

ALAN COLBURN

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EDUCATION

Ph.D., UNIVERSITY OF IOWA 1991
Science Education Center *Iowa City, IA*

Dissertation title: Model programs for the preparation of middle school math and science teachers: a descriptive case study

M.S., UNIVERSITY OF PENNSYLVANIA 1986
Graduate School of Education *Philadelphia, PA*

Secondary science education (Educational Leadership Division). PA certification - chemistry, biology. 1986 Pi Lambda Theta teacher award winner.

M.S., UNIVERSITY OF ILLINOIS 1984
School of Life Sciences *Urbana, IL*

Concentration: genetics, cell and molecular biology. Thesis topic: theories about molecular biology of aging.

B.S., CARNEGIE-MELLON UNIVERSITY 1983.
Mellon College of Science *Pittsburgh, PA*

Major: biology, including biochemistry, cell, developmental, organismal, molecular biology courses. Genetics research. Beta Beta Beta membership (Biology honor society).

EXPERIENCE

PROFESSOR, Dept. of Science Education 1995-present
California State University *Long Beach, CA*

2004 Distinguished Teaching Award winner

Courses taught include:

- Current Issues & Research in Science Education, first of three core courses in Science Education M.S. program.
- A Process Approach to Science, inquiry-based science course for prospective K-8 teachers. Students learn science while experiencing innovative elementary curricula. Additional course emphasis on nature of science, learning theory.
- Curriculum & Methods in Science, a secondary science methods class. Course focuses on goals and rationale for teaching science, developing an analytical approach to teaching, understanding how people learn science, and applying theory and research to teaching.
- Understanding Science & Scientific Reasoning, a course to help prospective & practicing secondary science teachers understand the nature of science.
- Seminar on Integrated Science, a 30 hr. course to help prospective & practicing secondary science teachers better understand and be prepared to teach integrated science courses.
- Science Teaching for Teaching Assistants, a 15 hr. workshop style course created to help new science teaching assistants working in lab courses.
- Directed Field Experience in Secondary Science Teaching, a course centered around an early field experience. Course focuses on learning to observe classrooms, classroom management, and instructional strategies for diverse-ability classrooms.
- Student Teaching Supervisor, working with high school student teachers in Long Beach Unified School District and other nearby districts.

• Methods in the Teaching of Secondary Science, series of seminars designed for engineers retraining to be science teachers. Part of Defense Reinvestment Initiative.

Service activities include: developing new Master's degree program, University Academic Senate, College Council, College Curriculum Committee, and a long list of other activities available upon request.

INTERIM ASSOCIATE DIRECTOR, Center for Faculty Development
California State University

2000-2001
Long Beach, CA

Duties included creating a Technology Showcase project designed to help faculty learn effective ways to teach with technology, via workshops led by selected faculty peers. [part-time position]

VISITING ASSISTANT PROFESSOR, Science Education Center
University of Iowa

1991-1995
Iowa City, IA

• Methods in the Teaching of Science II (1991-1994), second course of three in methods course sequence, focusing on goals and rationale for teaching science, self-analysis of videotaped teaching behavior, science education research, learning cycles, and cooperative learning.

• Methods in the Teaching of Science I (1989-1991, 1994-1995), first of three methods course sequence, supervised accompanying practicum in an elementary school.

• Methods in the Teaching of Elementary School Science (1992), introducing students to hands-on developmentally appropriate science activities.

• Race to Save the Planet (1991-1995), an environmental science course constructed around PBS television series.

• Teaching, Learning & Curriculum Models (spring 1994, spring 1995), graduate level course concerning teacher behavior research, constructivism, and analysis of current science education curriculum projects.

STUDENT TEACHING SUPERVISOR
University of Iowa

1988-1991
Iowa City, IA

Supervised student teachers, assisted in Methods in the Teaching of Science II and III. Established computer data-base of effective lessons.

HIGH SCHOOL TEACHER
West High School

1994
Iowa City, IA

Taught Physical Science to 9th grade students. Unique hands-on curriculum divides year into twelve application oriented units. Served as cooperating teacher for preservice students.

HIGH SCHOOL TEACHER
Haverford School

1986-1988
Haverford, PA

Taught Chemistry and Advanced Placement Chemistry to 10th, 11th, & 12th grade students. Doubled enrollment in AP Chemistry after one year. Attended Woodrow Wilson Institute and College Board inservice workshops.

BIOLOGIST
Wistar Institute

1984-1985
Philadelphia, PA

Investigated molecular biology of aging using cell culture techniques.

PROFESSIONAL PUBLICATIONS & PRESENTATIONS

BOOKS, MONOGRAPHS & CHAPTERS

Henriques, L., Colburn, A., Ritz, W. C. (2006). Developing assessment items: a how-to guide. In *Assessment in Science: Practical Experiences and Education Research*. Arlington, VA: National Science Teachers Association and National Association for Research in Science Teaching.

Echevarria, J & Colburn, A. (2005). Designing lessons: inquiry approach to science using the SIOP model, pp. 95-109, in A. Lathman & D. Crowther, Eds.(2005). *Science for English Language Learners: K-12 Classroom Strategies*. Arlington, VA: NSTA Press.

Colburn, A. (2003) *The Lingo of Learning: 88 education terms every science teacher should know*. Arlington, VA: NSTA Press.

Henriques, L., Colburn, A., Olson, J., Ritz, W.C., Siegel, M.A., & Cheng, B. (2003). Learning about assessment: Elementary Science Teacher Leadership (ESTL) 3. Berkeley, CA: SEPUP, Lawrence Hall of Science, University of California, Berkeley. [originally issued as: Henriques, L., Olson, J., Colburn, A. & Ritz, W. C. (1998). ESTL assessment guide. Berkeley, CA: Lawrence Hall of Science.] [available online via <http://sepuplhs.org/profdev/educators/estlguides.html>]

Colburn, A. (1998). Constructivism and science teaching. Fastback No. 435. Bloomington, IN: Phi Delta Kappa.

Colburn, A. (1994). Misconceptions in evolution education, in McComas, W. (ed.) *Investigating evolutionary biology in the laboratory*. Reston, VA: National Association of Biology Teachers, 11-15.

Colburn, A. (1994). Using the learning cycle to introduce students to cooperative learning, in Schafer, L. (ed.) *Behind the Methods Class Door: Educating Elementary and Middle School Science Teachers 1994 AETS Yearbook*. Columbus, OH: Association for the Education of Teachers in Science.

Colburn, A. (1993). *Creating Professional Development Schools*. Fastback No. 352. Bloomington, IN: Phi Delta Kappa.

REFEREED PUBLICATIONS

Colburn, A & Henriques, L. (2006). Clergy views on evolution, creationism, science, and religion. *Journal of Research in Science Teaching* 43, 4, 419-442.

Colburn, A. (2004, Nov). Focusing labs on the nature of science. *The Science Teacher*, pp 32-35

Colburn, A. & Henriques, L. (2000). Reaching the reluctant science teacher. *Science & Children* 37, 8, 46-49.

Colburn, A. (2000). A primer on inquiry. *Science Scope* 23, 6, 42-44.

Bianchini, J. A. & Colburn, A. (2000). Teaching the nature of science through inquiry to prospective elementary teachers: a tale of two researchers. *Journal of Research in Science Teaching* 37(2): 177-209.

Colburn, A. & Echevarria, J. (1999). Meaningful lessons. *The Science Teacher* 66, 3, 36-40. [reprinted in NSTA (2001). *Science Learning for All: Celebrating Cultural Diversity*. Arlington, VA: NSTA Press.]

Colburn, A. & Tillotson, J.W. (1998). Using case studies in science methods courses. *Journal of Science Teacher Education* 9, 2, 153-164.

Colburn, A. (1997, fall). How to modify laboratory activities. *CSTA Journal* 4-6.

Colburn, A. & Clough, M. (1997). Implementing the learning cycle. *The Science Teacher* 64, 5, 30-33.

McComas, W. & Colburn, A. (1995). Laboratory learning: a neglected dimension of instruction. *Journal of Science Teacher Education* 6,2,120-124.

Colburn, A. (1993). Model programs for the preparation of middle school science teachers. *Journal of Science Teacher Education* 4,3, 73-76.

OTHER PUBLICATIONS

Colburn, A. (2004, Sept.). Inquiring scientists want to know. *Educational Leadership* 62, 1, 63-67.

Colburn, A. (2000). Constructivism: science education's "grand unifying theory." *The Clearing House* 74, 1, 9-12.

Colburn, A. (2000). Changing faculty teaching techniques. *Contemporary Issues in Technology and Teacher Education*. 1, 1. [available online at <http://www.citejournal.org/vol1/iss1/currentissues/science/article3.htm>]

Colburn, A. (1999). Recharging batteries and bulbs. *Connect* 12, 4, 3-5.

Colburn, A. (1996). Modifying laboratory activities [invited paper]. *The Science Teacher*. 63,1,10.

Colburn, A. & Penick, J.E. (1991). The power of cooperative learning *Science Education International* 2,1,25-28.

Penick, J.E. & Colburn, A. (1991). Implementing cooperative learning *Science Education International* 2,4,23-25.

Colburn, A. (1990, Oct. 31). If testing's to be the standard, then the price may be too dear. *Education Week* 60,9,24-25.

PRESENTATIONS

Colburn, A. (2005). Solving the mysteries of CSI: constructivism, science & inquiry. Focus speaker (invited presentation) at the annual meeting of the California Science Teachers Association, Palm Springs, CA, October 29.

Henriques, L., McMahan, M., Colburn, A., Martin, C., Kisiel, J. (2005). Using data to teach science & the nature of science in a college science course. Paper presented at the annual meeting of the Association of Science Teacher Educators, Colorado Springs, CO, January 21.

- Colburn, A. (2004). Learning about the nature of science through inquiry-based labs. Presentation at the annual meeting of the California Science Teachers Association, San Jose, CA, October 16.
- Colburn, A. & Henriques, L. (2004). *A comparison of teacher and clergy views on evolution, creationism, science, and religion*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Vancouver, BC, April 2.
- Colburn, A. (2004). *Conceptual change in the chemistry classroom: understanding student thinking*. Presentation at the Hawaii International Conference on Education, Honolulu, HI, January 4.
- Colburn, A. (2003). *Inquiry, constructivism in science and conceptual change: the value of open-ended classroom activities*. Paper presented at the International Conference on Science and Mathematics Education, Kuala Lumpur, Malaysia, October 15. [invited paper presentation]
- Colburn, A. (2003). *The value of open-ended classroom activities: an example from a college science course*. Presentation at the International Conference on Science and Mathematics Education, Kuala Lumpur, Malaysia, October 13. [invited workshop presentation]
- Colburn, A. (2003). *Constructivism and Inquiry: what are they & why should you care?* Presentation at the annual meeting of the California Science Teachers Association, Long Beach, CA, October 9
- Colburn, A. And Henriques, L. (2003). *Evolution and creationism: voices of the clergy*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, St. Louis, MO, January.
- Colburn, A., et al. (2002). *Publishing in the CITE Journal*. Panel presentation at the annual meeting of the Society for Information Technology & Teacher Education, Nashville, TN, March.
- Colburn, A., Henriques, L., & Clough, M. (2002). *Science, creationism & religion: responses from the clergy*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Charlotte, NC, January.
- Colburn, A., et al. (2002). *Publishing in AETS sponsored journals*. Panel presentation at the annual meeting of the Association for the Education of Teachers in Science, Costa Mesa, CA, Jan. 2001.
- Colburn, A. & Martin, C. (2001). *Reforming a college science course via standards and assessment*. Presentation at the annual meeting of the California Science Teachers Association, Palm Springs, CA, Oct. 27, 2001. [invited to give same presentation at the California State University Fullerton, Nov. 2001]
- Colburn, A., et al. (2001). *Publishing in the CITE Journal*. Panel presentation at the annual meeting of the Society for Information Technology & Teacher Education, Orlando, FL, Mar 6, 2001.
- Colburn, A., et al. (2001). *Publishing in AETS sponsored journals*. Panel presentation at the annual meeting of the Association for the Education of Teachers in Science, Costa Mesa, CA, Jan. 2001.
- Henriques, L. & Colburn, A. (2000). *Reforming an innovative college science course via assessment and standards*. Paper presented at the annual meeting of the School Science and Mathematics Association, Albuquerque, NM, Oct. 20, 2000.
- Colburn, A. (2000). *What every teacher educator needs to know about inquiry*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Akron, OH, Jan. 2000
- Colburn, A. & Henriques, L. (2000). *The long term impact of an inquiry-based science class on preservice teachers*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Akron, OH, Jan. 2000
- Colburn, A. (1999). *Making textbook activities inquiry-based*. Presentation at the annual meetings of the California Science Teachers Association, Long Beach, CA, Oct. 8 and Orange County Science Educators Association, Orange, CA, Nov. 20, 1999.
- Colburn, A., et al. (1999). *Strategies we are devising, lessons we are learning, and actions we are taking to set standards at the postsecondary level*. Panel presentation at the tenth Education Trust national conference, Washington, D.C., November, 1999.
- Colburn, A., et al. (1999). *Creating a university standards-based curriculum in teacher education*. Panel presentation at the tenth Education Trust national conference, Washington, D.C., November, 1999.
- Colburn, A. (1999). *What JRST said about inquiry: a 35 year review*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Boston, MA, Mar. 1999.
- Colburn, A. (1999). *Finding useful resources on the world wide web*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Austin, TX, Jan. 16, 1999.
- Colburn, A. & Tillotson, J. W. (1999). *Inquiry and constructivism for science methods students*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Austin, TX, Jan. 14, 1999.
- Colburn, A. (1999). *Web page construction for science teacher educators*. Workshop presented at the annual meeting of the Association for the Education of Teachers in Science, Austin, TX, Jan. 15, 1999.
- Henriques, L., Olson, J. & Colburn, A. (1999). *Beyond outcomes: Standardizing performance assessments in a college science course*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Austin, TX, Jan. 16, 1999.

- Colburn, A. (1998). *Using lessons learned observing experts to help students find resources on the web*. Presentation at Learning & Instructional Technologies in Higher Education Conference, Long Beach, CA, October 20.
- Bianchini, J. A., & Colburn, A. (1998). *Inquiry into inquiry: What do students learn about science's nature through inquiry instruction?* Paper presented at the annual meeting the National Association for Research in Science Teaching, San Diego, CA.
- Colburn, A. & Henriques, L. (1998). *Helping preservice elementary teachers learn science content & pedagogy simultaneously*. Paper presented at the Fifth CSU Symposium on University Teaching, San Bernardino, CA, February 21.
- Colburn, A. (1998). *Making web pages for use in your classes*. Presentation at the annual meeting of Association for the Education of Teachers in Science. Minneapolis, MN, Jan. 8, 1998.
- Colburn, A. (1997). *Welcome to Biology: A Community Context*. Presentation at the annual meeting of the California Science Teachers Association, Palm Springs, CA, Oct. 3, 1997.
- Colburn, A. (1997). *Behaviors & Beliefs of an Exemplary Urban Science Teacher*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Cincinnati, OH, January 11, 1997
- Colburn, A. & Henriques, L. (1996). *Test as You Teach: labs into assessments*. Presentation at the annual meeting of the California Science Teachers Association, Sacramento, CA, October 5, 1996.
- Colburn, A. (1996). *Using Case Studies in Methods Courses*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Seattle, WA, January 13, 1996.
- Colburn, A. et al. (1996). *What should a secondary science methods course contribute to the knowledge, skill and attitude base of preservice teachers?* Panel presentation at the annual meeting of the Association for the Education of Teachers in Science, Seattle, WA, January 13, 1996.
- Colburn, A. (1995). *Legacy of a Reform Effort: Iowa-UPSTEP*. Presentation at the annual meeting of the Association for the Education of Teachers in Science, Charleston, WV, January 6, 1995.
- McComas, W. & Colburn, A. (1994). *Reinventing the Laboratory*. Presentation at the annual meeting of the National Science Teachers Association, Anaheim, CA, April 1, 1994.
- Colburn, A. (1993). *Activity Based Science: a Potpourri*. Presentation at the annual meeting of Iowa Association of Elementary Teachers, Cedar Falls, IA, November 6, 1993.
- Colburn, A. (1992). *Factors that Aid & Hinder School-University Collaboration*. Presentation at the annual meeting of the National Association of Biology Teachers, Denver, CO, November 12, 1992.
- Colburn, A. (1991). *Model Programs for the Preparation of Middle School Math & Science Teachers*. Presentations at regional meeting of National Science Teachers Association), New Orleans, LA and National Science Foundation, Washington, DC.

LOCAL INVITED PRESENTATIONS

- Colburn, A. (2005, Sept.). *Inquiry for the rest of us*. Presentation to an LAUSD K-5 teacher's group.
- Colburn, A. (2004, Feb.). *Inquiry for the rest of us*. Presentation to the Long Beach Science Educators Network.
- Colburn, A. (2003, Mar). *Conceptual change in chemistry*. Presentation to Chemistry Department seminar, California State University, Long Beach.
- Colburn, A. & Henriques, L. (2002). *Scientific literacy*. California State University, Long Beach General Education Summer Institute, August 20.
- Henriques, L. & Colburn, A. (2002). *Science, religion and education*. CSULB Faculty Supper Club [invited presentation], April 4.
- Colburn, A., et al. (2000) *How should we prepare future K-8 teachers in science?* Presentation the California K-16 Partnerships & Student Success Conference, Long Beach, CA, June 2000.
- Colburn, A. et al. (1997). *Future Teachers Reactions to Science*. Created/moderated panel discussion at Earth Science for Preservice Teacher Education conference, Long Beach, CA, March 21, 1997.

EDITORIAL

2005. Guest Editor, special issue focusing on science education, *Issues in Teacher Education* 14:1 (pub. by Calif. Council on Teacher Education)
- 2000-2002. Editor, *Contemporary Issues in Technology & Teacher Education* (AETS section)
- 1998-present. *Journal of Science Teacher Education* review board
- 1990-1994. *Teaching Education* review board

ADVISORY BOARDS

Young Scientist's Camp, part of Long Beach Elementary Science Teacher Education Project, an NSF grant (2000-2002)

K-12/Post-Secondary Science Advisory Council of L.A. county (met Oct. 1999, Jan. 2000, June 2000).

The Galaxy Project, Center to Advance Science Education at University of Southern California (met Jan. 2000).

WORKSHOPS & CONSULTING

2001. Inquiry-Based Instruction & the Learning Cycle. Workshop for 6-12 teachers, Syracuse University, Syracuse, NY. [half-day workshop]

2001. Inquiry, the Learning Cycle, and Performance Assessment in the Elementary Science Classroom. Workshop for K-5 teachers, Appleby Elementary School, Marathon, NY. [half-day workshop]

2001. Aligning assessment, instruction, and standards: a case study. Standards-Based Professional Development Seminar for Community College Faculty. California State University Long Beach, March, and Cerritos, CA, June. [half-day workshops]

2000. Making web pages: a workshop for teachers. Orange County Science Educators Association meeting, Nov. 18, 2000 [one hour workshop]

2000. California Science Implementation Workshop, Hemet, CA [two day workshop, co-taught]

1998. Better questioning. *Promoting women and science*. California State University Long Beach. Feb. 5, 1998 [one hour workshop].

1998. Making web pages using Netscape Composer. *Academic Computing Services*. California State University Long Beach. Feb. 1998 [half-day], repeated Oct. 1998

1997. An introduction to constructivism. *University of California Irvine*. [half-day]

1996 (spring, fall). Test as you teach: better assessment for small classes. *Teaching Projects Program*, California State University Long Beach [half-day]

1996, 1997, 1998. The great color mix-up, hands-on science workshop for primary students and their teachers. California State University Long Beach Annual Kaleidoscope Festival, Academic Day: April 24, 1998, April 25, 1997 and April 26, 1996 [one hour workshops].

1995. Learning theory and the elementary science classroom. *Arrowhead Area Education Agency* [three full-days]

1995. Learning theory and the middle/high school science classroom. *Arrowhead Area Education Agency* [three full-days]

1995. Creating constructivist laboratory activities. *Arrowhead Area Education Agency* [half-day]

1995. An introduction to constructivism in the classroom. *Project SMART: Science/Mathematics & Reform in Teaching* [half-day].

1995. Assessment Consultant, *Iowa Assessment Project* Scored items for proposed performance assessments sponsored by the IAP.

1994. An introduction to constructivism in the classroom. *Project SMART: Science/Mathematics & Reform in Teaching* [full-day].

1993. Cooperative learning. *Iowa Scope, Sequence & Coordination* [half-day].

1993. Assessment Consultant, *American College Testing Service*. Prepared and reviewed items for large scale performance assessment project sponsored by Council of Chief State Science Officers.

1992. Scope & Sequence Project *Coralville Central Elementary School*, Jan-June. University liaison for Title III grant. Worked with group of elementary teachers trying to change how science is taught at their school.

1992. Assessment Consultant, *Iowa Test of Basic Skills*. Edited science sections of ITBS.

GRANTS & FELLOWSHIPS

CREATION OF A NEW GENERAL EDUCATION SCIENCE CAPSTONE COURSE

Summer 2002

CSULB Enhancing Educational Effectiveness grant award to create a new general science capstone course for non-majors. Course emphasizes critical thinking and helping students understand the nature of science.

A CERTIFICATE PROGRAM IN COMMUNITY COLLEGE SCIENCE TEACHING

Fall 2001

CSULB Education Innovations grant award to create a new program to help graduate students in the College of Science interested in teaching at the community college level become better teachers and learn about community colleges.

IMPROVING THE SCOPE, SEQUENCE & COORDINATION OF THE SINGLE SUBJECT SCIENCE CREDENTIAL PROGRAM. Spring 2000

CSULB Education Innovation grant award. A collaborative effort to improve the science credential program. Co-investigators Drs. Henriques, Kenealy, and Turley.

ASSESSING STUDENT LEARNING OUTCOMES Spring 1998

Co-principal investigator on \$6,500 grant from CSULB Campus Assessment Committee to create course [SCED 401] assessment package aligned with class standards and objectives.

SCHOLARLY & CREATIVE ACTIVITIES AWARD Spring 1997

Internal grant provides faculty with 3 hrs. released time to pursue research activities.

ALTERNATIVE ASSESSMENT FOR THE UNIVERSITY CLASSROOM Spring 1996

Administered by California State University Long Beach Teaching Projects Program. Grant provides travel and research funds for scholarly productivity in exchange for workshops (see Workshops & Consulting).

AMERICAN EDUCATIONAL RESEARCH ASSOCIATION FELLOWSHIP 1992

Administered by National Science Foundation, Office of Studies, Evaluation & Dissemination. Studied NSF sponsored professional development school ventures to determine how four programs are overcoming barriers to school-university collaboration.

LABORATORY LEARNING: AN INSERVICE INSTITUTE 1992

Co-wrote \$29,000 Dwight D. Eisenhower grant to provide 30 teachers with inservice addressing issues of science instruction in the laboratory. Workshop effects include participants leading own workshops on same topics, submitting articles for publication, presenting at state science teacher convention, letters sent to school administration

PROFESSIONAL COMMITTEE ACTIVITIES

UNIVERSITY SERVICE

Institutional Review Board for the Protection of Human Subjects	2005-present
Faculty Personnel & Policies Council (elected position) (chair 2006-2007)	2005-present
Academic Senate <i>ad hoc</i> Committee on Plus/Minus Grading Option	2005-2006
University Academic Senate (elected position)	2001-present
Academic Senate Executive Committee (elected position)	2004-2005, 2006-2007
University Teacher Preparation Committee (chair 2006-2007)	2004-present
General Education Governing Council	2002-2003
Academic Computing Services Advisory Committee	2000-2001
Integrated Teacher Education Program Steering Committee	1997-1999

COLLEGE SERVICE

College Assessment Coordinator	2005-present
College Council (elected position)	2004-present
Curriculum Committee	1995-2004, 2005-present

Elections Committee	1995-1996?
Seamless Education Coordinating Committee	1995-1997

DEPARTMENT SERVICE

Retention, Tenure & Promotion Committee	2000-present
Search Committees	2001-2002, 2002-2003, 2004-2005, 2005-present
Liaison to Liberal Studies Dept.	2000-2002
Development of M.S. in Science Education	2000-2002

SERVICE TO PROFESSIONAL ORGANIZATIONS

Association of Science Teacher Educators

- Technology Committee (continuing)
- Communications Committee (past)
- Ad Hoc* Committee for Standards-Based Teacher Education Programs (Chair)(past)
- Publications Committee (past)
- Ad Hoc* Committee for Liaisons with Other Professional Organizations (past)

PROFESSIONAL MEMBERSHIPS

Association of Science Teacher Educators (formerly Association for the Education of Teachers in Science)

National Association for Research in Science Teaching

School Science and Mathematics Association (past member)

National Science Teachers Association

California Science Teachers Association

Orange County Science Educators Association

National Association of Biology Teachers (past member)

Beta Beta Beta (past member)