

VICKIE M. WILLIAMSON

CURRICULUM VITA

PERSONAL DATA

Address: 2719 Sandy Circle
College Station, Texas 77845
Telephone: (979) 764-0785 home
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Marital Status: Married
Birthplace: Altus, Oklahoma
E-Mail: williamson@tamu.edu

EDUCATION

Ph. D. in Science Education (Chemical Education); University of Oklahoma; Norman, OK: May 1992. Dr. Michael R. Abraham, Department of Chemistry & Biochemistry, directed research.

M.S. in Chemistry (Chemical Education); University of Oklahoma; Norman, OK: May 1977.

B.S. in Natural Science (Chemistry Emphasis); Central State University; Edmond, OK: July 1974.

OCCUPATIONAL EXPERIENCE

Senior Lecturer. Department of Chemistry, Texas A & M University, College Station, TX. September 1997 to present. Promotion from Lecturer to Senior Lecturer effective August 1999. Instructor for large lecture, general chemistry courses and coordinator of TA training and laboratory organization for general chemistry and for introductory chemistry. Dr. Emile Schweikert, Head until 2006. Dr. David Russell, Head 2006-present.

Curriculum Specialist. Center for Mathematics, Science, and Technology, Illinois State University, Normal, Illinois. June 14, 1993 to July 1997. Developing integrated middle school science curriculum. Drs. Franzie Loepp and Robert Fisher, Directors.

Lecturer. Department of Chemistry, Illinois State University, Normal, Illinois. January 1994 to July 1997. Instructor for large-lecture fundamentals of chemistry course. Dr. Michael Kurz, Chair.

Visiting Assistant Professor. Department of Chemistry, University of Central Oklahoma (formerly Central State University), Edmond, Oklahoma. January 1993 to May 1993. Full-time temporary faculty teaching chemistry for non-majors and general chemistry II lecture and lab. Dr. Fred A. Grosz, Chair.

Adjunct Assistant Professor. Department of Instructional Leadership and Academic Curriculum, University of Oklahoma, Norman, Oklahoma. January 1993 to May 1993. Instructor of secondary science methods course. Dr. Edmund A. Marek, Director of Science Education.

Visiting Assistant Professor. Department of Chemistry and Biochemistry, University of Oklahoma, Norman, Oklahoma. August 1992 to January 1993. Developing

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elementary physical science curriculum. Writing of NSF and Eisenhower grant proposals for elementary physical science project and teacher workshops. Dr. Bing Fung, P.I.

Adjunct Assistant Professor. Department of Chemistry, University of Central Oklahoma (formerly Central State University), Edmond, Oklahoma. August 1992 to December 1992. Instructor for introductory and second semester general chemistry laboratories. Dr. Fred A. Grosz, Chairman.

Visiting Assistant Professor. Department of Chemistry and Biochemistry, University of Oklahoma, Norman, Oklahoma. June 1992 to August 1992. Lecturer for second semester general chemistry for science and engineering majors for Summer 1992. Dr. Stanley C. Neely, Assistant Chair.

Instructor of the Science Education Academy. Summer Youth Academy, University of Oklahoma, Norman, Oklahoma. July 1992. Development and teaching of a pre-collegiate program in accelerated science for honors students. Dr. Edmund A. Marek, Co-Director.

Graduate Teaching and Administrative Assistant. Department of Chemistry and Biochemistry, University of Oklahoma, Norman, Oklahoma. September 1988 to May 1992. Duties included supervision and weekly training of teaching assistants in general chemistry courses (non-majors course through the science majors sequence), developing curriculum materials, computer grading of large lecture classes, revision of laboratory manuals, teaching laboratory sections, etc. Dr. Michael R. Abraham, Director.

University Supervisor for Student Teachers. College of Education, University of Oklahoma, Norman, Oklahoma. August 1991 to January 1992. Instruction and supervision of public school science student teachers. Dr. Frank Mcquarrie, Director.

Coordinator of the Science Education Academy. Summer Youth Academy, University of Oklahoma, Norman, Oklahoma. July 1990 and July-August 1991. Development and teaching of a pre-collegiate program in accelerated science for honors students. Dr. Edmund A. Marek, Director.

Chemistry Instructor in the Chemistry Academy. Summer Youth Academy, University of Oklahoma, Norman, Oklahoma. July 1990. Instruction of accelerated chemistry pre-collegiate program. Dr. Gordon Atkinson, Dir.

Chemistry Instructor. Summer Scholars Program, University of Oklahoma, Norman, Oklahoma. June 1989 and June 1990. Instruction of accelerated chemistry pre-collegiate program. Dr. Michael R. Abraham, Director.

Adjunct Mathematics Professor. Rose State College, Midwest City, Oklahoma. June

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1988 to July 1988. Instructor of algebra. John Hansen, Department Head.

Adjunct Mathematics and Science Professor. Hillsdale Free Will Baptist College, Moore, Oklahoma. August 1987 to December 1988. Instructor of algebra, biology, and physical science. Dr. Thomas Marberry, Dir. of Instruction.

Office Manager/ Bookkeeper. Williamson & Associates, Inc., Norman, Oklahoma. December 1979 to January 1988. Construction bookkeeping, payroll, and all accounting reports for bonding purposes using computerized systems.

Secondary Science Teacher. Washington Public Schools, Washington, Oklahoma. August 1974 to December 1979. Duties included: teaching Chemistry I and II, Biology, Physiology, General Science, and Gifted & Talented classes (grades 1 - 12); curriculum development; and evaluation.

Chemistry Department Tutor. Central State University; Edmond, Oklahoma. August 1973 to July 1974. Tutoring in general chemistry.

CONSULTATION WORK

Evaluator, NSF-funded Workshops and Minigrants, 2007 Gordon Research Conference on Visualization in Science and Education, Chris Watters, conference chair, 2006-present.

Lead Teacher, OWL Electronic Homework System, Thomson Learning, 2002 to present

Evaluator, NSF-funded Workshops and Minigrants, 2005 Gordon Research Conference on Visualization in Science and Education, Peter Mahaffy, conference chair, 2004-2006.

Advisory Committee, NSF-funded grant "Design Principles for Effective Molecular Animations", Loretta Jones, Barbara Tversky, Jerry Honts, Jerry Suits, David Falvo and Vickie Williamson, PIs, 2005-2006.

Evaluator, NSF-funded Minigrants, 2003 Gordon Research Conference on Visualization in Science and Education, Mary Jane Shultz, conference chair, 2002-2005.

SCHOLARLY PAPERS/ BOOK CHAPTERS

Williamson, V.M., Lindsey, L. & Mealey, G. The training of teaching assistants in an inquiry-based general chemistry program. Manuscript under preparation.

Sarvela, T. & Williamson, V.M. Feedback and Attitude Study of Online Web-Based Learning (OWL) in First Semester General Chemistry. Manuscript in preparation.

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- Gilbreath, T., Williamson, V.M., MacFarlane, R, & Williamson, K.C. The effect of macroscopic and particulate visualizations on students' particulate explanations. Manuscript submitted.
- Chatterjee, S., Williamson, V.M., McCann, K., & Peck, L. (in press). Attitude and perception of students towards guided and open inquiry laboratories. *Journal of Chemical Education*.
- Williamson, V.M. & Jose, T.J. (2009). Using visualization techniques in chemistry teaching. In N.J. Pienta, M.M. Cooper, & T.J. Greenbowe, (Eds) *Chemists' Guide to Effective Teaching*, Volume 2. Upper Saddle Rive, N.J: Prentice Hall.
- Williamson, V.M. (2008). The particulate nature of matter: How theory-based research can impact the field. In D. Bunce, & R. Cole, (Eds) *Nuts and Bolts of Chemical Education Research*, Washington, DC: American Chemical Society.
- Williamson, V.M. & Jose, T.J. (2008). Effects of a two-year molecular visualization experience on teachers' attitudes, content knowledge, and spatial ability. *Journal of Chemical Education*, 85 (5), 718-723
- McKee, E., Williamson, V.M., & Ruebush, L.E. (2007). Effects of a demonstration laboratory on student learning. *Journal of Science Education and Technology*. 16, 395-400.
- Williamson, V.M., Brown, L.M., Peck, M.L., & Simpson, M. (2005). Facilitators and barriers to teacher implementation of molecular visualization. *The Texas Science Teacher*, 34(2), 12-16.
- José, T.J. & Williamson, V.M. (2005) Molecular visualization in science education: An evaluation of the NSF – funded workshop. *Journal of Chemical Education*, 82(6), 937-943.
- Velázquez-Marcano, A, Williamson, V.M., Ashkenazi, G, Tasker, R, Williamson, K.C. (2004). The use of video demonstrations and particulate animation in the general chemistry. *Journal of Science Education and Technology*, 13(3), 315-323.
- Williamson, V.M., Huffman, J., & Peck, M.L. (2004). Testing student's use of the particulate theory. *Journal of Chemical Education*, 81(6), 891-896.
- Williamson, V.M. & Rowe, M.W. (2002). Group problem solving versus lecture in college-level quantitative analysis: The good, the bad, and the ugly. *Journal of Chemical Education*, 79(9), 1131-1134.
- Williamson, V.M., & Abraham, M.R. (1995). The effects of computer animation on the particulate mental models of college chemistry students. *Journal of Research in Science Teaching*, 32(5), 521-534.

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Abraham, M. R., Williamson, V.M., & Westbrook, S.L. (1994). A cross-age study of the understanding of five chemistry concepts. *Journal of Research in Science Teaching*, 31(2), 147-165.

Abraham, M. R., & Williamson, V.M. (1992). Integrating the laboratory and lecture with computers. In W.J. McIntosh & M.W. Caprio (Eds.) *Successful Approaches to Teaching Introductory Science Courses*, (Monographs of the Society for College Science Teachers, Monograph 3), 21-28.

Williamson, V.M. (1992). The effects of computer animation emphasizing the particulate nature of matter on the understandings and misconceptions of college chemistry students. Unpublished doctoral dissertation, University of Oklahoma.

PUBLISHED TEXTBOOKS AND OTHER CURRICULUM MATERIALS

Williamson, V.M. (2009). *Instructor's Manual for Whitten, Davis, Peck, and Stanley's General Chemistry*, 9th ed., Belmont, CA: Brooks/Cole Publishing

Williamson, V.M. & Peck, M.L. (2009). *Experiences in Chemistry: Inquiry and Skill Building*, Belmont, CA: Brooks/Cole Publishing.

Williamson, V.M. & Peck, M.L. (2007). *Inquiry-Based Laboratories for Liberal Arts Chemistry*, Belmont, CA: Brooks/Cole Publishing.

Williamson, V.M. (2006). *Instructor's Manual for Whitten, Davis, Peck, and Stanley's General Chemistry*, 8th ed., Belmont, CA: Brooks/Cole Publishing

Williamson, V.M. (2004). *Instructor's Manual for Whitten, Davis, Peck, and Stanley's General Chemistry*, 7th ed., Belmont, CA: Brooks/Cole Publishing

Peck, M.L., & Williamson, V.M. (2002-2006). *Experiences in Chemistry: Inquiry and Skill Building-II* (1st-3rd Edition). Plymouth, MI: Hayden-McNeil Publishing, Inc.

Peck, M.L., & Williamson, V.M. (2001-2006). *Experiences in Chemistry: Inquiry and Skill Building-I* (1st-3rd Edition). Plymouth, MI: Hayden-McNeil Publishing, Inc.

Bauer, C.F; Cole, R.; Langdon, L.; Nakhleh, M; Nurrenbern, S.; Robinson, B; Smith, C.; Towns, M.; VandenPlas, J.; Williamson, V. (2006). *ACS First Term General Chemistry Paired Questions Examination*. Milwaukee, WI, ACS Division of Chemical Education Examinations Institute

Bauer, C.F, Birk, J; Bowen, C.; Bracken, J.D; Brooks, K; Foxman, B; Francisco, J; Frank, D.; Gammon, S.D.; Kimbrough, D; LaPorte, M; Lewis, E; March, J;

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Metz, P.; Nurrenbern, S.; Phelps, A.; Robinson, B; Russell, J.; Sawrey, B.; Williamson, V.; Wink, D. (2001). *2001 ACS Conceptual General Chemistry Examination*. Clemson, S.C., ACS Division of Chemical Education Examinations Institute

Williamson, V.M., & Kennicutt, W. (1999). *Holt Chemfile Interactive Tutor* [a chemistry CD for high school students] Austin, TX: Holt, Rinehart, and Winston.

Hovde, R, Shea, T., Shook, S. Williamson, V.M., et al. (1999). *Integrated Science, Mathematics, and Technology: Waste Management*. Peoria, IL: Glencoe Publishing. (Teacher Edition, Student Edition, and Student Journal)

Hovde, R, Shea, T., Shook, S. Williamson, V.M., et al. (1999). *Integrated Science, Mathematics, and Technology: Energy Transformations*. Peoria, IL: Glencoe Publishing. (Teacher Edition, Student Edition, and Student Journal)

Hovde, R, Shea, T., Shook, S. Williamson, V.M., et al. (1998). *Integrated Science, Mathematics, and Technology: Food Production*. Peoria, IL: Glencoe Publishing. (Teacher Edition, Student Edition, and Student Journal)

Hovde, R, Shea, T., Shook, S. Williamson, V.M., et al. (1998). *Integrated Science, Mathematics, and Technology: Wellness*. Peoria, IL: Glencoe Publishing. (Teacher Edition, Student Edition, and Student Journal)

NEWSLETTERS AND OTHER NONREFEREED PUBLICATIONS

Williamson, V.M., & Jose, T. (Fall 2006) Research in Chemical Education Symposium. ACS Division of Chemical Education (CHED) Newsletter, 50-51.

Williamson, V.M., & Mason, D. (Fall 2003) Research in Chemical Education Symposium. ACS Division of Chemical Education (CHED) Newsletter, 47-48.

FUNDED GRANTS

Shultz, M.J., Hegarty, M., Stieff, M, Deslongchamps, G., & Williamson, V.M., (2005-2006) Student View of Visualizations: What do They See? (Molecular Visualization and Science Education: Research) \$5,000 Beloit College/NSF flow-through. Funding to conduct a research study using eye-tracking technology to investigate what part of visuals that students use when problem solving.

Williamson, K.C., Williamson, V.M. & Bryant, J. (2003-2004) Energy, Equilibrium, Conservation, and Conversion in Materials Science. \$168,843. Information Technology in Science Center for Teaching and Learning; Texas A&M University/NSF flow-through. Three-week workshop for teachers/ community college instructors during each of two summers that focused on energy conservation, materials used, and molecular visualization, implementation of information technology into the classroom, and action research projects to access

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the effectiveness.

- Williamson, V.M. (2001-2003) Molecular Visualization and Science Education: Evaluation \$13,933 University of Northern Colorado/NSF flow-through.
- Williamson, V.M., Tasker, R., & Ashkenazi, G. (2001-2002) Visualization to Promote Conceptual Change (Molecular Visualization and Science Education: Research) \$5,000 University of Northern Colorado/NSF flow-through. Funding to conduct a research study concerning the effectiveness of animations and video demonstrations on students' conceptual change.
- Williamson, V.M., Lindhal, P. & Romo, D. (2000-2002) Structure & Properties of Matter and Chemical Reactions \$250,000 Information Technology in Science Center; Texas A&M University/NSF flow-through. Three-week workshop for teachers/ community college instructors during each of two summers that focused on molecular visualization, its implementation into the classroom, and action research projects to assess its effectiveness.
- Williamson, V.M., & Peck, M.L. (2000-2001) Molecular Visualization On-line Module, \$6,000 Regents' Initiative Fellowship Grant. Funding to create a website with links to molecular visualizations for general chemistry.
- Foster, E., Williamson, V.M., Self, N., et al. (2000-2001) Effective Teacher Preparation \$35,000 Regents' Initiative Collaborative Research Grant. Research into the changes in the reasoning abilities of elementary pre-service teachers who were in an inquiry program.
- Williamson, V.M., & Anderson, R.C. (1996-1997) Peer Assisted Project for Enhancing Elementary Science. \$61,980 Scientific Literacy Program of the Illinois State Board of Education. P.I. and fiscal agent for this four-week project which teamed teachers with graduate students for a half-day research component and teamed two teachers for a half-day science education component.
- Williamson, V.M., & Anderson, R.C. (1996) Peer Assisted Project for Enhancing Elementary Science. \$58,000 Eisenhower Professional Development Program. State of Illinois Board of Higher Education. P.I. and fiscal agent for this four-week project which teamed teachers with graduate students for a half-day research component and teamed two teachers for a half-day science education component.
- Williamson, V.M., & Anderson, R.C. (1994-1995). Peer Assisted Approach to Enhance Science Perception and Curriculum Development of Preservice and Inservice Elementary Teachers. \$64,330 Scientific Literacy Program of the Illinois State Board of Education. P.I. and fiscal agent for this four-week project which teamed teachers with graduate students for a half-day research component and teamed two teachers together for a half-day science education component.

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GRADUATE COMMITTEES- College of Science

- Co-Chair, Research Advisor for **Sean Carroll**, Chemical Education Masters Degree, Texas A & M University (2008-present).
- Co-Chair, Research Advisor for **Rebecca Rich**, Chemical Education Masters Degree, Texas A & M University (2008). "Attitudes toward Chemistry: The Characteristics of Chemophobia".
- Co-Chair, Research Advisor for **James Watkins**, Chemical Education Masters Degree, Texas A & M University (2008). "Changes in Students' Spatial Ability, Equilibrium Content Knowledge, and Attitudes Through the Use of Storyboards and Student-Constructed Animation in College General Chemistry".
- Member for **Ron Henriquez**, Chemistry Doctoral Degree, Texas A & M University (2007).
- Co-Chair, Research Advisor for **Travis Gilbreath**, Chemical Education Masters Degree, Texas A & M University (2007). "The Effect of Macroscopic and Particulate Visualizations on Students' Particulate Explanations".
- Co-Chair, Research Advisor for **Tara Sarvela**, Chemical Education Masters Degree, Texas A & M University (2007). "Feedback and Attitude Study of Online Web-Based Learning (OWL) in First Semester General Chemistry".
- Co-Chair, Research Advisor for **Sara Tate**, Chemical Education Masters Degree, Texas A & M University (2006). "Historical Analysis of Student Performance in Junior Level Chemistry Courses".
- Co-Chair, Research Advisor for **Suparna Chatterjee**, Chemical Education Masters Degree, Texas A & M University (2006). "Students' Perception and Attitudes towards Guided and Open Inquiry Laboratories".
- Co-Chair, Research Advisor for **Tracy Harrison Fulton**, Chemical Education Masters Degree, Texas A & M University (2006). "Investigating Students' Attitudes Toward Organic Chemistry."
- Member for **Leticia Espinosa**, Chemistry Doctoral Degree, Texas A & M University (2006).
- Co-Chair, Research Advisor for **Mary Simpson**, Chemical Education Masters Degree, Texas A & M University (2005). "Changes in Explanations of the Nature of Matter using Videos and Animations."
- Co-chair, Research Advisor for **Sean McMaughan**, Chemical Education Masters Degree, Texas A & M University (2004). "Knowledge of Historical Background Compared to Understanding of the Structure of the Atom."
- Co-chair, Research Advisor for, **Brittany Beckstead** Chemical Education Masters Degree, Texas A & M University (2004), "Student Attitudes towards Learning Conceptual Quantitative Analysis."
- Co-chair, Research Advisor for **Brooke Rowan**, Chemical Education Masters Degree, Texas A & M University (2004), "Electronic Homework in the Undergraduate Chemistry Classroom."
- Co-chair, Research Advisor for **Lorraine Lindsay**, Chemical Education Masters Degree, Texas A & M University (2004). "Teaching Assistant Attitudes and Concerns Relevant to a Laboratory Innovation Implementation."

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- Co-chair, Research Advisor for **Gina Mealey**, Chemical Education Masters Degree, Texas A & M University (2003). "Evaluation of Teaching Assistant Training."
- Co-chair, Research Advisor for **Erik McKee**, Chemical Education Masters Degree, Texas A & M University (2003). "Effects of a Demonstration Laboratory on Student Learning."
- Co-chair, Research Advisor for **Lisa Brown**, Chemical Education Masters Degree, Texas A & M University (2003). "Facilitators And Barriers To Teacher Implementation Of Molecular Visualization."
- Co-chair, Research Advisor for **Crista Force**, Chemical Education Masters Degree, Texas A & M University (2002). "Effects of Science Laboratory on Students' Attitudes in Science."
- Co-chair, Research Advisor for **Alexandria Velaquez**, Chemical Education Masters Degree, Texas A & M University (2002). "The Use of Video Demonstrations and Particulate Animation Assessments in the Chemistry Classroom".
- Co-chair, Research Advisor for **Julie Pasos**, Chemical Education Masters Degree, Texas A & M University (2001-2002). "Comparison of Achievement in the Use of Static, Dynamic & Interactive Visualization Tools"
- Co-chair, Research Advisor for **Thomas Jose**, Chemical Education Masters Degree, Texas A & M University (2002), "The Attitudes and Behaviors of Participants of an Interdisciplinary Workshop on Molecular Visualization."
- Co-chair, Research Advisor for **Denise Brode**, Chemical Education Masters Degree, Texas A & M University (2002). "Images of Scientists: Affects of Caregivers."
- Co-chair, Research Advisor for **Mary Ellen Passarelli**, Chemical Education Masters Degree, Texas A & M University (2001). "Retention of Chemistry Majors at Texas A&M University."
- Member for **Bonnie Louradis**, Chemical Education Masters Degree, Texas A & M University (2001). "UV Analysis of Sunscreens: An Introductory Organic Laboratory Experiment Incorporating a Real World Sample."
- Member for **Sam Cozzens**, Chemical Education Masters Degree, Texas A & M University (2001). "Development and Implementation of a Supramolecular Experiment for Chemistry 433 - Advanced Inorganic Laboratory."
- Co-chair, Research Advisor for **Jason Huffman**, Chemical Education Masters Degree, Texas A & M University (2001). "Testing Students' Use of the Particulate Theory."
- Co-chair, Research Supervisor for **Erich Santos**, Chemical Education Masters Degree, Texas A & M University (1999). "Enjoyment of Group Work vs. Lecture in Laboratory Recitation."
- Co-chair, Research Advisor for **Deborah Walker**, Chemical Education Masters Degree, Texas A & M University (1999). "Web-Based Introductory Chemical Module: A Field Study."

GRADUATE COMMITTEES (College of Education)

- Member for **Cathy Martinez**, Masters Degree, Department of Teaching Learning & Culture. Texas A & M University (2004- present).
- Member for **Shelley Alexander**, Ph.D. Degree, Department of Teaching Learning & Culture. Texas A & M University (2002- present).

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- Member for **Judy Hudek**, Masters Degree, Department of Teaching Learning & Culture. Texas A & M University (2007- 2009).
- Member for **Deena Harper**, Ph.D. Degree, Department of Teaching Learning & Culture, Texas A & M University (2002-2008).
- Member for **Pamela Rogers**, Ph.D. Degree, Department of Teaching Learning & Culture. Texas A & M University (2002- 2006).
- Member for **Joowon Huh**, Masters Degree, Department of Educational Technology, Texas A & M University (2003-2004).
- Member for **Jisook Kim**, Masters Degree, Department of Teaching Learning & Culture, Texas A & M University (2003-2004).
- Member for **Laura Aaron**, Masters Degree, Department of Teaching Learning & Culture, Texas A & M University (2003-2004).
- Member for **Dane Bozman**, Masters Degree, Department of Teaching Learning & Culture, Texas A & M University (2003-2004).
- Member for **Melinda Ledwig**, Masters Degree, Department of Teaching Learning & Culture, Texas A & M University (2003-2004).
- Member for **Evelyn Restivo**, Masters Degree, Department of Teaching Learning & Culture, Texas A & M University (2000-2001).

HONORS AND AWARDS

- College Board Advanced Placement® Best Practices Course**, 2006 My course identified as an example of best practices in a national study of 166 courses conducted by the Center of Educational Policy Research on behalf of the College Board.
- Distinguished Achievement College-Level Award in Teaching**, College of Science. The Association of Former Students, Texas A&M University, 2003.
- Fish Camp Namesake**, Freshman Orientation Camp, Texas A&M University, 2001.
- Member**, Texas A & M Regents' Initiative, Academy for Educator Development, (2000 induction).
- Outstanding Dissertation Award**, University of Oklahoma, 1992-93.
- Finalist for the Dissertation Award**, the National Association for Research in Science Teaching; one of three finalists nationwide, 1991-1992.
- Graduate Teaching Assistant Excellence Award**, Department of Chemistry and Biochemistry, University of Oklahoma, Norman, Oklahoma, 1992.
- Outstanding Presenter** in Social Sciences & Education, Graduate Student Recognition Day, University of Oklahoma, 1990. Poster presented research on students' conceptions of selected chemistry topics.

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Teacher of the Year, Washington High School, Washington, Oklahoma, 1978.

Cum Laude graduate; Central State University; Edmond, Oklahoma, 1974.

Physics Beginning Achievement Award; Central State University; Edmond, Oklahoma, 1974.

INVITED TALKS, SEMINARS, AND WORKSHOPS

Learning OWL Workshop, University of Massachusetts, Amherst, MA, November 14-15, 2008. Co-Presenter

Visualization Techniques for Teaching Chemistry: Relying on Old and New Technologies; Keynote Address at the 178th Conference of the Two-Year College Chemistry Consortium, Paramus, NJ September 28, 2007

Particulate Mental Models: The Quest for Student Understanding. Seminar speaker, Department of Chemistry, Purdue University, West Lafayette, IN, November 15, 2006.

A Retrospective on 2001 and 2003 Mini-grants: What the Data Indicates About Success. Invited Speaker. NSF Workshop: Future Directions for Visualizations in Science and Education, NSF Headquarters, September 26, 2006.

OWL Electronic Homework Workshop, University of North Texas, Denton, TX, March 3-4, 2006.

The Quest to Improve Student Understanding: Current Research Findings. Seminar speaker, Department of Chemistry, University of Michigan, Ann Arbor, MI, February 17, 2005.

How to Ace Freshman Chemistry. Seminar Speaker, Genetics and Biochemistry Enrichment Experience, Texas A&M University, September 2003.

Using the OWL electronic homework system. Seminar speaker, Chemistry Division, Blinn College, May 2003.

Using the OWL electronic homework system. Seminar speaker, Department of Chemistry, Prairie View University, February 2003.

The Quest to Improve Student Understanding: Research findings on visualizations, Verbalizations, and Group Problem Solving. Seminar speaker, Department of Chemistry, University of South Florida, Tampa, FL, October 24, 2002.

The Quest to Improve Student Understanding: Research findings on visualizations, Verbalizations, and Group Problem Solving. Seminar speaker, Department of

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Chemistry, University of North Texas, Denton, TX, October 4, 2002.

What is an Academic Leader? Keynote speaker at the General O.R. Simpson Corps Honor Society Induction Banquet, December 5, 2001.

Science in a Scientific Classroom. Presenter of this full-day workshop for the science teachers of Normal Public Schools held February 15, 1997.

The Learning Cycle as an Instructional Strategy for Science. Co-presenter of this workshop for the science teachers of Decatur Public Schools (held February 1996), Manito Public Schools (June 3, 1996), and Momence Public Schools (June 4, 1996).

Hands-on, Learning Cycles, Constructivism, and Science Workshop. Director and presenter of this four-week, one-half day workshop from the Peer Assisted Approach to Enhance Science Perception and Curriculum Development of Preservice and Inservice Elementary Teachers' grant. June-July 1995.

The Learning Cycle as an Instructional Strategy for Science. Presenter of this workshop to the elementary teachers at Blooming Grove Academy. August 1994.

Polymer Power Workshop. Presenter of session examining the properties of polymers. Expanding Your Horizons Through Science and Mathematics Conference for girls in grades 6-10. Illinois State University. April 1994, March 1995, & March 1996.

PRESENTATIONS

Williamson, V.M. & Mawk, E.J. (2008, July). Creation and use of screencasts for large lecture exam reviews using Macintosh computers: Part 1 & 2. Paper presented at the 20th Biennial Conference on Chemical Education. Bloomington, IN.

Williamson, V.M. (2008, July). Teaching general chemistry for student understanding: Research findings and teaching techniques. Paper presented at the 20th Biennial Conference on Chemical Education. Bloomington, IN.

Williamson, V.M. (2008, May). Assessment of 2005 and 07 pre-conference workshops: Suggestions for change & Assessment of 2001/03/05 mini-grant awards: Suggestions for change. Papers presented at the National Science Foundation during the Future Directions for Visualizations in Science and Education Workshop. Arlington, VA.

Williamson, V.M. (2008, March). The particulate nature of matter: The quest for student understanding. Paper presented at the Symposium in honor of Dorothy L. Gable at the 235th National Meeting of the American Chemical Society. New Orleans, LA

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Mawk, E.J. & Williamson, V.M. (2008, Feb). The Creation & Use of Screencasting For Macs. Paper presented at the Teaching With Technology Conference, Texas A&M University, College Station, TX.

Sarvela, T., Williamson, V.M. & MacFarlane, R. (2007, August). Feedback and attitude study of online web-based learning (OWL) in first semester general chemistry. Paper presented at the 234th National Meeting of the American Chemical Society. Boston, MA.

Gilbreath, T., Williamson, V.M. & MacFarlane, R. (2007, August). The effect of macroscopic and particulate visualizations on student reasoning. Paper presented at the 234th National Meeting of the American Chemical Society. Boston, MA.

Gilbreath, T., Williamson, V.M. & MacFarlane, R. (2007, July). The effect of macroscopic and particulate visualizations on student reasoning. Poster presented at the 2007 Gordon Research Conference on Visualization and Science Education & Gordon Research Conference on Chemical Education Research and Practice. USA.

Sarvela, T., Williamson, V.M. & MacFarlane, R. (2007, March). Feedback and attitude study of online web-based learning (OWL) in first semester general chemistry. Poster presented at the 233rd National Meeting of the American Chemical Society. Chicago, IL.

Williamson, V.M. (2006, Oct.). Teaching general chemistry for student understanding. Paper presented at the Southwest Regional Meeting of the American Chemical Society. Houston, TX.

Jose, T. & Williamson, V.M. (2006, Oct.). Using visualization techniques in chemistry teaching. Paper presented at the Southwest Regional Meeting of the American Chemical Society. Houston, TX.

Williamson, V.M. (2006, September). A retrospective on 2001, 2003, and 2005: What the data indicates about success. Paper presented at the National Science Foundation during the Future Directions for Visualizations in Science and Education Workshop. Arlington, VA.

Williamson, V.M. (2006, September). Visualization to Promote Conceptual Change. Poster presented at the National Science Foundation during the Future Directions for Visualizations in Science and Education Workshop. Arlington, VA.

Williamson, V.M. & Tate, S. (2006, September). Historical analysis of student performance in junior level chemistry courses. Paper presented at the 232nd National Meeting of the American Chemical Society. San Francisco, CA.

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- Jose, T. & Williamson, V.M. (2006, July). Using visualization techniques to promote mental models in chemistry classrooms. Paper presented at the 19th Biennial Conference on Chemical Education. West Lafayette, IA.
- Williamson, V.M., Chatterjee, S., & Peck, M.L. (2006, July). Students' perceptions and attitudes towards guided and open inquiry laboratories. Paper presented at the 19th Biennial Conference on Chemical Education. West Lafayette, IA.
- Williamson, V.M., & Shank, P. (2006, March) "That's what happens": Exposing students' mental models of chemistry through drawing and animation. Paper presented at the 231st National Meeting of the American Chemical Society. Atlanta, GA.
- Williamson, V.M., Simpson, M.J., Ashkenazi, G, Tasker, R. & Williamson, K. (2006, March) Does the order of video demonstrations and animations affect students' particulate explanations? Paper presented at the 231st National Meeting of the American Chemical Society. Atlanta, GA.
- Chatterjee, S., Williamson, V.M., & Peck, M.L. (2006, March). Students' perceptions and attitudes towards guided and open inquiry laboratories. Paper presented at the 231st National Meeting of the American Chemical Society. Atlanta, GA.
- Chatterjee, S., Williamson, V.M., & Peck, M.L. (2006, March) Teaching chemistry using role-playing techniques. Paper presented at the 231st National Meeting of the American Chemical Society. Atlanta, GA.
- Williamson, V.M., Velazquez, A, Simpson, M.J., Tasker, R, Ashkenazi, G, Williamson, K. (2005, July). The use of video demonstrations and particulate animations in the chemistry classroom. Poster presented at the 2005 Gordon Research Conference on visualization and science education. Oxford, UK.
- Williamson, V.M., Simpson, M.J., Tasker, R, Ashkenazi, G, Williamson, K. (2005, July). Video demonstrations and particulate animations: Predications and reasoning. Poster presented at the 2005 Gordon Research Conference on chemical education research and practice. Connecticut College, CN.
- Williamson, V.M. (2005, April). Developing inquiry laboratories. Paper presented at the 53rd National Conference of the National Science Teacher Association. Dallas, TX.
- Williamson, V.M., Brown, L (2005, April). Facilitators and Barriers to Teacher Implementation of Molecular Visualization. Paper presented at the 53rd National Conference of the National Science Teacher Association. Dallas, TX.
- Williamson, V.M., Brown, L. (2005, March). Effects of college chemistry course on freshman student's drawings of chemists". Paper presented at the 229th National

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Meeting of the American Chemical Society. San Diego, CA.

- Williamson, V.M., Beckstead, B., Brown, L., Jose, T., & Simpson, M. (2004, November). Molecular visualization in the chemistry classroom. Workshop presented at the Conference for the Advancement of Science Teaching for the Science Teachers Association of Texas. Corpus Christi, TX.
- Williamson, V.M. & Rowan, B. (2004, Oct.). Electronic homework in the undergraduate chemistry classroom. Paper presented at the Southwest Regional Meeting of the American Chemical Society. Dallas, TX.
- Williamson, V.M. (2004, Oct.). The use of video and molecular animations to induce conceptual change. Paper presented at the Southwest Regional Meeting of the American Chemical Society. Dallas, TX.
- Lindsay, L. & Williamson, V.M. (2004, Oct.). Teaching assistant attitudes and concerns relevant to a laboratory innovation implementation. Paper presented at the Southwest Regional Meeting of the American Chemical Society. Dallas, TX.
- Williamson, V.M., Jose, T., & Simpson, M (2004, Oct.). Creating the collective. Paper presented at the Southwest Regional Meeting of the American Chemical Society. Dallas, TX.
- Williamson, V.M., Lindsey, L., & Mealey, G. (2004, August). TA training for inquiry-based laboratories. Paper presented at the 228th National Meeting of the American Chemical Society. Philadelphia, PA.
- Williamson, V.M., & Mealey, G. (2004, July). Evaluation of teaching assistant training for an inquiry-based general chemistry laboratory. Paper presented at the 18th Biennial Conference on Chemical Education. Ames, IA.
- Lindsey, L. & Williamson, V.M. (2004, July). Teaching assistant attitudes and concerns relevant to a laboratory innovation implementation. Paper presented at the 18th Biennial Conference on Chemical Education. Ames, IA.
- Jose, T., Restivo, E. & Williamson, V.M. (2004, July). Measurement of student attitude and understanding in the chemistry classroom: Investigation of the solubility of ionic compounds using molecular visualization. Paper presented at the 18th Biennial Conference on Chemical Education. Ames, IA.
- Jose, T. & Williamson, V.M. (2004, July). The effects of an intensive course on molecular visualization on teachers' content knowledge, spatial ability, and attitude. Paper presented at the 18th Biennial Conference on Chemical Education. Ames, IA.
- Williamson, V.M. (2004, March). Effects of molecular visualization training on

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teachers' attitudes, content knowledge, and spatial ability. Paper presented at the 227th National Meeting of the American Chemical Society. Anaheim, CA.

Williamson, V.M., Ashkenazi, G. & Tasker, R. (2003, July). Visualization to promote conceptual change. Paper presented at the 2003 Gordon Research Conference on visualization in science and education. Oxford, UK.

Williamson, V.M., McKee, E., & Peck, L. (2003, March). Use of a demonstration laboratory in teaching chemistry. Paper presented at the 225th National Meeting of the American Chemical Society. New Orleans, LA.

Williamson, V.M., Brown, L., & Peck, L. (2003, March). Facilitators and barriers to teacher implementation of molecular visualizations. Paper presented at the 225th National Meeting of the American Chemical Society. New Orleans, LA.

Williamson, V.M. (2003, March). Inquiry-based laboratory manuals. Paper presented at the 225th National Meeting of the American Chemical Society. New Orleans, LA.

Jose, T.J., Restivo, E., & Williamson, V.M. (2003, March). Measurement of student attitude and understanding in the chemistry classroom: Investigation of the solubility of ionic compounds using molecular visualization. Paper presented at the 225th National Meeting of the American Chemical Society. New Orleans, LA.

Pasos, J., Williamson, V.M, Peck, L, & Williamson, K.C. (2003, March). Comparison of achievement in the use of static, dynamic, and interactive visualization tools. Paper presented at the 225th National Meeting of the American Chemical Society. New Orleans, LA.

Williamson, V.M. & Jose, T. (2003, Feb.) Using the OWL electronic homework system. A paper at the 57th Annual Convention of the Texas Community College Teachers Association.

Williamson, V.M. (2002, July). Moving towards inquiry laboratories. Paper at the 17th Biennial Conference on Chemical Education. Bellingham, WA.

Williamson, V.M. & Williamson, K.C. (2002, July). Effects of explicitness on mental model building. Paper at the 17th Biennial Conference on Chemical Education. Bellingham, WA.

Williamson, V.M. (2002, July). The effects of a molecular visualization workshop for high school teachers. Paper presented at the 17th Biennial Conference on Chemical Education. Bellingham, WA.

Williamson, V.M., Pasos, J., Lindsay, L., Jose, T., Brown, L., & Brode, D. (2002, July).

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Paper set: Molecular Visualization Five papers presented at the 17th Biennial Conference on Chemical Education. Bellingham, WA.

- Brown, L., Williamson, V.M., & Peck, M.L. (2002, July). Facilitators and barriers to teacher implementation of molecular visualization. Paper presented at the 17th Biennial Conference on Chemical Education. Bellingham, WA.
- Pasos, J., & Williamson, V.M. (2002, July). Comparison of achievement in interactive vs dynamics vs static learning approaches. Paper presented at the 17th Biennial Conference on Chemical Education. Bellingham, WA.
- Jose, T.J., & Williamson, V.M. (2002, July). Changes in attitude and behavior of participants at a workshop on molecular visualization. Paper presented at the 17th Biennial Conference on Chemical Education. Bellingham, WA.
- Brode, D.L. & Williamson, V.M. (2002, July). Images of scientists. Paper presented at the 17th Biennial Conference on Chemical Education. Bellingham, WA.
- Walker, D.R., Williamson, V.M., & Yenello, S. (2000, April). Web-based Introductory Chemistry Module: A Field-Test. Referred paper presented at the 73rd Annual Conference of the National Association for Research in Science Teaching. New Orleans, LA.
- Williamson, V.M. (2002, April). The effects of a molecular visualization workshop for high school teachers. Paper presented at the 223rd National Meeting of the American Chemical Society. Orlando, FL.
- Huffman, J., & Williamson, V.M. (2002, April). Testing students' use of particulate terms. Paper presented at the 223rd National Meeting of the American Chemical Society. Orlando, FL.
- Jose, T.J., & Williamson, V.M. (2002, April). Changes in attitude and behavior of participants at a workshop on molecular visualization. Paper presented at the 223rd National Meeting of the American Chemical Society. Orlando, FL.
- Jose, T.J., Williamson, V.M., & Peck, M.L. (2002, April). Use of molecular visualization in the classroom: a review of the literature. Paper presented at the 223rd National Meeting of the American Chemical Society. Orlando, FL.
- Lindsay, L.L., Williamson, V.M., & Peck, M.L. (2002, April). Evolution of chemistry curriculum. Paper presented at the 223rd National Meeting of the American Chemical Society. Orlando, FL.
- Brode, D.L. & Williamson, V.M. (2002, April). Drawing scientists: A literature survey. Paper presented at the 223rd National Meeting of the American Chemical Society. Orlando, FL.

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- Williamson, V.M., Peck, M.L., & Jose, T.J. (2002, January). Molecular visualization on-line module. Poster presented at the Regents' Initiative for Excellence in Education Texas A&M University Collaborative Research Conference, College Station, TX.
- Williamson, V.M. (2001, Oct.). Chemical education courses from Texas A & M University. Paper presented at the Southwest Regional Meeting of the American Chemical Society. San Antonio, TX.
- Williamson, V.M. & Pasos, J, Lindsay, L, Jose, T, & Brode, D. (2001, Oct.). Paper set: Molecular Visualization; Four papers presented at the Southwest Regional Meeting of the American Chemical Society. San Antonio, TX.
- Williamson, V.M. (2001, August). New pedagogies for teaching large lecture classes at Texas A&M University. Paper presented at the 222nd National Meeting of the American Chemical Society. Chicago, IL.
- Jose, T.J. & Williamson, V.M. (2001, August). Evaluation of the NSF workshop on molecular Visualization in Science Education. Poster presented at the 222nd National Meeting of the American Chemical Society. Chicago, IL.
- Williamson, V.M. & Jose, T.J. (2001, August). Evaluation of the NSF workshop on molecular Visualization in Science Education. Poster presented at the 2001 Gordon Research Conference on science education and visualization. Mount Holyoke College, South Hadley, MA.
- Mason, D., Williamson, V.M., & Walker, D.R. (2001, March). Master-level programs in chemical education. Paper presented at the 221st National Meeting of the American Chemical Society. San Diego, CA.
- Williamson, V.M. (2001, March). Changes in freshman chemistry: A move towards inquiry-based laboratories. American Association of Colleges for Teacher Education 53rd Annual Meeting. Dallas, TX.
- Williamson, V.M. (2000, August). Group problem solving vs. lecture in college-level quantitative analysis. 16th Biennial Conference on Chemical Education. Ann Arbor, MI.
- Williamson, V.M. (2000, April). Group problem solving vs. lecture in college level quantitative analysis. Interactive poster session presented at the 73rd Annual Conference of the National Association for Research in Science Teaching. New Orleans, LA.
- Walker, D.R., Williamson, V.M., & Yenello, S. (1999, August). Web-based introductory chemistry module: A Field-Test. Paper presented at the 218th National Meeting

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of the American Chemical Society. New Orleans, LA.

- Williamson, V.M., & Cracolice, M.S. (1998, August). Computer animation, mental modeling, and algorithmic - conceptual equilibrium problem solving of college chemistry students. Paper presented at the 15th Biennial Conference on Chemical Education. Waterloo, ON, CA.
- Williamson, V.M. (1998, April). Year three of a science research/education experience for teachers. Referred paper presented at the 71st Annual Conference of the National Association for Research in Science Teaching. San Diego, CA.
- Williamson, V.M. (1997, April). The effect of a research/education experience on teachers' attitudes towards science and process skills. Referred paper presented at the 70th Annual Conference of the National Association for Research in Science Teaching. Oakbrook, IL.
- Williamson, V.M. (1996, November). Teaching chemistry conceptually. Paper presented at the 96th Annual Convention of the School Science and Mathematics Association. Little Rock, AR.
- Williamson, V.M., & et al. (all teacher participants from Eisenhower grant) (1996, October). Natural science learning cycles for grades 2-3; 4-5; and 6-8. Three presentations at the Annual Meeting of the Illinois Science Teachers Association. Chicago, IL.
- Williamson, V.M. (1996, October). Teaching chemistry conceptually. Paper presented at the Annual Convention of the Illinois Science Teachers Association. Chicago, IL.
- Williamson, V.M., & Jones, M.A. (1996, August). Peer assisted project for enhancing elementary science. Paper presented at the 14th Biennial Conference on Chemical Education. Clemson, SC.
- Williamson, V.M., & Jones, M.A. (1996, August). Peer assisted project for enhancing elementary science. Paper presented at the 4th Biennial Conference on Chemical Education. Clemson, SC.
- Williamson, V.M., & Abraham, M.A. (1996, August). Computer animation and the understanding and misconceptions of college chemistry Students. Paper presented at the 14th Biennial Conference on Chemical Education. Clemson, SC.
- Williamson, V.M., & Cracolice, M.S. (1996, May). Mental modeling, computer animation, and problem solving with general chemistry students. Paper presented at the 29th Annual Great Lakes Regional Meeting of the American Chemical Society. Normal, IL.

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- Williamson, V.M., & Jones, M.A. (1996, May). Peer assisted project for enhancing elementary science. Paper presented at the 29th Annual Great Lakes Regional Meeting of the American Chemical Society. Normal, IL.
- Williamson, V.M., & Cracolice, M.S. (1996, April). Computer animation, mental modeling, and algorithmic and conceptual equilibrium problem solving of college chemistry students. Referred paper presented at the 69th Annual Conference of the National Association for Research in Science Teaching. St. Louis, MO.
- Williamson, V.M., Cracolice, M.S., Poelker, B., Rogers, L.N., Westbrook, S.L. (1996, March) Learning Cycles, Hands-on, and the National Standards: Are there differences? A panel presentation at the 1996 National Convention of the National Science Teachers Association at St. Louis, MO.
- Williamson, V.M., & et al. (all teacher participants from scientific literacy grant) (1995, September). Natural science learning cycles for grades 2-3; 4-5; and 6-8. Three presentations at the Annual Meeting of the Illinois Science Teachers Association. Springfield, IL.
- Williamson, V.M. (1995, September). The learning cycle, integration, and the national standards. Paper presentation at the Annual Meeting of the Illinois Science Teachers Association. Springfield, IL.
- Williamson, V.M., & Cracolice, M.S. (1995, August). The effects of computer animation on the algorithmic and conceptual equilibrium problem solving of college chemistry students. Paper presented at the 210th National Meeting of the American Chemical Society. Chicago, IL.
- Williamson, V.M., & Williamson, K.C. (1995, April). The effects of verbal explicitness on college chemistry students' mental model building. Paper presented at the 68th Annual Conference of the National Association for Research in Science Teaching. San Francisco, CA.
- Fisher, R.L., Williamson, V.M., Penick, J.E., Westbrook, S.L., & Wright, E.L. (1995, April). Integrated learning: Can it, should it, be done. Symposium presented at the 68th Annual Conference of the National Association for Research in Science Teaching. San Francisco, CA.

NATIONAL/REGIONAL SERVICE

Editorial:

Feature Editor for the Chemical Education Research section of the *Journal of Chemical Education*, 2002 to present

Associate Editor, *School Science and Mathematics Journal*, 2006 to present

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Reviewer for the *Journal of Chemical Education*, 1998 to present

Editorial Board Member, *Journal for Science Education and Technology*, 2004 to present

Conference:

Exhibits Chair, Biennial Conference on Chemical Education, summer 2010, to be held at the University of North Texas, 2006 to present.

Exhibits Chair, Chemed 07 held Summer 2007 at the University of North Texas (Chemed is an international meeting held on the odd years for high school and college instructors of chemistry.)

Panels and committees:

ACS Chemical Education Research Committee: Elected for a second three-year term, January 2009 to December 2011. This committee promotes chemical education research, including the distribution of guidelines for good research practice, the delivery of workshops on chemical education research, etc.

Director, Region V, Associated Chemistry Teachers of Texas: 2006 to present. This committee advises the state chemistry teachers' organization.

ACS 2008 General Chemistry Conceptual Exam Chairperson: 2006 to 2008. This committee will author a standardized examination that contains conceptual questions.

Awards Committee Member, School Science and Mathematics Association: 2005 to 2008.

ACS General Chemistry Blended Exam Committee: 2004 to 2006. This committee authored a standardized examination that contains both algorithmic and conceptual questions for first and second semester general chemistry.

NSF Review Panelist for the CCLI proposals, Summer 2005, 2006

NSF Review Panelist for the SVIR/STTR proposals, Fall 2003

ACS Chemical Education Research Committee: Elected for a second three-year term, January 2000 to December 2005. This committee promotes chemical education research, including the distribution of guidelines for good research practice, the delivery of workshops on chemical education research, etc.

ACS General Chemistry Conceptual Exam Committee: March 1999 to 2001. This committee authors a standardized examination offered by the ACS Division of Chemical Education Examinations Institute. The 2001 American Chemical Society examination in general conceptual chemistry will be available for use

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worldwide and will include author's names and institutions.

Symposia:

Symposium Organizer: Williamson, V.M.& Mason, D. (2006, September). Research in Chemical Education. 2.5-day symposia organized at the 232nd National Meeting of the American Chemical Society. San Francisco, CA.

Symposium Organizer: Williamson, V.M.& Jose, T. (2006, March) Using Particulate Visualization in General Chemistry Classes. Half-day symposium organized at the 231st National Meeting of the American Chemical Society. Atlanta, GA.

Symposium Organizer: Williamson, V.M.& Mason, D. (2003, March). Research in Chemical Education. 2.5-day symposium organized at the 225th National Meeting of the American Chemical Society. New Orleans, LA.

Symposium Organizer: Williamson, V.M. (2002, July). Using Molecular Visualization in General Chemistry Classes. Symposia organized at the 17th Biennial Conference on Chemical Education. Bellingham, WA.

Symposium Organizer: (2001, Oct.). Williamson, V.M. Graduate Education for Chemistry Teachers Symposia organized at the Southwest Regional Meeting of the American Chemical Society. San Antonio, TX.

Symposium Organizer: Williamson, V.M. (2000, August). Validating Distance Education Instruction With Research. Symposia organized at the 16th Biennial Conference on Chemical Education. Ann Arbor, MI.

UNIVERSITY AND COMMUNITY SERVICE

Member, Texas A & M Regents' Initiative, Academy for Educator Development, 2000- present.

Member, Texas A & M Dean of Faculties Search Committee, 2009.

Organizer: Departmental New Graduate Student training, which included: TAMU Chemistry course organization, questioning/tutoring techniques, students with disabilities, classroom management, safety, eye protection, inquiry techniques, etc. Sessions were delivered by a number of faculty members. 1998-2006.

Committee Member, Chemical Education Committee, Department of Chemistry, Texas A & M University, 1997-2004.

Organizer/Director: Departmental Chemistry 101-102 TA lab training for inquiry-based laboratories partial implementation Fall 1999-Spring 2001 and full implementation Fall 2001-Spring 2006.

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Volunteer, TAMU Chemistry Open House, October 2005.

Troop Committee Member, Boy Scouts of America. 1987- 2004.

Academic Faculty Advisor: Squadron 16, Corps of Cadets, August 2001 to August 2003.

Committee Member, Committee on Education, College of Science, Texas A & M University, 1997-2003.

Committee Chair: Chemical Education Interest Group, Department of Chemistry, Texas A & M University, 1999-2001.

Faculty Advisor: Aggie School Volunteers, organized Feb 1999 to September 2001. This service organization works in conjunction with area elementary schools to provide tutors to work individually with elementary students.

Committee Member, Science NCATE Team, College of Science, Texas A & M University, 2000-2001.

Session Organizer, Expanding Your Horizons, 1994-2000.

Field Trip Organizer: Conference for the Advancement of Science Teaching, the annual conference for the Science Teachers' Association of Texas, October 2000.

Organizer/Recruiter: Texas A & M University Chemistry Department's Annual High School Chemistry Teacher Appreciation Day. Saturday workshop to acquaint teachers with the department and its outreach program. Included sessions, make-&-take workshops, Internet training and lunch. 1998-2000.

CURRICULUM DEVELOPMENT PROJECTS

Inquiry Lab Manual for college general chemistry, Author

Chemfile Interactive Tutor, HOLT CD for high school chemistry, Script Author

Integrated Mathematics, Science, and Technology (IMaST) for 7th and 8th grades

Hands-On Physical Science Laboratories For Upper Elementary School

Computer Animations Depicting The Particulate Nature Of Matter For Beginning Chemistry Courses

College Chemistry For Non-Majors Laboratory Manual

COURSE DEVELOPMENT PROJECTS

CHEM 698: Inquiry & Chemistry Concepts --This graduate level course is for inservice teachers or for graduate students whose committees approve. The course investigates the essential concepts in chemistry at the precollege level and the

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methods and techniques of inquiry teaching as called for by state and national standards. Parallels between inquiry teaching and scientific inquiry are drawn. The course is a combination of two on-campus visits and Web-based activities. Chem 698 is scheduled each Fall.

CHEM 696: Modern Applications in Chemistry --This graduate level course is for inservice teachers or for graduate students whose committees approve. The course focuses on modern topics in chemistry and their application in the precollege classroom in a manner compatible with good scientific inquiry. The course has variable content and credit hours. Previous topics have centered on molecular visualization as applied to the high school or general chemistry classroom, on material science, and on industrial chemistry, its importance to society, the role of radioactivity, kinetics and catalysis, organic synthesis (production of drugs and polymers), and patents. A field trip to a chemical manufacturing plant highlighted these areas of study. Another version of the course focused on molecular visualization and its infusion into the classroom. The course involves four Saturday on-campus visits (one per month) and Web-based activities or a short, intensive session during the summer with Web-based activities before and after the summer session.

PROFESSIONAL MEMBERSHIPS

American Chemical Society (ACS) Chemical Education Division Member

National Association For Research in Science Teaching (NARST)

National Science Teacher Association (NSTA)

School Science and Mathematics Association (SSMA)

Phi Delta Kappa (education)

Pi Mu Epsilon (honorary mathematics)

Alpha Chi (general scholarship)

COURSES TAUGHT

Undergraduate:

- Chemistry and Society Lecture (i.e., consumer chemistry),
- Introduction to Chemistry for Nursing Majors Laboratory,
- Fundamentals of Chemistry Lecture/Laboratory (one semester survey),
- First Semester General Chemistry Laboratory (for science & engineering majors),
- Second Semester General Chemistry Lecture (for science & engineering majors),
- Second Semester General Chemistry Laboratory (for science & engineering majors).
- First Semester General Chemistry Lecture/Laboratory (for science/related majors),
- Second Semester General Chemistry Lecture/Laboratory (for science/related majors),
- Secondary Science Methods

Graduate:

- Directed Studies

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- Chemical Education Seminar
- Professional Internship Project
- Modern Applications of Chemistry-Materials Science
- Modern Applications of Chemistry-Industrial Chemistry
- Modern Applications of Chemistry-Molecular Visualization
- Inquiry & Chemistry Concepts
- Issues in Chemical Education
- Secondary Science Methods

REFERENCES

Dr. Michael R. Abraham
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Department of Chemistry and Biochemistry
620 Parrington Oval
University of Oklahoma
Norman, Oklahoma 73019
(405) 325-4981
Dr. Abraham was my dissertation advisor and
graduate mentor.

Dr. Loretta Jones
Professor
Department of Chemistry and
Biochemistry
University of Northern Colorado
Greeley, CO 80639
(970) 351-1443

Dr. M. Larry Peck
Professor Emeritus
3017 Cypress St
Lewiston, ID 83501-4753
(208) 798-3023
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Dr. Diana Mason
Associate Professor
Department of Chemistry
University of North Texas
P.O. Box 305070
Denton, TX 76203-5070
(940) 565-2491

Other References can be provided.