

FACULTY VITA

NAME: Blubaugh, William, Leo DATE:
1/10/07

POSITION: Professor
Department of Mathematical Sciences
College of Arts and Science
University of Northern Colorado
Greeley, CO 80639

HOME ADDRESS: 2503 Bismarck Avenue
Loveland, CO 80538

TELEPHONE: Office (970) 351-2028
Home (970) 667-8793

EDUCATION:	<u>Year</u>	<u>Degree</u>	<u>Institution</u>	<u>Area of Study</u>
	1984	Ph.D.	University of Colorado at Boulder	Mathematics Education
	1974	M.Ed.	Kent State University	Mathematics & Education
	1969	B.S.	Kent State University	Mathematics & Science

WORK EXPERIENCE:

<u>Year(s)</u>	<u>Institution/Organization</u>	<u>Position</u>	<u>Responsibilities</u>
1996 - present	University of Northern Colorado	Professor	Teaching, Scholarship, Service, and Directing
1998 - 00	University of Northern Colorado	Interim Director	MAST Center
1991 -96 present	University of Northern Colorado	Associate Professor	Teaching, Scholarship, and Service
1987-91	University of Northern Colorado	Assistant Professor	Teaching, Scholarship, and Service
1984-87	University of Texas at Austin	Assistant Professor	Teaching, Scholarship, and Service
1982-84	University of Colorado at Boulder	Teaching Assistant	Teaching
1981-82	University of Colorado at Boulder	Research Assistant	Collect Data Statistics
1970-81	Ohio High Schools	Teacher	Teaching

AREA(s) OF SPECIALIZATION:

Mathematics Instruction
Mathematical Problem Solving
Technology for Teaching Mathematics

RESEARCH AREAS/INTERESTS:

Develop Problems Solving Skills
Teaching Methodology
Technology in the Mathematics Classroom
Psychology of Learning
Integrate Math, Science, & Technology

PUBLICATIONS:

Juried:

- Powers, R., & Blubaugh, W. (2005). Technology in mathematics education: Preparing teachers for the future. *Contemporary Issues in Technology and Teacher Education* [Online serial], 5(3/4). Available: <http://www.citejournal.org/vol5/iss3/mathematics/article1.cfm>
- Blubaugh, W. L. (2003). Developing Students' Higher Order Thinking (HOT) Skills. *The Colorado Mathematics Teacher*, 36(2), 7-10.
- Blubaugh, W. L., & Emmons, K. (1999). Graphing for All Students Mathematics Teacher, *Mathematics Teacher*, 91(4) 323-334.
- Blubaugh, W. L. (1995). Use of Software to Improve the Teaching of Geometry. *Mathematics and Computer Education*, 29(3), 288-293.
- Blubaugh, W. L. (1993). Computer Assisted Introduction to Mathematical Induction. *School Science and Mathematics*, 93(1), 31-34.
- Swadener, M., & Blubaugh, W. L. (1990). Teaching mathematics with a vision: Integrating computers into mathematics instruction. In T. J. Cooney & C. R. Hirsch (Eds.), *Teaching Mathematics in the 1990's: 1990 Yearbook* (pp. 123-128), Reston, VA: The National Council of Teachers of Mathematics, Inc.
- Blubaugh, W. L. (1988). A course designed to prepare teachers to better utilize computers. *School Science and Mathematics*, 88(4), 295-300.
- Blubaugh, W. L. (1988). Why cancel? *Mathematics Teacher*, 81(4), 300-302.
- Blubaugh, W. L. (1987). Distribution of sample means as related to the concept of sufficiently large. *Computer Education*, 55, 24-25.
- Blubaugh, W. L. (1987). Questioning in the mathematics classroom. *Texas Mathematics Teacher*, 34(2).

Monograph:

- Blubaugh, W. L. (1993). Direction of Computer Use in Teaching Mathematics and Science: The Best of JCMST Research Notes. Association for the Advancement of Computing in Education, 105 pages.

Columns:

Blubaugh W. L. (1987-1992) "Research Notes" Editor for the quarterly journal, The Journal of Computers in Mathematics and Science Teaching. I reviewed and abstracted research articles related to instructional use of computers for mathematics or science.

Published Conference Proceedings:

- Blubaugh, W. L. (2004) Teaching and Learning Business Calculus Through Technology. Proceedings of the Seventeenth Annual International Conference on Technology in Collegiate Mathematics, New Orleans.
- Blubaugh, W. L. (1998). Multiple Connections Between the Derivative & Integral Functions Using Real-Time Data Effective use of Technology in Teaching Mathematics. Proceedings of the Eleventh Annual International Conference on Technology in Collegiate Mathematics, New Orleans.
- Blubaugh, W. L. (1997). Effective use of Technology in Teaching Mathematics. Proceedings of the Tenth Annual International Conference on Technology in Collegiate Mathematics, (pp. 48-52), Chicago.
- Blubaugh, W. L. (1987). Are you prepared to use computers for teaching mathematics or science? Proceedings of the Seventh Annual Texas Computer Education and International Council for Computers in Education Conference, (pp. 100-101). San Antonio.
- Blubaugh, W. L. (1987). Effects of computer programming on mathematical problem solving. *Social Science Perspectives Journals*, 1(1), 1-14.
- Blubaugh, W. L. (1987). Using Computers in the Classroom. Chinese University of Hong Kong, Annual Education Conference.
- Blubaugh, W. L. (1986). Choosing the ethical path to excellence in education. In J. Hydrick (ed.), *Ethics and excellence in computer education: Choice or mandate* (pp. 106-113). Rockville, MD: Computer Science Press.
- Blubaugh, W. L. (1986). Integrating a computer in the geometry classroom. Proceedings of the Sixth Annual Texas Computer Education and International Council for Computers in Education Conference (pp. 129-133). San Antonio.
- Blubaugh, W. L. (1985). Computer applications in the mathematics classroom: An integrated approach. In D. Craighead (Ed.), *Fifth annual microcomputers in education conference: Tomorrow's technology* (pp. 39-44), Rockville, MD: Computer Science Press.
- Blubaugh, W. L. (1985). Effect of a semester of instruction in different computer programming languages on mathematical problem solving skills of high school students. *Dissertation Abstracts International*, 45(10), 3086A.

Reviews:

- Blubaugh, W. L. (1995). [Review of Young Children Continue to Reinvent Arithmetic--3rd grade: Implications of Piaget's Theory]. School Science and Mathematics, 95(6), 330-331.
- Blubaugh, W. L. (1994). [Review of The Art of Problem Solving Volume 1: the Basics], Mathematics Teachers, 87(6), 454.
- Blubaugh, W. L. (1994). [Review of Contextual Reality]. School Science and Mathematics, 94(5), 273-274.
- Blubaugh, W. L. (1993). [Review of Exploring Prime Numbers on Your Personal Computer], National Council of Teachers of Mathematics.
- Blubaugh, W. L. (1991). [Review of Euclid's Toolbox- Triangles]. Mathematics Teacher, 84(6), 484.
- Blubaugh, W. L. (1990). [Review of Graph Wiz]. Mathematics Teacher, 83(9), 748-749.
- Blubaugh, W. L. (1989). [Review of Mathematica]. Mathematics Teacher, 82(9), 734.
- Blubaugh, W. L. (1989). [Review of Do Nows]. School Science and Mathematics, 89(8), 709-710.
- Blubaugh, W. L. (1988). [Review of The Cactus Primer]. School Science and Mathematics, 88(8), 705.
- Blubaugh, W. L. (1986). [Review of Factoring Algebraic Expressions]. Journal of Computers in Mathematics and Science Teaching, V(3), 76-77.
- Blubaugh, W. L. (1985). [Review of Solving Quadratic Equations]. The Journal of Computers in Mathematics and Science Teaching, IV(4), 70-71.
- Blubaugh, W. L., & Anderson, R. D. (1983). [Review of An Introduction to the Atom]. Science Books and Films, 19(1), 56.

PROFESSIONAL PRESENTATIONS:

- Blubaugh, W. L. (2006, September). Where is the Discrete Mathematics?
Colorado Council of Teacher of Mathematics' Annual Conference, Denver, CO.
- Blubaugh, W. L. (2006, April). Using Technology as a Tool for Instruction in Middle School and High School Mathematics Classrooms. National Council of Supervisors of Mathematics' 42nd Annual Conference, San Francisco.
- Blubaugh, W. L. (2004, October). Teaching and Learning Business Calculus Through Technology. International Conference on Technology in Collegiate Mathematics' 17th Annual Meeting, New Orleans, LA.
- Blubaugh, W. L. (2004, September). Fun With Data. Colorado Council of Teacher of Mathematics' Annual Conference, Denver, CO.

- Blubaugh, W. L. (2003, September). Developing Higher Order Thinking (HOT) Skills. Colorado Council of Teacher of Mathematics' Annual Conference, Denver, CO.
- Blubaugh, W. L. (2003, April). Incorporating Projects and Technology in Learning New Mathematics. National Council of Teacher of Mathematics' 81st Annual Meeting, San Antonio, TX.
- Blubaugh, W. L. (2003, February). Tools and Technology of Secondary Mathematics Needed to Prepare Inservice Teachers for Present and Future Classrooms. Association of Mathematics Teacher Educators 7th Annual Conference, Atlanta, GA.
- Blubaugh, W. L. (2002, October). A Methods Course in Secondary School Mathematics Using StudyWorks for Project Work and Write-up. School Science and Mathematics' 101st Annual Conference, Rochester, New York.
- Blubaugh, W. L. (2001, September). Probability, Standards, and the TI-83 Calculator. Annual Conference of the Colorado Council of Teacher of Mathematics, Denver, Colorado.
- Blubaugh, W. L. (1999, April). Leadership Practices of RMSTEIM Teachers. National Council of Supervisors of Mathematics' 35th Annual Conference, San Francisco.
- Blubaugh, W. L. (1998, November). Multiple Connections Between the Derivative & Integral Functions Using Real-Time Data. Eleventh Annual International Conference on Technology in Collegiate Mathematics, New Orleans, Louisiana.
- Blubaugh, W. L. (1998, October). Teaching Mathematics With a Graphics Calculator. Annual Conference of the Colorado Council of Teacher of Mathematics, Denver, Colorado.
- Blubaugh, W. L. (1998, October). Algebra Topics to Exceed Standards and Meet TIMMS Expectations. Annual Conference of the Colorado Council of Teacher of Mathematics, Denver, Colorado.
- Blubaugh, W. L. (1997, November). Research Report: Effective use of Technology in Teaching Mathematics. Tenth Annual International Conference on Technology in Collegiate Mathematics, Chicago, Illinois.
- Blubaugh, W. L. (1997, October). A Graphics Approach to Teaching Probability and Statistics. Annual Conference of the Colorado Council of Teacher of Mathematics, Denver, Colorado.
- Blubaugh, W. L. (1997, April). Innovative Practices of RMSTEIM Project Teachers. National Council of Teacher of Mathematics' 75th Annual Meeting, Minneapolis, MN.

- Blubaugh, W. L. (1996, October). Connecting Secondary School and Collegiate Mathematics. National Council of Teacher of Mathematics, Southwest Regional Meeting, Denver, Colorado.
- Blubaugh, W. L. (1995, October). Using the Graphics Calculator to Teach High School Mathematics. Annual Conference of the Colorado Council of Teacher of Mathematics, Denver, Colorado.
- Blubaugh, W. L. (1995, April). Research Update on Technology use for Teaching and Learning Mathematics. National Council of Supervisors of Mathematics, Annual Meeting, Boston, MA.
- Blubaugh, W. L. (1995, April). Technology and Cooperative Learning in College Mathematics Classrooms. National Council of Teacher of Mathematics' 73rd Annual Meeting, Boston, MA.
- Blubaugh, W. L. (1994, October). What's All the Fuss About Problem Solving? Annual Conference of the Colorado Council of Teacher of Mathematics, Denver, Colorado.
- Blubaugh, W. L. (1993, November). Science and Mathematics Education: Bridging the Gap Between State, Local, and National Standards. A Roundtable presentation along with Kovar, R.; Schwentz, R.; Cochran, K.; and Berger, D. at the Annual Meeting of Project 30, Cincinnati, Ohio.
- Blubaugh, W. L. (1993, October). Integrating Probability and Statistics in High School Mathematics. National Council of Teacher of Mathematics, Southwest Regional Meeting, Denver, Colorado.
- Blubaugh, W. L. (1993, October). Graphing Technology and Assessment: How do we do both? Annual Conference of the Colorado Council of Teacher of Mathematics, Denver, Colorado.
- Blubaugh, W. L. (1993, October). Telecommunication Opportunities through the Mathematics and Science Teachers (MAST) Hotline.. Annual Conference of the Colorado Council of Teacher of Mathematics, Denver, Colorado.
- Blubaugh, W. L. (1993, March). Selected Topics in Calculus using the TI-85 Graphics Calculator. A Mathematics Teaching Seminar open to the University.
- Blubaugh, W. L. (1991, October). A Collection of Algebraic Problems for Teachers Who Wish to Use Graphing Calculators Within Their Classrooms. Annual Conference of the Colorado Council of Teacher of Mathematics, Denver, Colorado.
- Blubaugh, W. L. (1989, October). Topics of Probability and Statistics for High School Mathematics. National Council of Teacher of Mathematics, Southwest Regional Meeting, Denver, Colorado.
- Blubaugh, W. L. (1988, October). Using the Computer Laboratory Effectively. Colorado Council of Teachers of Mathematics, Annual Conference, Denver, Colorado.

- Blubaugh, W. L. (1988, March). Integrating Weekly Computer Laboratory Sessions with Traditional Mathematics Instruction. National Council of Teacher of Mathematics, Southwest Regional Meeting, Marshall, Texas.
- Blubaugh, W. L. (1987, October). Effect of Learning and Applying Mathematical Problem Solving Heuristics on Attitudes and Achievement of Elementary School Teachers. School Science and Mathematics, Annual Meeting, Billings, Montana.
- Blubaugh, W. L. (1987, October). Computer Programming vs. Application Software: Where is the Proper Balance? School Science and Mathematics, Annual Meeting, Billings, Montana.
- Blubaugh, W. L. (1987, March). Are You Prepared to Use Computers to Assist in the Teaching of Mathematics or Science? Texas Computer Education Conference, Seventh Annual Meeting, San Antonio, Texas.
- Blubaugh, W. L. (1987, February). Computers to Assist in the Teaching of Probability and Statistics. Area III of Texas Computer Education Association, Annual Meeting, San Antonio, Texas.
- Blubaugh, W. L. (1986, November). The Differential Effect of Computer Programming Languages on Mathematical Problem Solving Abilities. School Science and Mathematics, Annual Meeting, Lexington, Kentucky.
- Blubaugh, W. L. (1986, November). Preparing Secondary School Teachers of Mathematics or Science to Use Computers for Instruction. School Science and Mathematics, Annual Meeting, Lexington, Kentucky.
- Blubaugh, W. L. (1986, October). Effects of Computer Programming on Mathematical Problem Solving. National Social Science Conference, San Antonio, Texas.
- Blubaugh, W. L. (1986, October). Mathematical Concept Development With Microcomputers. Thirty-second Annual Conference of the Advancement of Mathematics Teaching, Austin, Texas.
- Blubaugh, W. L. (1986, October). FOM, Essential Elements, and the Hand-Held Calculator. Thirty-second Annual Conference of the Advancement of Mathematics Teaching, Austin, Texas.
- Blubaugh, W. L. (1986, March). Choosing the Ethical Path to Excellence in Education. Microcomputer in Education Conference, Sixth Annual Meeting, Tempe, Arizona.
- Blubaugh, W. L. (1986, February). Integrating a Computer in the Geometry Classroom. Texas Computer Education Conference, Sixth Annual Meeting, San Antonio, Texas.
- Blubaugh, W. L. (1986, February). Early Experience With Mathematical Models: Using Probability and Statistics Applications. National Council of Teachers of Mathematics, Southwest Regional Meeting, Dallas, Texas.
- Blubaugh, W. L. (1986, January). Geometric Concept Development Using the Computer. Conference on the Teaching of Algebra and Geometry, Annual

Meeting, Huntsville, Texas.

Blubaugh, W. L. (1985, October). Mathematical Concept Development With Microcomputers. Conference of the Advancement of Mathematics Teaching, Thirty-first Annual Meeting, Austin, Texas.

Blubaugh, W. L. (1985, June). Developing Mathematics Concepts With Computer Assistance. Texas Conference on Technology and Education, Fifth Annual Meeting, Austin, Texas.

Blubaugh, W. L. (1985, March). Computer Applications in the Mathematics Classroom: An Integrated Approach. Microcomputers in Education Conference, Fifth Annual Meeting, Tempe, Arizona.

Blubaugh, W. L. (1985, January). Computer Applications in Algebra. Texas Computer Education Association, Annual Meeting, San Antonio, Texas.

Blubaugh, W. L. (1985, January). Computers For Algebra. Conference on the Teaching of Algebra, Annual Meeting, Huntsville, Texas.

Workshops:

Blubaugh, W. L. (2003). Mathematics Enhancement for Colorado's Western Slope. Colorado Department of Education, La Junta, Colorado, August.

Blubaugh, W. L. (2001). Mathematics Enhancement for Colorado's Western Slope. Eisenhower Title II Funded, Glenwood Springs, Colorado, June/July.

Blubaugh, W. L. (2000). Mathematics Enhancement for Colorado's Western Slope. Eisenhower Title II Funded, Leadville, Colorado, June/July.

Blubaugh, W. L. (1996). RMSTEIM Conference within a Conference. Colorado Council of Teachers of Mathematics, Annual Conference, Denver, Colorado.

Blubaugh, W. L. (1996). Mathematics Enhancement of Colorado's Eastern Plains. Eisenhower Title II Funded, Lamar, Colorado, May.

Blubaugh, W. L. (1996). Mathematics Enhancement of Colorado's Eastern Plains. Eisenhower Title II Funded, Ft. Morgan, Colorado, May.

Blubaugh, W. L. (1995). Algebra with the TI-82. Colorado Council of Teachers of Mathematics, Annual Conference, Denver, Colorado.

Blubaugh, W. L. (1995). RMSTEIM Conference within a Conference. Colorado Council of Teachers of Mathematics, Annual Conference, Denver, Colorado.

Blubaugh, W. L. (1992). Mathematics Enhancement of Colorado's Eastern Plains. Eisenhower Title II Funded, Ft. Morgan, Colorado, July.

Blubaugh, W. L. (1992). Mathematics Enhancement of Colorado's Eastern Plains. Eisenhower Title II Funded, Lamar, Colorado, August.

Blubaugh, W. L. (1987). Geometry: Practical and Theoretical (presenter). Region XIII of the Texas Education Agency, Austin, Texas, August.

- Blubaugh, W. L. (1987). Geometry: Practical and Theoretical (presenter). Region XIII of the Texas Education Agency, Austin, Texas, August.
- Blubaugh, W. L. (1987). Computers for Problem Solving in Mathematics (presenter). Region XIII of the Texas Education Agency, Austin, Texas, June.
- Blubaugh, W. L. (1986). Odds Are: You'll be Winner (presenter). Region XIII of the Texas Education Association, San Marcus, Texas, August.
- Blubaugh, W. L. (1986). Machines and Mathematics: Methods or Mayhem (presenter). Region XIII of the Texas Education Association, Austin, Texas, August.
- Blubaugh, W. L. (1986). Clinical Processes in Teaching Mathematics (presenter). Region XIII of the Texas Education Association, Austin, Texas, June.
- Blubaugh, W. L. (1986). Methods and Materials in Teaching Secondary School Mathematics (presenter). Region XIII of the Texas Education Association, San Marcus, Texas, June.

FUNDED PROJECTS:

- 2003 A UNC Instructional Technology Grant of \$15,042 for exploring state-of-the-art technology tools for enhancing mathematics instruction at the middle school and high school levels by pre- and in-service mathematics teachers.
- 2001-03 Graduate Teaching Fellows in K-12; Co-PI. A \$1,409,010 grant from the National Science Foundation for UNC, CSU, District 6, and Poudre R1 school districts to form a collaborative to support graduate fellows in SMET disciplines and discipline-based education. Our teaching and research themes focus on human impacts on land use and ecosystem structure and function along the Front Range of Northern Colorado. Teaching-Research teams of teachers, fellows and researchers will interact throughout the 3 years of the project that begins in May 2001.
- 2001 UNC's PT³ Grant from the College of Education via U.S. Department of Education grant for course development and supplies for our new MED 340: Tools and Technology of Secondary Mathematics course. An approximately \$5,000 grant to address the need of students who enter the secondary school classroom with the knowledge, skill, and experience at teaching secondary level mathematics with appropriate technology tools
- 2000-01 Teaching Materials for Western Slope Teachers. A \$10,000 grant from the Colorado Institute of Technology for classroom materials for 40 teachers of secondary school mathematics in Western Colorado for appropriate mathematics technology (graphics calculator or appropriate software) and materials that are related to the goals of the Western Slope project.
- 1999-00 Mathematics Enhancement for Colorado's Western Slope. A \$66,336 grant from the Education for Economic Security Grant, Dwight D. Eisenhower Program designed to enhance the quality of student learning through a teacher education program for forty seventh through twelfth grade mathematics teachers of Western Colorado.

- 1994-98 Rocky Mountain Secondary Teacher Enhancement Initiative in Mathematics. A \$577,260 grant from the National Science Foundation to develop master degree teachers and leaders of systemic change in teaching secondary school mathematics in Colorado, New Mexico, and Wyoming.

- 1992-93 Mathematics Enhancement for Colorado's Eastern Plains (MECEP) Secondary Schools. A \$51,331 grant from the Education for Economic Security Grant, Dwight D. Eisenhower Title II Program designed to enhance the quality of student learning through a teacher education program for forty seventh through twelfth grade mathematics teachers of Eastern Colorado.

- 1985-86 Development of Software Related to Computer Applications in Mathematics. Competitive award from Intel Corporation consisting of an 86/300 High-Performance Integrated Microcomputer System. Included IRMX 86 Software, and ISBC Winchester Controller.

ONGOING PROJECTS:

Collaborative work with District Six, Colorado Department of Education, School of Chemistry, Earth Science and Physics and School of Biology of improving Standards Based instruction in mathematics and science for District Six schools. Also working on a Department of Education grant to assist in this same area.

Working with several schools across campus on assessment entry into TracDat.

Working on an NSF proposal on Research in Disabilities Education with faculty from the School of Human Sciences to improve instruction in mathematics from those with disabilities.

PROFESSIONAL ASSOCIATION PARTICIPATION:

<u>Membership:</u>	<u>Years</u>
Association of Mathematics Teacher Educators (AMTE)	1991-present
National Council of Supervisors of Mathematics (NCSM)	1988-present
Colorado Council of Supervisors of Mathematics (CCSM)	1988-present
School Science and Mathematics Association (SSMA)	1985-present
Special Interest Group/Research in Mathematics Education	1984-present
National Council of Teachers of Mathematics (NCTM)	1968-present
Colorado Council of Teachers of Mathematics (CCTM)	1982-84; and 87-present
American Association of Colleges for Teacher Education	1892-93
International Council of Computers in Education (ICCE)	1985-92
American Educational Research Association (AERA)	1984-92
Mathematical Association of America (MAA)	1984-92
Phi Delta Kappa (PDK)	1982-91
Austin Area Council of Teachers of Mathematics (Officer)	1985-87
Southwest Educational Research Association (SERA)	1986-87
Texas Computer Education Association (TCEA)	1984-87
Texas Council of Teachers of Mathematics (TCTM)	1984-87
National Education Association (NEA)	1970-81
Ohio Education Association (OEA)	1970-81

Local Education Associations (officer)	1970-81
Ohio Council of Teacher of Mathematics (OCTM)	1970-81
Kent State University Student Education Association (Officer)	1968-70

<u>Service:</u>	<u>Year(s)</u>	<u>Organization/Journal</u>
Textbook reviewer	2006	McGraw-Hill
Textbook reviewer	2005	Houghton Mifflin
Textbook reviewer	2004	John Wiley & Sons, Inc..
Textbook reviewer	2003	Harper Collins College Publishers.
Panelist for Review of Teacher Enhancement Proposals	1995 & 2001	National Science Foundation
The Colorado Mathematics & Education Coalition Board Member	1998 - 2001	Colorado Lieutenant Governor's Office Science
Mathematics Endorsement Committee Member	1996	Colorado Department of Education
Mathematics Standards Committee Member	1995	Colorado Department of Education
Editorial Board Member	1992 - 99	<i>Journal of Computers in Mathematics and Science Teaching</i>
State Director, both Elementary & Secondary	1990-93	Presidential Awards for Excellence in Science and Mathematics Teaching
Program Committee Member	1989	Colorado Alliance for Science Annual Meeting
Publications/Registration	1989	National Council of Teachers of Mathematics Southwestern Regional Meeting
Research Notes Editor	1986-92	<i>Journal of Computers in Mathematics and Science Teaching</i>
Referee of manuscripts for journal	1988-present	National Council of Teachers of Mathematics <i>/Mathematics Teacher</i>
Referee of manuscripts for journal	1988-2001	National Council of Teachers of Mathematics <i>/Arithmetic Teacher</i>
Referee of manuscripts for journal	1986-present	<i>Mathematics and Computer Education</i>
Referee of manuscripts for journal	1986-present	School Science and Mathematics Association (SSMA)
Referee of manuscripts	1986-	International Council for Computers in Education

for annual meetings	2000	(ICCE)
Book reviewer	1993	National Council of Teachers of Mathematics (NCTM)
Book reviewer	1986 & 1989	School Science and Mathematics Association (SSMA)
Book reviewer	1986-87	<i>Journal of Computers in Mathematics and Science Teaching</i> (JCMST)
Software reviewer	1989-present	National Council of Teachers of Mathematics / <i>Mathematics Teacher</i>
Software reviewer	1985-88	JCMST
Textbook reviewer	1986	Merrill Publishing Company
Representative to NCTM Delegate Assembly	1985-87	Austin Area Council of Teachers of Mathematics
Evaluator of the 32nd & 33rd Annual Conferences	1985-86	Conference for the Advancement of Mathematics Teaching

UNIVERSITY SERVICE:

Department/School of Mathematical Sciences

2006	Develop ed the course: MED 595, Teaching Advanced Topics in Secondary School Mathematics
2000-02	Develop online courses, MED 534, MED 600, MED 528, MED 341 and MATH 464 (for Extended Studies)
1997-06	Supervision of Student Teachers
1995	Developed the course: MED 600, Survey of Research in Mathematics Education.
1994	Developed the courses: MED 550 - Teaching Probability and Statistics; and MED 534 Teaching Algebra and Trigonometry.
1993	Developed the course MED 700, Advanced Seminar: Post-Secondary Cognitive Processes.
1992	Developed the course MED 701, Educational Mathematics Research
1988-90	Assistant Chairman and Coordinator of Mathematics Education Unit of Department
1989	Assisted in Writing Proposal for new Ph.D. in Educational Mathematics

Committee Membership

2006	School Assessment Committee- Chair, MA-Graduate Committee, MATH 176 Coordinator, Licensure, School Evaluation Committee, Library Committee, Admissions Officer for the MA/Teaching Degree Program, Graduation, Checks/Transfer Evaluator, and Supervisor of Student Teachers, NCATE/NCA liaison.
2002-05	Department Assessment Committee- Chair, MA-Graduate Committee, MATH 176 Coordinator, Licensure, Department Evaluation Committee, Admissions Officer for the MA/Teaching Degree Program, Graduation, Checks/Transfer Evaluator, and Supervisor of Student Teachers.
2000-02	Department Evaluation Committee, Search Committee for Mathematics Education position – Chair, Undergraduate and Graduate Committees, MATH 175/176 Coordinator, Licensure, Admissions Officer for the MA/Teaching Degree program, Graduation, Checks/Transfer Evaluator, and Assessment Committee - Chair
1999-00	Executive, Undergraduate, MATH 175/176 Coordinator, Licensure, Admissions Officer for the MA/ Teaching Degree program, and Graduation Checks/Transfer Evaluator
1998-99	Executive, Graduate, Undergraduate , MATH 175/176 Coordinator, Licensure, Admissions Officer for the MA/ Teaching Degree program, and Graduation Checks/Transfer Evaluator
1997-98	Undergraduate, Search & Hiring, Licensure, and Graduation Checks/Transfer Evaluator
1996-97	Undergraduate, Search & Hiring, Teaching Seminar, Licensure, and Graduation Checks/Transfer Evaluator
1994-95	MAST Steering Council (Chair), Mathematics Tutoring Laboratory (Coordinator), Undergraduate, Graduation Checks/Transfer Evaluator, Professional Teacher Educators Advisory (Chair), Academic Advising
1993-94	Mathematics Tutoring Laboratory (Coordinator), Undergraduate, Professional Teacher Educators Advisory, Academic Advising
1992-93	MAST Council, Mathematics Tutoring Laboratory (Coordinator), Graduate, Professional Teacher Educators Advisory, Academic Advising
1991-92	Computer Equipment and Related Space (Chair), Mathematics Laboratory (Coordinator), Undergraduate, Professional Teacher Educators Advisory, Academic Advising
1990-91	Department Advisory, Capital Outlay (Chairman), Travel, Professional Teacher Educators Advisory, Reorganization of Department, Academic Advising
1988-90	Department Advisory, Travel, Professional Teacher Educators, Off Campus, Graduate and Undergraduate, Academic Advising
1987-88	Travel Advisory, Professional Teacher Educators Advisory, and Off-Campus Advisory

College of Natural and Health Sciences

- 2006 Coordinator/Facilitator of the Teaching in the Natural and Health Sciences – Special Interest Group (TNHS-RIG).
2005-06 Member of the NHS Assessment/Program Review Team.

College of Arts and Science

- 2005 TracDat Facilitator for College
2001-05 Member of the A&S Assessment Committee.
2001-02 Member of the A&S Assessment Committee.
I compiled and wrote a "Mathematics Education Program Report" that was Submitted to the National Council of Teachers of Mathematics, the National Council for the Accreditation of Teacher Education, and the Colorado Commission of Higher Education
1999-00 Organized UNC's presentation for the Colorado Alliance for Science meeting on campus, and assisted in judging UNC's Junior Academy of Science
1998-00 Interim Director of the Mathematics and Science Teaching (MAST) Center
1994-95 Mathematics Liaison to the Mathematics and Science Center (MAST)
1993-94 Co-Director/Mathematics Coordinator of the Mathematics and Science Teaching (MAST) Center
1990-92 Ad hoc member, Computer and Model Classroom of the Future Committee
1991 Member of Critical Thinking Clone Group
1989-90 Voting Member of Steering Committee, Mathematics and Science Teaching Center (MAST), Hotline resources
1987-88 Member, Math and Science Teaching Center (MAST) Steering Committee

University

- 2005-06 Member. Faculty Senate; Chair, Academic Policy Committee, Reappointment to Teacher Education Faculty
2002-04 Member. Faculty Senate; Member, Academic Policy Committee
2001-02 Developed several packets of materials for the CCHE campus visit of teacher preparation programs
1998 Member, Teacher Education Across Campus Task Force; re-appointed to the Teacher Education Faculty for a five year term
1997-98 Chair, Professional Education Council; Member, Faculty Senate, Member, Academic Policies Council; Member, Undergraduate Council
1996-97 Member, Professional Education Council
1993-97 UNC facilitator for Colorado's State Systemic Initiative.

- 1992-93 Professional Education Council (Chair), Member of Faculty Senate, Member of Academic Policies Committee
- 1991-92 Professional Education Council (Vice-Chair), PEC Representative to the Undergraduate Council, Member of Curriculum Subcommittee
- 1991-92 Member, Professional Teacher Education Program-Secondary Level
- 1990-91 Member, Professional Education Council, and Membership Subcommittee.
- 1990 Appointed to serve on a Faculty Analysis Team for the Teaches of the Future Project
- 1989-90 Mathematics Task Force Leader, Project 30

Graduate School

- 1990-present Membership to the Graduate Faculty with Doctoral Research Endorsement
- 1988 Membership to Graduate Faculty

GRADUATE STUDENT COMMITTEES:

Doctoral:

Research Advisor, Huang, Chien-Chung. (2006). The Understanding of Multiplication of Preservice Elementary School Teachers in Taiwan, Graduate School.

Research Co-Advisor, Dollard, C. (2006). Preservice Elementary Teachers' Thinking About Situations Involving Probability, Graduate School.

Committee Member, Neumann, J. (2004). The Matheatical Tasks Framework: A Consequence of Condition for Professional Development, Graduate School.

Research Advisor, Gonske, T. (2002). Relationships Among mathematics Anxiety, Beliefs About the Nature of Mathematics and the Learning of Mathematics and Students' Learning Approaches in Non-traditional Aged Students at the Community college, Graduate School.

Research Advisor, Perrine, V. (2001). Effects of Problem-Solving based Mathematics Course on the proportional Reasoning of Preservice Teachers, Graduate School.

Research Advisor, Hsieh, D. (1995). A Comparison of the Thinking Processes of Mathematically Capable and Average Students, Ages 10 to 11, Engaged in Mathematics Problem Solving, Graduate School.

Research Advisor, Brown, John. (1995). The Effect of a Computer-Supported Curriculum on Student Beliefs about Mathematics and Mathematics Achievement, Graduate School.

Research Advisor, Ma, Hsiu-Lan. (1994). A Comparative Study Between Traditional Instruction and Multimedia Instruction in Mathematical Problem-Solving Achievement of Sixth Grade Students in Taiwan, The Republic of China, Graduate School.

Committee Member, Olsen, J. (1994). The Effect of the use of Number Lines Representations on Student Understanding of Basic Function Concepts, Graduate School.

Faculty Representative, Laker, A. (1994). Teachers and Pupils Perceptions of Lesson Content in Physical Education, Graduate School.

Faculty Representative, Hicks, K. (1991). Effecting Instructional Change: Categorization of Inservice Oral Representations to Reading and Writing Teachers, Graduate School.

Faculty Representative, Bellack, S. (1994). Divorce Groups for Adolescents, Graduate School.

UNIVERSITY OF TEXAS AT AUSTIN:

Department of Curriculum and Instruction, Graduate Studies

Committee Membership

1984-86 Qualifying Examination, Faculty Awards, Undergraduate Course, Doctoral Dissertation Awards

Graduate School

1984-86 Science and Mathematics Education, Graduate Studies

University

1985-87 Parking and Traffic Panel of the General Faculty

GRADUATE STUDENT COMMITTEES:

Doctoral:

Committee member, Verheyden, N. (1987). The Effect of an Integrated Presentation of Quadratics on Higher Cognitive Levels of Mathematics Education, Graduate School.

Committee member, Lizcano, L. (1986). Graduate School.

Committee member, Geibprasert, P. (1986). Graduate School.

Committee member, Gronberg, S. (1985). Graduate School.

Committee member, Markshoe, P. (1985). Errors in Problem Solving in Ninth-Grade Mathematics, Graduate School.

Master's:

Committee member, Sherrill, D. (1985). Meeting the Needs of Mathematically Talented Eighth Graders, Graduate School.

Supervisor, Loucks, P. (1985). Predictors of Success at Learning Structured Programming at the High School Level, Graduate School.

Committee member, Crawford, M. (1985). Design and Development Documentation for a Lesson on Apple Writer's File Manipulation Commands, Graduate School.

Supervisor, Kelley, J. (1985). The use of Microcomputers in the Teaching of Trigonometry and Calculus in High School, Graduate School.

Committee member, Rankin, J. (1985). What's Happening to Our Mathematics Teachers?", Graduate School.

Committee member, Briadway, E. (1985). Graduate School.

TEACHING:

University of Northern Colorado

<u>Academic Year(s)</u>	<u>Courses Taught:</u>
2006 - 2007	Teaching Discrete Mathematics Topics in Calculus Research in Mathematics Education Tools and Technology of Secondary Mathematics Teaching Advanced Topics in Sec. School Mathematics Fundamentals of Mathematics I Fundamentals of Mathematics III
2005 - 2006	Topics of Fundamental Mathematics Topics in Calculus Research in Mathematics Education Tools and Technology of Secondary Mathematics Action Research Project
2004 - 2005	Fundamentals of Mathematics II Topics in Calculus Applied Probability and Statistics Mathematics in Our Technological World Teaching Applied Probability and Statistics Teaching Discrete Mathematics
2003 - 2004	Fundamentals of Mathematics I & II Topics in Calculus Introduction to Research in Mathematics Education Mathematics in Our Technological World Teaching Geometry

2002- 2003	<p>Fundamentals of Mathematics I Fundamentals of Mathematics II Topics in Calculus Teaching Applied Probability and Statistics Teaching and Learning Mathematics on the Elementary Level</p>
2001- 2002	<p>Methods of Teaching Mathematics Introduction to Research in Mathematics Education Teaching Discrete Mathematics Topics in Calculus, Plane Trigonometry Fundamentals of Mathematics II Applied Probability and Statistics</p>
2000- 2001	<p>Methods of Teaching Mathematics Fundamentals of Mathematics II Teaching Algebra and Trigonometry Topics in Calculus Plane Trigonometry</p>
1999- 2000	<p>Topics in Finite Mathematics Teaching Applied Probability and Statistics Teaching Algebra and Trigonometry Concepts in Calculus Plane Trigonometry</p>
1998-99	<p>Teaching Discrete Mathematics Fundamentals of Mathematics I Fundamentals of Mathematics II Survey of Research in Mathematics Education Teaching and Learning Mathematics on the Secondary Level Teaching Mathematics with a Graphics Calculator</p>
1997-98	<p>Topics in Calculus Advanced Seminar: Post Secondary Cognitive Processes Teaching Probability and Statistics Teaching Algebra and Trigonometry Methods of Teaching Secondary School Mathematics Observing and Analysis of Secondary Teaching I & II Clinical Experiences: Secondary</p>
1996-97	<p>Mathematics and the Liberal Arts Teaching Geometry Teaching Algebra and Trigonometry Methods of Teaching Secondary School Mathematics Teaching and Learning Mathematics at the Post-Secondary Level</p>
1995-96	<p>Sabbatical with Thompson Valley High School</p>
1994-95	<p>Calculus and Analytic Geometry I Teaching Algebra and Trigonometry Methods of Teaching Secondary School Mathematics Teaching Elementary and Middle School Mathematics Survey of Research in Mathematics Education Mathematics Tutoring</p>

1993-94	Advanced Seminar: Post Secondary Cognitive Processes Teaching Applied Probability and Statistics Educational Mathematics Research Topics in Mathematics for Teachers Mathematics Tutoring
1992-93	Mathematics for Elementary School Teachers I Mathematics for Elementary School Teachers II Methods of Teaching Secondary School Mathematics Calculus and Analytic Geometry II Calculus and Analytic Geometry III Mathematics Tutoring
1991-92	Mathematics for Elementary School Teachers I Mathematics for Elementary School Teachers II Methods of Teaching Secondary School Mathematics Calculus and Analytic Geometry I Current Issues in Teaching Mathematics
1990-91	Mathematics for Elementary School Teachers I Mathematics for Elementary School Teachers II Methods of Teaching Secondary School Mathematics Topics in Mathematics for Teachers Topics in Teaching Secondary School Algebra Curriculum of Secondary School Mathematics
1989-90	Mathematics for Elementary School Teachers I Methods of Teaching Secondary School Mathematics Topics in Mathematics for Teachers Teaching Mathematics as Problem Solving Curriculum of Secondary School Mathematics
1988-89	Informal Geometry Mathematics for Elementary School Teachers II Methods of Teaching Secondary School Mathematics Teaching Mathematics as Problem Solving Using Computers to Teach Mathematics Curriculum of Secondary School Mathematics
1987-88	Mathematics in the Elementary School I Mathematics for Elementary School Teachers II Methods of Teaching Secondary School Mathematics An Introduction to the History of Mathematics Intermediate Algebra Fundamental Mathematical Skills

The University of Texas at San Antonio (Guest Instructor)

1987 (Summer)	Preparing Teachers to Teach AP Computer Science Mathematics for Elementary School Teachers
---------------	---

The University of Texas at Austin

1984-87 Research Design and Analysis
Using Computers to Teach Mathematics and Science
Methods of Teaching Secondary School Mathematics

University of Colorado

1982-84 BASIC Programming for Educators
Methods of Teaching Secondary School Mathematics

Program Developed:

1989 Assisted with new Ph.D. in Educational Mathematics

Courses Developed:

1986 Using Computers in the Teaching of Mathematics of
Science. The University of Texas at Austin

PROFESSIONAL DEVELOPMENT ACTIVITIES:

Workshops, Clinics, Symposia, Conferences:

1987 - present Colorado Council of Teachers of Mathematics Annual
Conference

1984 - present National Council of Teachers of Mathematics Annual Conference

1987 Computers in Mathematics Classrooms by NCTM

1986-87 School Science and Mathematics Annual Conference

1985 International Conference on Computers in Education

HONORS AND AWARDS:

1996 Promotion to Professor

1994 Granted Sabbatical Leave for the 1995-96 academic year

1992 Granted Tenure

1991 College Achievement Award, and
Promotion to Associate Professor

1988-90 Research Associate, Center for
Research in Teaching and Learning

1987-88 Research Fellow, Center for
Research in Teaching and Learning

1982-84	Graduate Teaching Assistantship School of Education University of Colorado at Boulder
1981-82	Graduate Research Assistantship School of Education University of Colorado at Boulder
1980	Outstanding Teaching Award Centennial Celebration Anna Local School District