

# Keith Evan Schubert

## Education

- 2003 University of California, Santa Barbara  
Ph.D. Electrical and Computer Engineering, Control Systems  
Minors: Applied Mathematics and Signals and Communication  
Dissertation: A New Look at Estimation
- 1992 University of California, Los Angeles  
MS Electrical Engineering, Control Systems  
Minors: Applied Mathematics and Digital Signal Processing  
Project: Guidance and Control of Amateur Rockets
- 1991 University of Redlands  
BS General Engineering  
Minor: Mathematics  
Project: Solar Desalination  
Honors: Dean's List (multiple times), Cum Laude

## Experience Summary

- 2010-present Professor of Computer Science and Engineering  
2006-2010 Associate Professor of Computer Science  
2002-2006 Assistant Professor of Computer Science  
California State University, San Bernardino
- 2000 - 2002 Visiting Assistant Professor of Mathematics and Computer Science  
University of Redlands
- 2000-2004 Vice President of Engineering  
Synergistix Scientific LLC
- 1997-2000 Graduate Student Researcher  
1997-2000 Grader  
1996-1997, 2000 Teaching Assistant  
University of California, Santa Barbara
- 1996-present Engineering and Computer Consultant  
Various Companies
- 1993-1997 Associate Design Engineer  
1992-1993 Assistant Design Engineer  
Northrop-Grumman
- Summer Engineering Intern  
1990, 1991 Greer-McGuire Enterprises
- 1990-1991 Digital and Electronics Lab Assistant  
1988-1989 Math, Science, and Engineering Tutor  
University of Redlands

## Experience Details

2010-present Professor of Computer Science and Engineering  
2006-2010 Associate Professor of Computer Science  
2002-2006 Assistant Professor of Computer Science  
California State University, San Bernardino

I was hired at CSUSB to start the computer engineering program, which was approved by the chancellor's office spring 2006 and began Fall 2007. We currently have 168 students and are preparing for ABET Accreditation. I have been responsible for the program design, the development of four new courses for the program, co-designing a fifth course for the new computer engineering degree, writing the program proposal to the chancellor, all paperwork, coordinating involved departments, getting development funding, comparing the proposed curriculum to the latest ABET standards, meeting with ABET evaluators, leading meetings, and working with local community colleges and corporations. Additionally, I benchmarked the curriculum against respected accredited programs at other universities to ensure that the final program was of the highest quality. Further, I visited the University of Texas at El Paso as a Hispanic Serving Institution with similar demographics, to get feedback and advice from its faculty. I was Co-I and primary writer for a \$96k NSF Department Level Reform of Engineering grant, which supported the necessary studies, faculty time, and travel. The program I have started is the first new engineering program at a CSU that did not have an existing engineering program, in over 20 years. I continue to improve the program and work to increase diversity at the university, such as my work as a Co-I on a \$500k NSF Math and Science Scholars (MASS) grant that has helped increase the number of students from traditionally under-represented groups in the College of Natural Sciences.

My research is in the areas of medical imaging (MRI, pCT), medical applications of robotics (patient positioning, localization of treatment area, functional radiosurgery), parallel computation (GPUs and clusters of GPUs to solve medical and biological problems, algebra of synchronization), and astrobiology (life in extreme environments, search for life on Mars, mission computing and automation). I have over 30 peer reviewed conference and journal papers as well as numerous presentations and invited talks. I am the organizer of the student section of the IEEE/NASA JPL conference, Space Mission Challenges for Information Technology, and I am a visiting scientist for NASA Ames Spaceward Bound project. I have received 10 grants totaling almost \$3 million in the last 8 years, from NSF, NIH, NASA and local companies. I have advised over 35 master's students in their projects and thesis, and dozens of undergraduate students in research activities, I regularly meet with a fourth (about 80) of our undergraduates for academic advising.

I was the lead faculty on CSUSB's new BS in bioinformatics degree, which was approved by the chancellor and will begin next fall. This has involved me designing two new courses in bioinformatics. I have been instrumental in the design of CSUSB's new game programming degree by creating the curriculum, designing two new courses for it, and assisting in the design of two other courses for it.

- 2000 - 2002 Visiting Assistant Professor of Mathematics and Computer Science  
University of Redlands  
I taught three to four courses per semester and designed two new courses: a community service course and a math for teachers course. Computer science courses included a GE computer course, introductory programming course, data structures, theory of computation, and electives in VB and web programming. Math courses included a GE math course, pre-calculus, calculus I, Numerical Analysis, Ethno-Mathematics, and a community service learning math course. The community service course was for mathematics and science students and involved web based math tutoring of K-12 students through the web service Dr. Math, which I have been a member of since 1996. This course was very successful and was written up in the Redlands Daily Facts. I also created a math for teachers course, which involved looking at real math in a cultural context such as: fractals in Africa, base conversion and division from Babylon, magic squares and geometry in China, as well as logic puzzles and game theory from various cultures. I was responsible for all areas of courses taught, including textbook selection, syllabus, lesson planning, grading, testing, and holding office hours. Integrated problem based learning into curriculum, and designed labs to further explore concepts. Assisted other professors in department with computer needs. Participated in faculty assemblies and retreats.
- 2000-2004 Vice President of Engineering  
Synergistix Scientific LLC  
Directed company goals and activities as a board member of a startup LLC until it was acquired. Oversaw technical aspects of fire tracking equipment, such as detectors, encoders, reliability, communication systems, and visualization. Designed estimation algorithms for fire detection equipment.
- 1997-2000 Graduate Student Researcher  
University of California, Santa Barbara  
Pursued various research topics in estimation theory and application. Solved degenerate case of the optimistic bounded errors-in-variables problem (also called the degenerate minmin problem) and the minimum backward error estimator problem. Assisted in development of various column and row partitioning of estimators like the bounded errors-in-variables (also called minmax estimator). Additionally, I have worked on applications of estimation theory to problems such as oil exploration, imaging, radar tracking, and identification. Research interests included fast numerically stable solvers for estimation problems, exploiting matrix structure in solution techniques, application of robust estimation theory, and modeling and simulation of systems.
- 1997-2000 Grader  
University of California, Santa Barbara  
Graded homework assignments for graduate and undergraduate courses in controls and signal processing areas, proctored and graded exams, helped students with homework questions, led class while professors were away, and assisted professors in assigning grades. I have graded for: ECE 147B: Digital Control Systems - Theory and Design, ECE 210: Matrix Analysis and Computation, ECE 234: Analysis of Linear Models, ECE 240A: Optimal Estimation and Filtering, and ECE 248: Kalman Filtering.

1996-1997, 2000 Teaching Assistant  
University of California, Santa Barbara  
Taught discussion sessions for upper division courses on continuous and discrete time signals and systems, as well as the Engineering Department course on linear algebra. Held regular office hours to help students with homework and classroom comprehension. The course titles are: ECE 130A, B, C: Signal Analysis and Processing.  
Taught discussion sessions for upper division course on linear algebra (ECE 130C: Signal Analysis and Processing), by special request of professor.

1996-present Engineering and Computer Consultant  
Various Companies  
Engineering study and subsequent design of robotic golf caddie, integrated CAD-CAM facilities for biomedical manufacturer, designed and set up network connectivity for small firms, installed and integrated web servers for a large desktop publishing firm, and designed frame stiffening kit for Atlantic series race cars.

1993-1997 Associate Design Engineer  
Northrop Grumman  
System administration of HP/UX and Sun LAN at multiple sites, capacity planning, network design, vendor liaison, tuning and diagnosis, application configuration and user support, interdepartmental consultation and assistance. Taught courses on Kalman Filtering to engineers and lab personnel.

1992-1993 Assistant Design Engineer  
Grumman Aircraft  
Engineer on several F14 A/B Upgrade projects. System configuration, software support, and employee training for CAD system running on UNIX workstations.

Summer  
1990,1991 Engineering Intern  
Greer-McGuire Enterprises  
Responsibilities included CAD and manual drafting, preparation of materials lists, design of furnace parts and layout, system maintenance and installation, and providing informal training and assistance to designers.

1990-1991 Digital and Electronics Lab Assistant  
University of Redlands  
Helped students design and debug circuits and software controllers. Handled lab instruction. Maintained UNIX and Macintosh computer systems, wrote lab assistant's manual. Maintained inventory of parts and safety check of equipment. The courses included: Engr 151: Electronics, and Engr 152: Digital Systems Design.

1988-1989 Math, Science, and Engineering Tutor  
University of Redlands  
Tutored both individual students and groups in Physics, Chemistry, Calculus, Statics and Dynamics, and Mechanics of Solids as needed. Helped most students raise grades two letter categories on Physics tests. Tutor of Year 1988-89. Courses tutored: Phys 61,62: General Physics I&II, Chem 51,52: General Chemistry, Chem 61,62: Advanced General Chemistry, Engr 130: Mechanics, Engr 133: Mechanics of Solids, and Math 105,106,107: Analytic Geometry and Calculus I,II,III.

1986-1987 Assistant to Math Department Head  
Haddonfield School District  
Fabricated network cables, installed ROMs, and created software inventory.

# Memberships and Honors

## Licensing

- Engineer In Training (EIT) License Number XE079701 (first half of PE License)

## Member of

- IEEE (Senior Member)
- IEEE Computer society
- SIAM
- Bioinformatics Organization, Inc.
- International Association of Engineers
- Golden Key Honor Society
- Gamma Lambda Chapter of Phi Beta Delta, the Honor Society for International Scholars

## Reviewed for

- IEEE Transactions on Signal Processing
- SIAM Journal on Matrix Analysis and Applications
- IEEE/JPL Space Mission Challenges for Information Technology Conference
- University of Oxford Press (Digital Circuits/Design)
- Wiley (Dym's Engineering Design, Estell & Reid's Constraints)

## Honors

- Erdős Number of 3.
- Boy Scouts of America - Woodbadge.
- National Science Honorary Mention (graduate scholarship program)
- Two perfect scores on the GRE
- Tutor of the Year, University of Redlands 1988-89
- Trustee Scholar, 1987-1991
- William M. Porter Scholar 1989-1991
- Neumelar Scholar (1987)

## Activities

- Member of NASA JPL Mission Computing and Autonomy Systems Research Program Annual Review 2009, 2010, 2011.
- Director for NASA Spaceward Bound Mojave expedition (2013).
- Science team for NASA Spaceward Bound Mojave expedition (2008, 2009, 2010, 2011, 2012).
- Member of the NASA Cal Space Grant for CSUSB.
- University of Redlands Engineering Club Member 1987-91
  - Vice-president 1990-1991
  - Secretary/Treasurer 1989-1990
- Senior Design Project President
- Circle K (Kiwaniis International college service club) Member 1989-91

## Grants

I have been part of over \$3M in funded grants.

1. Received \$2,182,000 NIH R-01 grant for research in creating the first proton computed tomography system. My portion of the grant is reconstruction algorithms for graphics processors. I am a Co-I on this grant.
2. Received \$10,000 NIH grant for research in parallelizing proton computed tomography reconstruction algorithms for graphics processors. I was the PI on this grant.
3. Received \$118,000 NSF grant for research into bioinformatics/bioimaging in conjunction with UCSB Bioimaging ITR. I was the PI on this grant.
4. Received \$15,000 NASA grant for research into reducing latency in cluster communications. I was the PI on this grant.
5. Received \$5,000 NASA grant for continuing research into reducing latency in cluster communications. I was the PI on this grant.
6. Received \$500,000 NSF grant Math and Science Scholars (MASS) for student scholarships, retention, and diversity. I was a Co-I on this grant.
7. Received \$96,000 NSF grant for design of Computer Engineering program, titled PACE<sup>3</sup>. I was a Co-I on this grant.
8. Received two grants totaling \$52,000 dollars from Synergistix Scientific, LLC to investigate differential imaging for automated surveillance. I was PI on these grants.
9. Received \$15,000 CSUSB College of Natural Science Summer Research POD for GPU computation of Cellular Automata.
10. Received Course Development grant (\$5,000 CSUSB internal grant) with Haiyan Qiao to redesign engineering design sequence - CSE 406, 407, 408.
11. Received Course Development grant (\$5,000 CSUSB internal grant) to design Advanced Digital Logic Course - CSE 311.
12. Received Collaboration through Team Teaching grant (\$5,000 CSUSB internal grant) with Kay Zehmoudeh to redesign CSCI 310 labs and buy new components. Donated release time to department to help ease budget difficulties. There was no PI for this internal grant.

## Publications

### Peer-Reviewed Journals

1. Ernesto Gomez and Keith Schubert. Algebra of Synchronization with Application to Deadlock and Semaphores. *International Journal of Networking and Computing*, 1(2):144-156, 2011.
2. S. N. Penfold, A. B. Rosenfeld, R. W. Schulte, and K. E. Schubert. A more accurate reconstruction system matrix for quantitative proton computed tomography. *Journal of Medical Physics (Medphys)*, 36(10):4511-4518, October 2009.
3. R. W. Schulte, S. N. Penfold, J. T. Tafas, K. E. Schubert. A maximum likelihood proton path formalism for application in proton computed tomography. *Journal of Medical Physics (Medphys)*, 35(11):4849-4856, November 2008.

4. T.S. Lee, K.E. Schubert, R. Schulte. Software-Based Algorithm for Modeling and Correction of Gradient Nonlinearity Distortions in Magnetic Resonance Imaging. *Advances in Electrical and Electronics Engineering - IAENG Special Edition of the World Congress on Engineering and Computer Science 2008*, WCECS '08., pages 52-61, 2008.
5. S. Chandrasekaran, M. Gu, A. H. Sayed, and K. E. Schubert. The Degenerate Bounded Errors-In-Variables Model. *SIMAX*, 23(1):138-166, 2001.

## Book Contributions

1. B. Strader, K. E. Schubert, M. Quintana, E. Gomez, J. Curnutt, and P. Boston. *Software Tools and Algorithms for Biological Systems*, volume 696 of *Advances in Experimental Medicine and Biology*, chapter Estimation, Modeling, and Simulation of Patterned Growth in Extreme Environments. Springer, 2010.
2. The Math Forum Drexel University. "Dr. Math Gets You Ready for Algebra: Learning Pre-Algebra is Easy! Just Ask Dr. Math!". Jossey-Bass publishers, 2003.

## Conference Invited Speaker

1. K. E. Schubert, "Teaching Robotics Interactively" Keynote - CCRAA Stem Best Practices Conference, Cal Poly Pomona, April 9, 2010.
2. E. Gomez, R. Ruttimann, and K.E. Schubert, "Challenges and Advantages in Using Open Source Components" at the International Conference on Computer Science and its Applications, 2006.

## Peer-Reviewed Conferences

1. M. Witt, R. Schulte, and K.E. Schubert, "A Proton Simulator for Testing Implementations of Proton CT Reconstruction Algorithms on GPGPU Clusters" in *Proceedings of the IEEE Nuclear Science Symposium Medical Imaging Conference*, submitted.
2. G. Chu, E. Gomez, R. Hovanesian, A. Kharebov, P. Mans, C. McKay, R. Mogul, R. Piaget, and K.E. Schubert, "Remote sensing of biological soil crusts using hybrid 3-D imaging" in *Proceedings of The 2012 International Conference on Image Processing, Computer Vision, and Pattern Recognition*, submitted.
3. Y. Chen, E. Gomez, F. Hurley, Y. Nie, K.E. Schubert, and R. Schulte, "Accurate Proton Beam Localization" in *Proceedings of Biocomp 2012*, accepted.
4. R. Cai, K. E. Schubert, R. Schulte, "Computational Algorithm for Estimating the Gradient Isocenter of an MRI Scanner", in *The Proceedings of the 2012 Conference on Scientific Computing*, accepted.
5. A. Batista, E. Gomez, H. Qiao, and K. E. Schubert, "Constellation Design of a Lunar Global Positioning System Using CubeSats and Chip-Scale Atomic Clocks", in *Proceedings of The 2012 International Conference on Embedded Systems and Applications*, accepted.
6. M. Brant, G. Chu, M.W. Claire, J. Curnutt, E. Gomez, A. Gonzalez, C. Gott, M. Grigsby, R. Hovanesian, G. Kaladjian, J. Losch, A. Nguyen, A. Olano, G.W. Payton, A. Razzak, K. Rotunno, S. Saleemi, A. Scheppelmann, K.E. Schubert, G. Solis, E. Statmore, and K. Symer, "Anode Effects On Microbial Fuel Cell Efficiency," in *Proceedings of the 2011 International Conference on Bioinformatics and Computational Biology*, pages 718-721, 2011.
7. K. E. Schubert, E. Gomez, J. Curnutt, and P. Boston, "To Live and Die in CA," in *Proceedings of the 2010 International Conference on Bioinformatics and Computational Biology*, pages 662-665, 2010.
8. E. Gomez and K. Schubert, "Algebra of Synchronization with Application to Deadlock and Semaphores," *Proceedings of the International Conference on Natural Computation*, IEEE Computer Society Press, pages 202-208, 2010.

9. S.N. Penfold, R.W. Schulte, Y. Censor, V. Bashkirov, S. McAllister, K.E. Schubert and A.B. Rosenfeld, "Block-iterative and string-averaging projection algorithms in proton computed tomography image reconstruction," in: Y. Censor, M. Jiang and G. Wang (Editors), *Biomedical Mathematics: Promising Directions in Imaging, Therapy Planning and Inverse Problems*, Medical Physics Publishing, Madison, WI, USA, pp. 347-367, 2010.
10. P. Boston, J. Curnutt, E. Gomez, K. Schubert, B. Strader, "Patterned Growth in Extreme Environments," in Proceedings of the Third IEEE International Conference on Space Mission Challenges for Information Technology, IEEE Press, pages 221-226, July 2009.
11. N. Wiser-Orozco, K.E. Schubert, E. Gomez, R. Botting, "Extensible Simulation of Planets and Comets," in Proceedings of the Third IEEE International Conference on Space Mission Challenges for Information Technology, pages 216-220, July 2009.
12. B. Strader, K. Schubert, E. Gomez, J. Curnutt, P. Boston, "Simulating spatial partial differential equations with cellular automata," in Hamid R. Arabnia, Mary Qu Yang editors, Proceedings of the 2009 International Conference on Bioinformatics and Computational Biology volume 2, pages 503-509, July 2009.
13. S. A. McAllister, K. E. Schubert, R. Schulte, S. Penfold, "General Purpose Graphics Processing Unit Speedup of Integral Relative Electron Density Calculation for Proton Computed Tomography," in 2009 IEEE Nuclear Science Symposium Conference Record (NSS/MIC) - 2009 IEEE High Performance Medical Imaging Workshop, pages 4085 - 4087, 2009.
14. V. Bashkirov, R. Schulte, G. Coutrakon, B. Erdelyi, K. Wong, H. Sadrozinski, S. Penfold, A. Rosenfeld, S. McAllister, and K. Schubert, "Development of proton computed tomography for applications in proton therapy," *CAARI Conf. Rec.*, AIP Conference Proceedings Volume 1099, pages 460-463, 2008.
15. T.S. Lee, K.E. Schubert, and R.W. Schulte, "Computational Algorithm for Modeling and Correction of Gradient Nonlinearity Distortions in Magnetic Resonance Imaging," in *Proceeding of the World Conference of Engineering and Computer Science 2008*, pages 210-215, October 2008.
16. J. Curnutt, E. Gomez, K.E. Schubert, "Patterned Growth in Extreme Environments" In Dan Werthimer, Karen Meech, Janet Siefert, and Michael Mumma, editors, *Proceedings of Bioastronomy-2007: Molecules, Microbes and ExtraTerrestrial Life*, San Juan, Puerto Rico, July 16-20 2007. Volume 420 of Astronomical Society of the Pacific Conference Series, pages 233-238, 2009.
17. Fadi Shihadeh, Reinhard Schulte, Keith Schubert, and Pani Chakrapani, "Performance Analysis of an Optoelectronic Localization System for Monitoring Brain Lesioning with Proton Beams" in *29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007 (EMBS 2007)*, pages 4693 - 4698, IEEE, 2007.
18. T.S. Lee, K.E. Schubert, and R.W. Schulte MD, "Gradient Non-Linearity Correction of MR Images for Functional Radiosurgery," in N. Ishii and R. Lee, editors, *Proceedings of the 5<sup>th</sup> IEEE/ACIS International Conference on Computer and Information Science*, pages 338-343, IEEE, Los Alamitos, CA, 2006.
19. T.S. Lee, K.E. Schubert, and R.W. Schulte MD, "Software Development For Correction Of Gradient-Nonlinearity Distortions In MR Images," in P.P. Dey, M.N. Amin, and T.M. Gattton, editors, *Proceedings of the International Conference on Computer Science and its Applications*, pages 275-279, US Education Service, San Diego, CA, 2006.
20. R. Cai, J. Curnutt, E. Gomez, G. Kaymaz, T. Kleffel, K. Schubert, and J. Tafas, "A Scalable Distributed Datastore for BioImaging," in P.P. Dey, M.N. Amin, and T.M. Gattton, editors, *Proceedings of the International Conference on Computer Science and its Applications*, pages 11-14, US Education Service, San Diego, CA, 2006.



21. E. Gomez, Y. Karant, K.E. Schubert, "Multiple Column Partitioned Min Max," in P.P. Dey, M.N. Amin, and T.M. Gattton, editors, *Proceedings of the International Conference on Computer Science and its Applications*, pages 1-7, US Education Service, San Diego, CA, 2005.
22. E. Gomez, Y. Karant, K.E. Schubert, "Preventing Deadlock with Dynamic Message Scheduling," in H. Selvaraj and V. Muthukumar, editors, *Proceedings of the 18<sup>th</sup> International Conference on Systems Engineering*, pages 52-57, IEEE, Los Alamitos, CA 2005.
23. E. Gomez, Y. Karant, V. Malkoc, M.R. Neupane, K.E. Schubert, and R.W. Schulte, "Orthogonal and Least-Squares Based Coordinate Transforms for Optical Alignment Verification in Radiosurgery," in *Proc. ITCC (2)*, pp.83-88, 2005.
24. E. Gomez, Y. Karant, K.E. Schubert, "When e Is Really II," in P.P. Dey, M.N. Amin, and T.M. Gattton, editors, *Proceedings of the International Conference on Computer Science and its Applications*, pages 341-344, US Education Service, San Diego, CA, 2004.
25. S. Faruqui, E. Gomez, Y. Karant, K.E. Schubert, "A Model for Assessing and Certifying the Resource Capabilities of Utility Computing Resource Centers," in P.P. Dey, M.N. Amin, and T.M. Gattton, editors, *Proceedings of the International Conference on Computer Science and its Applications*, pages 327-332, US Education Service, San Diego, CA, 2004.
26. S. Chandrasekaran, E. Gomez, Y. Karant, K.E. Schubert, "Backward Error Estimation," in *Proceedings of the Hawaii International Conference on Computer Science*, pages 326-338, Honolulu, Hawaii, 2004.
27. E. Gomez, Y. Karant, K. E. Schubert, "Preventing Deadlock with Dynamic Message Scheduling," in *Proceedings of the Hawaii International Conference on Computer Science*, pages 122-140, Honolulu, Hawaii, 2004.
28. E. Gomez, Y. Karant, K. E. Schubert, "An Analytical Model for Network Flow Analysis," in *Proceedings of the Hawaii International Conference on Computer Science*, pages 289-295, Honolulu, Hawaii, 2004.
29. S. Chandrasekaran and K. E. Schubert, "Models for Robust Estimation and Identification," in P.P. Dey, M.N. Amin, and T.M. Gattton, editors, *Proceedings of the International Conference on Computer Science and its Applications*, pages 273-279, US Education Service, San Diego, CA, 2003.)
30. S. Chandrasekaran and K. E. Schubert, "Models for Robust Estimation and Identification," in S. Van Huffel and P. Lemmerling, editors, *Total Least Squares and Errors-In-Variables Modeling*, pages 199-208, Kluwer Academic Publishers, Dordrecht, 2001.

## Selected Presentations Without Papers

1. K. E. Schubert, E. Gomez, "Turing Computer Science," CSUSB Computer Science and Engineering School Seminar, December 2011.
2. K. E. Schubert, E. Gomez, J. Curnutt, and P. J. Boston, "Patterned Extremophiles," at Lunar and Planetary Institute's First International Planetary Cave Research Workshop: Implications for Astrobiology, Climate, Detection, and Exploration, Carlsbad, New Mexico, October 2011.
3. K. E. Schubert, E. Gomez, and J. Curnutt, Scotch on the Rocks (Cellular Automata and Extremeophiles), NASA Spaceward Bound March 2011.
4. K. E. Schubert, Warp Speed: A Lighthearted Introduction to GPGPUs, CSUSB Seminar, 2010.
5. Penny Boston, Jane Curnutt, Ernesto Gomez, Jim Nienow, Keith Schubert, Henry Sun, Patterned Growth of Extremeophiles, NASA Spaceward Bound 2009.
6. P.J. Boston, J. Curnutt, E. Gomez, K.E. Schubert, D.E. Northup, H. Sun, C.P. McKay, Biovermiculations, Geological Society of America (GSA) National Conference, 2008.

7. K. E. Schubert, E. Gomez, "Turing Computer Science," CSUSB Computer Science and Engineering School Seminar, 2008.
8. G. Kaymaz, D. Havey, K.E. Schubert "Localization of Network Nodes for Extra-Terrestrial Deployment" at IEEE/NASA-JPL Space Missions Challenges for Information Technology, 2006 (SMCIT-2006).
9. K.E. Schubert "A Working Experience L<sup>A</sup>T<sub>E</sub>X" at CSUSB Computer Science Seminar, 2006.
10. R. W. Schulte, R. P. Levy, T. S. Lee, M. Neupane, F. Shihadeh, D. Slusarczyk, K. E. Schubert, and J. D. Slater, "A System for Functional Proton Radiosurgery" at the International Meeting for Brain Mapping and Surgical Treatment Planning, 2005.
11. R. W. Schulte, R. P. Levy, M. F. Moyers, M. Neupane, K. E. Schubert, "Image-guided Alignment Verification with Submillimeter Precision for Functional Proton Radiosurgery" at the 2005 Annual Meeting of the American Society for Therapeutic Radiology and Oncology, 2005.
12. J. Curnutt, E. Gomez, Y. Karant, K.E. Schubert, "Analysis of Network Test Equipment Emulation and Measurement" at Hawaii International Conference on Computer Science, 2004.
13. K.E. Schubert "The Next Paige of Kalman's Filter" for the Society of Physics Students at CSUSB, 2003.
14. K.E. Schubert "A Working Introduction to L<sup>A</sup>T<sub>E</sub>X" at CSUSB Computer Science Seminar, 2003.
15. K.E. Schubert "Hardware and Robotics" at CSUSB Computer Science Seminar, 2002.
16. K.E. Schubert "Backward Thinking: Confessions of a Numerical Analyst" at CSUSB Computer Science Seminar, 2001.
17. K.E. Schubert "How Do I Know the Answer If I'm Not Sure Of The Question: Putting Robustness into Estimation" at University of Redlands Seminar, 2001.