisions in catalog copy/web sites/policies which address departmental curriculum issues; managing student grade appeal/complaints.

Summer 2001 Web Instructor, Center for Faculty Development, San Jose State University.

Fall 2000 Alquist Faculty in Residence, San Jose State University. For the 2000-2001 academic year, I received 0.4 release time to train faculty in the use of multimedia and the WWW in their classrooms.

Summer 2000 Multimedia Instructor, MASTEP Project (funded by the NSF), San Jose State University. I taught three workshops: *Basics of Networking* (with Dr. Julio Garcia), *Evaluating WWW Materials for the Classroom*, and *Developing a Web Site*.

Spring 2000 Alquist Faculty in Residence, San Jose State University. For Spring 2000, I received 0.6 release time to train faculty (with Dr. Saltmarch of Nutrition & Food Science [NUFS]) in the use of multimedia and the WWW in their classrooms.

Fall 1999 Alquist Faculty in Residence, San Jose State University. For Fall 1999, I received 0.4 release time to train faculty (with Dr. Saltmarch of NUFS) in the use of multimedia and the WWW in their classrooms.

Summer 1999 Multimedia Instructor, MASTEP Project (funded by the NSF), San Jose State University. I taught two workshops: *Fundamentals of Web Design and Video Capture and Editing* to teachers from high schools, community colleges, and universities.

Summer 1998 Multimedia Instructor, MASTEP Project (funded by the NSF), San Jose State University. During summer 1998, I taught two four-week workshops on using multimedia and the WWW in the classroom (with Dr. Saltmarch).

- Fall 1997 Fulbright Scholar lecturing award, Peru, August-December 1997. This project focused on providing information and illustrations on preparation of computer-based multimedia and web teaching materials for both high school and university instructors. Project time was spent as a “lecturer” with part time teaching and part time consulting. Through this combination of teaching and consulting, I worked with nine different universities, the Ministry of Education, and teachers from over twenty schools to help get multimedia “off the ground” in their organizations
- Summer 1997 Multimedia Instructor, MASTEP Project (funded by the NSF), San Jose State University. During summer 1998, I taught two one-week introductory workshops and two three-week advanced workshops on using multimedia and the WWW in the classroom (with Dr. Saltmarch and Dr. Lu).
- Summer 1994 National Endowment for the Humanities fellow, Iowa State University
- Summer 1989 Research fellow, Army Research Institute (ARI), Alexandria, VA
- 1988-1990 Instructor, Thomas Jefferson High School of Science and Technology, Fairfax County, Virginia. Classes taught included Computer Science, Physics, Principles of Technology, Psychology, and Geometry.
- 1987-1988 Instructor, Stonewall Jackson High School, Prince William County Schools, VA. Courses taught included Physics I, Physics II, and Chemistry.
- 1984-1987 Graduate Research Associate, OSU College of Education, Office of Research and Development Services.
- 1982-1984 Instructor, Tennessee Temple High School, Chattanooga, TN. Courses taught included Geometry, Computer Science (Basic and FORTRAN), Pre-calculus, Chemistry, Physics, and the Gifted program.
- 1981-1982 Instructor, Tennessee Temple University (TTU), Chattanooga, TN. Courses taught included Introduction to Mathematics, Intermediate Algebra, Computer Science, Introductory Business Statistics, Tests & Measurements (Graduate), and Philosophy of Education.
- Director of Laboratory Experience Program at TTU—administered, monitored, and evaluated the pre-student teaching observation program (approximately 80 high school and 150 elementary teachers-in-training).

Industrial Work Experience

- 1998-2008 Webmaster, MASTEP
In addition to my work as a workshop instructor for the NSF-MASTEP Project, I designed and maintained the MASTEP web page. <http://mastep.sjsu.edu>
- 2001-2007 Webmaster, Department of Aviation and Technology
I redesigned and maintained the SJSU Department of Aviation web site <http://www.engr.sjsu.edu/aviation>
- 1998-2000 Webmaster, Alameda County Central Committee (ACCC)
I redesigned and maintained the ACCC homepage for the local democratic party as part of my volunteer work in the community. <http://home.inreach.com/a-acdemo/>
- Summer 1990 Management Consultant, Interpore Orthopedics, Piscataway, NJ

- 1979-1980 Associate Manager, New Jersey Bell Telephone Responsibilities included Northern Division materials management, report analysis, computer implementation of Division reports, technical writing, editing, & major project review.
- 1977-1979 Distribution Engineer, New Jersey Bell Telephone in four different positions: local distribution engineer responsible for telephone plant in two central offices, project engineer responsible for designing and monitoring all major project work (over \$10,000) in the Ridgewood District, long-range planner for Ridgewood District, and construction scheduler for Ridgewood/Pompton Lakes districts.

Publications in Scholarly Journals, Chapters and Books

- Backer, P. R. (1993-1994). Management and instructional styles and techniques for functioning in a global marketplace. **ATEA Journal**, **21**(2), 21-23.
- Backer, P. R. (1999). WWW Pages: An Investigation into How Students Learn to Create Web Pages. **CSS (Computers in the Social Sciences) Journal**, **7**(1). <http://www.cssjournal.com/backer.html> [online journal]
- Backer, P.R. (2004, Spring). Using Multimedia to Teach a Class on Technology and Society. **Journal of Technology Studies**. **30**(2), 70-79.
- Backer, P. R. (2014). Effectiveness of an Online Writing System in Improving Students' Writing Skills in Engineering. **Computers in Education Journal**, **5**(1), 14-27.
- Backer, P. R., & Bates, S. P. (2007). Product Design and Innovation: Results of a Cross-Disciplinary Mini-curriculum. **The International Journal of Applied Management and Technology**, **5**(3), 5-16. Available: http://www.ijme.us/cd_06/PDF/IT%20304-093.pdf
- Backer, P. R. & Saltmarch, M. (2000). Getting on board with multimedia and Internet training. In P. Hoffman & D. Lemke (Eds.), **Teaching and learning in a network world** (pp. 1-6). Washington, DC: IOS Press.
- Backer, P. R., Sullivan-Green, L., & Parent, D. W. (2019). Assessment of an integrated engineering general education/senior projects course. *Technology Interface International Journal*, **19**(2), 59-70.
- Backer, P. R., Wei, B., & Sundrud, J. (2011). Increasing Hispanic Engagement in Computing Through Service Learning. **Technology Interface International Journal**, **11**(2), 52-60. Available: <http://tij.org/issues/summer2011/TIJ%20spring-summer%202011-PDW4.pdf>
- Backer, P. R. & Yabu, J. (1993). Hypercard tutorial as an instructional strategy: A comparative study. **Journal of Industrial Technology**, **9**(4), 23-28.
- Backer, P. R., & Yabu, J. (1994). Computer anxiety of industrial technology students. **Journal of Industrial Technology**, **10**(3), 5-9.
- Backer, P. R., & Yabu, J. (1994). Hypermedia as an instructional strategy. In D. F. Halpern (Ed.), **Changing college classrooms: New teaching and learning strategies for an increasingly complex world** (pp. 351-383). New York: Jossey-Bass.
- Markert, L. R., & Backer, P. (2003). **Contemporary Technology: Innovations, Issues, and Perspectives** (4th ed.). Tinley Park, IL: Goodheart Willcox.
- Markert, L. R., & Backer, P. (2010). **Contemporary Technology: Innovations, Issues, and Perspectives** (5th ed.). Tinley Park, IL: Goodheart Willcox.
- Orasanu, J., & Backer, P. (1996). Stress and military performance. In J.E. Driskell & E. Salas (Eds.), **Stress and human performance** (pp.89-125). Mahwah, NJ: Lawrence Erlbaum.
- Ryaby, P.A. (1982). **Laboratory experience program manual**. Chattanooga, TN: TTU.
- Ryaby, P.A. (Ed.). (1986). **College of Education research directory**. Columbus: The Ohio State University College of Education.
- Ryaby, P.A. (Ed.). (1987a). **College of Education research directory**. Columbus: The Ohio State University College of Education.
- Ryaby, P.A. (1987b). Comparative analyses of neurocognitive traits of artists, engineers, and writers (Doctoral dissertation, The Ohio State University, 1987). **Dissertations Abstracts International**.
- Ryaby, P.A. (1989). **Physiological indicators of workload, stress, and attention** [Hypercard document]. Alexandria, VA: Army Research Institute. (Contract No. DAAL03-86-D-001)

Publications Published in Proceedings

- Anagnos, T., Furman, B., Hsu, P., & Backer, P. R. (2013). How Important is the WOW Factor in First Year Engineering Courses? **ASEE Proceedings**. Available: <https://peer.asee.org/how-important-is-the-wow-factor-in-first-year-engineering-courses>
- Backer, P. R. (1995). Technology and Civilization: A multimedia course. In T. Sechrest, M. Thomas, & N. Estes (Eds.), **Proceedings of the ICTE 1995 Conference** (Volume 2, pp. 566-568). Austin: The University of Texas at Austin, College of Education Continuing Education Program.
- Backer, P. R. (1997). Electronic portfolios as a mechanism for learning and student achievement. In T. Müldner & T. C. Reeves (Eds.), **Educational Multimedia and Hypermedia, 1997. Proceedings of Ed-Media 97** (pp. 1329-1334). Charlottesville, VA: AACE. Available at: <http://curry.edschool.virginia.edu/aace/download/edmedia/EDM1997.PDF>
- Backer, P.R. (1997). **The use of portfolios in professional education: A multimedia model of instructional methodology**. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL. (ERIC Document No. ED 408 356)
- Backer, P. R. (1997). Using multimedia for promotional purposes in education: A multimedia presentation about the Division of Technology. In T. Müldner & T. C. Reeves (Eds.), **Educational Multimedia and Hypermedia, 1997. Proceedings of Ed-Media 97** (pp. 2028- 2030). Charlottesville, VA: AACE. Available at: <http://curry.edschool.virginia.edu/aace/download/edmedia/EDM1997.PDF>
- Backer, P. R. (1997). Using Multimedia to Expand Portfolios to Student Resumes. **NECC '97 Proceedings**. Eugene, OR: National Educational Computing Association.
- Backer, P. R. (1998). Student WWW Pages: An Investigation into How Students Learn to Create Web Pages. In H. Maurer & R. G. Olson (Eds.), **Proceedings of WebNet 98--World Conference of the WWW, Internet, and Intranet**. Charlottesville, VA: AACE.
- Backer, P.R. (2000). Effectiveness of a multimedia General Education course. **ASEE Proceedings**. Available: <https://peer.asee.org/effectiveness-of-a-multimedia-general-education-course>
- Backer, P.R. (2000). Training students to become web authors: Evaluation of a training model. In J. Bourdeau & R. Heller (Eds.), **Proceedings of ED-MEDIA 2000** (pp. 1214-1215). Charlottesville, VA: AACE.
- Backer, P. R. (2007). Assessment of multi-media and web-based instruction in a science-technology & society course (AC 2007-227). **ASEE Proceedings**. Available: <https://peer.asee.org/assessment-of-multi-media-web-based-instruction-in-a-science-technology-society-course>
- Backer, P. R. (2007). Technology and gender issues: Development and assessment of a freshmen General Education course in the College of Engineering (AC 2007-228). **ASEE Proceedings**. Available: <https://peer.asee.org/technology-and-gender-issues-development-and-assessment-of-a-freshman-general-education-course-in-the-college-of-engineering>
- Backer, P. R. (2010). Implementation of a Hybrid Multimedia General Education Course in Engineering. **40th Annual Frontiers in Education (FIE) Conference Proceedings**. Available: <http://fie-conference.org/fie2010/papers/1585.pdf>
- Backer, P. R. (2012). Assessment Techniques Using A Course Management System for a General Education Course. **Proceedings New Learning Technologies 2012 SALT Conference** (February, 2012).
- Backer, P. R. (2013). Effectiveness of an Online Writing System in Improving Students' Writing Skills in Engineering. **ASEE Proceedings**. Best of Computer in Education Division. Available: <https://peer.asee.org/effectiveness-of-an-online-writing-system-in-improving-students-writing-skills-in-engineering>
- Backer, P. R. (2016). Improving the Writing Skills of Engineering Students: Assessment of a Writing Workshop Model. **ASEE Proceedings**.
- Backer, P. R., Allen, E., & Sundrud, J. (2011). Assessment of First Year Experiences at SJSU. **ASEE Proceedings**. Available: <https://peer.asee.org/assessment-of-first-year-experiences-at-sjsu>
- Backer, P. R., & Chung, W. R. (2015). Global Technology Experiences for Upper-division Engineering Students: An Assessment. **ASEE Proceedings**. Available: <https://peer.asee.org/global-technology-experiences-for-upper-division-engineering-students-an-assessment>
- Backer, P. R., Feinstein, A. H., McClory, S., & Gleixner, S. (2017). Remediation challenges in California. **7th Annual - 2017 STEM/STEAM & Education Conference**. Available: <https://huichawaii.org/wp-content/uploads/2017/08/Backer-Patricia-2017-STEAM-HUIC.pdf>

- Backer, P. Green, J., Matlen, B., & Kato, C. (2018). Impact on First Year Initiatives on Retention on Students: Are There Differences in Retention of Students by Ethnicity and Gender? **2018 CoNECD (Collaborative Network for Engineering and Computing Diversity) Conference Proceedings**. Available: <https://www.asee.org/public/conferences/113/papers/24086/view>
- Backer, P. R. & Kato, C. (2017). Effect of cohorts on student retention in engineering. **ASEE Proceedings**. Available: <https://www.asee.org/public/conferences/78/papers/19232/view>
- Backer, P. R., & Halualani, R. T. (2012). Impact of Self-Efficacy on Interest and Choice in Engineering Study and Careers for Undergraduate Women Engineering Students. **ASEE Proceedings**. Available: <https://www.asee.org/public/conferences/8/papers/3790/view>
- Backer, P. R., & Orasanu, J. (1992). **Stress and performance training: A review of the literature with respect to military applications in military operations**. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document No. ED 347 184)
- Backer, P. R. & Saltmarch, M. (1999). Evaluation of a Multimedia workshop model: Training instructors to use technology in the classroom. In B. Collis & R. Oliver (Eds.), **Proceedings of ED-MEDIA** (pp. 516-521). Charlottesville, VA: AACE.
- Backer, P. R. & Saltmarch, M. (1999). Development of a workshop to train faculty to use multimedia and the WWW in the classroom. **Syllabus99 Proceedings**. Available online at http://www.syllabus.com/syll99_proceedings/DEVELOPM.HTM
- Backer, P. R. & Saltmarch, M. (2000). Development of an Effective Multimedia/WWW Training Model for Faculty. In R. Robson (Ed.), **Proceedings of M/SET 2000** (pp. 39-43). Charlottesville, VA: AACE.
- Backer, P. R. & Sullivan-Green, L. (2016). Integration of General Education into the Senior Capstone Class in Engineering. **ASEE Proceedings**. Available: <https://peer.asee.org/integration-of-general-education-into-the-senior-capstone-class-in-engineering.pdf>
- Backer, P. R., & Wei, B. (2009). Transdisciplinary Green Engineering Education at San José State University. **ASEE Proceedings**. <http://soa.asee.org/paper/conference/paper-view.cfm?id=10564>
- Backer, P. R., & Wei, B. (2010). Hispanic Computer Brigade Silicon Valley Computer Camp. **ASEE Proceedings**. Available: <http://soa.asee.org/paper/conference/paper-view.cfm?id=22992>
- Backer, P. R., & Wei, B. (2010). Recruiting Hispanic Students into Computing through Community Service Learning. **40th Annual Frontiers in Education (FIE) Conference Proceedings**. Available: <http://fie-conference.org/fie2010/papers/1568.pdf>.
- Backer, P. R., Wei, B., & Sundrud, J. (2011). Increasing Hispanic Engagement in Computing Through Service Learning. **Proceedings 2011 IAJC-ASEE International Conference**.
- Backer, P. R., & Yabu, J. (1993). Review of the literature as related to the pedagogical and instructional issues of hypermedia. In H. Maurer (Ed.), **Educational multimedia and hypermedia annual, 1993** (p. 601). Charlottesville, VA: AACE.
- Garcia, J. & Backer, P. R. (2005). Integration of Computer-Based Electronics Laboratory in a Control Systems Course. **ASEE Proceedings**. Available: <https://peer.asee.org/integration-of-computer-based-electronics-laboratory-in-a-control-systems-course>
- Garcia, J. & Backer, P. R. (2007). Assessment of LabVIEW and Multisim in the delivery of electronics laboratory content. **ASEE Proceedings**. Available: <https://peer.asee.org/assessment-of-labview-and-multisim-in-the-delivery-of-electronics-laboratory-content>
- Gleixner, S., Backer, P. R., & Klaw, E. (2011). Service Learning in a Multi-Disciplinary Renewable Energy Engineering Course. **ASEE Proceedings**. Available: <https://peer.asee.org/service-learning-in-a-multi-disciplinary-renewable-energy-engineering-course>
- Gleixner, S., Casey, K., Tuberty, J., Latic, S., Backer, P. R., & Allen, E. (2013). EXCEED: Excellence in Your Engineering Education Summer Transition Program. **ASEE Proceedings**. Available: <https://peer.asee.org/exceed-excellence-in-your-engineering-education-summer-transition-program>
- Parent, D. W. & Backer, P. R. (2018). Integration of an electrical engineering capstone course with social justice and global studies. **2018 Frontiers in Education Conference Proceedings**.
- Sullivan-Green, L. & Backer, P. R. (2019). Supporting faculty to "Do the Flip!" Lessons learned when transitioning faculty to active pedagogy in the classroom. **ASEE Proceedings**. <https://www.asee.org/public/conferences/140/papers/27673/view>
- Sullivan-Green, L., Backer, P. R., & Feinstein, A. (2018). Analyzing the effects of a flipped classroom pedagogy on freshmen and sophomore STEM courses. **2018 Frontiers in Education Conference Proceedings**.

- Wei, B. & Backer, P.R. (2009). Transdisciplinary Green Engineering Education at San José State University. **ASEE Proceedings**. Available: <https://peer.asee.org/transdisciplinary-green-engineering-education-at-san-jose-state-university>
- Wei, B., Backer, P.R., & Howell, T. (2010). Development Of A Technological Literacy Course For Non Engineering Students: Science Of High Technology. Available: <https://peer.asee.org/development-of-a-technological-literacy-course-for-non-engineering-students-science-of-high-technology>
- Wei, B., Backer, P. R., & Chung, W.R. (2012). Global Technology Initiative at SJSU: Results of Seven Years of an International Experience for Students. **ASEE Proceedings**. Available: <https://peer.asee.org/global-technology-initiative-at-san-jose-state-university-results-of-seven-years-of-an-international-experience-for-students>

Additional Publications

- Backer, P. R. (2018). Strategies to increase retention of first and second year students. **2018 WSCUC Academic Resource Conference**. Available: <https://2018.wascarc.org/session/concurrent-session/topic-direct-and-indirect-assessment-engaging-faculty>
- Sullivan-Green, L., Feinstein, A., & Backer, P. R. (April 25-27, 2018). Update on a Multi-Campus Implementation of the Flipped Classroom in Gateway STEM Courses. 2018 WSCUC Academic Resource Conference. Available: <https://2018.wascarc.org/session/concurrent-session-showcasing-teaching-and-learning/update-multi-campus-implementation>

Multimedia Publications

- Backer, P. R. (2011). **Technology and Civilization: A multimedia course. Unit 1. The nature of science and technology (versions 1-9)** [CD-ROM software]. San Jose, CA.
- Backer, P. R. (2011). **Technology and Civilization: A multimedia course. Unit 3. Technology and work (versions 1-9)** [CD-ROM software]. San Jose, CA.
- Backer, P. R. (2011). **Technology and Civilization: A multimedia course. Unit 4. Technology and gender issues (versions 1-6)** [CD-ROM software]. San Jose, CA.

EBooks created

- Backer, P. R. (2012). **Technology and Civilization EBook: Unit 1. The nature of science and technology**. San Jose, CA.
- Backer, P. R. (2012). **Technology and Civilization EBook: Unit 3. Technology and work**. San Jose, CA.
- Backer, P. R. (2012). **Technology and Civilization EBook: Unit 4. Technology and gender issues**. San Jose, CA.

Web-based material

- Backer, P. R. (2011). **The history of technology** [WWW online module]. San Jose, CA: The Department of Aviation and Technology, SJSU. Available: <http://www.engr.sjsu.edu/pabacker/history/>

Video Publications

I served as Associate Producer of Green Rim. "Green Rim," a documentary directed by retired San José State Professor of Sociology Bob Gliner, records efforts by the United States and China, the world's biggest energy users, to implement energy solutions. The work also aims to mobilize college students. Gliner produced the piece, which features interviews with business, government, and academic leaders in both nations, with support from the Charles W. Davidson College of Engineering. Link to video: <http://www.youtube.com/watch?v=NWa6vxpQ1HU>

Research and Grants

- 2014 From 2014-2016, I served as the coPI for the SJSU grant, Project SUCCEED Title III STRENGTHENING INSTITUTIONS PROPOSAL (funded by the U.S. Department of

- Education, Amount: \$2,249,421, grant period 2014-2019). In January 2016, I became PI of this grant. Our concerted campus-wide effort is strategic and research-based, targeting specific critical areas. These areas include: first-year experiences for freshmen; coordination of student support services at SJSU; and development of strategies to target high needs URM undergraduate students.
- 2013 I served as a member of the organizing committee for the NSF grant: NSF 13-1: The Future of MOOCs and Turbocharged Technologies in STEM Education (Grant Received, amount \$49,987, Award No: 1355101, PI: Hsu, grant period 2013-2014).
- 2011 From 2011-2016, I served as the project evaluator for the SJSU grant, Improving Writing Skills of Asian American and High Needs Students at San José State University (funded by the U.S. Department of Education, Amount: \$ 1,978,434, grant period 2011-2017). In January 2016, I became PI of this grant. This project addressed four major goals: (1) Assess and reorganize the existing writing support services at SJSU; (2) Enable more data-based decision-making about student retention and graduation at SJSU; (3) Develop, implement, and integrate proactive writing strategies; and (4) Change the SJSU writing culture from a policy driven approach to an action-oriented approach.
- 2008 Co-PI, NSF planning grant under the NSF 07-548--Broadening Participation in Computing (BPC) Program (Award No: CNS-0837821, Amount: \$149,999, grant period 2008-2010). We propose a new approach for recruiting Hispanic students into computing studies and careers through the *Broadening Participation in Computing—Hispanic Computer Brigade* initiative. By forming Hispanic Computing Brigades (HCB) in two local high schools, we aimed to inspire and engage Hispanic students through IT service learning projects.
- 2007 PI, Globalization of Quality, SJSU College of Engineering Faculty Development Grant, \$29,684. This project changed the delivery mode of three courses in the MSQA program from traditional lecture to online, web-based classes. The conversion and globalization of three courses occurred in AY 08-09 although these were just intermediate steps in the conversion of the MSQA degree program into a WWW-based degree program.
- 2004 Co-PI, NSF Grant Integration of Computer-Based Electronics Laboratory into a Control Systems Course in Electronics Technology, CCLI award 0411330, \$99,521, grant period 2004-2006. This project created online lecture and laboratory materials for Tech 167—Control Systems, an upper division electronics course.
- Co-PI, Applied Mobile Technology Solutions in Learning Environments – 2004 Extension Grant, Hewlett Packard Total grant of \$112,238 in equipment and \$10,500 in cash. This project took the technology-enhanced, problem-based learning model used and refined in the first year of the Hewlett Packard Mobility Grant and initiated its deployment across campus. We extended our involvement with the local community by primarily targeting Community Based Organizations (CBOs) as client partners. To fully address the socio-technical needs of CBOs, teams were composed of members from both technical (Engineering and Management Information Systems) and social science (e.g. nursing, sociology) fields
- 2003 PI, Problem-based learning through mobile technology, Hewlett Packard, Total grant of \$30,000 in cash and \$200,000 in equipment. This project aimed to transform the learning environment at SJSU through a cross-disciplinary, problem-based learning (PBL) instructional initiative using mobile technologies. This initiative brought together faculty and upper division students from the Colleges of Engineering and Business to collaborate in cross-functional, entrepreneurial teams to develop mobile computing applications for clients from business or non-profit organizations in our local community.
- 2002 Equipment donation from Tektronix of \$54,555, August 2002.
College of Engineering Teaching Excellence Fund Award. I received a grant for summer support to develop a multimedia module on gender and technology.
- 2001 Professional Development Grant, SJSU, award of \$2125 to pay the expenses of attending the EdMedia 2001 conference in Tampere, Finland, June 25-30, 2001.
Co-PI, Product Design and Innovation through Diversity and the Power of Collaboration, Equipment Seed grant from HP, \$20,000.
- 2000 Alquist Center for Innovative Learning Faculty-in-Residence Program. Responsibilities included forming a team (with Miriam Saltmarch) to develop a model program for faculty training in multimedia and WWW (0.4 release time granted for AY 2000-2001).

- ITL Learning Productivity Program Implementation Grant. I wrote both the planning and implementation grants for this project that supplied release time to five faculty members in the Department of Technology.
- ITL Learning Productivity Program Planning Grant. I served as the Project Director of this grant in Spring 2000 to revise the manufacturing systems area of concentration for the BS in Industrial Technology.
- ITL Fellowship (Champions) Implementation Grant. I served on an expert panel in Spring 2000 to evaluate the effectiveness of distance learning on the WWW at San Jose State University.
- ITL Technology Grant. This grant provided an additional 0.20 release time for my participation as a workshop leader in a technology training project for Spring 2000.
- 1999 ITL Fellowship (Champions) Planning and Implementation Grant. Grant developed an interactive, multimedia-based module for a General Education course for the Department of Technology (0.2 release time granted for Fall 1999 & Spring 2000).
- Alquist Center for Innovative Learning Faculty-in-Residence Program. Grant included forming a team (with Miriam Saltmarch) to develop a model program for faculty training in multimedia and WWW (0.4 release time granted for Fall 1999 & Spring 2000)
- 1997 Fulbright Scholar award, Fall 1997, Peru & Difference-in-Pay Leave, Fall 1997, SJSU.
- 1994 National Endowment for the Humanities grant. Fellowship to attend a five-week seminar at Iowa State.
- Innovation in Teaching and Learning Fellowship. San Jose State University. Fellowship to develop an interactive, hypermedia-based advanced General Education course for SJSU (half-time release time granted for Spring 1994 & Fall 1994).
- Member, Steering Committee, Pac-TEC—The Pacific Technological Education Center. Planning grant for \$300,000 by National Science Foundation.
- 1992 CSU Affirmative Action Faculty Development grant. Research investigated incentives and barriers to enrollment of women in the Division of Technology at SJSU.

National & International Presentations

- 2020 WSCUC Academic Resource Conference, April 2020. Title: Impact of Block Scheduling on Retention and Graduation at SJSU.
- American Society for Engineering Education (ASEE), June 2020. Title: Strategies to Increase the 4-year Graduation Rate of Engineering Students at SJSU (with C. Kato).
- 2019 ASEE, June 2019. Title: Supporting Faculty to “Do the Flip!” Lessons Learned when Transitioning Faculty to Active Pedagogy in the Classroom (with L. Sullivan-Green, accepted for presentation).
- Laura Sullivan-Green and I were invited to do three workshops at the University of Northern Colorado in April 2019.
- Transforming Education for Student Success (TESS) Conference, March 2016. Title: Flipping Gateway STEM courses at three institutions.
- 2018 6th IAJC International Conference, October, 2018. Title: Assessment of an integrated engineering general education/senior project course (with L. Sullivan-Green and D. Parent)
- Frontiers in Education 2018 Conference, October, 2018. Title: Integration of an electrical engineering capstone course with social justice and global studies (with D. Parent)
- Frontiers in Education 2018 Conference, October, 2018. Title: Analyzing the effects of a flipped classroom pedagogy on freshmen and sophomore STEM courses (with A. Feinstein & L. Sullivan-Green).
- 2018 CoNECD - The Collaborative Network for Engineering and Computing Diversity Conference, April-May, 2018. Title: Impact on First Year Initiatives on Retention on Students: Are There Differences in Retention of Students by Ethnicity and Gender? (with J. Green, B. Matlen, and C. Kato).
- WSCUC Academic Resource Conference, April 2018. Title: Strategies to Increase Retention of First and Second Year Students
- WSCUC Academic Resource Conference, April 2018. Title: Update on a Multi-Campus Implementation of the Flipped Classroom in Gateway STEM Courses (with A. Feinstein & L. Sullivan-Green).

- 2017 ASEE, June 2017. Title: Effect of cohorts on student retention in engineering (with C. Kato).
 STEAM Education Conference, Honolulu, Hawaii, June 2017. Remediation issues in the CSU: the impact of remediation on student success (with A. Feinstein, S. McClory and S. Gleixner)
 WSCUC Academic Resource Conference, April 2017. Title: Faculty Learning Communities: High-Impact Practices in Support of Faculty Supporting Students (with A. Feinstein & L. Sullivan-Green).
 WSCUC Academic Resource Conference, April 2017. Title: Remediation Issues in the CSU: The Impact of Remediation on Student Success (with A. Feinstein).
- 2016 STEAM Education Conference, Honolulu, Hawaii, June 2016. Presentation Title: Assessment of a Writing Workshop Model to Improve Outcome of Engineering Students.
 American Society for Engineering Education (ASEE), June 2016. Paper Presentation Title: Improving the Writing Skills of Engineering Students: Assessment of a Writing Workshop Model.
 ASEE, June 2016. Paper Presentation Title: Integration of General Education into the Senior Capstone Class in Engineering (with L. Sullivan-Green).
- 2015 ASEE, June 2015. Paper Presentation Title: Global Technology Experiences for Upper-division Engineering Students: An Assessment.
 WSCUC Academic Resource Conference, April 2015. Title: Utilization of an Online Grammar and Writing Program to Improve Student Work.
- 2014 Annual Frontiers in Education (FIE) Conference, October 2014. Paper presentations Title: Efficacy of an Online Writing Program on URM Students in Engineering.
 APAHE Conference, April 2014. Presentation: Effectiveness of an Online Writing System in Improving Students' Writing Skills.
- 2013 ASEE, June 2013. Paper Presentation Title: Effectiveness of an Online Writing System in Improving Students' Writing Skills in Engineering.
 ASEE, June 2013. Paper Presentation Title: EXCEED: Excellence in Your Engineering Education Summer Transition Program (with Stacy Gleixner, Katherine Casey, Jared Tuberty, Sanela Latic, and Emily Allen).
 ASEE, June 2013. Paper Presentation Title: How Important is the WOW Factor in First Year Engineering Courses? (with Thalia Anagnos, Buff Furman, and Ping Hsu).
- 2012 ASEE, June 2012. Paper Presentation title: Global Technology Initiative at SJSU: Results of Seven Years of an International Experience for Students (with Belle Wei and Richard Chung).
 ASEE, June 2012. Paper Presentation title: Impact of Self-Efficacy on Interest and Choice in Engineering Study and Careers for Undergraduate Women Engineering Students (with Rona Halualani).
 New Learning Technologies 2012 SALT Conference, February, 2012. Paper Presentation title: Assessment Techniques Using A Course Management System for a General Education Course.
- 2011 ASEE, June 2011. Paper Presentation title: First Year Experiences at SJSU (with Emily Allen).
 ASEE, June 2011. Paper Presentation title: Service Learning in a Multi-Disciplinary Renewable Energy Engineering Course (with Stacy Gleixner and Elena Klaw).
- 2010 ASEE, June 2010. Paper Presentation title: Hispanic Computer Brigade (with Belle Wei).
 ASEE, June 2010. Paper Presentation title: Science of High Technology (with Belle Wei).
 40th Annual Frontiers in Education (FIE) Conference Proceedings (FIE 2010), October 2010. Implementation of a Hybrid Multimedia General Education Course in Engineering.
 40th Annual Frontiers in Education (FIE) Conference Proceedings (FIE 2010), October 2010. Recruiting Hispanic Students into Computing through Community Service Learning (with Belle Wei).
- 2009 ASEE, June 2009. Paper Presentation title: Transdisciplinary Green Engineering Education at San José State University (with Belle Wei).
- 2007 ASEE, June 2007. Paper Presentation title: Assessment of LabVIEW and Multisim in the delivery of electronics laboratory content (with Julio Garcia).

- ASEE, June 2007. Paper Presentation title: Technology and Gender Issues: Development and Assessment of a freshman General Education course in the College of Engineering.
- ASEE, June 2007. Paper Presentation title: Assessment of Multimedia and Web-Based Instruction in a Science-Technology & Society Course
- 2006 National Association of Industrial Technology (NAIT), November 15-18, 2006. Paper Presentation Title: Comparison of the NAIT Certification Examination and the SME Certified Manufacturing Technologist Exam as Outcome Assessment Tools for BS Industrial Technology Students.
- 2005 International Technology Education Association (ITEA), April 2005. Paper presentation title: Technology integration to target women and minorities.
- ASEE, June 2005. Paper Presentation title: Integration of Computer-Based Electronics Laboratory in a Control Systems Course.
- ASEE, June 2005. Paper Presentation title: Introduction to Product Design and Innovation: A Cross-Disciplinary Mini-Curriculum.
- ASEE, June 2005. Paper Presentation title: A shift in teaching methodology: From Instructor Led to Student Driven Multimedia Instruction.
- 2003 NAIT, November 18- 22, 2003. Paper Presentation Title: Learning Styles and Student Achievement of Industrial Technology Students: Is There a Relationship?
- NAIT, November 18- 22, 2003. Paper Presentation Title: Assessment of a multimedia and web-based Science-Technology-Society course (with Seth Bates and Mohan Kim).
- American Association for the Advancement of Science (AAAS) Annual Meeting, Poster Presentation Title: Assessment of a multimedia Science-Technology-Society course (accepted but did not present).
- 2002 University Aviation Association, September 11-14, 2002, UAA Research Roundtable Paper: Correlation of Learning Styles and Student Achievement of Aviation Students (with Scott Yelich).
- E-Learn 2002, October 15-19, 2002, Montreal, Canada. Paper Presentation Title: Evaluation of a Web-based Tutorial on the History of Technology in a University Science-Technology-Society Course.
- 2001 ED-MEDIA 2001, June 26-July 1, 2000, Tampere, Finland. Poster Presentation Title: Genesis of a CD-based Authorware application: Lessons learned from six years of design and development.
- 2000 EDUCAUSE 2001, October 28-30, Indianapolis, Title: Models for Faculty Training in Technology.
- AAAS, Washington, DC. Symposium Co-Organizer. Symposium Title: Integrating Technology Into Science Education.
- AAAS, Washington, DC. Session Speaker. Presentation Title: Theory Into Practice: K-12 Teachers Expanding Educational Horizons through Multimedia.
- ASEE, St. Louis, MO. Multi-media session paper. Title: Effectiveness of a multimedia General Education course.
- ED-MEDIA 2000, June 26-July 1, 2000, Montreal, Canada. Paper Presentation Title: Training students to become web authors: Evaluation of a training model.
- M/SET. The International Conference on Mathematics/Science Education & Technology, San Diego, CA. Paper Presentation Title: Development of an Effective Multimedia/WWW Training Model for Faculty.
- TechEd 2000, Palm Springs, CA. Paper Title: Getting On Board with Multimedia and Internet Training.
- 1999 AAAS, Anaheim, CA. Poster presentation Title: Empowering Teachers to Transform Math and Science Education through Multimedia
- ED-MEDIA 99, June 19-24, 1999, Seattle, WA. Paper Presentation Title: Evaluation of a Multimedia workshop model: Training instructors to use technology in the classroom.
- 1999 Syllabus 99, July 25-27, 1999, Santa Clara, CA. Poster Paper Title: Development of a workshop model to train faculty to use multimedia and WWW technology in the classroom.
- 1998 WebNet 1998, Orlando, FL. Paper Presentation Title: Student WWW Pages: An Investigation into How Students Learn to Create Web Pages

- 1997 American Educational Research Association (AERA) annual meeting, Chicago, IL. Paper Presentation Title: The Use of Electronic Portfolios in Professional Education: A Multimedia Model of Instructional Methodology.
- 1997 ED-MEDIA/ED-TELECOM 97, Calgary, Canada. Paper Presentation Title: Electronic portfolios as a mechanism for learning and student achievement.
ED-MEDIA/ED-TELECOM 97, Calgary, Canada. Poster Presentation Title: Using multimedia for promotional purposes in education: A multimedia presentation about the Division of Technology, San Jose State University.
9th Annual Lilly Conference on College Teaching-West, Lake Arrowhead, CA. Poster Presentation Title: Development of Student Resumes in an Electronic Format: A New Paradigm for Portfolios.
National Educational Computing Conference, Seattle, WA. Paper Presentation Title: Using multimedia to expand portfolios to student resumes.
- 1996 ED-MEDIA/ED-TELECOM 96, Boston, MA. Poster Presentation Title: General Education through multimedia: A course on Technology & Civilization.
- 1995 Hypermedia '95, Bloomington, IN. Paper Presentation Title: Design of a multimedia course on the science-technology-society interface: Technology and Civilization.
12th International Conference on Technology and Education (ICTE), Orlando, FL. Paper Presentation Title: Technology & Civilization: A multimedia course.
- 1994 ITEA annual meeting, Kansas City, MO. Paper Presentation Title: Hypermedia: Instructional opportunity for technology education.
Ed-Media 94 World Conference of Educational Multimedia and Hypermedia, Association for the Advancement of Computing in Education, Vancouver. Paper Presentation Title: Pedagogy in hypermedia: Questions and answers based on the literature (with J. Yabu; accepted, did not present)
NAIT annual meeting, St. Louis, MO. Paper Presentation Title: Effect of a hypermedia-based AutoCAD Help System (AHHS) on student learning outcomes: A comparative study.
- 1993 Thirtieth Conference on Technical Education, American Technical Education Association, San Diego, CA. Paper Presentation Title: Management and instructional styles and techniques for functioning in a global marketplace.
Ed-Media 93 World Conference of Educational Multimedia and Hypermedia, Association for the Advancement of Computing in Education, Orlando, FL. Paper Presentation Title: Review of the literature as related to the pedagogical and instructional issues of hypermedia.
NAIT annual meeting, Triangle Research Park, NC. Paper Presentation Title: The efficacy of hypermedia as an instructional strategy in technology education (with J. Yabu).
- 1992 AERA annual meeting, San Francisco, CA. Paper Presentation Paper Presentation Title: Stress and performance training: A review of the literature with respect to military applications (with J. Orasanu).
NAIT annual meeting, Fort Worth, Texas. Paper Presentation Title: Valuing diversity: Management styles and techniques for multicultural organizations (accepted, did not present).
- 1992 Fourth Annual Conference on College Teaching West, Lake Arrowhead, CA. Paper Presentation Title: Hypercard tutorial as an instructional strategy (with J. Yabu; accepted, did not present).
- 1986 AERA annual meeting, San Francisco, CA. Paper Presentation Title: Research in cognitive and learning styles: Implications for vocational education research (with J.J. Buffer & M.L. Scott).
- 1985 American Vocational Association, Atlanta, GA. Paper Presentation Title: New research in learning styles: implications for industrial teacher education and research (with J.J. Buffer & M.L. Scott; given by J.J. Buffer & M.L. Scott).

Regional Presentations

- 2009 Panelist, Wow! That's Engineering! April 25, 2009.

- 2002 SJSU Conference: "Celebrating the Scholarship of College Teaching and Learning" Paper Presentation Title: Effectiveness of a multimedia General Education course in meeting GE learning goals (with Gene Moriarty, Seth Bates, Mohan Kim, & Jack McKellar).
- 2001 SJSU Conference: "Celebrating the Scholarship of College Teaching and Learning" Paper Presentation Title: Reflections on the Development and Use of Self-paced Multimedia in the Classroom
- 2000 SJSU Conference: "Celebrating the Scholarship of College Teaching and Learning" Paper Presentation Title: Getting on Board with Multimedia and Internet Training.
SJSU Conference: "Celebrating the Scholarship of College Teaching and Learning" Paper Presentation Title: Art History, Science, War, Technology, an World Cultures: A Collaborative Development of Illustrated Modules to Learning.
- 1999 Promoting Excellence in Teaching Science and Mathematics: Issues and Practices Conference. Poster presentation title: Enhancing Math and Science Through Multimedia (November 12, 1999).
MASTEP Project Showcase. Paper Presentation Title: Training teachers to use multimedia in the classroom (May 1, 1999)
- 1997 Alquist Center for Innovative Learning Workshops for Faculty & Staff, San Jose State University. 3 Workshops given on PowerPoint (2/26/97), Advanced Multimedia Authoring (4/9-10), and Instructional Design for Interactive Learning using CD-ROM (4/16-17).
Using New Technologies in the Classroom, MASTEP Conference, SJSU, May, 10, 1997
- 1996 Alquist Center for Innovative Learning Workshops for Faculty & Staff, San Jose State University. Workshop given on Advanced Multimedia Authoring.
- 1993 Direct Electronic Learning and Teaching Alternatives (DELTA) Conference, California State University Chancellor's office, workshop participant as representative of San Jose State University.
- 1992 California State University Teaching and Learning Exchange, Los Angeles, CA. Paper Presentation Title: Hypercard tutorial as instructional strategy: Comparative study (with J. Yabu).
"Taking the Lead: Balancing the Educational Equation. Issues of Equity and Diversity for Women and Girls," conference sponsored by AAUW/Mills College, Oakland, CA. Paper Presentation Title: Gender equity in attitudes towards computers (with J. Yabu).
- 1990 Virginia Educational Media Association, Alexandria, VA. Workshop Title: Teaching and utilizing computer graphics.
- 1985 The Ohio State University Department of Human Services Education, Columbus. Workshop Title: Computers in special education.

Committee Work

University

<i>Year</i>	<i>Role</i>	<i>Activity</i>
2018-present	Member:	University Retention, Tenure & Promotion Committee
2018-present	Member:	Undergraduate Studies Committee
2018-present	Member:	Wang Awards Selection Committee for the Outstanding Faculty Service Category
2011-present	Member:	Distinguished Service Award Committee
2017-2019	Chair:	University Retention, Tenure & Promotion Committee
2016-2017	Member:	Student Success Committee
2016-2017	Member:	Distinguished Service Selection Committee
2013-2016	Member:	Athletics Board
2014-2015	Vice-Chair:	Athletics Board
2006-2016	Member:	SJSU Academic Senate (Elected 2006; Re-elected 2007, 2010, & 2013)
2014-2016	AVC:	Academic Senate
2013-2014	Member:	Organization & Government Committee
2012-2013	Member:	Curriculum & Research Committee
Spring 2012	Member:	Learning Management System Recommendation Committee
2011-2012	Member:	Distinguished Service Selection Committee

2010-2012	Member:	University Sabbatical Committee
2011-2012	Chair:	University Sabbatical Committee
2010-2011	Member:	Professional Standards Committee, SJSU Academic Senate
2009-2010	Chair:	Professional Standards Committee, SJSU Academic Senate
2001-2010	Member:	University Council of Chairs
2007-2010	Member:	SJSU Academic Senate Executive Committee
2007-2009	Chair:	Organization & Government Committee, SJSU Academic Senate
2008-2009	Member:	General Education Task Force
Fall 2007	Member:	Wang Award Committee
Fall 2007	Member:	University CSU Research Funds Committee
2006-2009	Member:	Organization & Government Committee
2005-2007	Member:	Investment in Faculty Panel
2006-2007	Member:	University Planning Council
2004-2006	Member:	Board of General Studies
2000-2003	Member:	Board of General Studies
2000-2002	Chair:	Program Planning Committee
1999-2000	Vice-chair:	Program Planning Committee
Fall 2000	Chair:	FMI Review Board
1999-2000	Member:	Instruction & Student Affairs Committee
1998-1999	Chair:	Undergraduate Studies Committee
1997-1998	Member:	Undergraduate Studies Committee
1994-1996	Chair:	Improvement of Instruction Committee
1993-1997	Member:	Improvement of Instruction Committee
1996-1998	Member:	Alquist Center for Innovative Learning Advisory Panel
1992-1996	Member:	Humanities & Arts General Education Advisory Panel
1992-1993	Member:	Washington Square Computer Committee
1991-1993	Member:	Alternative Transportation Committee

College of Engineering

<i>Year</i>	<i>Role</i>	<i>Activity</i>
2017-present	Member:	Strategic Planning Cmte
2016-2018	Member:	College of Engineering Undergraduate Curriculum Cmte
2011-2015	Member:	College of Engineering RTP Committee
2012-2013	Member:	College of Engineering Undergraduate Curriculum Cmte
2007-2012	Chair	College of Engineering Undergraduate Curriculum Cmte
2001-2013	Member:	Engineering Council of Chairs
2007-2009	Member:	College of Engineering Research Committee
Spring 2003	Member:	Decanal Search Committee
2000-2001	Member:	COE Graduate Committee
1999-2001	Member:	Information Technology Committee

College of Applied Sciences and Arts

<i>Year</i>	<i>Role</i>	<i>Activity</i>
1996-1997	Member:	Information Technology Committee
1994-1996	Member:	College Curriculum Committee
1993-1994	Member:	Decanal Search Committee and Future Directions Committee
	Chair:	College Curriculum Committee
1992-1993	Vice-chair:	College Curriculum Committee

College of Science

<i>Year</i>	<i>Role</i>	<i>Activity</i>
1998-2006	Member:	Science Education Committee

Department of Aviation and Technology

<i>Year</i>	<i>Role</i>	<i>Activity</i>
2013-present	Member:	Faculty Search Committee
2013-2014	Chair:	Graduate Committee
2000-2001	Chair:	Graduate Committee
Spring 2000	Project Director:	Manufacturing Task Force
1997-1999	Member:	Computer, Facilities, & Equipment Committee
1998-1999	Member:	Curriculum Committee
1996-1997	Member:	Curriculum Committee, Graduate Committee, and Computer, Facilities, & Equipment Committee
1995-1996	Member:	Computer, Facilities, & Equipment Committee
	Chair:	Curriculum Committee
1994-1995	Member:	Curriculum Committee and Computer, Facilities, & Equipment Committee
1993-1994	Member:	Computer Committee, Curriculum Committee, Graduate Committee, and CIM Committee
1992-1993	Member:	Curriculum Committee, CIM Committee, Graduate Committee, and Strategic Planning Task Force
1991-1992	Member:	Core Redesign and Tracking Committee, Curriculum Committee, and CIM Committee
	Co-Chair:	Computer Committee
	Chair:	Outcomes Assessment Committee and Division Director Screening Committee
1990-1991	Member:	Advisement Committee, Computer Committee, and Display Committee
	Chair:	Outcomes Assessment Committee and Outreach Committee

Graduate Advisees**Graduation Date**

August 1992	<i>Daniel Cheadle</i> . Title: Forecasting the improvement on manufacturing productivity in the microcircuit packaging industry. Member of Thesis Committee.
May 1993	<i>James Laurin</i> . Title: An examination of the experiences of 10 Silicon Valley companies who implemented ISO 9000. Second reader for graduate project.
Dec. 1993	<i>Piyarat Meksupa</i> . Title: A study to evaluate and develop the effectiveness of environmental packaging as a marketing tool. Advisor for graduate project. <i>Massoud Aghel</i> . Title: Choosing the right graphs for data interpretation. Advisor for graduate project.
Dec. 1993	<i>Vince Du</i> . Title: Development of a hypermedia help system for AutoCAD. Advisor for graduate project.
May 1994	<i>Eric Kristich</i> . Title: Organizational change implemented in a government maintenance group. Advisor for graduate project. <i>Jayasree Dutta</i> . Title: Multi-Vari analysis: Comparison to traditional process control techniques in manufacturing. Advisor for graduate project.
Dec. 1995	<i>Rajbir Dhindsa</i> . Title: Aviation safety for helicopters. Advisor for graduate project.
May 1996	<i>Bruce Overby</i> . Title: Identification and validation of a societal model of the USENET computer conferencing system. Chair, Masters thesis committee.
August 1996	<i>Nancy Leone Hollister</i> . Title: A review of the US Army Officer Evaluation System.
May 1999	<i>Carrie Cabak</i> . Title: Defining "Quality" in the staffing industry. Chair, Masters thesis committee. <i>Steve Wisbar</i> . Title: An investigation of variation control methodology for dynamic processes.
Fall 1999	<i>Michael Norman Iban</i> . Title: Reducing the proportion of variation attributed to part variation in measurements of destructive testing without reference standards.

Spring 2006.	<i>Ron Lauderbaugh</i> . Title: Improving supplier quality in the test interface industry: A continuous improvement project
Spring 2007	<i>Patrick Wilder</i> . Title: A screening study design to evaluate information improvements to a job shop traveler
Spring 2007	<i>Uma Krishmurthy</i> . Reduction of Reopen Rate for Software Defect Reports
Fall 2007	<i>Sonal Asthana</i> . Quality Assurance and Time to Market in the Software Industry: A Case Study
Spring 2008	<i>Parul Dhamija</i> . Exploring Total Quality Management in Stent Companies

Professional Activities

- Master Reviewer, Quality Matters
- Elected Director at Large for the ASEE Women in Engineering Division, 2009-2011
- Elected Director: Awards for the ASEE Women in Engineering Division, 2007-2009
- Elected Regional Director of the National Association of Industrial Technology Region 6, 2006-2008
- Elected member of the AAAS Electorate Nominating Committee of the Section on Industrial Science and Technology, 2/22/2005-2/18/2008
- Journal of Computers in Mathematics and Science Teaching (2002-present), member, Editorial Review Board
- Journal of Excellence in College Teaching (1998-present), member, Review Board
- 12th Annual AHSIE Best Practices Conference, proposal reviewer
- ASEE Proposal and Paper reviewer, 2005, 2006, 2007, 2009-2019 annual meetings
- 2018 CoNECD, Co-chair, Assessment Committee
- NSF Graduate Research Fellowship Program panelist, 2017, 2019
- WASC Eligibility Panel Member, 2002
- 2000 College of Engineering's Research on College Teaching and Learning Award, SJSU
- 1999 College of Engineering's Research on College Teaching and Learning Award, SJSU
- NAIT, Member, Review Board (1991-1998), Journal of Industrial Technology
- Benchmark Reviewer, Project 2061, American Association for the Advancement of Science
- NAIT Proposal reviewer, 2005, 2006, 2007, 2008 annual meetings
- AERA Proposal reviewer, 1992 and 1997 annual meetings
- AAAS Proposal reviewer, 2006, 2007 annual meetings
- Research on Women in Education (AERA-SIG/RWE) Proposal reviewer, 1991 & 1992 annual meetings
- Elected member of Epsilon Pi Tau