

GABRIELA CORNEJO WEAVER

Curriculum Vita

January, 2007

EDUCATION

Doctor of Philosophy, Chemical Physics 1994
University of Colorado, Boulder, JILA Institute
Thesis advisor: Stephen R. Leone
“Reactions of the Silicon (100) Crystal Surface with Hyperthermal Chlorine Molecules and Radicals”

Bachelor of Science, Chemistry 1989
California Institute of Technology (Caltech), Pasadena

PROFESSIONAL EXPERIENCE

2001 - present

Associate Professor of Chemistry, Purdue University

2001

Associate Professor of Chemistry, University of Colorado at Denver

1994 - 2001

Assistant Professor of Chemistry, University of Colorado at Denver

1988

Undergraduate Research Assistant, California Institute of Technology, Pasadena

1985 - 87

Member of Research Staff, Jet Propulsion Laboratories, NASA, Pasadena

PROFESSIONAL SOCIETIES

- American Chemical Society
- American Educational Research Association
- National Association of Research in Science Teaching

HONORS AND AWARDS

2006 Purdue University, College of Science Engagement Award

2005 Rho Chapter Lectureship Award from Phi Lambda Upsilon, University of Nebraska, Lincoln.

2004 Purdue University *Seed for Success* award.

2000 CU-Denver President's Faculty Excellence Award for Advancing Teaching and Learning through Technology.

2000 College of Liberal Arts and Sciences Research Award, CU-Denver.

1999 National Science Teachers Association, Gustav Ohaus College Level Award, for Inter-institutional On-line Physical Chemistry Instruction, team includes G. R. Long, D. G. Sauder, G. Shalhoub, R. Stout, M. Towns, T. J. Zielinski.

1998 University of Colorado at Denver, Excellence Award, For the Energy 2020 Educational Research Program.

TEXTBOOKS and BOOK CHAPTERS

2005 *Chemistry and Chemical Reactivity*, 6th Ed., by J. C. Kotz, P. M. Treichel and G. C. Weaver, Thomson Brooks/Cole: New York.

2005 *Chemistry in Context: Applying Chemistry to Society*, 5th Ed., by L. P. Eubanks, C. H. Middlecamp, N. Pienta, C. Heltzel and G. C. Weaver, McGraw-Hill: Dubuque.

In Press G. C. Weaver, "Building a Fruitful Relationship between the Chemistry and Chemical Education Communities within a Department of Chemistry." Chapter 14. In Bunce, D. M., Cole, R. (Eds.), *Nuts and Bolts of Chemical Education Research*. American Chemical Society. Washington, D. C.

In Press G. C. Weaver, "Teaching to Achieve Conceptual Change." Chapter 10. In Pienta, N., Cooper, M., Greenbowe, T. (Eds.), *The Chemists' Guide to Effective Teaching*, Vol. 2. Prentice Hall: Upper Saddle River, NJ.

REFEREED PUBLICATIONS

Accepted; In Press A. K. Bentley, G. C. Weaver, C. B. Russell, W. L. Fornes, S. Shih, K.-S. Choi, "Modifying Optical Properties of ZnO Films by Forming Zn_{1-x}Co_xO Solid Solutions via Spray Pyrolysis." *J. Chem. Educ.*

Accepted; In Press D. Danforth, E. Elkin, S. Emberton, K. Martinez-Hernandez, N. Nattam, R. Pedela, K. Maicher, C. R. Morales, G. C. Weaver, "The Design Process of a Chemistry Video Game." *American Society for Engineering Education (ASEE) Conference Proceedings*.

Submitted K. F. Green, A. M. Rahman, G. C. Weaver, "A Comparative Analysis of Online and Face-to-Face Discourse in General Chemistry." *Journal of Research in Science Teaching*.

Submitted E. M. Epp, K. F. Green, A. M. Rahman, G. C. Weaver, "Analysis of Student-Instructor Patterns in Real-Time Online Discourse." *Chemical Educator*.

Submitted G. Ashkenazi, G. C. Weaver, "Interactive Lecture Demonstrations as a Context for Classroom Discussion: Effective Design and Presentation" *Chemistry Education Research and Practice*.

2005 G. C. Weaver, P. Varma-Nelson, D. Wink, R. Morris, F. Lytle "Experiencing Research in a First or Second Year Science Course – Preliminary Results and Reflections on the Goals and Progress of the Center for Authentic Science Practice in Education (CASPiE)." *The Chemical Educator*. **11**, 125-129.

2001 R. Schwenz, G. C. Weaver, "Large-Scale Demonstration of the Raman Effect as an Introduction for the Technique in a Laboratory Setting." *The Chemical Educator*. **6**(3), 164-167.

2000 G. C. Weaver, "Creating a Scientifically Literate Populace: What Should Students Know when They Leave General Chemistry?," *ALDEQ: Anuario Latinoamericano de Educacion Quimica* (an International English/Spanish journal on Chemical Education), **3**, 138-148.

2000 G. C. Weaver, "An Examination of the National Educational Longitudinal Study (NELS:88) Database to Probe the Correlation Between Computer Use in School and Improvement in Test Scores," *J. Sci. Educ. and Technol.*, **9** (2), 121-133.

1999 D. R. Kimbrough and G. C. Weaver, "Improving the Background Knowledge of Non-traditional Undergraduates in Chemistry," *Innovative Higher Education*, **23** (3), 197-219.

1998 G. C. Weaver, "Strategies in K-12 Science Instruction to Promote Conceptual Change," *Sci. Educ.*, **82**, 455-472.

1998 G. C. Weaver and K. Norrod, "A Novel Physical Chemistry Experiment for the Undergraduate Laboratory: Surface Enhanced Raman Spectroscopy," *J. Chem. Ed.*, **75**, 621-624.

1997 G. C. Weaver, "Analysis of Student Use of a World Wide Web Site Created as a Supplement for General Chemistry Instruction," *The Chemical Educator*, **2** (5), 1-17.

1996 G. C. Weaver, D. R. Kimbrough, "Colorful Kinetics," *J. Chem. Educ.*, **73**, 256.

1995 G. C. Weaver and S. R. Leone, "Fragmentation and Recombination of Molecules during Laser Vaporization of Cryogenic Films," *J. Phys. Chem.*, **100**, 4188-4192.

1995 G. C. Weaver and S. R. Leone, "Scattering of Cl₂ Beams from Si(100) for Kinetic Energies up to 2.6 eV: Implications for Sticking Coefficients and Reaction Product Formation," *Surface Science*, **328**, 197-214.

INVITED PRESENTATIONS at CONFERENCES

Forthcoming:

Gordon Conference on Chemistry Education Research and Practice, Bates College, Maine. *Remote Instrumentation Network for Providing Research Experiences to Undergraduate Students*. **G. C. Weaver**, June 24-29, **2007**.

Gordon Conference on Visualization in Science and Education, Bryan University, Rhode Island. *Research on the Video Game Model for Teaching Chemistry*. **G. C. Weaver and C. R. Morales**, July 1-5, **2007**.

Conference on Active Learning in Physics and Chemistry, **Madrid, Spain**. Research for the Undergraduate Curriculum. **G. C. Weaver**, July 10, **2007**.

Gordon Conferences:

23. Re-evaluating Pedagogy in Physical Chemistry: Using Context to Anchor Meaning; Invited Presentation at the Gordon Research Conference on Innovations in College Chemistry Teaching; CT; **G. C. Weaver**. **2002**.

NSF-organized Meetings:

22. CASPiE and Assessment Across the National Undergraduate Research Centers; NSF-sponsored Meeting of Principal Investigators of Undergraduate Research Centers, Santa Clara, CA. **G. C. Weaver**. **2006**.

21. Establishing a Remote Instrumentation Network for Undergraduate Research. Analytical Sciences Digital Library workshop, sponsored by the National Science Foundation, San Diego, CA. **G. C. Weaver**, F. Lytle, D. M. Steffen, P. Wyss. **2005**.

20. The Center for Authentic Science Practice in Education (CASPiE): A Collaborative Experiment. Invited Presentation at the Undergraduate Research Centers Program meeting, Division of Chemistry, National Science Foundation, Washington, DC. **G. C. Weaver**. P. Varma-Nelson, F. E. Lytle, D. Lehman, D. Wink, R. Morris. **2004**.

19. *Physical Chemistry in Practice: A Web-enabled DVD*; Invited talk at “Innovation and Impact,” a conference of PI’s of the NSF’s CCLI program. **G. C. Weaver**. **2004**.

International Conferences:

18. Web-connected DVD for Education; Invited Presentation at the DVD Summit IV; Dublin, Ireland; **P. O’Neill Jones and G. C. Weaver**. **2002**.

National Conferences:

17. Undergraduate Research Centers: A Model for Incorporating Research into the Mainstream Science Curriculum. Invited talk at the Reinvention Center Conference: “Transforming the Culture: Undergraduate Education and the Multiple Functions of the Research University” Washington, DC. **G. C. Weaver**, **2006**.

16. Remote Instrumentation Network for Undergraduate Research. ACS National Meeting, Physical Chemistry Division, San Francisco, CA. **G. C. Weaver**, F. Lytle, **2006**.
15. Authentic Research Experiences for the Undergraduate Chemistry Curriculum. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **G. C. Weaver**, W. Fornes, F. Lytle, R. Morris, C. Russell, P. Varma-Nelson, D. Wink. **2006**
14. Classroom polling systems: Implementation and lessons learned. Invited speaker. 231st ACS National Meeting, Atlanta, GA. **G. C. Weaver**. **2006**
13. A Model for Incorporating Research into the First- and Second-Year Chemistry Curriculum. Invited speaker at the Presidential Event symposium "Envisioning Undergraduate Chemistry Education in 2015: A Community Dialog". 230th ACS National Meeting, Washington, DC. **G. C. Weaver**. **2005**.
12. Chemistry Education for Global Citizens: The Responsibilities of Scientific Knowledge. Keynote speaker at First-Year Undergraduate Chemistry Education International Conference, University of Illinois at Urbana-Champaign, Champaign, IL. **G. C. Weaver**. **2005**.
11. What Can Conceptual Change Theory Tell Us About Classroom Chemistry Teaching? 18th Biennial Conference on Chemical Education, Ames, IA. **G. C. Weaver**. **2004**.
10. The Emerging Technology of Web-enabled DVD and It's Potential as an Educational Tool; Invited Presentation at the 17th Biennial Conference on Chemical Education; Bellingham, Washington; **G. C. Weaver**. **2002**
9. Immersive environments: What are the possibilities for chemistry education?; Invited Presentation at the 223rd American Chemical Society National Meeting; Orlando; **G. C. Weaver**. **2002**.
8. A Continuum of Instructional Models that Integrate Educational Technologies; Invited for the symposium "Chemistry Education in the 21st Century: Visions of Teaching and Learning" at the 219th American Chemical Society National Meeting; San Francisco; **G. C. Weaver**. **2000**.
7. Invited member of the panel on "Using Technology in Teaching and Training," sponsored by the Younger Chemists Committee at the 219th ACS National Meeting; San Francisco; **G. C. Weaver**. **2000**.

Regional Conferences:

6. ACS Rocky Mountain Regional Meeting, Tucson, AZ. Keynote Address. **G. C. Weaver**: Using the Video Game Model to Teach Chemistry. **2006**.
5. Teaching approaches for including nanotechnology and other current topics in the undergraduate curriculum: Context, inquiry and authentic science practice. Seminar for the National Center for Learning and Teaching in Nanoscale Science and Engineering. Webcast, live transmission on May 2. **G. C. Weaver**. **2006**.

4. Chemistry Education: The Crossroads of Psychology, Anthropology, Neuroscience, Education, and Chemistry. Southeast Regional Meeting of the American Chemical Society (SERMACS), Research Triangle Park, NC. **G. C. Weaver. 2004.**
3. *Physical Chemistry in Practice*: Implementation and assessment of a Web-enabled DVD; Invited participant at the Integrating Science and Mathematics Education Research into Teaching conference, University of Maine. **G. C. Weaver. 2004.**
2. Creating a Working Relationship Between Research and Teaching in the Classroom; Invited Keynote Address at the Annual Chemistry Teachers Conference of the Puerto Rico Collaborative for Excellence in Teacher Education; San Juan, Puerto Rico; **G. C. Weaver. 2001.**
1. On-line Instructional Resources for Chemistry; Invited presentation and workshop for the Michigan College Chemistry Teacher's Association annual meeting; Oakland University, Rochester, MI; **G. C. Weaver. 2000.**

INVITED SEMINARS

International:

29. Teaching Teachers How to Use Inquiry-based Methods in the Science Classroom; Invited Presentation at the University of Concepción, Chile; **G. C. Weaver. 2003.**
28. Using Examples from Current Research to Teach Physical Chemistry; Invited Presentation at the University of Concepción, Chile; **G. C. Weaver. 2003.**
27. On-line Resources for Teaching Science; Invited Presentation at the University of Concepción, Chile; **G. C. Weaver. 2003.**
26. What is the Current State-of-the-Art in Instructional Technologies; Invited Presentation at the University of Bio-Bio, Chile; **G. C. Weaver. 2003.**

Domestic:

25. Center for Authentic Science Practice in Education. Estee Lecture Series speaker, University of South Dakota, Chemistry Dept., Vermillion, SD. **G. C. Weaver, 2006.**
24. Authentic Research Experiences for the Undergraduate Chemistry Curriculum. State University of New York, Stony Brook. **G. C. Weaver, 2006.**
23. Authentic Research Experiences for the Undergraduate Chemistry Curriculum. University of Puerto Rico, Rio Piedras. **G. C. Weaver, 2006.**
22. Chemistry Education for a Changing World. Phi Lambda Upsilon, Rho Chapter, Award Lecturer. University of Nebraska, Lincoln. **G. C. Weaver, 2005.**
21. Teaching Surface-Enhance Raman Spectroscopy Using a Research Application to Undergraduates in Physical Chemistry. Invited speaker, Northeastern Illinois University, Chicago, IL. **G. C. Weaver, 2005.**

20. Politics of Change: Creating an Undergraduate Research Experience. Invited speaker and workshop leader to Project Kaleidoscope Leadership Initiative Seminar, Department of Chemistry, Hope College, Holland, MI. **G. C. Weaver. 2005.**
19. A Model for Incorporating Research Into the First- and Second-Year Chemistry Curriculum . Indiana University-Purdue Univ., Fort Wayne, IN. **G. C. Weaver. 2005.**
18. Center for Authentic Science Practice in Education (CASPiE). Departmental Symposium at Clemson University, Chemistry Department. **G. C. Weaver. 2005.**
17. Evaluating the Effectiveness of a Web-enhanced DVD Supplement for the Physical Chemistry Course. University of Wisconsin, Eau-Claire. **G. C. Weaver. 2004.**
16. Development and Assessment of a Web-enhanced DVD for Physical Chemistry. Invited presentation at the University of Akron, OH. **G. C. Weaver. 2004.**
15. Remote Instrumentation for the CASPiE Program. Integrated Laboratory Network Workshop, Western Washington Univ., Bellingham, WA. F. Lytle, **G. C. Weaver. 2004.**
14. Instructional Technologies in Chemical Education; Invited Presentation at the 51st Annual Meeting of the Midwestern Association of Chemistry Teachers in Liberal Arts Colleges (MACTLAC), Evansville, IN; **G. C. Weaver. 2003.**
13. Inquiry-based Science Teaching: Learning to Teach Science as Science is Done; Invited Presentation to Chemistry Dept., Univ. of IL, Chicago; **G. C. Weaver. 2003.**
12. An Analysis of Student Use of a Web-enhanced DVD for Physical Chemistry; Invited Presentation at University of Wisconsin, Madison; **G. C. Weaver. 2003.**
11. Keeping the Student at the Center: Instructional Technologies and Inquiry-based Learning; Invited Presentation at Univ. of Michigan, Dearborn; **G. C. Weaver. 2002.**
10. Research on Student-centered Teaching and Learning: Technology and Inquiry; Invited Presentation at University of Michigan, Ann Arbor; **G. C. Weaver. 2002**
9. Web-connected DVD for Education; Invited Presentation at the University of Northern Colorado, University-wide Scholars Seminar Series; Greeley, CO; **P. O'Neill Jones and G. C. Weaver. 2002.**
8. The *Physical Chemistry in Practice* DVD; Invited Presentation at the Univ. of Northern Colorado, Chemistry Dept. Scholars Seminar Series; Greeley, CO; **G. C. Weaver. 2002.**
7. Re-evaluating Pedagogy in Physical Chemistry: Using Context to Anchor Meaning; Invited Presentation at the Univ. of North Carolina, Wilmington; **G. C. Weaver. 2002.**
6. Bringing Current Research into the Physical Chemistry Classroom: An Industry-Academia Collaboration; Invited Presentation at the IBM Almaden Research Laboratory; San Jose; **G. C. Weaver. 2001.**
5. Assessing Learning on the Physics 2000 Website; Invited Presentation for the Faculty Teaching Excellence Program, Education Forum in Teaching, Learning and Technology; University of Colorado at Boulder; **G. C. Weaver, M. V. Goldman. 2001.**

4. Using Examples from Current Research to Make Physical Chemistry More Relevant to Students: A New DVD; Invited presentation at the University of Colorado at Colorado Springs, Chemistry Department; **G. C. Weaver. 2001.**
3. Assessment Models for Educational Technologies that are Based on Cognitive Research; Invited talk at the University of Massachusetts, Amherst, Chemistry Department; **G. C. Weaver. 2000.**
2. Using Research on Learning to Direct the Use of Instructional Technology in Chemistry; Inaugural address for the Marie Foscue Rourk Endowed Chair in Chemical Education; University of North Carolina, Greensboro; **G. C. Weaver. 1999.**
1. Conceptual Change Theory: Some Thoughts on the Implications for Teaching Science; Invited talk at the University of Northern Colorado; Greeley, Chemistry Department; **G. C. Weaver. 1999.**

CONTRIBUTED PRESENTATIONS AT MEETINGS/CONFERENCES

39. Development and Testing of a Chemistry-based Video Game. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **G. C. Weaver, D. Danforth, K. Martinez-Hernandez, C. R. Morales, K. Maicher. 2006**
38. CASPiE: A program to include research as part of the mainstream first and second year laboratory curriculum. 231st ACS National Meeting, Atlanta, GA. **G. C. Weaver, W. J. Boone, C. B. Russell, D. J. Wink, F. E Lytle, P. Varma-Nelson, R. J. Morris, and A. K. Bentley. 2006.**
37. Developing a video game approach to reduce chemistry anxiety. 231st ACS National Meeting, Atlanta, GA. **G. C. Weaver, C. Morales, K. Martinez-Hernandez, and D. Danforth.. 2006**
36. Developing Rubrics for Evaluation of laboratory notebooks, project development, and reports for research-based undergraduate experiments. 231st ACS National Meeting, Atlanta, GA. **W. R. Robinson and G. C. Weaver. 2006**
35. The Center for Authentic Science Practice in Education (CASPiE): An Experiment in Undergraduate Research. (Poster) Gordon Research Conference on Chemistry Education Research and Practice, New London, CT. **G. C. Weaver, P. Varma-Nelson, D. Wink, F. Lytle, R. Morris. 2005.**
34. Development of a research validated toolkit for creating instructional video games. Teaching and Learning with Technology Conference, Purdue University. **C. Morales, G. C. Weaver, K. Martinez-Hernandez, D. Danforth. 2005.**
33. The Center for Authentic Science Practice in Education (CASPiE): Applying Disciplinary Research in the Undergraduate Laboratory. International Society for the Scholarship of Teaching and Learning. **G. C. Weaver, P. Varma-Nelson, F. E. Lytle, W. Boone, D. Wink, R. Morris. 2004.**

32. An Analysis of Student Discourse in an Online Environment. 228th National Meeting of the American Chemical Society, Philadelphia, PA. **G. C. Weaver**, K. F. Green. **2004**.
31. Using Current Research to Teach Raman Spectroscopy: Student Response to a Multimedia Unit about SERS. 228th National Meeting of the American Chemical Society, Philadelphia, PA. **G. C. Weaver**, M. H. Towns, R. W. Schwenz. **2004**.
30. A Model for Incorporating Research into the First Year Chemistry Experience. 18th Biennial Conference on Chemical Education, Ames, IA. **G. C. Weaver**. **2004**.
29. Making Movies: Bringing Science and its Cast of Characters to Life; 226th American Chemical Society National Meeting; New York; **G. C. Weaver**, **M. Rose**. **2003**.
28. Comparing Hands-On Use of VSEPR Models to CHIME-based Instruction; 226th American Chemical Society National Meeting; New York; **G. C. Weaver**, C. Ashmore-Good, J. Nash. **2003**.
27. A Qualitative Analysis of On-line Discourse in a General Chemistry Distance-Learning Course; 17th Biennial Conference on Chemical Education, Bellingham, WA; **G. C. Weaver**, A. E. Litzenberg**. **2002**.
26. A Web-DVD to provide context-based instruction for Physical Chemistry; 223rd American Chemical Society National Meeting; Orlando; **G. C. Weaver**. **2002**.
25. Animations of Chemical Processes to Supplement the Textbook and Classroom Instruction; Teaching, Learning and Technology Forum; Purdue University; **G. C. Weaver**. **2002**.
24. Thinking About a Standardized Approach to Assessing the Use of Instructional Technologies for Teaching and Learning Chemistry: Is It Possible?; 222nd American Chemical Society National Meeting; Chicago; **G. C. Weaver** and **W. R. Robinson**. **2001**.
23. A Multimedia Thermodynamics Module About Semiconductor Surface Growth; 222nd American Chemical Society National Meeting; Chicago; **G. C. Weaver**. **2001**.
22. The E-2020 program: Summer Research Experiences for Middle School and High School Science Teachers; 222nd American Chemical Society National Meeting; Chicago; **G. C. Weaver**, L. Goodwin. **2001**.
21. A Dialogue on Assessing Instructional Technology: A Participatory Workshop; Teaching with Technology Conference; Boulder, CO; **G. C. Weaver** and **L. Barker**. **2001**.
20. Using Current Research to teach Physical Chemistry: A New DVD; 221st American Chemical Society National Meeting; San Diego; **G. C. Weaver**. **2001**.
19. Integrating Visualization and Interactivity into a General Chemistry Course Using a Specially Designed On-line Resource; 16th Biennial Conference on Chemical Education, Ann Arbor, MI; **G. C. Weaver**. **2000**.

18. A DVD Project to Bring Cutting Edge Applications into the Classroom: "Physical Chemistry in Practice"; 16th Biennial Conference on Chemical Education, Ann Arbor, MI; **G. C. Weaver. 2000.**
17. Bringing Physical Chemistry to Life: The *Physical Chemistry in Practice* DVD; Teaching with Technology Conference; Colorado Springs, CO; **G. C. Weaver. 2000.**
16. Assessment Methods for Instructional Technologies; Teaching with Technology Conference; Colorado Springs, CO; **L. Barker, G. C. Weaver. 2000.**
15. Identifying and Addressing the Difficulties in Implementing a Distance Learning General Chemistry Course: An Action Research Approach; Teaching with Technology Conference; Golden, CO; **D. R. Kimbrough, G. C. Weaver. 1999.**
14. Assessment of an Instructional Web Site: What are the Learning and Affective Outcomes; 218th American Chemical Society National Meeting; New Orleans; **G. C. Weaver, M. V. Goldman, K. Beck, D. Rea. 1999.**
13. Interinstitutional On-Line Physical Chemistry Collaborations; 218th American Chemical Society National Meeting; New Orleans; **G. C. Weaver, T. J. Zielinski, M. H. Towns, D. Sauder, G. M. Shalhoub, R. Stout, G. R. Long, D. M. Whisnant, L. M. Lever. 1999.**
12. Portability of a Distance Learning General Chemistry Course: Reflections on Teaching Somebody Else's Course; 218th American Chemical Society National Meeting; New Orleans; **G. C. Weaver. 1999.**
11. Providing Appropriate Resources: Expanding Student Learning with Instructional Technology; 218th American Chemical Society National Meeting; New Orleans; **G. C. Weaver. 1999.**
10. The E-2020 Program: Promoting Inquiry-based Science Instruction through Summer Research for Teachers; 217th American Chemical Society National Meeting; Anaheim; **G. C. Weaver, Doris R. Kimbrough, Randall P. Tagg. 1999.**
9. A Qualitative Comparison of On-Line Discussion by Distance Learning and On-Campus Students; 217th American Chemical Society National Meeting; Anaheim; **G. C. Weaver. 1999.**
8. The Physics 2000 Project: Evaluation of Interactive Web-based Physics Learning; Winter Meeting of the American Association of Physics Teachers (AAPT); Anaheim; **M. V. Goldman, D. Rea, G. C. Weaver. 1999.**
7. E2020 - first year of expanded participation; 3rd Annual CU-Denver Research Day, sponsored by the Office of Research Administration and by the Office of Student Creative Activities and Research (OSCAR); **G. C. Weaver, D. R. Kimbrough, R. Tagg, R. Mahler, L. Goodwin, F. Stein. 1998.**
6. Sink or Swim: What Level of Guidance do Students Need to Really Benefit from Computer-Supplemented Instruction?; 15th Biennial Conference on Chemical Education, American Chemical Society; Waterloo, Canada; **G. C. Weaver. 1998.**

5. Creating WWW Pages as a Cooperative Learning Project in the Physical Chemistry Classroom; 215th American Chemical Society National Meeting; Dallas; **G. C. Weaver. 1998.**
4. Teacher Enhancement Program to Increase Inquiry-based Instruction in Middle and High-school Classrooms; 215th American Chemical Society National Mtg; Dallas; **G. C. Weaver, D. R. Kimbrough, R. P. Tagg. 1998.**
3. Effectiveness of a World Wide Web Tutorial in General Chemistry; 213th American Chemical Society National Meeting; San Francisco; **G. C. Weaver. 1997.**
2. Addressing Background Deficiencies for Non-traditional College Students; 14th Biennial Conference on Chemical Education, American Chemical Society; Clemson, S. C.; D. R. Kimbrough, **G. C. Weaver. 1996.**
1. A Novel Experiment for the Undergraduate Physical Chemistry Laboratory: Surface-Enhanced Raman Spectroscopy; 14th Biennial Conference on Chemical Education, American Chemical Society; Clemson, S. C.; **G. C. Weaver. 1996.**

PRESENTATIONS at CONFERENCES by WEAVER GROUP MEMBERS and COLLABORATORS

35. Working Toward Unattended Student Access to Remote Instrumentation. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **D. Steffen[§], F. Lytle, P. Wyss, G. C. Weaver. 2006**
34. Peer-led Team Learning in a Research-based First-year Laboratory Course: A Novel Implementation. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **A. Bentley, W. Fornes, C. Russell, P. Varma-Nelson, D. Wink, G. C. Weaver. 2006**
33. Comparative Analysis of Online and Face-to-Face Discourse in General Chemistry. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **K. Green, G. C. Weaver. 2006**
32. How Effective is the Computer Game Model for Teaching Chemistry? Phase II Findings. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **K. Martinez-Hernandez, C. R. Morales, G. C. Weaver. 2006**
31. Student Perceptions of the Purpose and Function of Lab. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **C. Russell, G. C. Weaver. 2006**
30. Implementation and Study of e-Learning in a Laboratory Course: Issues, Solutions and Findings. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **E. Epp, K. Jennings, G. C. Weaver. 2006**
29. Can Video Games Contribute Meaningfully to the Chemistry Curriculum? (Poster) 19th Biennial Conference on Chemical Education, West Lafayette, IN; **K. Martinez-Hernandez, D. Danforth, N. Nattam, P. Robertson, G. C. Weaver. 2006**

28. Undergraduate Research-based Laboratory Implementations. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **C. Russell**, G. C. Weaver. **2006**
27. Inquiry Is...:Secondary Science Teachers' Conceptions of Inquiry. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **J. Steward**, G. C. Weaver. **2006**
26. Physical Chemistry in Practice DVD: Development and Implementation. 19th Biennial Conference on Chemical Education, West Lafayette, IN; **K. Jennings**, E. Epp, M. Towns, G. C. Weaver. **2006**
25. Adapting the peer-led team learning approach for a research-based first-year laboratory course. 231st ACS National Meeting, Atlanta, GA. **A. K. Bentley**, C. B Russell, G. C. Weaver, D. J. Wink, and P. Varma-Nelson. **2006**
24. Remote access instrumentation for undergraduate research. 231st ACS National Meeting, Atlanta, GA. **F. E Lytle**[§], G. C. Weaver, D. Steffen, and P. J Wyss. **2006**
23. How does educational discourse differ in the on-line environment and the traditional classroom? Gordon Research Conference on Chemistry Education Research and Practice, New London, CT. **K. F. Green**, A. R. Rahman**, G. C. Weaver. **2005**.
22. Establishing a Remote Instrumentation Network for Undergraduate Research. 229th American Chemical Society National Meeting, San Diego, CA. **F. Lytle**[§], G. C. Weaver, D. M. Steffen, P. Wyss. **2005**.
21. Assessment of a DVD for Physical Chemistry: Student Attitudes and Understanding Gains. 229th American Chemical Society National Meeting, San Diego, CA. **M. H. Towns**[§], G. C. Weaver. **2005**.
20. How Effective is the Computer Game Model for Teaching Chemistry? 18th Biennial Conference on Chemical Education, Ames, IA. **K. Martinez-Hernandez**, C. Morales, G. C. Weaver. **2004**.
19. The E-2020 Program: Implementing and Inquiry-Based Project in the Science Classroom. 18th Biennial Conference on Chemical Education, Ames, IA. **J. L. Steward**, A. M. Rahman, G. C. Weaver. **2004**.
18. Visualizing Molecular Geometry: Is One Teaching Method Better than Another? 18th Biennial Conference on Chemical Education, Ames, IA. **C. Ashmore-Good**, J. J. Nash, W. R. Robinson, G. C. Weaver. **2004**.
17. How Does Educational Discourse Differ in the On-Line Environment and the Traditional Classroom? 18th Biennial Conference on Chemical Education, Ames, IA. **K. F. Green**, G. C. Weaver. **2004**.
16. The Physical Chemistry in Practice DVD: Using Modern Research to Teach Physical Chemistry. 18th Biennial Conference on Chemical Education, Ames, IA. **F. Arocho-Perez**, B. Cisneros, W. Cho, G. C. Weaver. **2004**.
15. Physical Chemistry in Practice: Preliminary Evaluation Findings. 18th Biennial Conference on Chemical Education, Ames, IA. **M. H. Towns**[§], J. U. Dyer, G. C. Weaver. **2004**.

14. Preliminary Analysis of Physical Chemistry in Practice (PCIP) DVD Modules. 36th ACS Central Regional Meeting, Indianapolis. **J. U. Dyer**, M. H. Towns[§], G. C. Weaver. **2004**.
13. Inquiry in the science classroom: The E-2020 program. 36th ACS Central Regional Meeting, Indianapolis. **J. Steward**, G. C. Weaver. **2004**.
12. How effective are computer simulations and models when teaching Valence Shell Electron Pair Repulsion (VSEPR) theory? 36th ACS Central Regional Meeting, Indianapolis. **C. Ashmore-Good**, G. C. Weaver. **2004**.
11. How does educational discourse differ in the on-line environment and the traditional classroom? 36th ACS Central Regional Meeting, Indianapolis. **K. F. Green**, G. C. Weaver. **2004**.
10. *Physical Chemistry in Practice: A Web-enabled DVD*. 36th ACS Central Regional Meeting, Indianapolis. **F. Arocho Perez**, G. C. Weaver. **2004**.
9. How effective is the computer game model for teaching chemistry. 36th ACS Central Regional Meeting, Indianapolis. **K. Martinez-Hernandez**, G. C. Weaver. **2004**.
8. *Physical Chemistry in Practice: A Web-enabled DVD*; Purdue 8th Annual Teaching and Learning with Technology Conference. **F. A. Perez**, G. C. Weaver. **2004**.
7. How effective is the computer game model for teaching chemistry; Purdue 8th Annual Teaching and Learning with Technology Conference. **K. Martinez-Hernandez**, G. C. Weaver. **2004**.
6. Implementing the *Physical Chemistry in Practice* DVD at the University of Northern Colorado; 17th Rocky Mountain Regional Meeting of the American Chemical Society, Albuquerque, NM; **R. W. Schwenz**[§], M. T. Love, G. C. Weaver. **2002**.
5. The E-2020 Program: Learning How to Involve Students in Scientific Inquiry; 16th Biennial Conference on Chemical Education, Ann Arbor, MI; **D. Burgard***, G. C. Weaver. **2000**.
4. Using Inquiry-based Science Instruction in an International Baccalaureate High School Program; 217th American Chemical Society National Meeting; Anaheim; **Kristin Volle***, G. C. Weaver. **1999**.
3. Physical Chemistry On Line: Intercollegiate Collaborative Learning in Physical Chemistry; 217th American Chemical Society National Meeting; Anaheim; **T. J. Zielinski**[§], M. H. Towns[§], D. Sauder[§], G. M. Shalhoub[§], R. Stout[§], G. C. Weaver, G. R. Long[§]. **1999**.
2. Engaging Teachers in Research in Order to Promote Inquiry Teaching Methods in High School Classrooms; 15th Biennial Conference on Chemical Education, American Chemical Society; Waterloo, Canada; **B. Randall***, G. C. Weaver. **1998**.
1. Use of a WWW Educational Supplement in a High School Science Classroom; 215th American Chemical Society National Meeting; Dallas; **G. M. Crockett*****, G. C. Weaver. **1998**.

*high school teacher **undergraduate student §faculty collaborator

PAPERS PRESENTED AT ON-LINE CONFERENCES

(These are invited, non-refereed manuscripts 8-10 pages in length with complete references, figures and tables. The manuscripts are prepared for Web-based presentation, sometimes including animations, digital images or video. Discussion on each manuscript takes place over one complete week via the conference email listserver.)

1999 Creating a Scientifically Literate Citizenry: What are the Long-Term Lessons that Students Should Take Away From General Chemistry?; ConfChem: Fall On-line Chemical Education Conference on Distance and Collaborative Education over the Internet (<http://www.ched-ccce.org/confchem/1999/c/>); **G. C. Weaver**

1999 Going the Distance: Exploring Ways to Provide Students with Instructor "Contact" in a Distance Learning General Chemistry Course; ConfChem: Summer On-line Chemical Education Conference on Distance and Collaborative Education over the Internet (<http://www.chem.vt.edu/confchem/1999b/>); **G. C. Weaver** and D. R. Kimbrough.

1998 Using the World Wide Web to Provide Teaching on Demand in the Physical Chemistry Laboratory; ChemConf: On-line Chemical Education Conference(<http://www.inform.umd.edu/EdRes/Topic/Chemistry/ChemConfernce/ChemConf98/>); **G. C. Weaver.**

CHAired/ORGANIZED SYMPOSIA AT MEETINGS

2007 Co-organizer of the "Bringing Authentic Research into the Undergraduate Laboratory" symposium with D. Wink at 233rd ACS National Meeting, Chicago; March.

2005 Co-organizer of the "E-learning in University Chemical Education" symposium with M. Ito and H. J. Kim at Pacifichem, Honolulu, HI; December.

2004 Organizer of the Scientific Literacy for the new Century symposium at the 18th Biennial Conference on Chemical Education, Ames, IA, July 2004.

2004 Co-chair of the Insight for Teaching from Chemical Education Research symposium at the 36th American Chemical Society Central Regional Meeting, Indianapolis, June 2004.

2003 Co-chair of the Chemical Education Division meeting at the 225th American Chemical Society National Meeting, New York in Spring 2003.

2003 " Non-Traditional Teaching Methods: Methods Other Than Lecture And Assessment Of These Methods "; Spring 2003 ConfChem, On-line Chemical Education

Conference sponsored by the Committee for Computers in Chemical Education; Co-organizer with George Shalhoub; <http://www.ched-ccce.org/confchem/2003/a/index.html>.

2003 "Advances in Chemical Education Research - Symposium in Honor of George Bodner, 2003 George C. Pimentel Award Winner"; 224th American Chemical Society National Meeting; New Orleans.

2000 "Development and Assessment of Technology-Based Teaching Tools"; 219th American Chemical Society National Meeting; San Francisco.

1999 "Making Connections Between K-12 and Higher Education Faculty"; 217th American Chemical Society National Meeting; Anaheim.

1998 "Making Inquiry Teaching/Learning and Technology Work in the High School Classroom: Sharing Success Stories." 15th Biennial Conference on Chemical Education, American Chemical Society; Waterloo, Canada (Organized by Mary Ann Varanka-Martin, Presided by G. C. Weaver)

1998 "General Papers in Chemical Education"; 215th American Chemical Society National Meeting; Dallas.