

Resume of: **WILLIAM C. RITZ**

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## EDUCATION

Ed.D. 1969 SUNY at Buffalo  
Science Education

Ed.M. 1959 University of Buffalo  
Secondary Science Teaching

A.B. 1951 University of Buffalo  
Division of Sciences  
(Chemistry & Geology)

*Additional course work completed at: Cornell University, Union College, Western Reserve University, Wayne State University, and Syracuse University.*

## EMPLOYMENT

### 1977-Present

PROFESSOR EMERITUS of Science Education, AND Founding CHAIR, Department of Science Education (1995-2000), SCIENCE EDUCATION COORDINATOR, College of Natural Sciences and Mathematics, and DIRECTOR of Science and Mathematics Education Institute. California State University, Long Beach, 90840.

*Professor of Science Education:* Taught courses in science and environmental education (e.g., elementary and secondary science methods, workshop in environmental education), and in Biology ("Man & Environment"). Research and writing in science and environmental education. Supervise secondary level student teachers in science. Advise students.

*Founding Chair, Department of Science Education:* Served as leader and administrator of the Department of Science Education of the College of Natural Sciences & Mathematics, with 3.5 fulltime faculty members. Typical department chair responsibilities. Established Science Curriculum Materials Resource Center. Program development in science education. Advised and assisted science department faculty with science education matters. Developed, sought funding for, and administered grant projects in science education (see list of grants).

*Science Education Coordinator:* Managed the Single Subject Credential programs in life and physical science. Advised students. Maintained working relationships with cooperating schools. Coordinated student teaching school assignments, as well as assignment of faculty supervision. Served on the University Single Subject Credential Committee.

*Director, Science & Mathematics Education Institute:* Administered program focusing on collaborative interaction between CSULB Schools of Education, Humanities, and Natural Sciences. Institute promoted research and other scholarly activity in science and math education, as well as engaging in the study, development, and implementation of more effective pre- and inservice education of mathematics and science teachers.

### 1971-1977

ASSOCIATE PROFESSOR of Science Education & DIRECTOR, Environmental Studies Institute (ESI), Syracuse University, Syracuse, NY 13210.

*Director, Environmental Studies Institute:* Administrative responsibility for ESI, including program development and fiscal management. Developed and taught courses in environmental education for teachers. Developed grant proposals (see list); Responsible for ESI publications, including a quarterly newsletter, "Review of Audio-Visual Materials for EE," and the simulation, "Familius," as well as occasional research reports. Conducted environmental education workshops and other types of programs.

*Associate Professor of Science Education:* Courses taught included: "Teaching the Elementary Science Program," "Internship in Science Supervision," "New Perspectives on Teaching Middle/ Junior High School Science," and "Seminar in Curriculum Implementation." Co-Director and principal instructor for 3 years of an NSF-supported program for training experienced teachers to become science supervisors. Developed proposal and directed an NSF-supported leadership project, "The Curriculum Implementation Specialist." Advisor to Ed.M. and Ph.D. students. Supervised dissertation research in science education. Arranged and monitored supervisory internships in

local school systems. Research and writing in science supervision and science and environmental education, curriculum development and implementation.

- 1967-1971** STAFF ASSOCIATE -- teacher education, science consulting, and educational product development. Eastern Regional Institute for Education (ERIE), Syracuse, NY 13203.
- Staff Associate:* Planned and conducted several types of science and social studies workshops. Science consultant to nine pilot elementary schools installing Science--A Process Approach. Instructor, ERIE Teacher-Leader workshop. Team Leader for Science Curriculum Augmentation. Prepared the ERIE augmentation of *A House of Ancient Greece* in collaboration with Fred Kresse of the Boston Children's Museum, and advisor for its field test. Product Coordinator for "Strategies for Teacher-Consultant Cooperation" series. Developed project proposals. Wrote and co-authored numerous ERIE Program Documents and in-house papers. Program presentations at a variety of national, state, and local meetings.
- 1965** ASSISTANT PROFESSOR (Part-Time). Teaching of general Biology and Physical Science courses. State University College, Buffalo, NY.
- 1954-1967** TEACHER and CHAIRMAN of Science Department. Teaching of biology and general science courses. Amherst Central Junior High School, Snyder, NY 14226.
- 1952** TEACHER, chemistry, biology, and general science. Scottsville High School, Scottsville, NY. (Interrupted by Army service, Oct 1952-Aug 1954)
- Summers 1951, 1952** CHEMICAL LABORATORY TECHNICIAN  
George Urban Milling Company, Buffalo, NY.

## PUBLICATIONS

### A. Journal Articles:

- (1) What Do You Remember from Elementary School Science? *Science and Children*, Vol.7, No.2, (Oct. 1969), p.34.
- (2) Needed: An Operational Definition of a "Science Congress" *Science Teachers Association of NYS Newsletter*, January 1970.
- (3) Photographing the Lead Tree Reaction *Chemistry*, Vol.43, No.8, (Sept. 1970), pp.28-29.
- (4) Some Effects of Structured Science and Visual Perception Instruction Among Kindergarten Children *Journal of Research in Science Teaching*, Vol.7, No.3, pp.179-186. (co-author: Ronald J. Raven).
- (5) A Proposed Model for the Supervision of Student Teachers *Teacher Education Forum*, Vol.2, No.9 (Feb. 1974). (co-author: Harold Harty).
- (6) Eco-Advertising: Taking a Closer Look *The Science Teacher*, Vol.42, No.8, (Oct. 1975), pp.27- 28.
- (7) Investigating the Aerosol Issue *Today's Education*, Vol.64, No.3, (Sept/Oct 1975), pp.46-48 + 96. Reprinted in a book: Posthuma, F.E. (Ed.): *Energy and Education: Teaching Alternatives*. Washington, DC: National Education Association, 1978 (pp 27).
- (8) A Non-Evaluative Helping Relationship: An Approach to Classroom-Oriented Supervision *Educational Perspectives*, Vol.15, No.2, pp.15-21. (co-author: Harold Harty).
- (9) A Profile of Science Supervision in New York State *Science Education*, Vol.60, No.3, pp. 339- 351. (co-author: Martin F. Felsen).
- (10) Involving Teachers in Environmental Education *The Journal of Environmental Education*, Vol.8, No.3, (Spring 1977), pp. 40-47.
- (11) Curriculum Augmentation: An Application and Evaluation of the Process *Instructional Science*, Vol.6, (Winter, 1977), pp. 389-407.
- (12) The Environment and a Human Future *Environmental Review*, Vol.1, No.1, (Nov. 1976), pp.32-41, with an addendum appearing in Vol.1, No.2. (co-author: Donald G. Trites).
- (13) Population Education: A Basic Responsibility for All *Bulletin of the Science Teachers Association of New York State*, Vol.61, No.2, pp.40-46.
- (14) Cell Sell "Idea Bank" section of *The Science Teacher*, Vol.46, No.1, (Jan. 1979), p.36.
- (15) Science Supervision in New York State: An Examination of Supervisor-Faculty Relationships *School Science and Mathematics*, Vol.79, No.6, (Oct. 1979), pp. 465-472. (co-author: Martin F. Felsen).

- (16) Population Stabilization: Toward an Educated Public Debate *Environmental Review*, Vol.4, No.3, (1980), pp. 34-44. (co-author: Donald G. Trites).
- (17) Cold War Between Supervisors and Teachers? *Educational Leadership*, Vol.88, No.1, (Sept. 1980), pp. 77-78. (co-author: Jane Cashell).
- (18) A Futures News Bulletin Approach to Stimulate Student Debate on Population Stabilization *Journal of College Science Teaching*, Vol.10, No.1, (Sept 1980) pp.34-37.
- (19) BIO-FORUM: Inservice Education for High School Biology Teachers *Science Education*, Vol.64, No.5, (Oct. 1980), pp. 651-659.
- (20) The Effectiveness of Science Supervisors and Their Membership Status Within a Faculty *Journal of Research in Science Teaching*, Vol.18, No.3, pp. 229-240, 1980. (co-authors: Jane Cashell & Marty Felsen).
- (21) Do We Link School Science with Nonschool Constituents? Paper appearing in *Science Education: A Profession Speaks (1983 Yearbook of the National Science Teachers Association)*. Washington, DC: NSTA, 1983, pp 43-49.
- (22) The Effectiveness of Science Supervisors. In *Sourcebook for Science Supervisors (3rd Ed)*. National Science Supervisors Association/National Science Teachers Association. Washington, DC: NSTA, 1988, pp 197-206.
- (23) Standards for the Preparation and Certification of Biology Teachers. Chapter 25 of *High School Biology Today and Tomorrow*. Washington, DC: National Research Council of the National Academy of Sciences, 1989, pp. 219-229.
- (24) Project RETRAIN -- A Unique Staff Development Delivery System. *Journal of Science Teacher Education*, Vol.4, No.4, Autumn 1993, pp. 121-128.
- (25) A Head Start on Science. Head Start Bulletin. March 2000 (Issue # 67), Head Start Bureau, Washington, DC (with Jean Simpson), p.30.
- (26) Extended letter to the editor regarding Land Snail (helix) activities for children. *Science Scope*, Vol 4, No 1, September, 2003, pp 32-34.
- (27) A Sense of Wonder Science. Scheduled for publication in *Science and Children*, October 2006 issue (co-author Greg Potter).

#### **B. Multi-Media and Other Publications:**

- (1) *Our Microenvironment*, Block "D" of Junior High School Science Program, New York State Education Department, 1972.
- (2) *SIM-1*. A self-instructional module for *People and Technology* -- abbreviated version, Education Development Center, Inc., Cambridge, MA, 1975. (co-author: Fred Kresse).
- (3) *SIM-2*. A self-instructional module for *People and Technology*; complete version. Education Development Center, Inc., Cambridge, MA, 1975. (co-author: Fred Kresse).
- (4) User's Guide to *When Science Happens*. . . Office of the Los Angeles County Superintendent of Schools, 1979.
- (5) "Recommended Standards for the Preparation and Certification of Secondary School Teachers of Science." A position paper of the National Science Teachers Association, published in *The Science Teacher* and *The Journal of College Science Teaching*, as well as in a separate NSTA document on standards for teacher preparation and certification, grades K-12, 1985. (co- authors: members of the NSTA Teacher Education Committee, 1983-85).
- (6) Too Good to Lose, a Science-Technology-Society module for high school students, developed for the STS Project of the Department of Defense Dependents Schools, Germany. Trial Version, 1986.
- (7) A National Science Standards: A Vision for the Improvement of Science Teaching and Learning. A Position paper of the National Science Teachers Association, 1998. (Co-authors: members of the writing committee).
- (8) A Learning About Assessment. A Guide for teachers published by the Elementary Science Leadership Program (ESTL). A project of the Lawrence Hall of Science in Berkeley, CA. 1998 (co-authors: Laura Henriques, Joanne Olson, and Al Colburn).
- (9) A Developing Assessment Items: A How-To Guide co-authored with Laura Henriques and Al Colburn) appears as a chapter in: *Assessment in Science: Practical Experiences and Education Research* (Eds, Maureen McMahon, Patricia Simmons, Randy Sommers, Diane DeBaets, and Frank Crawley), 2005, NSTA Press, Arlington VA.

### C. ERIE Documents and Educational Products:

- (1) *How to Conduct a Workshop*, (2 volumes), an ERIE Program Document. ERIC Documents #ED-065 486 and #ED-065 476. (co-author: Charles W. Wallace).
- (2) *ERIE's Model for Selection and Augmentation of Curricula*, an ERIE Program Document. ERIC Document #ED 051 557. (co-authors: John Calvert and Leona Kosmac).
- (3) *Evaluation of Curriculum Installation*, a volume of papers based on presentations made at the 1970 NSTA Convention. ERIC Document #ED 064 779. (co-authors: Charles W. Wallace, Fred Brown, and Harold Harty).
- (4) *Non-Evaluative Classroom Observation*, a multi-media instructional module for consultant training. (co-author: Howard T. Stackpole).
- (5) *A Day in the Life of the Consultant*, a multi-media instructional module for consultant training. (co-author: Charles W. Wallace).
- (6) *Arranging for Effective Demonstration Teaching*, a multi-media instructional module for consultant training. (co-author: Charles W. Wallace).
- (7) *Teacher's Guide to the ERIE Modification of A House of Ancient Greece*. (co-author: Fred Kresse).
- (8) *Workshop Evaluation by Means of the AAAS Science Process Measure for Teachers*, an ERIE Report.

### PRESENTATIONS AT PROFESSIONAL MEETINGS

1. NATIONAL SCIENCE TEACHERS ASSOCIATION: 1963: "Methods to Use, Report, and Evaluate Open-Ended Laboratory Work" (panel); 1964: "Providing for the Laboratory Approach in Junior High School Science" (panel); 1969: "A Regional Approach to Improving Elementary Science" (panel); 1970: "An Evaluation of a 2-Year Installation of Science--A Process Approach" (paper); 1976: "The Responsibility of Science to Interface with Social Studies in the Elementary School" (paper); 1979: "Science Teachers and Science Supervisors--A Cold War?" (paper); 1984 & 1985: "Guidelines for Secondary School Science Teacher Preparation and Certification" (briefing sessions); 1985: "Some Sciencing Golden Oldies Revisited" (workshop); 1986: "University Science Education Centers -- What is their Mission?" (panel); "California Science Education Initiatives" (panel). "Some Sciencing Golden Oldies Revisited" (workshop); 1987: "The Coastal Environment and its Resources" (workshop); "Search for Excellence in Secondary Science Teacher Education" (panel); "Sidewalk Sleuthin' and Supermarket Sagaciousness--A CityScience Workshop" (workshop). 1988: "Taking Hands-On Science to the Kids" (paper); "Sidewalk Sleuthin' and Supermarket Sagaciousness--A CityScience Workshop" (workshop). 1989: "Sidewalk Sleuthin' and Supermarket Sagaciousness--A CityScience Workshop" (workshop). 1993: "Tried and True Science Activities" (workshop); 1996-2006 AA Head Start on Science@ (workshop) at 2-3 conventions per year.
2. NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING: 1969: "The Effect of Two Instructional Programs on the Attainment of Reading Readiness, Visual Perception, and Science Process Skills in Kindergarten Children" (paper); 1979: "The Effectiveness of Science Supervisors and their Membership within a Faculty" (paper); 1981: "Building a Base of Community Support for Science Education" (panel).
3. THOMAS ALVA EDISON FOUNDATION, 28th Science Institute, Montana State University, 1979: "Science Teaching for a Human Future" (an invited lecture).
4. NATIONAL COUNCIL OF STATES ON INSERVICE EDUCATION: 1979: "Bio-Forum: Inservice Education for High School Biology Teachers" (paper).
5. AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE: 1976: "Involving Teachers in Environmental Education" (paper). 1985: "Sciencing the Elementary School Teacher" (paper; part of a symposium entitled "Science for the Non-Scientist."
6. ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT: 1974: "Supervisor/Consultant Activity Profiles and their Relationship with Faculty Membership" (paper, with Martin F. Felsen); 1975: "The Environment and a Human Future" (ASCD "Action Lab," with Donald G. Trites).
7. NATIONAL ASSOCIATION FOR ENVIRONMENTAL EDUCATION: 1975: "Getting Teachers into Environmental Education" (paper); 1976: "The Environment and a Human Future" (paper).
8. NATIONAL ASSOCIATION OF BIOLOGY TEACHERS: 1979: "The Young Child and Science for a Human Future" (paper delivered by co-author, Paul S. Markovits). 1993: "Young Scholars Institutes for Your Students" (paper); 2001: AA Head Start on Science@ (workshop)

9. ASSOCIATION FOR THE EDUCATION OF TEACHERS IN SCIENCE: 1980: "Bio-Forum: Inservice Education for High School Biology Teachers" (paper); 1982, 1983, 1984, 1985, and 1986: "How to Teach Elementary Science Teachers Real Good: A Share-a-Thon of Methods" (shared presentations with Alfred DeVito, Joe Abruscato, Michael Lerner, Larry Schafer, and Alan McCormack); 1997,  $\Delta$ A Head Start on Science $\text{\textcircled{R}}$  (paper); 2002:  $\Delta$ Summer Science at the Beach $\text{\textcircled{R}}$  (paper, with Laura Henriques).
10. NATIONAL SCIENCE SUPERVISORS ASSOCIATION: 1980: "It's a Great Idea, But...How to Write a Competitive Science Proposal" (panel).
11. SOCIETY FOR COLLEGE SCIENCE TEACHERS: 1983: "The Many Faces of Introductory College Science Courses (special lecture).
12. SCIENCE TEACHERS ASSOCIATION OF NEW YORK STATE: 1965: "One School System's Experience with Science--A Process Approach" (panel); 1968: "ERIE's Science Curriculum Installation Program" (paper). 1989: "Uncle Bill's Sciencing Golden Oldies" (workshop). Also, numerous presentations made at STANYS local section meetings -- Western, Central-Western, and Eastern regions.
13. MAXWELL INTERNATIONAL DEVELOPMENT SEMINARS (for Agency for International Development); at Syracuse Univ. 1971 & 1972: "The Unintended Consequences of Development" (workshop with Don Trites et.al)
14. NEW JERSEY SCIENCE TEACHERS ASSOCIATION: 1975: "Getting to Know Essence" (workshop format).
15. NEW YORK STATE COMMISSION ON YOUTH EDUCATION IN ENVIRONMENTAL CONSERVATION: 1973 Regional Conference, Albany, NY (panelist).
16. NEW YORK STATE ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT: 1974: "Getting to Know Essence" (workshop format).
17. MEMPHIS STATE UNIVERSITY, "Search for Excellence in Mathematics and Science" Academic Enrichment Program: 1984: "AETS/NSTA Guidelines & Competencies for Elementary and Secondary Science Teacher Preparation" (with Kenneth Mechling).
18. SCIENCE ASSOCIATION OF TENNESSEE, 1984: "Recommended Standards for the Preparation and Certification of Teachers of Science at the Elementary, Middle/Junior High School, and High School Levels" (with Kenneth Mechling).
19. NATIONAL ENERGY FOUNDATION, Science Teachers Conference (Pasadena, CA): 1984: "Oldies But Goodies -- Tried & True Hands-On Science Activities" (Workshop format).
20. CALIFORNIA ASSOCIATION FOR BILINGUAL EDUCATION, (Anaheim, CA), 1987: "Classifying -- A Skill for All Ages" (workshop).
21. NATIONAL ACADEMY OF SCIENCES "High School Biology Today and Tomorrow" Conference (Washington, DC), 1988: Invited panelist, paper entitled "Standards for the Preparation and Certification of Biology Teachers."
22. CALIFORNIA SCIENCE TEACHERS ASSOCIATION, "Sidewalk Sleuthin' and Supermarket Sagaciousness: A CityScience Workshop" Palm Springs, 1994; "A Cornucopia of Classifying Activities" San Jose, 1995;  $\Delta$ A Head Start on Science $\text{\textcircled{R}}$  workshops, 1997-2006.
23. HEAD START ASSOCIATION, REGION IX,  $\Delta$ A Head Start on Science, $\text{\textcircled{R}}$  (Workshop, with Donna Iwagaki), San Diego, CA, 1997; 2001:  $\Delta$ A Head Start on Science $\text{\textcircled{R}}$  (workshop), Anaheim, CA.
24. NATIONAL ASSOCIATION FOR ALTERNATIVE EDUCATOR PREPARATION, CERTIFICATION, AND LICENSURE,  $\Delta$ Defense Reinvestment Initiative: A Model Program for Secondary Mathematics and Science Teacher Credentialing (paper, with Maureen Shiflett and Kirsten Sampson), Norfolk, VA, 1997
25. NATIONAL SCIENCE FOUNDATION CETP PI MEETING: NEXT STEPS,  $\Delta$ Recruiting and Training Pre-Service Teachers in Long Beach, California $\text{\textcircled{R}}$  in Arlington VA, 2001. (Co-presenters: Hazen and Ruth von Blum); StemTEC Teacher Preparation PI Conference,  $\Delta$ Science Camp as a Vehicle for the Professional Development of Teachers $\text{\textcircled{R}}$  in Washington DC, 2004 (co-author: Laura Henriques)
26. LA COUNTY OFFICE OF EDUCATION: Family Literacy Learning Luau, Cerritos CA, 2004.  $\Delta$ Fostering Language Development and Literacy Skills through Science $\text{\textcircled{R}}$  (workshop co-presenter: Maureen McMahon).
27. CALIFORNIA DEPARTMENT OF EDUCATION EVEN START OFFICE: 12<sup>TH</sup> Annual California Family Literacy Conference, Long Beach, CA, 2005.  $\Delta$ Fostering Language Development and Literacy Skills through Science $\text{\textcircled{R}}$  (workshop co-presenter: Maureen McMahon)
28. EUROPEAN SCIENCE EDUCATION RESEARCH ASSOCIATION (ESERA):  $\Delta$ A Head Start on Science: Science for pre-school Youngsters and Early Childhood Teachers $\text{\textcircled{R}}$  Kiel, Germany, 1999. Poster Session (co-author, Ruth von Blum);  $\Delta$ National Dissemination of  $\Delta$ A Head Start on Science=  $\Delta$  Science for Pre-School Youngsters and Early Childhood Teachers $\text{\textcircled{R}}$  Amsterdam, The Netherlands, 2003. (Paper, co-authors, Ruth von Blum & Maureen McMahon).

29. HAWAII INTERNATIONAL CONFERENCE ON EDUCATION: ΔHead Start on Science: Science for Pre-School Youngsters and Early Childhood Teachers@ 2003. Workshop (co-author, Ruth von Blum); ΔScience Camp as a Vehicle for Professional Development of Teachers@ 2004. Paper presentation (co-author, Laura Henriques); ΔThe Long Beach Elementary Science and Mathematics Teacher Education Partnership: An Overview of a Successful Collaboration@ 2005. Paper presentation (co-author, Elizabeth Ambos); ΔPre-School Science and Early Literacy Development@ 2006. Paper presentation (co-authors Maureen McMahon and Kay Timme).

## **OTHER PROFESSIONAL ACTIVITIES**

### **A. Professional Affiliations:**

National Science Teachers Association (Life Member)  
 National Association for Research in Science Teaching  
 Association for Science Teacher Education formerly, the Association for the Education  
 of Teachers in Science  
 Association for Supervision and Curriculum Development  
 California Science Teachers Association  
 National Education Association (Life Member)  
 Phi Delta Kappa  
 National Biology Teachers Association  
 American Cetacean Society  
 Council for Elementary Science International  
 National Audubon Society

### **B. Activities and Offices in Professional Organizations**

1. Chair, National Conference on Science education of the National Science Teachers Association, Anaheim, CA, 2006
2. Chair, Long Beach Regional Convention of the National Science Teachers Association, Long Beach, CA, November, 1990.
3. President, Association for the Education of Teachers in Science, 1988-89.
4. Member, Board of Directors, Council for Elementary Science International, 1992-1995.
5. Member, Board of Directors, Zero Population Growth, Inc. (now, The Population Connection), Washington, DC, 1988-92., ZPG Executive Committee, 1991-92. Vice-President, 1991-92..
6. Member, National Science Teachers Association/ National Council for Accreditation of Teacher Education Folio Review Board, 1993-95 (review college science teacher education programs for accreditation).
7. Member, Program Committee, School Science and Mathematics Association, 1993-94.
8. Member, Ad Hoc Committee on Science Teacher Certification Standards, National Science Teachers Association, 1986-87.
9. Director for Teacher Education, National Science Teachers Association, 1983-85.
10. Member, Board of Directors, National Science Teachers Association, 1983-85 and 1988-89.
11. Director-at-Large, Association for the Education of Teachers in Science, 1985-87.
12. Chairperson, Teacher Education Committee, National Science Teachers Association, 1983-85; committee member, 1988-89.
13. Chairperson, Search for Excellence in Secondary Science Teacher Education, National Science Teachers Association - Association for the Education of Teachers in Science, 1986-87.
14. Chairperson, Task Force on Defining Excellence in Secondary Science Teacher Education, National Science Teachers Association, 1985-86.
15. Member, Committee to Explore NSTA Certification of Teachers, National Science Teachers Association, 1985-86.
16. Joint Convention Advisory Board, National Science Teachers Association, 1982-85.
17. Program Committees, NSTA Cincinnati (1985), San Francisco (1986), Las Vegas (1998) and Anaheim (2006) National conventions.
18. Convention Committee, NSTA Regional Convention, San Diego, 1983.
19. Program Committee, Association for the Education of Teachers in Science, 1980 and 1981 National Meetings.

20. Award Committee, "Journal of Research in Science Teaching," National Association for Research in Science Teaching, 1979-1982.
21. President, Southern California Association of Science Specialists, 1982-83; other offices, 1979- 82.
22. Science Framework and Criteria Committee, California State Department of Education, 1982-84.
23. Science Curriculum Advisory Committee, California State Department of Education, 1984.
24. Science Teacher Training Committee, California State Department of Education, 1984-85.
25. Implementation Committee for "Science Framework for California Public Schools," 1979-81.
26. Committee to Study the State of Science Education in California, California Science Teachers Association, 1979.
27. Press and Publicity Committee, National Science Teachers Association National Convention, Anaheim, CA, 1980.
28. Board of Directors, Science Teachers Association of New York State, 1958-1960; Western Section Offices, 1956-1961.
29. Director, Science Congress of New York State, 1968 and 1969. Chairman of Western NY Science Congress, 1962 and 1963. WNY Science Congress Committee, 1958-1967.

**C. Consulting and Adjunct Teaching**

1. Xerox Education Group, Stamford, CN: Film project. Planning committee and preparation of science film outlines, 1970-71.
2. Richard Ford Associates, Inc., Syracuse, NY: various workshops; proposal & other writing, 1969- 75.
3. Prentice-Hall, Inc., Englewood Cliffs, NJ: preparation of manuscript critiques, 1970-71.
4. American Science and Engineering, Inc., Educational Division, Boston, MA: conducting MATCH workshops, 1970-76.
5. J.B. Lippincott Company, Philadelphia, PA: Manuscript evaluation, 1977.
6. State University of New York at Geneseo: teaching of extension courses at several Central New York State locations, 1975-77.
7. Office of the Los Angeles County Superintendent of Schools, Downey, CA: science education consultant and member of the development/production team for the filmstrip-tape program, "When Science Happens. . .," 1979.
8. Delta Education Co., Nashua, NH: elementary science workshops, 1982-84.
9. Charles E. Merrill Publishing Co., Columbus, OH: manuscript evaluation, 1984.
10. Department of Defense Dependents Schools (Germany Region): Consultant to "Science, Technology, and Society" secondary school science curriculum development project, summers 1985 and 1986.
11. "The Science Connection" Project, Houston (TX) Museum of Natural Science and Silver Burdett and Ginn, Inc., 1988 ff.
12. Webster Groves, MI School District: environmental/outdoor education workshop for teachers, 1990.
13. California State University, San Bernardino: "Science Education Equity" project. Evaluation Consultant, 1993-present.
14. Elementary Science Leadership Project (ESTL), Science Education for Public Understanding Program, Advisory Panel on exemplary elementary science teaching, Lawrence Hall of Science, Berkeley, CA, 1997-2000.
15. Pre-K Learning and Development Curriculum Project, Sonoma State University. Preparation of "Pre-K Learning Development Curriculum Guidelines – Science" for submission to the California State Department of Education, 2004. (co-author: Maureen McMahon).
16. Oregon Museum of Science and Industry (OMSI). Member of Advisor=s Committee for an "Outdoors Indoors" exhibit for young children and their parents. 2004-2006.
17. BLAST Pre-K Science Explorations Program (Bristol-Myers Squibb Foundation). Member of the project evaluation Advisory Board, 2005 ff.

**D. Other Professional Activities**

1. "Area Consultant" for the Biological Sciences Curriculum Study (BSCS), Southern California region, 1979..

2. Resource Person for "Outdoor Biology Instructional Strategies" (OBIS) project (Lawrence Hall of Science, Berkeley), 1976-78.
3. Proposal evaluations for various National Science Foundation and US Department of Education grant programs, 1976, 1977, 1979, 1980, 1986, 1987, and 1993.
4. Resource Person for SAVI/SELPH ("Science Activities for the Visually Handicapped / Science Enrichment for Learners with Physical Handicaps"). Participated in National Leadership Institute, Lawrence Hall of Science, Berkeley, 1980. Coordinator of Long Beach "Science in the Mainstream" dissemination center for SAVI/SELPH, 1983-84.
5. Conducted MATCH workshops for teachers and educators at Indiana and Cornell Universities, and at Waco, TX and Boise, ID.
6. Member of writing committee for "Science Education for the 1980's: A Planning and Assessment Handbook," California State Department of Education, 1981.
7. Invited Participant, Conference on Goals for Science and Technology, Grades K-12. National Science Board, Washington, DC, March 1983.
8. Member of writing team for "Science Framework Addendum for California Schools," California State Department of Education, 1984.
9. Member, "Model Curriculum Standards" Science Advisory Committee, California State Department of Education, 1984-85.
10. Member, Science Teacher Education Committee of the California State Department of Education, 1984-85.
11. Member, Advisory Panel on the Subject Matter Preparation of Elementary School Teachers, California Commission on Teacher Credentialing, 1986.
12. Member, Population Education Training Network, Zero Population Growth, 1987-92.
13. Planner of "Preconvention Program" for annual meeting of the Association for the Education of Teachers in Science, Houston, TX convention, 1991.
14. Personnel Policies Committee, National Science Teachers Association, 1997-98.
15. Member Services/Chapters & Associated Groups Committee, National Science Teachers Association, 1996-98.
16. Director of AA Head Start on Science@ week-long summer workshops for teachers at CSULB, annually, 1996-present.

#### **E. CSULB Governance and Other Campus Activities**

1. Single Subject Credential Committee, 1977- 1999.
2. Teacher Education Committee,
3. Search Committee, Dean, College of Natural Sciences and Mathematics, 1996.
4. Panelist, Workshop on Grant Proposal Writing, Office of University Research, 1997.
5. Science Education Search and RTP Committees, 1980-2002.
6. CSULB College of Natural Sciences and Mathematics, Honorary Grand Marshall for Commencement 1999

#### **HONORS AND AWARDS**

##### **A. Grants**

1. "Summer Institute in Environmental Studies," 1973, NSF, at Syracuse University: \$49,947
2. "Leadership Specialist Project in Implementing the 'Essence' Project Approach and Materials," 1973, NSF, at Syracuse University: \$52,947
3. "Implementation Network for "People and Technology" Course Materials," 1975, NSF, at Syracuse University: \$43,995
4. "The Curriculum Implementation Specialist," 1975-77, NSF, at Syracuse University: \$130,507
5. "Bio-Forum: An Inservice Program for High School Biology Teachers," 1977, NSF, at CSULB: \$18,481
6. "Intermediate Science Cooperative," 1978, NSF, at CSULB: \$24,420

7. "Physical Science Forum: Inservice for Secondary School Teachers," 1979, NSF, at CSULB: \$23,425
8. "Intermediate Science Exchange Center," 1980, NSF, at CSULB: \$29,979
9. "Bio-Forum '80," 1980, NSF, at CSULB: \$29,978
10. "Mini-Courses in Science," 1981, NSF, at CSULB: \$28,071
11. "Sciencing the California 'School Improvement' Program," 1981, NSF, at CSULB: \$29,906
12. "Saturday Science for Teachers," 1983, Long Beach Unified School District, at CSULB: \$975
13. "Learning About the Marine Coastal Environment and its Resources," 1983, California Department of Education (Environmental Education program), at CSULB: \$20,000
14. "Saturday Science for Teachers," 1984, Long Beach Unified School District, at CSULB: \$975
15. "Exploring the Coastal Environment and its Resources -- Disseminating and Implementing a Unit of Study for Grades 7-9," 1985, California State Department of Education (Environmental Education), \$9,573
16. "SAVI/SELPH Workshop for Teachers," 1984-85, Division of Juvenile Court Schools of Los Angeles County, \$7,308
17. "Saturday Sciencing for Junior High School Kids," 1984-85, a project conducted collaboratively with Long Beach Unified School District, supported in part by a grant from the CSULB Student Affirmative Action Office, \$3,800
18. "Physical Science Mini-Course Development," 1984, CSULB Campus Program Development Reserve, \$8,570
19. "Mini-Courses in Energy Education for Teachers of the Greater Long Beach Region," 1985, Shell Companies Foundation, Inc, \$5,000
20. "Exploring the Coastal Environment and its Resources -- Disseminating a Unit of Study for grades 7-9," 1985, California State Department of Education (Environmental Education Program), \$5,050
21. "Saturday Sciencing for Junior High School Kids," 1985-86, a project conducted collaboratively with Long Beach Unified School District, supported in part by a grant from the CSULB Student Affirmative Action Office, \$8,670.
22. "The Greater Long Beach CSU-CALEEP Instructional Resource Center," a 1986-87 project conducted collaboratively with the California Earthquake Education Project (CALEEP), Lawrence Hall of Science, U.C. Berkeley, \$5,000.
23. "Project RETRAIN: A Science Teacher Retraining Program," 1986, conducted in collaboration with the Los Angeles County Education Office, Phase I, \$31,328; Phase II, \$90,494.
24. "Young Scholar's Ocean Science Institute," 1987, NSF, at CSULB, \$71,509.
25. "New Horizons," a project to recruit and train persons interested in making mid-career entry into science teaching careers, 1988-89, NSF (via California State University Chancellor's Office); Phase I, \$44,000; Phase II, \$44,000.
26. "Young Scholar's Ocean Science Institute," 1989, NSF, at CSULB, \$78,656.
27. "Project to Improve Methods Courses in Elementary Science," a national project to conduct summer institutes for methods course instructors at 4 different sites, 1990, NSF, at CSULB; Phase I, \$123,759; Phase II, \$272,648.
28. "Young Scholar's Ocean Science Institute," 1991, NSF, at CSULB, \$77,975.
29. "Project MOST: Minority Opportunities in Science Teaching," 1991, Eisenhower Grant via the California Postsecondary Education Commission, at CSULB, \$637,646.
30. "Young Scholar's Ocean Science Institute," 1992, NSF, at CSULB, \$80,338.
31. "Science Teaching Development Project," (subcontract with California State University, San Bernardino), 1993-94, National Science Foundation, \$26,750.
32. "Young Scholar's Ocean Science Institute," 1993, NSF, at CSULB, \$82,788.
33. "Young Scholar's Ocean Science Institute," 1994, NSF, at CSULB, \$85,346.
34. "Scientist/Mathematician to Science/Math Teacher" Defense Reinvestment Initiative Project (subcontract with the National Research Council), 1994, at CSULB, \$7,765.
35. "Scientist/Mathematician to Science/Math Teacher" Defense Reinvestment Initiative Project (subcontract with the National Research Council), 1995-96, at CSULB, \$786,794.

36. "A Head Start on Science," Head Start Bureau, US Department of Health and Human Services, 1995, at CSULB, \$230,872.
37. "A Head Start on Science," Head Start Bureau, US Department of Health and Human Services, 1995, at CSULB, \$281,629.
38. A National Dissemination of A Head Start on Science= American Honda Foundation, 1999-2002, at CSULB, \$99,990
39. A Long Beach Elementary Science/Mathematics Teacher Education Partnership, 1999-2001, at CSULB (Co-authors & co-project directors: Glenn Nagel, Elizabeth Ambos, Christine Dominguez, and Jean Houck), \$1,447,337.

**B. Honors**

1. Chi Beta Phi, Honorary National Science Fraternity, 1950.
2. Fellow, Science Teachers Association of New York State, 1966.
3. Fellow, American Association for the Advancement of Science, 1971.
4. Sigma Xi Scientific Research Society, elected to CSULB Club, 1990.
5. CSULB Distinguished Faculty Scholarly and Creative Achievement Award, 1993.
6. TRW Corporation / College of Natural Sciences and Mathematics Outstanding Teacher Scholar Award, 1994.

**C. Fellowship Awards**

1. E.I. duPont Science Teachers Fellowship, Summer 1955, at Cornell University.
2. General Electric Science Teachers Fellowship, Summer 1956, at Union College.
3. National Science Foundation Summer Fellowship for Secondary School Teachers of Science and Mathematics, awarded for a tenure of 3 summers: 1960 and 1962, in study at SUNY Buffalo, and 1961, at Western Reserve University.

**D. Institute Awards**

1. National Science Foundation Inservice Institute, 1962, at SUNY Buffalo.
2. National Science Foundation / Atomic Energy Commission Radiation Biology Institute, Summer 1963, Wayne State U.
3. National Science Foundation / American Association for the Advancement of Science "Chautauqua- Type Short Courses for College Teachers."
  - a. 1976-77, Syracuse U: "Ethical Issues in the Biological Sciences" (presented by George Kieffer, University of Illinois).
  - b. 1978-79, Stanford U: "Population: Demographic Processes and Techniques" (presented by Leon Bouvier, Population Reference Bureau, Washington, DC).
  - c. 1979-80, Santa Ana College: "Life in the Ocean" (presented by Eugenie Clark, University of Maryland).

**E. Other Awards or Recognition**

1. Distinguished Faculty Scholarly and Creative Achievement Award, California State University, Long Beach, 1993.
2. Departmental Incentive Award, California State University, Long Beach, 1997, for A Improving the Science Teaching Skills of College of Natural Sciences & Mathematics Teaching Assistants, a project collaboratively conducted by faculty of the CSULB Department of Science Education.
3. "Innovation in Teaching" Grant, California State University, Long Beach, 1993-94.
4. Departmental Incentive Award, California State University, Long Beach, 1993-94, for "Project Family Science," a project jointly designed by members of the CSULB Science Education Program.
5. Exceptional Merit Service Award, California State University, Long Beach, 1984
6. Research Award, California State University, Long Beach, 1979 and 1981.
7. Award to conduct community outreach activities, CSULB, 1983.
8. Faculty Development Award, California State University, Long Beach, 1984.

9. Meritorious Performance and Professional Promise Award, California State University, Long Beach, 1985 and 1986.
10. Sabbatical Leave, California State University, Long Beach, Spring Semester 1987.
11. Teacher Scholar Program, California State University, Summers 1987 and 1989.
12. "Who's Who in the West," 21st Edition (1987), ff.
13. "Who's Who in American Education," 3rd Edition (1991).
14. Travel Grant, CSULB Scholarly and Creative Activities Committee, Spring 1993.
15. California Science Education Administrator of the Year award, California Science Education Advisory Committee, Fall, 1999.
16. Distinguished Educator Award, Long Beach Industry Education Council, February 1999.
17. AETS Emeritus Professor Award, Association for the Education of Teachers in Science, January 2002.

### **COMMUNITY INVOLVEMENT**

Executive Committee, Industry-Education Council of Long Beach, California, 1985-2002. Participation in various IEC, Long Beach projects beginning in 1983.

Community Representative, Policy Council of the Long Beach Unified School District Head Start Program, 1995-1998.

Professional Education Committee, American Cancer Society, Long Beach-Harbor Southeast Unit, 1977- 1979.

Board of Directors, Onondaga Nature Centers, Inc., 1973-1977.

Member, Environmental Management Technical Advisory Committee, Central NY Regional Planning and Development Board, 1974-76.

Board of Directors, Lutheran Student Foundation, Syracuse, NY, 1968-71.

Church Council: 1964-67 (Buffalo, NY), and 1971-74 (Liverpool, NY).

### **PERSONAL DATA**

Born:	Buffalo, NY, December 8, 1929
	Height: 5'10"      Weight: 175
Wife's Name:	Joyce E. Ritz, R.N.
Children:	Lynne Estabrook, Lisa
Military Service:	US Army, 1952-54: Camp Pickett, VA and Berlin, Germany Highest Rank: Sergeant
Military Specialties:	Medical Aidman, and Officer Personnel Records Specialist
Hobbies:	Member of viola section, Amherst Symphony Orchestra, 1947-1967; Syracuse University Symphony Orchestra, 1968-1974.  Reading, travel, and gardening. Opera, concerts, and sports events.

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