

William J. Vining

Department of Chemistry
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Professional Appointments

Research Scientist	S. C. Johnson and Son, 1985-1988
Assistant Prof. of Chemistry	Hartwick College 1988-1994
Associate Prof. and Dept. Chair	Hartwick College 1994-1996 (tenured)
Associate Prof. of Chemical Education and Director of General Chemistry (tenured)	UMass Amherst 1996-2005
Assistant Professor	SUNY Oneonta 2005-2006
Associate Professor	SUNY Oneonta, 2006-2011
Professor	SUNY Oneonta 2011- Present

Education

Ph.D. Inorganic Chemistry, University of North Carolina, Chapel Hill, 1985;
Thesis advisor: Thomas J. Meyer
B.S. Chemistry, State University of New York College at Oneonta, 1981

Scientific and Teaching Interests

Our current work involves creating and testing interactive software for chemistry education. We are working on projects in the areas of general chemistry, organic chemistry, analytical chemistry, inorganic chemistry and polymer science and engineering. Our work centers on creating interactive environments in which students can explore and develop their own understanding of chemical systems and assessing the impact of these teaching systems on student learning and attitudes.

Teaching Awards

University of Massachusetts Distinguished Teaching Award; 1999

University of Massachusetts, College of Natural Sciences and Mathematics Outstanding Award in Teaching; 2003

Committee Appointments

Oneonta College Foundation Board of Directors

American Chemical Society Exams Institute, General Chemistry Laboratory Exam, Fall 2008 - 2012

General Education Assessment Committee, Spring 2009 - Present

Educational Technology Committee, Chair 2010-Present

College Technology Steering Committee, Fall 2008 - Present

Dean's Advisory Committee, Fall 2008 - 2011

Campus Portal Implementation Team, Spring 2010 - Present

Grants and Contracts

1. "Interactive Organic Chemistry Learning on the World Wide Web." P. Lillya (PI), S. Hixson, W. J. Vining, B. Woolf, NSF CCLI, 6/1/2001 – 5/31/2003; \$327,000 direct + \$151,000 indirect.
2. "Art Experience CD-ROM"; Thomson Learning; 1/1/2003 – 6/1/2003; \$38,000
3. "Physiology CD-ROM"; Thomson Learning; 1/1/2003 – 5/1/2003; \$74,000
4. "Analytical Chemistry CD-ROM"; Thomson Learning, 4/1/2002 – 5/1/2003; \$35,000
5. "General, Organic and Biochemistry CD-ROM"; Thomson Learning; 4/1/2002 – 12/1/2002; \$60,000
6. "Writer's Resources CD-ROM"; Heinle and Heinle; 1/1/2002 – 5/1/2002; \$125,000
7. "Interactive General Chemistry CD-ROM." Thomson Learning; 2/1/2001 – 4/1/2002; \$360,000

Chemical Education Publications

Journal Publications

1. Beatrice Botch , Roberta Day , William Vining and Barbara Stewart , David Hart , Kenneth Rath and Alan Peterfreund, "Effects on Student Achievement in General Chemistry Following Participation in an Online Preparatory Course. ChemPrep, a Voluntary, Self-Paced, Online Introduction to Chemistry", J. Chem. Educ., 2007, 84 (3), p 547
2. R. Grosso, W. J. Vining, "Symmetry and Point Groups," J. Chem. Ed. Software, 2003, Vol. 80, No. 1, Page 110
3. R. Grosso, J. T. Fermann, W. J. Vining, "Lattice Energetics," J. Chem. Ed. Software, 2003, Vol. 80, No.1, Page 108

4. R. Grosso, J. T. Fermann, W. J. Vining, "The Madlung Constant An In-Depth Look at the Madlung Constant for Cubic Crystal Systems" J. of Chem. Ed., 2001, 78, 1198-1204
5. J. T. Fermann, K. S. Stamm, A. A. Maillet, C. Nelson, S. J. Codden, M. A. Spaziani, M. A. Ramirez, W. J. Vining, "Discovery Learning Using Chemland Simulation Software" The Chemical Educator, 5 (1), 2000, 31-37
6. M. A. Spaziani, J. T. Fermann, W. J. Vining, "A Computer-based, Interactive, Multimedia Software System for Teaching and Independent Student Learning of Liquid Chromatography" The Chemical Educator, 4(6), 1999
7. M. Cornell, D. Hart, B. Woolf, W. Vining, R. Day, B. Botch, "Multimedia Simulations for Chemistry" Syllabus, 13(3), 1999, 24-28 (nonrefereed journal)
8. A. Roy, R.R. Broudy, S.M. Auerbach, W.J. Vining, "Teaching Materials that Matter: An Interactive, Multi-media Module on Zeolites in General Chemistry" The Chemical Educator, 4(3), 1999 (Online Journal with no inclusive pagination, total article length = 14 pages)
9. K.M. Stamm, J.T. Fermann, T. Whelan, R.R. Broudy, B. Botch, W.J. Vining, "Designing Interactive Instructional Software: Students as Educators" The Chemical Educator, 4(1), 1999 (Online Journal with no inclusive pagination, total article length = 11 pages)

Software Publications as Author

1. OWL Electronic Homework System: General Chemistry, Roberta O. Day, Beatrice Botch, William J. Vining, Cengage Learning, Yearly Editions 1999-Present
2. OWL Electronic Homework System: Organic Chemistry, Peter M. Lillya, Steven Hixson, William J. Vining, Cengage Learning, Yearly Editions 2002-Present
3. OWL Electronic Homework System: Allied Health Chemistry, Roberta O. Day, Beatrice Botch, William J. Vining, David Gross, Cengage Learning, Yearly Editions 2004-Present
4. General, Organic, and Biochemistry CD-ROM, Version 3.0, William J. Vining and Susan M. Young, Thomson Publishing, ISBN: 0495106569, 2007
5. PhysioEdge CD-ROM, Version 3.0, Angla Hinson, Kelly Johnson, Laura Malloy, Ronald Markle, and William J. Vining, Thomson Publishing, ISBN: 0495105015, 2006
6. Art Experience CD-ROM, Version 2.0, Joy Bertinuson, Ralph M. Larmann, Alan Peterson, William J. Vining, Thomson Publishing, ISBN: 0534641261, 2006

7. Website to Accompany Experimental Organic Chemistry (a text by John Gilbert and Steven Martin); Brooks/Cole/Thomson Learning, Publisher. 2006
8. W. J. Vining, J. C. Kotz, P. A. Harman, General Chemistry NOW, ver. 4.0, Brooks/Cole, 2005
9. W. J. Vining, S. Young, General, Organic, and Biochemistry CD-ROM, Ver. 2.0, Brooks/Cole Publishing, 2003, ISBN: 0-534-401937
10. W. J. Vining, Analytical Chemistry CD-ROM (to accompany Analytical Chemistry by Skoog, West, and Holler), Brooks/Cole Publishing, 2003, ISBN: 0-534-41796-5
11. K. Johnson, L. Malloy, R. Markle, W. J. Vining, PhysioEdge Physiology CD-ROM, Brooks/Cole Publishing, 2003, ISBN: 0-5343-9502-3
12. R. M. Larman, W. J. Vining, Art Experience CD-ROM, Wadsworth Publishers, 2003 ISBN: 0-5342-7392-0
13. W. J. Vining, J. C. Kotz, P. A. Harman, General Chemistry Interactive CD-ROMs, Ver. 3.0 Brooks/Cole Publishing, ISBN: 0-03-035403-K, 2002
14. W. J. Vining, V. M. Rotello, D. A. Bak, Harcourt Organic Chemistry CD-ROM, Complete Version, Saunders College Publishing, July, 2000, ISBN: 0-03-021969-8
15. W. J. Vining, V. M. Rotello, D. Bak, Saunders Organic Chemistry CD-ROM, Ver 1.0. ISBN: 0-03-031459-3, Saunders College Publishing, July, 1999
16. W. J. Vining, R. S. Stein, The World of Plastics, National Plastics Center and Museum, July, 1999
17. W. J. Vining, Archipelago Productions, General Chemistry, Term II,
Distance Learning Course, ISBN: 1-58262-006-7, Archipelago Productions, July, 1999
18. J. C. Kotz. W. J. Vining, Saunders Interactive General Chemistry CD-ROM with ActivChemistry, ver 2.5., ISBN 0-03-021499-8, Saunders College Publishing, 1998
19. W. J. Vining, S. Young, Directors, Saunders General Chemistry Web Site, August, 1998, August 1999
20. W. J. Vining, Archipelago Productions, General Chemistry, Term I,
Distance Learning Course, ISBN: 1-58262-004-0, Archipelago Productions, July, 1998
21. J. C. Kotz. W. J. Vining, Saunders Interactive General Chemistry CD-ROM with ActivChemistry, ver 2.2., ISBN 0-03-019983-2, Saunders College Publishing, 1996

Software Publications as Head Academic Designer

1. Writer's Resources CD-ROM; Heinle and Heinle, 2002
2. Comp21 CD-ROM; Heinle and Heinle, 2004
3. Enhanced WebAssign Calculus Tutorials, 2007

Conference Proceedings

1. Woolf, B., Hart, D., Day, R., Botch, B., & Vining, W. Improving instruction and reducing costs with a web-based learning environment. Proceedings of the International Conference on Mathematics/Science Education & Technology (M/SET 2000), San Diego, CA. February, 2000. Pp. 410-415.
2. Hart, D., Woolf, B., Day, R., Botch, B., & Vining, W. OWL: An Integrated Web-based Learning Environment. Proceedings of the International Conference on Math/Science Education & Technology (M/SET 99), San Antonio, TX. March, 1999. Pp. 106-112.
3. Vining, W. J. Multimedia Content Development for Anytime, Anywhere Learning. Conference Proceedings, Syllabus '99, Santa Clara, CA, July 1999.

Recent Conference and Other Presentations

1. Key Note Address, CHEMED 2005, New Zealand Chemical Education Conference, Dunedin, NZ, June, 2005 (invited)
2. Key Note Address, University of Wisconsin Chemistry Faculties Annual Meeting, West Bend, Wisconsin, October, 2005 (invited)
3. Pacific Basin Chemistry Conference, December, 2005, Honolulu, Hawaii (invited)
4. Departmental Seminar, Florida Atlantic University, Boca Raton, Florida, March, 2006 (invited)
5. American Chemical Society, National Meeting, Atlanta, March, 2006 (invited)
6. SUNY College at Oneonta, Faculty Research Show, March, 2006
7. American Chemical Society, National Meeting, Atlanta, March, 2006 (2 invited presentations)
8. SUNY College at Oneonta, Celebration of Teaching, Using Student-Response Systems Round Table, October, 2007
9. Biennial Conference on Chemical Education, August 2008, Bloomington, Indiana (invited)
10. American Chemical Society Southwest Regional Meeting, October 2008, Little Rock (invited)
11. American Chemical Society National Meeting, March 2009, Salt Lake City (invited)
12. New England Association of Chemistry Teachers, Fitchburg, August 2010 (invited)

13. Biennial Conference on Chemical Education, August 2010, Denton, Texas (invited)
14. American Chemical Society National Meeting, August 2010, Boston (invited)
15. Famous Last Words, SUNY Oneonta, Fall 2010
16. ConfChem Online Paper and Discussion, November, 2010 (invited)
17. American Chemical Society National Meeting, April, 2011, Anaheim (invited)
18. Florida Atlantic University, Department of Chemistry Symposium, Feb. 2011 (invited)
19. International Conference on Chemical Education, Rome, July 2012
21. Biennial Conference on Chemical Education, August 2012, State College, PA (invited)

Recent Workshops Led

Workshop Organizer and Leader (Instructing Faculty on Using Electronic Homework)

1. October 2005, University of Massachusetts, Amherst, Massachusetts
2. March 2006, University of North Texas, Denton, Texas
3. April 2006, University of San Francisco, San Francisco, California
4. April 2006, Bergen Community College, Paramus, New Jersey
5. February 2007, Florida Atlantic University, Boca Raton, Florida
6. September 2007, American Chemical Society, Two-Year Chemistry Teachers Conference, Paramus, New Jersey
7. , November 2007, University of Massachusetts, Amherst, Massachusetts
8. March 2008, Belmont, CA
9. April 2008, New Orleans
10. November 2008: UMass, Amherst, MA
11. February 2009: University of San Francisco, San Francisco, CA
12. March 2009: University of Alabama, Birmingham, AL
13. April 2009: Stevens Institute of Technology, New Jersey
14. August 2009, University of Ill., Chicago, IL
15. November 2009: UMass, Amherst, MA
16. December 2009: Toronto, ON
17. March 2009: University of Michigan, Ann Arbor, MI
18. March 2010, Michigan Tech
19. October 2010, UMass, Amherst, MA
20. January 2011, Mesa Arizona
21. February 2011, Florida Atlantic University, Boca Raton,
22. March 2011, New York University, New York City

Inorganic Chemistry Publications

1. J.T. Fermann, J.P. Kakareka, W.T. Klooster, J.L. Mullin, J. Quattrucci, J.S. Ricci, H.J. Tracy, W.J. Vining, S. Wallace, "Electrochemical and Photophysical Properties of a Series of Group-14 Metalloles" Inorganic Chemistry, 1999, 38(10), 2464-72

2. Photoprotonation of a Rhenium-Nitride; W.J. Vining, B.P. Sullivan, S. Neilson, G.A. Neyhart; Inorganic Chemistry, 1993, 32, 4214-4217
3. Photophysics and Photochemistry of Rhenium(V)-Nitrogen Triple Bonds; G. A. Neyhart, M. Bakir, J. Boaz, W.J. Vining, B.P. Sullivan, Coordination Chemistry Reviews, 1991, 111, 27-32
4. Chemically Modified Electrodes for the Catalytic Reduction of CO₂, T.J.Meyer, T.R.O'Toole, L.D. Margerum, T.D. Westmoreland, W.J. Vining, R.W. Murray, B.P. Sullivan, U.S. Patent Number 4,756,807, 1988
5. Direct Evidence for Chemically Distinct Regions Within Nafion Films on Electrodes; W.J. Vining and T.J. Meyer, J. Electroanal and Interfac. Electrochem., 1987, 237, 191-208
6. Oxygen Atom Transfer in the Oxidations of Dimethyl Sulfide and Dimethyl Sulfoxide by [(bpy)₂(py)Ru(O)]²⁺; L.R. Roecker, J.C. Dobson, W.J. Vining, T.J. Meyer, Inorg. Chem., 1987, 26(5), 779-781
7. Redox properties of the Water Oxidation Catalyst (bpy)₂(H₂O)RuORu(H₂O)(bpy)₂⁴⁺ in Thin Polymeric Films. Electrocatalytic Oxidation of Cl⁻ to Cl₂; W.J. Vining and T.J. Meyer, Inorg. Chem., 1986, 25(12), 2023-33
8. pH-Induced, Long-Range Electron Transfer across a Thin Polymeric Film; W.J. Vining, N.A. Surridge, T.J. Meyer, J. Phys. Chem., 1986, 90(11), 2281-3
9. One and Two Electron Pathways in the Electrocatalytic Reduction of Carbon Dioxide by fac-Re(bpy)(CO)₃Cl; B.P. Sullivan, C.M. Bollinger, D. Conrad, W.J. Vining, T.J. Meyer, J. Chem. Soc. Chem. Comm., 1985, 1414-16
10. Electrocatalytic Reduction of CO₂ at a Chemically Modified Electrode; T.R. O'Toole, L.D. Margerum, T.D. Westmoreland, W.J. Vining, R.W. Murray, T.J. Meyer, J. Chem. Soc. Chem. Comm., 1985, 1416-17
11. A Chemically Modified Electrode for the Catalytic Oxidation of Chloride to Chlorine; W.J. Vining and T.J. Meyer, J. Electroanal. and Interfac. Electrochem., 1985, 195, 183-7
12. The Influence of Environmental Effects on Excited-State Lifetimes. The Effect of Ion Pairing on Metal-to-Ligand Charge Transfer Excited States; W.J. Vining, J.V. Caspar, T.J. Meyer, J. Phys. Chem., 1985, 89, 1095-9
13. Oxidative Electrochemistry of Compounds of the Type (n⁵-C₅H₅)₂MX₂ Where M=Ti(IV),Mo(IV),W(IV) and X=Halide, Thiolate, or Ferrocenyl; J.C. Kotz, W.J. Vining, W. Coco, R. Rosen, M. Garcia, A. Dias, Organometallics, 1983, 2, 68-79
14. Intervalent Transition in Ferrocenyl-substituted (n⁴-Cyclobutadien)(n⁵-Cyclopentadienyl)Cobalt, J.C. Kotz, G.N. Neyhart, W.J. Vining, M. Rausch, Organometallics, 1983, 2, 79-82