

Erin O'Connor

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Current Employer:

Department of Earth & Planetary Sciences
Santa Barbara City College
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Education:

University of California, Santa Barbara, CA. M.A. in Statistics, June 1992.
Subjects of study: applied, theoretical, mathematical probability and statistics with regression, experimental design, operations research, actuarial, multiparameter, multivariate, and computational methods.

Harvey Mudd College, Claremont, CA. B.S. in Physics, May 1988. Subjects of study: classical, statistical, astronomical, relativistic, and quantum physics (with labs), as well as electromagnetism, optics, thermodynamics, and aerodynamics. Engineering courses in electronics, general systems analysis, computer science, and chemistry. The technical curriculum was balanced with 15 courses in humanities.

Sorbonne, University of Paris, Paris, France, May 1985. European Studies Abroad Program. Subjects of study: French language, culture, and history; supplemented with technical courses at Ecole Supérieure d'Ingenieurs en Electrotechnique et Electronique.

Employment in Education:

2005-Present: Santa Barbara City College, Santa Barbara, CA. Full-time tenured Associate Professor in the Department of Earth & Planetary Sciences teaching Astronomy Lectures, Astronomy Labs (planetarium & observatory), and Geology Field Courses (Sierra Nevada and Death Valley).

2002-2005: California Polytechnic State University, San Luis Obispo, CA. Part-time Lecturer teaching lectures and labs in calculus-based physics.

1997-2005: Allan Hancock College, Santa Maria, CA. Full-time tenured Associate Professor of Physics and Astronomy teaching calculus based 3-semester sequence for scientists and engineers, trig-based 2-semester sequence for life sciences, introductory/conceptual physics, astronomy, advanced astro (intro to relativity and cosmology), and Integrated Physical Science Field Studies Courses (earth science and astronomy on location in the field).

1994-1995: Santa Barbara City College, Santa Barbara, CA. One-year full-time temporary contract in physics teaching calculus and algebra-based physics courses and labs. Also taught astronomy as a 40% overload.

1989-1990: Santa Barbara City College, Santa Barbara, CA. One-year temporary instructor in the Department of Earth and Planetary Sciences working with the planetarium and observatory at the Santa Barbara Museum of Natural History. Taught astronomy labs and led astronomy field trips, gave planetarium shows and developed other educational programs for the community.

1989-1998: Santa Barbara City College, Santa Barbara, CA. Part-time instructor teaching astronomy, advanced astro (intro to relativity and cosmology), observational astronomy (planetarium), physics, physics labs, and statistics.

1993-1994: Ventura Community College, Ventura, CA. Part-time instructor -- physics labs, multiple grant projects in physics and astronomy.

1991-1994: University of California, Santa Barbara, CA. Worked with Philip Lubin's Experimental Cosmology Group as Educational Outreach Coordinator for the Remote Access Astronomy Project (RAAP). Design, programming, and construction of Remote Observation Telescope. Electronic design and construction of IR array telescope for supernova search of star burst galaxies.

1992-1993: University of California, Santa Barbara, CA. Campus Learning Assistance Services (CLAS). Learning Assistance Counselor leading tutorial groups in physics and providing other tutorial services in physics, astronomy, mathematics, and statistics.

1995-1997: Santa Barbara Middle School, Santa Barbara, CA. Full time teacher for 8th and 9th grade math and physics. Implemented an integrated lecture/lab project/computer based math and physics curriculum for the 9th grade.

1991-1993: Santa Barbara Department of Parks and Recreation, Santa Barbara, CA. Curricula development and instruction in astronomy and earth sciences for Discovery Camp (science camp for children).

Employment in Industry:

1993-Present: STATS Consulting, Santa Barbara, CA. Optical and Statistical Consulting Services. Design and development of windows based visual basic custom software for Statistical Process Control applications in industry. Development of acceptance/rejection sampling systems conforming to MIL-STD-105 and MIL-STD-414 acceptance sampling plans for attributes and variables.

1993-1994: Integrated Scientific Imaging Systems (ISIS), Santa Barbara, CA. Custom Filter Design -- filter transmittance combined with CCD response

matched to desired response. UBVRI astrophotometric filters, xyz Photopic Tri-Stimulus filters (to reproduce the human eye response), programming, image processing..

1988-1989: Orbisphere Laboratories, Geneva, Switzerland. Worked in the Research and Development Laboratory to design and develop highly accurate (ppm-ppb level) hydrogen and oxygen electrolytic sensors. Worked with development of a Post Accident Sampling System for Dissolved Hydrogen in Nuclear Reactor Coolant Water.

1986-1992: Applied Magnetics Corporation, Goleta, CA. Test engineer responsible for thin film dynamic tester set-up, calibration, correlation, maintenance, training, and offshore support to Korea, Singapore, and Malaysia. Also worked for the Systems and the Central Engineering groups on other projects. Work involved regular travel to offshore facilities in Korea, Singapore, and Malaysia.

Professional Meetings / Conferences / Workshops / Talks / Awards:

2022: USC, Los Angeles, CA. FIRE's Faculty Network Conference on Free Expression and Academic Freedom. Keynote speaker Eugene Volokh, UCLA School of Law, and book signing event with First Amendment attorney Robert Corn-Revere.

2022: Berkeley, CA. FACCC Education Institute / American Association of University Professors (AAUP) Conference on Academic Freedom. Attendee and participant in several workshops and group discussions.

2021: Chicago, IL. FIRE's Faculty Network Conference on Free Expression and Academic Freedom. Keynote speaker Chancellor Robert Zimmer, developer of the "Chicago Statement" on free expression. Conference venue at Univ of Chicago Booth School of Business' Gleacher Center.

2018: Berkeley, CA. FACCC Education Institute / American Association of University Professors (AAUP) Conference on Academic Freedom. Attendee and participant in several workshops and group discussions.

2005-2020: Santa Barbara, CA. Board Member and Grievance Officer, Santa Barbara City College Faculty Association (our college's independent union).

2004: Santa Maria, CA. Allan Hancock College Faculty Lecturer 9/17/04. *Ancient Fossils to Heavenly Bodies, Geology and Astronomy Integrated Physicals Sciences Field Study Courses.*

2002: Austin, Texas. NISOD Teaching Excellence Award. *International Conference on Teaching & Leadership Excellence* hosted by the National Institute

for Staff and Organizational Development. Was sent to conference as a registered participant and to receive award.

2000: Pasadena, CA. Cosmos in the Classroom Symposium of the "Universe 2000" 112th Annual Meeting of the Astronomical Society of the Pacific. Paper presentation on Integrated Physical Science Field Studies Courses in Geology & Astronomy.

1999: Berkeley, CA. Lawrence Berkeley National Laboratory Regional Workshop for the Department of Energy (DOE) Institute of Biotechnology, Environmental Science, and Computing for Community Colleges (served as "Point of Contact" representative for Allan Hancock College).

1998: Claremont, CA. Engineering Liaison Committee Spring 1998 Meeting at Harvey Mudd College.

1997: Ventura, CA. Coast Geologic Society Field Studies Tour of the Ventura Basin (Neotectonics and Associated Sedimentation) conducted by Arthur Sylvester of UCSB, and G.C. Brown of Unocal.

1996: Santa Barbara, CA. Planning committee workshop/retreat - Development of a "Multi-Media Art and Sciences Academy" at Santa Barbara High School - a school within a school.

1995: Dallas, Texas. Third International Applied Statistics in Industry Conference (presenter - computer software).

1994: San Diego, CA. American Association of Physics Teachers (hosted all day workshop, submitted paper, gave talk, participated in Science & Education Committee Meeting).

1993: Harvard Observatory, Cambridge, MA. Research Techniques for Undergraduate Faculty at Small Observatories workshop with Larry Marschall (weeklong intensive CCD Astronomy, Photometry, and Telescope Observing workshop).

1993: Santa Barbara, CA. Hosted the Remote Access Astronomy Project Workshop on Digital Image Processing attended by 60+ high school and community college teachers from the Western United States.

1993: San Diego, CA. Astronomical Society of the Pacific (presentation booth).

1993: Los Angeles, CA. So. Cal. Sect. of American Association of Physics Teachers meeting (presented paper, talk).

1993: Santa Barbara, CA. Coordinated the formation of a *Tri-County Physics Alliance*, and hosted a series of meetings of the Physics Alliance at SBCC.

1990: Santa Barbara, CA. Assisted Fred Marschak in hosting the *Pacific Planetarium Association's Western Regional Conference Meeting*.

Grant Projects:

2003: A Model for Experiential Learning: Integrated Field Studies in Physical Science and Rock Art. Fund for Instructional Improvement (FII), Chancellor's Office California Community Colleges. Grant involving our field trip courses to the Eastern Sierra Nevada, Death Valley, and the Colorado Plateau.

2002: Co-PI with Dr. Colin Terry of Ventura for Astronomy FII to prepare interactive web based materials for traditional and web-based astronomy courses.

2000: Lab tested FII developed curriculum materials in Kinematics and E&M prepared by Dr. Colin Terry of Ventura.

1998: Served as Principal Investigator (PI) with co-PI's Nick Arnold and Irene Wong for a series of grant proposals for the development of "*Microcomputer-based Integrated Lecture/Labs*" at Allan Hancock College. Although our proposals were well received, we were unsuccessful in securing a grant for this project. However, our school went ahead with some components of the proposal and I set up a microcomputer-based laboratory, and a wireless microcomputer-based laptop cart.

1990's: Assisted with a series of grants in support of Phil Lubin's *Remote Access Telescope (ROT)*, *Remote Access Astronomy Project (RAAP)*, and related projects as part of my work with Phil Lubin's Experimental Cosmology Lab. Many of these grant proposals, large and small, were successful.

Textbook Projects:

2005: Author of activities booklet for Starry Night Pro software to go with Chaisson / McMillan astronomy texts *Astronomy Today* and *Beginner's Guide to the Universe*, Pearson / Prentice Hall .

2004: Contributor for *College Physics, 8th Edition*, Sears, Zemansky, Young, & Geller, Pearson / Addison Wesley. Assisted author Robert Geller with the development of selected textbook "worked example" problems for a few chapters of this algebra/trig based physics text.

2002: Reviewer of *College Physics, 5th Edition*, Jerry D. Wilson & Anthony J. Buffa, Prentice Hall. Reviewed a number of chapters for this 5th edition release of algebra/trig based physics text.

Publications:

Integrated Physical Science Field Studies Courses, E. O'Connor, ASP Paper Presentation, July 2000, published in COSMOS IN THE CLASSROOM, A SYMPOSIUM FOR TEACHING ASTRONOMY FOR NON SCIENCE MAJORS, Edited by Andrew Fraknoi, July 2000.

The Remote Access Astronomy Project, E. O'Connor and P. Lubin, THE ANNOUNCER, July 1994, abstract.

The Remote Access Astronomy Project, E. O'Connor, in THE SCIENCE TEACHER (National Science Teachers Association Publication) -- March, 1994.

Remote Access Astronomy Project, E. O'Connor, T. Smith and C. Bosso in CENTER FOR PARTICLE ASTROPHYSICS NEWSLETTER (CfPA Newsletter), May/June, 1993.

The Remote Access Astronomy Project - An Update, E. O'Connor and P. Lubin, in THE ANNOUNCER, v. 23, December, 1993 -- Abstract.

The Remote Access Astronomy Project, E. O'Connor, J. van der Veen, T. Smith, C. Bosso and P. Lubin in the FEDERATION OF AMERICAN RESEARCH NETWORKS (FARNET) -- published on Internet.

Community Service and Other Activities:

www.fieldstudy.com, developed and maintain educational field trip website for field trips offered by the Life & Physical Sciences Department at Allan Hancock College. This is not an official AHC web site. I secured the domain name, pay for all expenses, and developed and maintain the site on my own. The site currently hosts many tens of thousands of images, hours of video, and countless student writings and educational projects. This site allows me to do with my students web-based activities well beyond the web-based capabilities that my school can supply.

Actively involved with National Science Foundation (NSF) grant writing for numerous programs at Allan Hancock College, the University of California, Santa Barbara City College, and Ventura Community College.

Worked on forming a Tri-County Physics Alliance to bring together physics teachers from different schools to foster collaborative grant projects. Hosted a series of meetings of the Alliance at SBCC.

Setup and implemented microcomputer-based physics laboratories at Allan Hancock College and the Santa Barbara Middle School (SBMS).

Community projects with K-12 students: Have given numerous invited talks to K-12 schools, businesses, and community service organizations. Worked with the Santa Barbara Parks and Recreation summer science camp for kids to create Astronomy and Earth Science projects. Participated in the development of the Santa Barbara High School Multi Media Art and Science Academy. Have participated in RAIN's on-line chats with Santa Barbara County local area schools and have hosted technology workshops for them.

Implemented Remote Access Astronomy Project into Astronomy and Physics Curricula at SBCC, AHC and SBMS. Acquired funds to upgrade computers at SBCC and secured a donation of \$30,000 in Digital Image Processing Software for both SBCC and AHC use.

Developed and Implemented an extensive "in the field" Integrated Physical Sciences Field Studies Program at Allan Hancock College with an extensive web-based component that produces and updates web materials live in the field. Host an extensive web presence on AHC's Field Study programs, including 10's of thousands of student generated images and video.

Have participated in or conducted numerous Earth Science and Astronomy short courses and field trips. Trips have varied in length from five days to one month. Destinations have included: the Eastern Sierra Nevada, the Western Basin and Range, Death Valley, Joshua Tree, Yosemite, Colorado Plateau, Canada, San Diego, Palomar Observatory, day trips to Griffith Observatory, JPL, Diablo Canyon Nuclear Power Plant, LA Museum of Science & Industry, IMAX Theater, and overnight telescope observation camping trips.

Memberships:

Astronomical Society of the Pacific, Santa Barbara Astronomy Club, Astronomical Unit, American Association of Physics Teachers, American Statistical Association, American Society for Quality Control.
(membership currency varies from year to year)

Computer Experience / Other Experience:

Experienced with CCD telescopes and Digital Image Processing software, methods, and techniques.
Mainframes, PC's, all types. Program in C, PASCAL, APL, Visual BASIC, Quick BASIC, and HTML Hypertext.
Proficient in word processing, statistical packages (SAS, MINITAB, SPSS), spreadsheets (Lotus, Excel)
EPROM and PAL programmers (Altera), and board layout packages (ORCAD and Tango).
Experienced with Robotics, electrical circuit board layout, and remote robotic systems analysis and control.