

# GERALDINE L. RICHMOND

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## PROFESSIONAL APPOINTMENTS

- 2001- Richard M. and Patricia H. Noyes Professor of Chemistry, University of Oregon  
**Research Interests:** Laser spectroscopy of surfaces, molecular structure at liquid and solid surfaces, photo-induced processes at semiconductor surfaces, nonlinear optical spectroscopy, dynamics at surfaces, physical chemistry and environmental chemistry.  
**Teaching Interests:** Development of courses in science literacy for nonscientists, introductory chemistry courses for undergraduates.
- 1998-2001 Knight Professor of Liberal Arts and Sciences, University of Oregon
- 1991- Professor of Chemistry, University of Oregon
- 1991-1995 Director, Chemical Physics Institute, University of Oregon
- 1985-1991 Associate Professor of Chemistry, University of Oregon
- 1980-1985 Assistant Professor of Chemistry, Bryn Mawr College

## EDUCATION

- 1976–1980 Ph.D. Chemistry, University of California, Berkeley, Advisor: George C. Pimentel
- 1971–1975 B.S. Chemistry, Kansas State University

## HONORS AND AWARDS

- 2009 Society for Applied Spectroscopy Honorary Membership Award
- 2009 International Women's Forum, Invited Member
- 2008 Bomem-Michelson Award
- 2008 Association for Women in Science (AWIS) Fellow
- 2008 Society for Applied Spectroscopy Fellow
- 2007 Guggenheim Fellow
- 2006 American Academy of Arts and Sciences, Elected Fellow
- 2006 Council on Chemical Research Diversity Award
- 2005 American Chemical Society Award for Encouraging Women in the Chemical Sciences
- 2004 Royal Society of Chemistry (UK), Spiers Medal, Faraday Division
- 2004 American Association for the Advancement of Science (AAAS), Fellow
- 2002 American Chemical Society, Spectrochemical Analysis Award
- 2002 American Chemical Society, Women Chemists Committee Regional Award for Diversity
- 2001 Oregon Academy of Science, Oregon Outstanding Scientist Award
- 2001 ADVANCE Leadership Award, National Science Foundation

- 2000 Research Creativity Extension, National Science Foundation
- 1998 Soroptomist International, Women Helping Women Award, Eugene, OR
- 1997 Presidential Award for Excellence in Science and Engineering Mentoring, White House
- 1997 College of Arts and Sciences Alumni Award, Kansas State University
- 1996 Francis P. Garvan Medal of the American Chemical Society
- 1993 Agnes Faye Morgan Research Award (Iota Sigma Pi Honorary Society)
- 1993 American Physical Society Fellow
- 1991 Faculty Award for Women Scientists and Engineers, National Science Foundation
- 1991 Research Creativity Extension, National Science Foundation
- 1989 Coblentz Society Spectroscopy Award
- 1986 Chemistry Department Alumni Award, Kansas State University
- 1986 Camille and Henry Dreyfus Teacher-Scholar Award
- 1985 Presidential Young Investigator Award, National Science Foundation
- 1985 Alfred P. Sloan Research Fellow
- 1982 Rosalyn Schwartz Award, Bryn Mawr College
- 1983 Junior Faculty Research Award, Bryn Mawr College

## **DISTINGUISHED LECTURESHIPS AND ADDRESSES**

- Danforth Lectureship, Grinnell College, September 2010 (upcoming)
- Presidential Lectureship, Iowa State University, 2010
- Henry Emmet Gunning Lecturer, University of Alberta, 2010
- James and Jeanette Neckers Lecturer, Hope College, 2010
- NSF MPS Distinguished Lecture, National Science Foundation, 2010
- Arthur William Davidson Memorial Lectureship, University of Kansas, 2009
- Frank T. Gucker Lecture, Indiana University, Bloomington, 2009
- Distinguished Guest Speaker, 11<sup>th</sup> Annual Beckman Scholars Symposium, 2009
- Eberly College of Arts and Sciences Distinguished Lectureship, West Virginia University, 2009
- AdvanceVT Distinguished Lectureship, Virginia Tech, 2009
- L. Carroll King Memorial Lectureship, Northwestern University, 2008
- Sr. Mary Thompson Scholar, College of St. Catherine, 2008
- George C. Pimentel Memorial Lectureship, Univ. of California, Berkeley, 2008
- “Science Without Limits” Lectureship, Lewis and Clark College, 2008
- Leland Wilson Chemistry Lectureship, University of Northern Iowa, 2007
- Fred M. Garland Lectureship, Texas A&M University, Knoxville, 2007
- Distinguished Women in Science Speaker, Stanford University, 2007
- Donna Russell Fox Lectureship, Cornell College, 2006
- Keynote Address, 20<sup>th</sup> Anniversary of the National Conference on Undergraduate Research, 2006

Howard S. Brode Memorial Lectureship, Whitman College, 2006  
Charles H. Fisher Lecturer, Roanoke College, 2005  
Keynote Address, Karen E. Wetterhahn Symposium, Dartmouth University, 2005  
Swiss Research Lectureship, Conférence Universitaire de Suisse Occidentale, Switzerland, 2005  
Keynote Address, Science Careers in Search of Women Conference, Argonne Natl. Lab., 2005  
McElvain Lectureship, University of Wisconsin, 2004  
Spiers Memorial Lecturer, Faraday Council of the Royal Society of Chemistry, Cambridge, UK 2004  
H.H. King Lectureship, Kansas State University, 2004  
Cottrell Scholars Lecturer, Research Corporation, 2004  
Kolthoff Distinguished Lectureship, University of Minnesota, 2003  
S. Dexter Squibb Distinguished Lectureship, North Carolina State, Asheville, 2002  
Nakamoto Lectureship, Marquette University, 2002  
Bergmann Lectureship, Yale University, 2002  
Gerhard L. Closs Lectureship, University of Chicago, 2002  
Dexter Squibb Distinguished Lectureship, North Carolina State, Asheville, 2002  
Directors Lectureship, Pacific Northwest National Laboratory, 2002  
Distinguished Lectureship, American Physical Society Laser Science Topical Group, 1996–2000  
Pittsburgh Conference Lectureship, Duquesne University, 2000  
Frontiers in Chemical Research Lectureship, Texas A&M University, 2000  
Clifford B. Purves Lectureship, McGill University, 1999  
Lucy W. Pickett Lectureship, Mount Holyoke College, 1997  
Phillips Distinguished Lectureship, Haverford College, 1995  
Shell Lecturer, National Science Teachers Association, 1991

## **APPOINTMENTS ON GOVERNING AND ADVISORY BOARDS (SELECTED LIST)**

### **CURRENT APPOINTMENTS**

2008-2010 *Chair-Elect and Chair*, Chemistry Section, AAAS  
2007-2010 *Chair*, Membership, American Academy of Arts and Sciences, Section of Chemistry  
2008-2011 Research Corporation Presidential Advisory Board Member  
2005-2010 *Associate Editor*, Annual Review of Physical Chemistry  
2006-2011 Hydrogen Fuel Cell Technical Advisory Committee Member, Office of the Secretary, Department of Energy  
2009-2010 *Chair*, Committee of Visitors, Workforce Development for Teachers and Scientists, Department of Energy  
2010-2012 Chemical Reviews, Editorial Advisory Board Member  
2006-2012 Accounts of Chemical Research, Editorial Advisory Board Member  
1998-2014 *Chair and Founder*, Committee on the Advancement of Women Chemists (COACH)

**PREVIOUS APPOINTMENTS (SELECTED LIST)**

- 2006-2009 Biointerphases, Editorial Advisory Board Member
- 2009 Helmholtz Association (Germany), Review Committee Member for Sponsored Programs in “Research with Photons, Ions and Neutrons”
- 2008-2009 Presidential Search Committee Member, University of Oregon
- 2006-2008 Journal of Chemical Physics, Editorial Advisory Board Member
- 2007-2008 *Chair*, Committee of Visitors (COV), Chemical Sciences, Geosciences, and Biosciences Division, Department of Energy, Basic Energy Sciences
- 2006-2008 *Chair*, Science Advisory Committee, Stanford Synchrotron Radiation Laboratory
- 2007-2008 Editor-in-Chief Search Committee Member, Journal of Chemical Physics
- 2007-2008 Steering Committee Member, NSF Sponsored Workshop on Recruitment and Retention of Minorities in the Chemical Sciences
- 2006-2007 *Chair*, Committee of Visitors (COV), Chemistry Division, NSF
- 1999-2006 State of Oregon, Board of Higher Education Member  
Gov. Kulongoski Appointee (2004-2006); Gov. Kitzhaber Appointee (1999-2003)  
*Vice President and Interim President* (2004)  
*Chair*, Chancellor’s Office Reorganization Committee (2004-2006)
- 2005-2006 COSEPUP Committee on Women in Academic Science and Engineering, NAS
- 2005-2006 Steering Committee, NSF, NIH & DOE Sponsored Workshop for Department Chairs on Gender Equity in the Chemical Sciences
- 2005 Research Corporation Presidential Advisory Panel
- 2004 Editor-in-Chief Search Committee Member, Journal of Physical Chemistry
- 2003-2007 Chemical Sciences Roundtable Member, NAS/NRC
- 2002-2005 Chemical and Engineering News Advisory Board Member
- 2001-2003 Langmuir, Editorial Board Member
- 1995-2003 Basic Energy Sciences Advisory Committee, Department of Energy  
*Chair* (1998-2003); *Member* (1995-1998)
- 1996-2001 Member, Council on Chemical Sciences, Department of Energy
- 1995-2000 Executive Committee, Physical Chemistry Division, ACS;  
*Chair* (1999) ; *Program Chair* (1998)
- 1992-2004 *Chair*, Women Faculty Resource Network, University of Oregon
- 1993-1996 Applied Spectroscopy Editorial Board Member
- 1993-1994 *Chair*, National Academy of Sciences Frontiers in Science Symposium
- 1993-1999 U.S. National Advisory Committee Member, IUPAC
- 1992-1995 Analytical Chemistry, Editorial Advisory Board Member

- 1991-1994 Accounts of Chemical Research, Editorial Advisory Board Member
- 1991-1994 Board on Solid State Sciences Member, NAS/NRC
- 1991-1995 Critical Reviews of Surface Science Editorial Board Member
- 1990-1994 Vibrational Spectroscopy, Editorial Advisory Board Member
- 1990-1995 Laser Science Topical Group Advisory Committee Member, American Physical Society
- 1989-1994 Journal of Physical Chemistry, Editorial Board Member
- 1989-1992 Materials Science Advisory Board Member, National Science Foundation
- 1989-1992 Board on Chemical Science and Technology Member, NAS/NRC
- 1988-1991 Executive Committee Member, Coblentz Society (Spectroscopy)
- 1986-1989 Governor's Science Advisory Board Member, State of Oregon, Gov. Goldschmidt appointee
- 1986-1989 Chemistry Advisory Board Member, National Science Foundation
- 1986-1989 Executive Board Member, Western Spectroscopy Association

### **LEGISLATIVE TESTIMONY**

- Oregon State House of Representatives, Subcommittee on Education, “Faculty Appointments and Hiring”, Salem, OR, April 2007.
- Oregon State House of Representatives, Subcommittee on Education, “Excellence in Research in the Oregon University System”, Salem, OR, March 2005.
- United States Senate, Committee on Science, Technology and Space on the issue of “Title IX and Women in Science”, Washington, DC, October 2002.
- United States House of Representatives, Subcommittee on Energy of the Committee on Science on “The Department of Energy Office of Science – Issues and Opportunities”, Washington, DC, May 2001.
- Oregon State House of Representatives, Subcommittee on Higher Education, “Science and Engineering Opportunities in Higher Education in Oregon”, Salem, OR, November 2001.

### **RADIO INTERVIEWS AND ESSAYS ON SCIENCE , MENTORING AND EDUCATION**

- “Women: We’ve Come A Long Way Maybe?” Eugene City Club broadcast on KLCC, National Public Radio, Eugene, OR, February 2010
- Jefferson Exchange Program on Jefferson Public Radio, Ashland, OR, November 12, 2007.
- “Wiggling the Wires”, Contributed Essay on Science and Engineering, Oregon Public Broadcasting, Portland, OR, July 20, 2005.
- Oregon Considered Program, Oregon Public Broadcasting, Portland OR, March 2005.
- Science and Society Program on World Talk Radio, October 5, 2005.

### **MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

- American Association for the Advancement of Science (Fellow)

American Academy of Arts and Sciences (Fellow)  
American Chemical Society  
American Physical Society (Fellow)  
Society for Applied Spectroscopy (Fellow)  
American Association for Women in Science (Fellow)  
International Women's Forum (Elected Member)  
Oregon Women's Forum (Elected Member)

## PUBLICATIONS

- (171) "The Unique Molecular Behavior of Water at the Chloroform-Water Interface", M. C. McFearin and G.L. Richmond, submitted.
- (170) "Ionic Disruption of the Liquid-Liquid Interface" E. S. Shamay and G.L. Richmond, *J. Phys. Chem. C*, submitted.
- (169) "Specific Ion Effects of Salt Solutions at the CaF<sub>2</sub>/water Interface. A.J. Hopkins, S. Schroedle and G.L. Richmond, *Langmuir*, in press.
- (168) "COACH Career Development Workshops for Science Faculty: Views of the Career Impact on Women Chemists and Chemical Engineers "J. Greene, P. Lewis, G.L. Richmond and J. Stockard, *J. Chem. Ed.*, 87 (386–391) 2010.
- (167) "Is the Academic Climate Chilly? The Views of Women Academic Chemists "J. Greene, P. Lewis, G.L. Richmond and J. Stockard, *J. Chem. Ed.*, **2010**, 87 (381–385) 2010.
- (166) "The Role of Interfacial Molecular Structure in the Adsorption of Ions at the Liquid-Liquid Interface," C. L. McFearin, and G.L. Richmond, *J. Phys. Chem. C*, 113 (21162-21168) 2009.
- (165) "From Franklin to Today: Towards a Molecular Level Understanding of Bonding and Adsorption at the Oil-Water Interface", C. McFearin, D. Beaman, F. Moore and G.L. Richmond, *J. Phys. Chem. C*, 113 (1171-1188) 2009.
- (164) "Integration or Segregation: How do Molecules Behave at Oil/Water Interfaces?" F.G. Moore and G.L. Richmond, *Accts. of Chem. Res.*, 41 (739-748) 2008.
- (163) "Equilibrium and Non-Equilibrium Kinetics of Self-Assembled Surfactant Monolayers: A Vibrational Sum-Frequency Study of Dodecanoate at the Fluorite-Water Interface", S. Schrödle and G. L. Richmond, *J. Amer. Chem. Soc.*, 130 (5072-5085) 2008.
- (162) "Sequential Wavelength Tuning: Dynamics at Interfaces Investigated by Vibrational Sum Frequency Spectroscopy", S. Schrödle and G. L. Richmond, *Appl. Spectroscopy*, 62 (389-393) 2008.
- (161) "Promoting Gender Equity in Academic Departments: A Study of Department Heads in Top-Ranked Chemistry Departments", J. Greene, P. Lewis, G.L. Richmond and J. Stockard, *J of Women and Minorities in Sci. and Engin.*, 14 (1-27) 2008.

- (160) "Water at Hydrophobic Liquid Surfaces: When Weaker is Better", D. K. Hore and G.L. Richmond, *J. Amer. Chem. Soc.*, 130 (1800-1801) 2008.
- (159) "Interfacial Depth Profiling of the Orientation and Bonding of Water Molecules Across Liquid-Liquid Interfaces", D. S. Walker and G.L. Richmond, *J. Phys. Chem. C*, 112 (201-209) 2008.
- (158) "In-situ Nonlinear Spectroscopic Approaches to Understanding Adsorption at Mineral-Water Interfaces", S. Schrödle and G. L. Richmond, *J. of Phys. D: Appl. Phys.*, 41 (1-14) 2008.
- (157) "Sum Frequency Generation Surface Spectra of Ice, Water and Acid Solutions Investigated by an Exciton Model", V. Buch, T. T. Tarbuck, G.L. Richmond, H. Groenzen and M.J. Schulz, *J. Chem. Phys.* 127 (204710-204730) 2007.
- (156) "Effects of Atmospherically Important Solvated Ions on Organic Acid Adsorption at the Surface of Aqueous Solutions" by M. Kido Soule, P. Blower, and G. L. Richmond, *J. Phys. Chem. B*, 49, (13703-13713) 2007.
- (155) "Good Coaching: As Important for Science as it is for Sports", G.L. Richmond, Invited Editorial, *Bunsen-Magazin*, 6, (211-213) 2007.
- (154) "Monomer Exchange Dynamics of Self-Assembled Surfactant Monolayers at the Solid-Liquid Interface", S. Schrödle and G.L. Richmond, *Chem. Phys. Chem.*, 8 (2315-2317) 2007.
- (153) "Understanding How Organic Solvent Polarity Affects Water Structure and Bonding at Halocarbon-Water Interfaces", C.L. McFearin and G.L. Richmond, *J. Mol. Liquids*, 136 (221-226) 2007.
- (152) "At the Water's Edge: Nitric Acid as a Weak Acid", E. S. Shamay, V. Buch, M. Parinello and G.L. Richmond, *J. Amer. Chem. Soc.*, 129, (12920-12911) 2007.
- (151) "Depth Profiling of Water Molecules at the Liquid-Liquid Interface using a Combined Surface Vibrational Spectroscopy and Molecular Dynamics Approach", D. S. Walker and G.L. Richmond, *J. Amer. Chem. Soc.*, 129 (9446-9451) 2007.
- (150) "Surface Speciation at Solid/Liquid Interfaces: A Vibrational Sum-Frequency Study of Acetate at the Fluorite/Water Interface", S. Schrödle, F.G. Moore and G.L. Richmond, *J. Phys. Chem. C*, 111 (10088-10094) 2007.
- (149) "In-situ Investigation of Carboxylate Adsorption at the Fluorite/Water Interface by Sum Frequency Spectroscopy", S. Schrödle, F.G. Moore and G.L. Richmond, *J. Phys. Chem. C*, 111, (8050-8059) 2007.
- (148) "Understanding the Effects of Hydrogen Bonding at the Vapor/Water Interface: Vibrational Sum Frequency Spectroscopy of H<sub>2</sub>O/HOD/D<sub>2</sub>O Mixtures Studied Using Molecular Dynamics Simulations, D.S. Walker and G.L. Richmond, *J. Phys. Chem. C*, 111 (8321-8330) 2007.
- (147) "Nonlinear Vibrational Spectroscopic Studies of the Adsorption and Speciation of Nitric Acid at the Vapor-Acid Solution Interface", J.C. Kido Soule, P.G. Blower and G.L. Richmond, *J. Phys. Chem. A*, 111 (3349-3357) 2007.

- (146) "Vibrational Sum-Frequency Spectroscopy and Molecular Dynamics Simulations of the Carbon Tetrachloride-Water and 1,2-Dichloroethane-Water Interfaces", D.S. Walker, F.G. Moore and G.L. Richmond, *J. Phys. Chem. C*, 111 (6103-6112) 2007.
- (145) "Molecular Structure of the Chloroform-Water and Dichloromethane-Water Interfaces", D. K. Hore, D. S. Walker, L. MacKinnon and G. L. Richmond, *J. Phys. Chem. C*, 111 (8832-8842) 2007.
- (144) "Layered Organic Structure at the Carbon Tetrachloride-Water Interface" D. K. Hore, D. Walker and G.L. Richmond, *J. Amer. Chem. Soc.*, 129 (752-753) 2007.
- (143) "Spectroscopic Studies of Solvated Hydrogen and Hydroxide Ions at Aqueous Surfaces", T. L. Tarbuck, S. T. Ota and G.L. Richmond, *J. Amer. Chem. Soc.*, 128 (14519-14527) 2006.
- (142) "Understanding the Population, Coordination, and Orientation of Water Species Contributing to the Nonlinear Optical Spectroscopy of the Vapor-Water Interface through Molecular Dynamics Simulations", D.S. Walker, D.K. Hore and G.L. Richmond, *J. Phys. Chem. B* 110 (20451 – 20459) 2006.
- (141) "Differing Orientational Behavior of Environmentally Important Cyanophenol Isomers at the Air-Water Interface", M. C. Kido Soule, D.K. Hore, D. M. Jaramillo-Fellin and G.L. Richmond, *J. Phys. Chem. B*, 110 (16575-16583) 2006.
- (140) "Adsorption and Reaction of CO<sub>2</sub> and SO<sub>2</sub> at a Water Surface", T. L. Tarbuck and G.L. Richmond, *J. Am. Chem. Soc.* 128 (3256-3267) 2006.
- (139) "And Gladly Teach, A Resource Book for Chemists Considering Academic Careers", 2<sup>nd</sup> Edition, A. T. Schwartz, R.A. Archer, A.K.El-Ashmawy, D.K. Lavallee, S. McGuire, G. Richmond, R. Eikey, American Chemical Society, 2006.
- (138) "Investigations of the Solid-Aqueous Interfaces with Vibrational Sum Frequency Spectroscopy," A. J. Hopkins, C. L. McFearin and G.L. Richmond, *Curr. Opin. in Solid State and Mater. Sci.*, 9 (19-27) 2005.
- (137) "SO<sub>2</sub>:H<sub>2</sub>O Surface Complex Found at the Vapor/Water Interface" T. L. Tarbuck and G.L. Richmond, *J. Amer. Chem. Soc.*, 127 (16806-16807) 2005.
- (136) "Adsorption of Organosulfur Species at Aqueous Surfaces: Molecular Bonding and Orientation," T. L. Tarbuck and G. L. Richmond, *J. Phys. Chem. B*, 109 (20868-20877) 2005.
- (135) "Redressing the Balance: Training Series for Women Scientists Expands", G. L. Richmond, *Nature*, 437 (592) 2005.
- (134) "Whole-Molecule Approach for Determining Orientation at Isotropic Surfaces by Nonlinear Vibrational Spectroscopy", D. K. Hore, D. K. Beaman, D. H. Parks, and G. L. Richmond, *J. Phys. Chem. B*, 109 (16846-16851) 2005.
- (133) "Surfactant Head Group Orientation at the Air/Water Interface", D. Hore, D. Beaman, G. L. Richmond. *J. Am. Chem. Soc.*, 127 (9356-9357) 2005.
- (132) "Career, Family and Institutional Variables in the Work Lives of Academic Women in the Chemical Sciences", R.E. Fassinger, K. Scantlebury, G. L. Richmond, *J of Women and Minorities in Science and Engineering*, 10 (297-316) 2005.
- (131) "Surfactant Adsorption at the Salt/Water Interface: Comparing the Conformation and

- Interfacial Water Structure for Selected Surfactants”, K. A. Becraft and G.L. Richmond, *J. Phys. Chem. B*, 109 (5108 – 5117) 2005.
- (130) “COACHing Women to Succeed in Academic Careers in the Chemical Sciences”, G. L. Richmond, *J. Chem. Ed.*, 82 (351-353) 2005.
- (129) “Vibrational Sum Frequency Spectroscopic Investigations of Molecular Interactions at Liquid/Liquid Interfaces”, M. R. Watry and G.L. Richmond, in *Interfacial Nanochemistry*, ed. H. Watarai, Kluwer Academic/Plenum Publishers, pgs 25-56, 2005.
- (128) “Recent Experimental Advances in Studies of Liquid/Liquid Interfaces”, M.A. Leich and G.L. Richmond, *Faraday Discuss.* 129 (1-21), 2005.
- (127) “Mid-Infrared Second Order Surface Susceptibility of  $\alpha$ -Quartz and its Application to Surface Sum Frequency Spectroscopy”, D.K. Hore, J. King, F. G. Moore, M.Y. Hamamoto and G.L. Richmond, *J. Chem. Phys.* 121 (12589-12594), 2004.
- (126) “Ti:Sapphire-based Picosecond Visible-Infrared Sum-Frequency Spectroscopy from 900-3100  $\text{cm}^{-1}$ ”, D.K. Hore, M.Y. Hamamoto and G.L. Richmond, *Applied Spectros.* 58 (1377-1384), 2004.
- (125) "Isolated Molecular Ion Solvation at an Oil/Water Interface Investigated by Vibrational Sum Frequency Spectroscopy", L.F. Scatena and G.L. Richmond, *J. Phys. Chem. B*, 108 (12518-12528) 2004.
- (124) “In-Situ Spectroscopic Investigations of Surfactant Adsorption at the  $\text{CaF}_2$ /Aqueous Solution Interface”, K. A. Becraft, F. G. Moore, and G.L. Richmond, *Chemical Physics-Phys. Chem.*, 6 (1880-1889) 2004.
- (123) "Probing the Molecular Structure and Bonding of the Surface of Aqueous Salt Solutions", E.A. Raymond and G.L. Richmond, *J. Phys. Chem. B*, 108 (5051-5059) 2004.
- (122) "Evidence for a Diffuse Interfacial Region at the Dichloroethane/Water Interface", D. S. Walker, M.G. Brown, C. L. McFearin and G. L. Richmond, *J. Phys. Chem. B*, 108 (2111-2114) 2004.
- (121) “Aqueous Solvation of Charge at Hydrophobic Surfaces”, L. F. Scatena and G.L. Richmond, *Chem. Phys. Lett.*, 383 (491-495) 2004.
- (120) “Charge Reversal Behavior at the  $\text{CaF}_2/\text{H}_2\text{O}/\text{SDS}$  Interface as Studied by Vibrational Sum Frequency Spectroscopy”, K.A. Becraft, F.G. Moore and G.L. Richmond, *J. Phys. Chem. B*, 107 (3675-3678) 2003.
- (119) “Hydrogen Bonding Interactions at the Vapor/Water Interface as Investigated by Vibrational Sum Frequency Spectroscopy of  $\text{HOD}/\text{H}_2\text{O}/\text{D}_2\text{O}$  Mixtures and Molecular Dynamics Simulations”, E.A. Raymond, T.L. Tarbuck, M.G. Brown and G.L. Richmond, *J. Phys. Chem. B*, 107, (546-556) 2003.
- (118) “Vibrational Sum-Frequency Spectroscopy of Alkane/Water Interfaces: Experiment and Theoretical Simulation”, M.G. Brown, D.S. Walker and G.L. Richmond, *J. Phys. Chem. B*, 107, (237-244) 2003.
- (117) “Vibrational Sum Frequency Studies of a Series of Phospholipid Monolayers and the Associated Water Structure at the Vapor/Water Interface,” M.R. Watry, T. Tarbuck and G.L. Richmond, *J. Phys. Chem. B*, 107(2) (512-518) 2003.

- (116) "Challenges in Interpreting Vibrational Sum Frequency Spectra: Deconvoluting Spectral Features as Demonstrated in the CaF<sub>2</sub>/H<sub>2</sub>O/SDS System", F.G. Moore, K.A. Becraft and G.L. Richmond, *Applied Spectroscopy*, 56 (1600-1610) 2002.
- (115) "Orientation and Conformation of Amino Acids in Monolayers at an Oil/Water Interface as Determined by Vibrational Sum Frequency Spectroscopy", M.R. Watry and G.L. Richmond, *J. Phys. Chem. B*, 106 (12517-12523) 2002.
- (114) "The Effects of Halothane on Phosphatidylcholine, -ethanolamine, - glycerol and -serine Monolayer Order at a Liquid/Liquid Interface," M. Watry and G.L. Richmond, *Langmuir*, 18 (8881-8887) 2002.
- (113) "Isotopic Dilution Studies of the Vapor/Water Interface as Investigated by Vibrational Sum-Frequency Spectroscopy", E.A. Raymond, T. Tarbuck and G.L. Richmond, *J. Phys. Chem. B*, 106 (2817-2820) 2002.
- (112) "Molecular Bonding and Interactions at Aqueous Surfaces as Probed by Vibrational Sum Frequency Spectroscopy ", G.L. Richmond, *Chemical Reviews*, 102 (2693-2724) 2002.
- (111) "In Situ Vibrational Spectroscopic Studies of the CaF<sub>2</sub>/H<sub>2</sub>O Interface", K. Becraft and G.L. Richmond, *Langmuir*, 17 (7721-7724) 2001.
- (110) "Orientation, Hydrogen Bonding, and Penetration of Water at the Organic/Water Interface", L.F. Scatena and G. L. Richmond, *J. Phys. Chem. B*, 105 (11240-11250) 2001.
- (109) "Probing Molecular Structure at Liquid Surfaces with Vibrational Sum Frequency Spectroscopy", M. Watry, M. G. Brown and G. L. Richmond, Focus Article for *Applied Spectroscopy*, 55 (321A-340A) 2001.
- (108) "Water at Hydrophobic Surfaces: Weak Hydrogen Bonding and Strong Orientation Effects", L.F. Scatena and G.L. Richmond, *Science*, 292 (908-911) 2001.
- (107) "Surface Structural Studies of Methane Sulfonic Acid at Air/Aqueous Solution Interfaces Using Vibrational Sum Frequency Spectroscopy", H.C. Allen, E.A. Raymond, and G.L. Richmond, *J. Phys. Chem. A*, 105 (1649-1655) 2001.
- (106) " Structure and Bonding of Molecules at Aqueous Surfaces", G.L. Richmond, *Ann. Rev. of Phys. Chem.*, 52, (357-389), 2001.
- (105) "Nonlinear Vibrational Sum Frequency Spectroscopy of Atmospherically Relevant Molecules at Water Surfaces", E.A. Raymond, H.C. Allen and G.L. Richmond, *Current Opinions in Colloids and Surfaces*, Vol. 5 (74-80) 2000.
- (104) "The Analysis of Interference Effects in the Sum Frequency Spectra of Water Surfaces", M.G. Brown, E.A. Raymond, H.C. Allen, L.F. Scatena and G.L. Richmond, *J. Phys. Chem. A*, 104 (10220-10226) 2000.
- (103) "Corrosion, Passivation and the Effect of Water Addition on an n-GaAs(100)/Methanol Photoelectrochemical Cell" T.A. Abshire and G.L. Richmond, *J. Phys. Chem. B*, 104 (1602-1609) 2000.
- (102) "Comparison of the Adsorption of Linear Alkanesulfonate and Linear Alkylbenzenesulfonate Surfactants at Liquid Interfaces", M. Watry and G. L. Richmond, *J. Am. Chem. Soc.*, 122 (875-883) 2000.
- (101) "Assembly of Long Chain Phosphatidylcholines at a Liquid-Liquid Interface", B. Smiley

- and G.L. Richmond, *Biopolymers (Biospectroscopy)*, 57 (117-125) 2000.
- (100) "Picosecond Photoluminescence Study of the n-GaAs(100)/Methanol Interface in a Photoelectrochemical Cell", T.A. Abshire and G.L. Richmond, *J. Phys. Chem. B*, 103 (7911-7919) 1999.
- (99) "Induced Changes in Solvent Structure by Phospholipid Monolayer Formation at a Liquid:Liquid Interface", R.A. Walker and G.L. Richmond, *Coll. Surf. A*, 154 (175-185) 1999.
- (98) "Alkyl Chain Ordering of Asymmetric Phosphatidylcholines Adsorbed at a Liquid-Liquid Interface", B.L. Smiley and G.L. Richmond, *J. Phys. Chem. B*, 103 (653-659) 1999.
- (97) "Molecular Structure and Adsorption of Dimethyl Sulfoxide at the Surface of Aqueous Solutions", H. Allen, D.E. Gragson and G.L. Richmond, *J. Phys. Chem. B*, 103 (660-666) 1999.
- (96) "Vibrational Sum Frequency Spectroscopy at Liquid-Liquid Interfaces: Model Membrane Systems", R.A. Walker, B.E. Smiley and G.L. Richmond, *Spectroscopy*, 14 (18-27) 1999.
- (95) "Effect of Alkyl Chain Length on the Conformation and Order of Simple Ionic Surfactants Adsorbed at the D<sub>2</sub>O/CCl<sub>4</sub> Interface as Studied by Sum-Frequency Vibrational Spectroscopy", J.C. Conboy, M.C. Messmer and G.L. Richmond, *Langmuir*, 14 (6722-6727) 1998.
- (94) "Phosphocholine Monolayer Structure at a Liquid-Liquid Interfaces", R.A. Walker, J.A. Gruetzmacher and G.L. Richmond, *J. Am. Chem. Soc.*, 120 (6991-7003) 1998.
- (93) "Vibrational Sum Frequency Spectroscopy of Surfactants and Phospholipid Monolayers at Liquid-Liquid Interfaces", B.E. Smiley, R.A. Walker, D.E. Gragson, T.E. Hannon and G.L. Richmond, *SPIE Proc.*, 3273 (134-144) 1998.
- (92) "Investigations of the Structure and Hydrogen Bonding of Water Molecules at Liquid Surfaces by Vibrational Sum Frequency Spectroscopy", D.E. Gragson and G.L. Richmond, Feature Article for *J. Phys. Chem. B*, 102 (3847-3861) 1998.
- (91) "Probing the Structure of Water Molecules at an Oil/Water Interface in the Presence of a Charged Soluble Surfactant through Isotopic Dilution Studies", D.E. Gragson and G.L. Richmond, *J. Phys. Chem. B*, 102 (569-576) 1998.
- (90) "Potential Dependent Alignment and Hydrogen Bonding of Interfacial Water Molecules at Charged Air/Water and Oil/Water Interfaces", D.E. Gragson and G.L. Richmond, *J. Am. Chem. Soc.*, 120 (366-375) 1998.
- (89) "Probing the Intermolecular Hydrogen Bonding of Water Molecules at an Oil/Water Interface in the Presence of Charged Soluble Surfactant", D.E. Gragson and G.L. Richmond, *J. Chem. Phys.*, 107 (9687-9690) 1997.
- (88) "Comparisons of the Structure of Water at Neat Oil/Water Interfaces as Determined by Vibrational Sum Frequency Generation", D.E. Gragson and G.L. Richmond, *Langmuir*, 13 (4804-4806) 1997.
- (87) "Vibrational Spectroscopy of Molecules at Liquid Surfaces and Interfaces", G.L. Richmond, *Anal. Chem.*, 69 (536A-543A) 1997.
- (86) "A Study of the Effect of pH on Surfactants and Water Structure at the Air/Water Interface

- Using Sum Frequency Generation", E.A. Raymond, D.E. Gragson, R.A. Walker and G.L. Richmond, *J. Undergrad. Res.*, 3 (145-148) 1997.
- (85) "Vibrational Sum Frequency Generation Studies of Saturated Glycerophospholipids: Effect of Temperature on Molecular Ordering at an Oil/Water Interface", J.A. Gruetzmacher, R.A. Walker and G.L. Richmond, *J. Undergrad. Res.*, 3 (90-94) 1997.
- (84) "Dependence of Alkyl Chain Conformation of Simple Ionic Surfactants on Head Group Functionality as Studied by Sum Frequency Generation Vibrational Spectroscopy", J.C. Conboy, M.C. Messmer and G.L. Richmond, *J. Phys. Chem. B*, 101 (6724-6733) 1997.
- (83) "Molecular Structure and Ordering of Phospholipids at a Liquid-Liquid Interface", R.A. Walker, J.C. Conboy and G.L. Richmond, *Langmuir*, 13 (3070-3073) 1997.
- (82) "An Investigation of Surfactant Behavior at the Liquid/Liquid Interface with Vibrational Sum Frequency Generation", J.C. Conboy, M.C. Messmer, R. Walker and G.L. Richmond, in *Progr. Colloid Polym. Sci.; Amphiphiles at Interfaces*, 103 (10-20) 1997.
- (81) "Photocorrosion of n-GaAs and Passivation by Na<sub>2</sub>S: Comparison of the (100), (110) and (111)B Faces", E.A. Miller and G.L. Richmond, *J. Phys. Chem. B*, 101 (2669-2677) 1997.
- (80) "Examination of the Interface Between Two Immiscible Electrolyte Solutions by Second Harmonic Generation", J.C. Conboy and G.L. Richmond, *J. Phys. Chem. B*, 101 (983-990) 1997.
- (79) "Ordering of Interfacial Water Molecules at the Charged Air/Water Interface Observed by Vibrational Sum Frequency Generation", D.E. Gragson, B.M. McCarty and G.L. Richmond, *J. Am. Chem. Soc.*, 119 (6144-6152) 1997.
- (78) "Quilting Together a Professional Life in Science", G.L. Richmond, *Association for Women in Science Newsletter*, 25 (38-39) 1996.
- (77) "Surfactant/Water Interactions at the Air/Water Interface As Probed by Vibrational Sum Frequency Generation", D.E. Gragson, B.M. McCarty and G.L. Richmond, *J. Phys. Chem.*, 100 (14272-14275) 1996.
- (76) "Tunable Picosecond IR Laser System for Use in Nonlinear Spectroscopic Applications", D.E. Gragson, B.M. McCarty, G.L. Richmond and D.S. Alavi, *J. Opt. Soc. B*, 13 (2075-2083) 1996.
- (75) "Investigation of Surfactant Conformation and Order at the Liquid-Liquid Interface by Total Internal Reflection Sum-Frequency Generation", J.C. Conboy, M.C. Messmer and G.L. Richmond, *J. Phys. Chem.*, 100 (7617-7622) 1996.
- (74) "Porous Silicon and the Search for a Silicon Based LED", R. Swischer, P. Sercel and G.L. Richmond, *J. Chem. Ed.*, 73 (738-741) 1996.
- (73) "Resonant Sum Frequency Generation Studies of Surfactant Ordering at Oil-Water Interfaces", M.C. Messmer, J.C. Conboy and G.L. Richmond, *SPIE Proc.*, 135 (2547) 1995.
- (72) "Total Internal Reflection Second Harmonic Generation from the Interface Between Two Immiscible Electrolyte Solutions", J.C. Conboy and G.L. Richmond, *Electrochim. Acta*, 40 (2881-2886) 1995.
- (71) "Observation of Molecular Ordering at the Liquid-Liquid Interface by Resonant Sum

- Frequency Generation", M.C. Messmer, J.C. Conboy and G.L. Richmond, *J. Am. Chem. Soc.*, 117 (8039-8040) 1995.
- (70) "Tunable Picosecond Infrared Laser System Based on Parametric Amplification in KTP with a Ti:sapphire Amplifier", D.E. Gragson, D.S. Alavi, G.L. Richmond, *Optics Lett.*, 20 (1991-1993) 1995.
- (69) "Surface Second Harmonic Generation Studies of Single Crystal Metal Surfaces", G.L. Richmond and R.A. Bradley, in Laser Spectroscopy and Photochemistry on Metal Surfaces, H.-L. Dai and W. Ho, eds., World Scientific Publishing Co., 1995, Part I, p 132-183.
- (68) "Observation of the Potential-Dependent Second Harmonic Response from the Si(111)/Electrolyte and Si(111)/SiO<sub>2</sub>/Electrolyte Interfacial Regions", J.L. Daschbach, P.R. Fischer, D. Demarest and G.L. Richmond, *J. Phys. Chem.*, 99 (3240-3250) 1995.
- (67) "Picosecond Photoluminescence Studies of Photocorrosion and Passivation of n-GaAs in Na<sub>2</sub>S Containing Solutions", B.A. Balko, E.A. Miller and G.L. Richmond, *J. Phys. Chem.* 95, (4124-4131) 1995.
- (66) "Picosecond Photoluminescence Studies of Recombination Dynamics at n-GaAs/Electrolyte Interfaces", G.L. Richmond, J. Kauffman and B.A. Balko, in Surface Imaging and Visualization, CRC Press, A.T. Hubbard, ed., 1995, p 597-633.
- (65) "FTIR Studies of Hafnium-Alkylbisphosphonate Multilayers on Gold: Effects of Alkylbisphosphonate Chain Length, Substrate Roughness and Surface Functionalization on Film Structure and Order", J.T. O'Brien, A.C. Zeppenfeld, G.L. Richmond and C.J. Page, *Langmuir*, 10 (4657-2663) 1994.
- (64) "Sensitivity of Second Harmonic Generation to Space Charge Effects at the Si(111)/Electrolyte and Si(111)/SiO<sub>2</sub>/Electrolyte Interfaces", P.R. Fischer, J.L. Daschbach and G.L. Richmond, *J. Vac. Sci. Tech.*, 12 (2617-2624) 1994.
- (63) "Total Internal Reflection Second Harmonic Generation: Probing the n-Alkane/Water Interface", J.C. Conboy, J.L. Daschbach, and G.L. Richmond, *Appl. Phys. A*, 59 (623-629) 1994.
- (62) "Studies of Alkane/Water Interfaces by Total Internal Reflection Second Harmonic Generation", J.C. Conboy, J.L. Daschbach, and G.L. Richmond, *J. Phys. Chem.*, 98 (9688-9692) 1994.
- (61) "Surface Second Harmonic Studies of Si(111)/Electrolyte and Si(111)/SiO<sub>2</sub>/Electrolyte Interfaces" P.R. Fischer, J.L. Daschbach and G.L. Richmond, *Chem. Phys. Lett.*, 218 (200-205) 1994.
- (60) "Surface-dipole and Electric-quadrupole Contributions to Anisotropic Second-Harmonic Generation from Noble Metal Surfaces", D.A. Koos, V.L. Shannon and G.L. Richmond, *Phys. Rev. B*, 47 (4730-4734) 1993.
- (59) "Surface Second Harmonic Studies of Stepped Ag(111) Electrode Surfaces", G.L. Richmond, *Chem. Phys. Lett.*, 213 (491-497) 1993.
- (58) "Corrosion Induced Surface States on GaAs Electrode Surfaces as Studied by Picosecond Luminescence Measurements", B. Balko, J. Kauffman and G.L. Richmond, *J. Phys. Chem.*, 97 (9002-9008) 1993.

- (57) "Nonlinear Optical Spectroscopy of Ag(111) in an Electrolyte and in Vacuum", R. A. Bradley, R. Georgiadis, S.D. Kevan and G.L. Richmond, *J. Chem. Phys.*, 99 (5535-5546) 1993.
- (56) "Examination of the Surface Second Harmonic Response from Noble Metal Surfaces at Infrared Wavelengths", E.K.L. Wong and G.L. Richmond, *J. Chem. Phys.*, 99 (5500-5507) 1993.
- (55) "Threshold Phenomena in Nonlinear Currents upon Metallization of Si(001)", S. Arekat, S.D. Kevan and G.L. Richmond, *Europhys. Lett.*, 22 (377-382) 1993.
- (54) "On the Influence of Steps on the Rotational Anisotropy of the Second Harmonic Generation from Ag Electrodes", K.A. Friedrich and G.L. Richmond, *Ber. Bunsen-Ges. Phys. Chem.*, 93 (386-394) 1993.
- (53) "Dependence of Luminescence Decays from GaAs/Electrolyte Contacts on Excitation Power and Applied Bias: Examination of the Modified Dead Layer Model", J.F. Kauffman and G.L. Richmond, *J. Appl. Phys.*, 73 (1912-1917) 1993.
- (52) "SHG and the Single Crystal Electrode Surface", G.L. Richmond, *Spectroscopy*, 7 (18-21) 1992.
- (51) "Power Dependent Effects in the Luminescence Decay of GaAs/Electrolyte Contacts at the Flat Band Potential", J.F. Kauffman, B.A. Balko and G.L. Richmond, *J. Phys. Chem.*, 96 (6371-6374) 1992.
- (50) "Power Dependent Effects in Photoluminescence vs. Voltage Scans of GaAs/Electrolyte Junctions Using Picosecond Pulse Excitation", J.F. Kauffman, B.A. Balko and G.L. Richmond, *J. Phys. Chem.*, 96 (6374-6377) 1992.
- (49) "Measurement of the Second Harmonic Response from Ag(111) at the Long-Wavelength Limit", E.K.L. Wong, K.A. Friedrich and G.L. Richmond, *Chem. Phys. Lett.*, 195 (628-632) 1992.
- (48) "Observation of Electronic Structure at the Metal/Electrolyte and Metal/Vacuum Interface by Second Harmonic Generation", R. Bradley, R. Georgiadis, S.D. Kevan and G.L. Richmond, *J. Vac. Sci. Tech.*, 10 (2996-3000) 1992.
- (47) "Comments on "Women in Science"" D.R. Rolison, P.A. Thiel, A.M. Stacy, G.L. Richmond, J.K. Rice, J.E. Pemberton, J.G. Osteryoung, W.E. O'Grady, R.J. Nowak, R.L. Lichter, *Science*, 256 (1614) 1992.
- (46) "Comparison of Cu(111) in Aqueous Electrolytes and in Ultrahigh Vacuum: An Optical Second Harmonic Generation Study", E.K.L. Wong, A. Friedrich, J.M. Robinson, R. Bradley and G.L. Richmond, *J. Vac. Sci. Tech.*, 10 (2985-3000) 1992.
- (45) "Letter to the Editor", G.L. Richmond, *Science*, 79 (256) 1992.
- (44) Comment on "Ag(111) Surface Reconstruction Studied by Optical Second Harmonic Generation", R. Georgiadis, R. A. Bradley and G.L. Richmond, *Phys. Rev. Lett.*, 69 (989-990) 1992.
- (43) "Structure and Stability of Underpotentially Deposited Layers on Au(111) Studied by Optical Second Harmonic Generation", D.A. Koos and G.L. Richmond, *J. Phys. Chem.*, 96 (3770-3775) 1992.

- (42) "Second Harmonic Generation and Surface Structure of Electrodes", G.L. Richmond, in Advances in Electrochemical Science and Engineering, C.W. Tobias and H. Gerischer, eds., VCH, Vol. 2, 1991, p 142.
- (41) "Investigations of Electrochemical Interfaces by Nonlinear Optical Methods", G.L. Richmond, in In-situ Studies of Electrochemical Interfaces, H. Abruña, ed., VCH Verlag Chemical, 1991, p 267-338.
- (40) "SHG and the Single Crystal Electrode Surface", G.L. Richmond, *Spectroscopy International*, 3 (18-21) 1991.
- (39) "Picosecond Studies of Photowashing on GaAs", J. Kauffman and G.L. Richmond, *Appl. Phys. Lett.*, 59 (561-563) 1991.
- (38) "A Comparative Second Harmonic Study of Cu(111) in UHV and in Solution", R. Bradley, E.K.L. Wong, A. Friedrich and G.L. Richmond, *J. Electroanal. Chem.*, 309 (319-323) 1991. (37) "Anionic Adsorption on the Surface of Polycrystalline Copper by Optical Second Harmonic Generation", *Gaodeng Zuezhiao Huaxue Zuebao*, 11 (863) 1990.
- (36) "Phase Measurements of Optical Second Harmonic Generation on Au(111) during Thallium Underpotential Deposition", D.A. Koos and G.L. Richmond, *J. Chem. Phys.*, 93 (869-871) 1991.
- (35) "Wavelength Dependent Second Harmonic Generation from Ag(111) in Solution", R. Georgiadis and G.L. Richmond, *J. Phys. Chem.* 95 (2895-2899) 1991.
- (34) "Comparison of the SH Response from Ag(111) in UHV and in Solution", R. Bradley, S. Arekat, R. Georgiadis, J.M. Robinson, S.D. Kevan and G.L. Richmond, *Chem. Phys. Lett.*, 168 (468-472) 1990.
- (33) "Effect of Optical Resonances on the SH Response from Ag(111) and Ag(110) in Solution", R. Georgiadis, G.A. Neff and G.L. Richmond, *J. Chem. Phys.*, 92 (4623-4625) 1990.
- (32) "Optical Second Harmonic Generation as a Probe of Electrode Surface Phenomena", G.L. Richmond, in Electroanalytical Chemistry, A.J. Bard, ed., Vol. 17, Marcel Dekker, New York, 1991, pp 87-180.
- (31) "Comparative Studies of the Silver/Aqueous Electrolyte Interface by Photoacoustic and Nonlinear Optical Techniques", P. Chu and G.L. Richmond, *J. Electroanal. Chem.*, 296 (203-219) 1990.
- (30) "An Optical Second Harmonic Generation Study of Thallium Underpotential Deposition on Au(111)", D. Koos and G.L. Richmond, *J. Electrochem. Soc.*, 136 (218C-220C) 1989.
- (29) "Time Resolved Measurements of the Electrodeposition of Thallium on Silver Electrodes by Optical Second Harmonic Generation", J.M. Robinson and G.L. Richmond, *Chem. Phys.*, 141 (175-188) 1990.
- (28) "Time Resolved Second Harmonic Generation Studies of Double Layer Restructuring: Sulfate Adsorption and Desorption on a Polycrystalline Silver Electrode" J.M. Robinson and G.L. Richmond, *Electrochim. Acta*, 34 (1639-1645) 1990.
- (27) "Rotational Anisotropy in the Second Harmonic Response from Cu(111) in Aqueous Solution", V.L. Shannon, D.A. Koos, S.A. Kellar, P. Huifang and G.L. Richmond, *J. Phys. Chem.*, 93 (6434-6440) 1989.

- (26) "Anisotropic Nonlinear Optical Response From Silver Electrodes During Thin Film Deposition", D.A. Koos, V.L. Shannon and G.L. Richmond, *J. Phys. Chem.*, 94 (2091-2098) 1990.
- (25) "Characterization of the Ag/Aqueous Electrolyte Interface by Optical Second Harmonic Generation and Differential Capacitance", H.M. Rojhtalab and G.L. Richmond, *J. Phys. Chem.*, 93 (3269-3275) 1989.
- (24) "Optical Second Harmonic Generation: A New Probe of Structure and Dynamics at the Solid/Liquid Interface", V.L. Shannon, J.M. Robinson and G.L. Richmond, *Spectroscopy*, 3 (44-49) 1988.
- (23) "Second Harmonic Generation Studies of Interfacial Structure and Dynamics", G.L. Richmond, J.M. Robinson and V.L. Shannon, *Prog. Surf. Sci.*, 28 (1-70) 1988.
- (22) "In Situ Characterization of Interfacial Phenomena by Optical Second Harmonic Generation", V.L. Shannon, D.A. Koos, J.M. Robinson and G.L. Richmond, *Chemically Modified Surfaces*, Gordon and Breach, New York, Vol. 2, 1988, p 485.
- (21) "Metal Binding Properties of Nafion Membrane as Studied by Laser Excitation Spectroscopy", E.K. Wong and G.L. Richmond, *Appl. Spectroscopy*, 42 (293-295) 1988.
- (20) "Optical Second Harmonic Generation as an In-Situ Probe of Electrode Surface Dynamics. Ag(111)", V.L. Shannon, D.A. Koos, J.M. Robinson and G.L. Richmond, *Chem. Phys. Lett.*, 142 (323-328) 1987.
- (19) "Changes in the Second Harmonic Rotational Anisotropy for a Ag(111) Electrode as a Function of Bias Potential", V.L. Shannon, D.A. Koos and G.L. Richmond, *J. Phys. Chem.*, 91 (5548-5551) 1987.
- (18) "Nonlinear Optical Studies of Semiconductor Interfacial Properties", J.M. Robinson and G.L. Richmond, in Advances in Laser Science-II, M. Lapp and G.A. Kenney-Wallace, eds. (Am. Inst. of Physics, NY 1987).
- (17) "SHG and Differential Capacitance Studies of Smooth Silver Electrode-Aqueous Electrolytes", H.M. Rojhtalab and G.L. Richmond, in Advances in Laser Science-II, M. Lapp and G.A. Kenney-Wallace, eds. (Am. Inst. of Physics, NY 1987).
- (16) "Laser Excitation Spectroscopic Studies of Metal Ion Binding in Polymers", E.K.L. Wong and G.L. Richmond, in Advances in Laser Science-II, M. Lapp and G.A. Kenney-Wallace, eds. (Am. Inst. of Physics, NY 1987).
- (15) "Second Harmonic Generation for In-Situ Analysis of Electrode Surface Structure", V.L. Shannon, D.A. Koos and G.L. Richmond, *Appl. Optics*, 26 (3579-3583) 1987.
- (14) "Monitoring Surface Structure and Interfacial Properties via Second Harmonic Generation", J.M. Robinson, H.M. Rojhtalab, V.L. Shannon, D.A. Koos and G.L. Richmond, *Pure Appl. Chem.*, 59 (1263-1268) 1987.
- (13) "The Observation of Rotational Anisotropy in the Second Harmonic Intensity from a Ag(111) Electrode", V.L. Shannon, D.A. Koos and G.L. Richmond, *J. Chem. Phys.*, 87 (1440-1441) 1987.
- (12) "Experiments on Optical Second Harmonic Generation as a Surface Probe of Electrodes", G.L. Richmond, H.M. Rojhtalab, J.M. Robinson and V.L. Shannon, *J. Opt. Soc. Amer. B*, 4 (228-236) 1986.

- (11) "Characterization of the Silver-Aqueous Electrolyte Interface by Optical Second Harmonic Generation", G.L. Richmond, *Langmuir*, 2 (132-139) 1986.
- (10) "Adsorption of Ions on Smooth and Roughened Silver Surfaces: A Comparative Study by Optical Second Harmonic Generation", G. L. Richmond, *Chem. Phys Lett.*, 113 (359-363) 1985.
- (9) "Laser Spectroscopic Studies of Metal Ion Binding in Concanavalin A", G. L. Richmond, J. Maule-Schmidt, P. Chu, and S. Emlen, *Proc. Inter. Conf. Lasers*, 1985, p 424-429.
- (8) "Optical Second Harmonic Generation as a Probe of Ion Adsorption at Electrochemical Interfaces", G.L. Richmond, *Proc. Inter. Conf. Lasers*, 1985, p 248-254.
- (7) "Optical Second Harmonic Generation as a Surface Probe of Silver Electrodes", G.L. Richmond, *Surf. Sci.*, 147 (115-126) 1984.
- (6) "Second Harmonic Generation Studies of Anionic Adsorption on Polycrystalline and Single Crystal Electrode Surfaces by SHG", G.L. Richmond, *Chem. Phys. Lett.*, 110 (571-575) 1984.
- (5) "Second Harmonic Generation As a Probe of Sulfate Ions Adsorbed on Silver Electrodes", G.L. Richmond, *Chem. Phys. Lett.*, 106 (26-29) 1984.
- (4) "HF Rotational Laser Emission from the ClF/H<sub>2</sub> Reaction: Time Evolution of the Gain", G.L. Richmond and G.C. Pimentel, *J. Chem. Phys.*, 80 (1162-1170) 1984.
- (3) "Vibrational Energy Transfer Probabilities of Highly Vibrationally Excited Fluoroethane and 1,2-Difluoroethane Molecules", G. Richmond and D.W. Setser, *J. Phys. Chem.*, 84 (2699) 1980.
- (2) "The Structure of the [C<sub>6</sub>H<sub>6</sub>O].bul.<sup>+</sup> ion: An Ion Kinetic Energy Spectrometry Study", M.K. Hoffman, M.D. Friesen and G. Richmond, *Org. Mass Spectrom.*, 12 (150-160) 1977.
- (1) "Spectrophotometric-Kinetic Determination of Thio Ketones, G. Richmond, C. Rainey, C.E. Meloan, *Anal. Lett.*, 9 (105-107) 1976.

## BOOK REVIEWS

- (3) "Being a Scientist and a Mother", Book Review of "Motherhood: The Elephant in the Laboratory" Edited by Emily Monosson, G. L. Richmond, *Chemical and Engineering News*, 86 (64-65) 2008.
- (2) "Women in Science", Book review of "Are Women Achieving Equity in Chemistry" edited by C.H. Marzabadi, V.J. Kuck, S.A. Nolan, and J.P. Buckner; G. L. Richmond, *Chemical and Engineering News*, 84 (35) 2006.
- (1) "Women in Science", Book review of "Every Other Thursday: Stories and Strategies from Successful Women Scientists" edited by Ellen Daniell, G. L. Richmond, *Chemical and Engineering News*, 84 (34) 2006.

## INVITED TALKS ON SCIENTIFIC RESEARCH

### Meetings, Events and Symposia

- “Oil on Water: Calming the Seas but Not the Science”, Plenary Lecture, ICORS 2010, Boston, MA, August 2010. (upcoming)
- “Understanding Adsorption and Reactivity at Oil-Water Interfaces”, Pittsburgh Spectroscopy Conference, Orlando, FL, March 2010.
- “Going Nonlinear to Study Environmental Processes at Liquid Surfaces”, Spectroscopy Society of Pittsburgh, Duquesne University, Pittsburgh, PA, November 2009.
- “Molecular Behavior of Fluorocarbon Surfaces in Reactive Aqueous Environments”, ASME/STLE International Joint Tribology Conference, Memphis, TN, October 2009.
- “Understanding Structure and Dynamics of Surfactant Adsorption at Mineral/Water Interfaces”, Pacific Northwest American Vacuum Society Meeting, Portland, OR, September 2009.
- “Going Nonlinear to Study Environmental Processes at Liquid Surfaces”, 2009 Beckman Scholars Symposium, Beckman Center, Irvine, CA, July 2009.
- “Who is the REAL Carl Lineberger?”, Meeting on 40 Years of Ion Chemistry, University of Colorado, Boulder, CO, June 2009.
- “At the Water’s Edge: Understanding Environmentally Important Processes at Aqueous Surfaces”, 237<sup>th</sup> National American Chemical Society Meeting, Salt Lake City, UT, March 2009.
- “To Charge or Not to Charge: Ions at Aqueous Interfaces”, FACSS 2008 Meeting, Reno, NV, October 2008.
- “Spectroscopic Studies of Environmentally Important Processes at Aqueous Surfaces”, FACSS 2008 Meeting, Reno, NV, October 2008.
- “Taking Charge: The Role of Water in Mediating Ion Distribution at Water/Organic Interfaces”, 236<sup>th</sup> National American Chemical Society Meeting, Philadelphia, PA, August 2008.
- “Water at Hydrophobic Surfaces: Insights Gained from a Combined Experimental and Theoretical Approach”, International Meeting on Aqueous Solutions and their Interfaces”, Heraklion, Crete, June 2008.
- “Going Nonlinear to Study Environmental Processes at Liquid Surfaces”, Northwest Regional ACS Meeting, Park City, Utah, June 2008.
- “Where Oil and Water Mix: Molecular Properties of the Interface between Aqueous Solutions and Hydrocarbon Solvents”, 235<sup>th</sup> National American Chemical Society Meeting, Boston, MA, March 2008.
- “The Magic and Mysteries of Water”, Lewis and Clark College Science Without Limits Lecture Series, Portland, OR March 2008.
- “Going Nonlinear to Study the Structure and Dynamics of Molecular Assembly at Complex Interfaces”, 2008 Bomem –Michelson Award Symposium, Pittsburgh Spectroscopy Conference, New Orleans, LA, March 2008.

- “Wet Interfaces: Developing a Molecular Framework for Understanding the Behavior of Materials in Aqueous Solutions”, Bio Molecular Materials Contractors’ Meeting, Department of Energy, Warrenton, VA, November 2007.
- “Going Nonlinear to Study Surfaces of Environmental Importance”, Frontiers in Optics 2007/Laser Science XXIII Conference, San Jose, CA September 2007.
- “The Surface of Nitric Acid Solutions: Insights Gained from a Combined Experimental and Computational Approach”, 234<sup>th</sup> National American Chemical Society Meeting, Boston, MA, August 2007.
- “How Nitric Acid Adsorption at an Aqueous Surface Alters its Acidity”, Dynamics at Surfaces Gordon Research Conference, Andover, NH, August 2007.
- "Surface Nonlinear Spectroscopy and Molecular Dynamics Simulations to Understand Molecular Structure and Bonding at a Series of Liquid-Liquid Interfaces", G. L. Richmond, International Conference on Solution Chemistry, Perth, Australia, July 2007.
- “The Magic and Mysteries of Water”, Oregon Museum of Science and Technology Pub Talk Series, Portland, OR, May 2007.
- "Combining Surface Nonlinear Spectroscopy and Molecular Dynamics Simulations to Understand Molecular Structure and Bonding at a Series of Liquid-Liquid Interfaces", G. L. Richmond, 233rd National American Chemical Society Meeting, Chicago, IL, March 2007.
- “Molecular Adsorption, Ion Solvation and Hydrogen Bonding at Aqueous Surfaces,” Conference on Liquid Systems Under Extreme Conditions, Environmental Molecular Liquids Group, Barcelona, Spain, September 2006.
- “The Surface of Aqueous Solutions: A Combined Experimental and Theoretical Approach”, 232nd National American Chemical Society Meeting, San Francisco, CA, September 2006.
- “Understanding the Surface Composition and Structure of Nitric Acid Solutions”, 232nd National American Chemical Society Meeting, San Francisco, CA, September 2006.
- “Molecular Structure and Bonding at Organic/Water Interfaces”, 232nd National American Chemical Society Meeting, San Francisco, CA, September 2006.
- “Acids at Aqueous Interfaces and their Effect on Adsorption”, Telluride Workshop on Molecular Aspects of Solvation in Hydrogen Bonded Systems”, Telluride, CO, August 2006.
- “Going Nonlinear in Studying Water Surfaces”, Partners in Science Program, Murdock Foundation, Vancouver, WA, August 2006.
- “Understanding Molecular Interactions at Fluid Interfaces”, Pittsburgh Spectroscopy Conference, Orlando, FL, March, 2006.
- “Franklin and the Future: From Franklin’s Oil Drop Experiment to Self-Assembled Monolayer Structures”, American Vacuum Society Meeting, San Francisco, CA, November 2006.
- “Recent Advances in Measuring Molecular Structure and Adsorption at Liquid Surfaces with Vibrational Sum Frequency Spectroscopy”, Federation of Analytical Chemistry and Spectroscopy Societies, Quebec City, Canada, October 2005.

- “Applications of Vibrational Sum Frequency Spectroscopy to the Study of Environmentally Important Processes at Liquid Surfaces”, 230th National American Chemical Society Meeting, Washington, DC, August 2005.
- “Ions in Complex Physical, Chemical and Biological Systems”, 230th National American Chemical Society Meeting, Washington, DC, August 2005.
- “Understanding Molecular Structure and Bonding at Monolayer Surfaces Adsorbed at Solid and Liquid Surfaces”, 230th National American Chemical Society Meeting, Washington, DC, August 2005.
- “Going Nonlinear in Probing Adsorption at Aqueous Surfaces of Environmental Importance”, (given by M.Kido) American Physical Society Meeting, Los Angeles, CA, March 2005.
- “Understanding the Structure and Bonding of Water at Aqueous Surfaces and Interfaces”, 229th National American Chemical Society Meeting, San Diego, CA, March 2005.
- “Going Nonlinear in Understanding Aqueous Surfaces”, 229th National American Chemical Society Meeting, San Diego, CA, March 2005.
- “Advances in Molecular Characterization of Liquid/Liquid Interfaces”, Faraday Discussion. The Dynamics and Structure of the Liquid-Liquid Interface, Cambridge University, Cambridge, UK, September 2004. (Spiers Lecturer).
- “Water Structure and Bonding at Hydrophobic Surfaces”, Symposium on Aqueous Surfaces, 228th National American Chemical Society Meeting, Philadelphia, PA, August 2004.
- “Nonlinear Optical Studies of Aqueous Interfaces”, Water and Aqueous Solutions Gordon Research Conference, Holderness School, Holderness, NH, August 2004.
- “Understanding Molecular Bonding and Adsorption at Liquid Interfaces”, Chemistry at Interfaces Gordon Research Conference, Kimball Academy, New Hampshire, August 2004.
- “Molecular Structure and Orientation at Liquid/Liquid Interfaces” 37<sup>th</sup> Heyrovsky Discussion Meeting, Trest, Czech Republic, June 2004.
- “Advancing our Understanding of Interfacial Structure with VSFS”, Vibrational Spectroscopy Gordon Research Conference, Bristol, RI, July 2004.
- “Going Nonlinear in Probing Surfaces with Vibrational Spectroscopy”, 227th National American Chemical Society Meeting, March 2004.
- “Probing Adsorption and Molecular Structure at Aqueous Interfaces with Vibrational Sum Frequency Spectroscopy”, 227th National American Chemical Society Meeting, March 2004.
- “Hydrogen Bonding at Water Surfaces”, German Chemical Society Meeting, Munich, Germany, October 2003.
- “Water Structure and Bonding at Hydrophobic Liquid Surfaces”, Deutsche Bunsen Discussion Meeting on Interfacial Water in Chemistry and Biology, Schloss Velen, Germany, Sept. 2003.
- “Molecular Interactions at Aqueous Surfaces”, Electronic Spectroscopy and Dynamics Gordon Research Conference, Bates College, ME, July 2003.
- “Understanding Molecular Interactions at Liquid Surfaces: Spectroscopy and Simulation,” 225<sup>th</sup> National American Chemical Society Meeting, New Orleans, LA, March 2003.
- “Adsorption at the CaF<sub>2</sub>/H<sub>2</sub>O Interface by Vibrational Sum Frequency Spectroscopy”, 225<sup>th</sup> National American Chemical Society Meeting, New Orleans, LA, March 2003.

- “Vibrational Spectroscopy of Liquid Surfaces: Going Nonlinear”, 224<sup>th</sup> National American Chemical Society Meeting, Boston, MA, August 2002.
- “Water-Surfactant Interactions at Liquid Surfaces Structure and Hydrogen Bonding of Water at Hydrophobic Liquid Surfaces”, 224<sup>th</sup> National American Chemical Society Meeting, Boston, MA, August 2002.
- “Structure and Hydrogen Bonding of Water at Hydrophobic Liquid Surfaces”, 224<sup>th</sup> National American Chemical Society Meeting, Boston, MA, August 2002.
- "Understanding Molecular Structure at Liquid Surfaces", Pittsburgh Spectroscopy Conference, New Orleans, LA, March 2002.
- "Water Surfaces; New Insights and Discoveries", Dynamics at Surfaces, Gordon Research Conference, Andover, NH, August 2001.
- "Structure and Hydrogen bonding of Water at Liquid Surfaces", Gordon Research Conference on Chemical Reactions at Surfaces", Ventura, CA, February 2001.
- "Hydrogen Bonding at Water Surfaces: Some Surprisingly Weak Interactions", Gordon Research Conference on Electrochemistry, Ventura, CA, January 2001.
- "Structure and Hydrogen Bonding of Water at Surfaces: Some New Insights and Surprises", 220<sup>th</sup> National American Chemical Society Meeting, Washington, DC, August 2000.
- "Surprising Discoveries of How Water Hydrogen Bonds and Orients at Hydrophobic Surfaces", Gordon Research Conference on Water and Aqueous Solutions, Holderness, NH, August 2000.
- "Structure and Hydrogen Bonding of Water at Hydrophobic Surfaces", Spring National American Physical Society Meeting, Minneapolis, MN, March 2000.
- "Adsorption and Monolayer Formation at Liquid Surfaces by Vibrational Sum Frequency Spectroscopy", 219<sup>th</sup> American Chemical Society Meeting, San Francisco, CA, March 2000.
- "Vibrational Sum Frequency Spectroscopy of Aqueous Surfaces: H-Bonding and Solvation", Western Spectroscopy Association, Asilomar, CA, January 2000.
- "Molecular Structure and Bonding at Liquid Surfaces as Probed by VSFS" 26<sup>th</sup> Annual Conference of Analytical Chemistry and Spectroscopy Societies, Vancouver, Canada, October 1999.
- "Hydrogen Bonding of Water Molecules at Liquid Surfaces as Probed by Vibrational Sum Frequency Spectroscopy", Gordon Research Conference on Liquids, Holderness, NH, August 1999.
- "Molecular Structure and Adsorption at Liquid Interfaces", 217<sup>th</sup> American Chemical Society Meeting, Anaheim, CA, March 1999.
- "Molecular Structure and Adsorption Dynamics at Liquid Surfaces and Interfaces", Canadian Society for Chemistry Conference, June 1998.
- "Studies of Molecular Adsorption at Liquid Surfaces and Interfaces by VSFS", 23<sup>rd</sup> Annual Informal Conference on Photochemistry, Pasadena, CA, May 1998.
- "Molecular Structure and Adsorption Dynamics of Phospholipids at Liquid/Liquid Interfaces", Electrochemical Society Meeting, San Diego, CA, May 1998.
- "Structure and Hydrogen Bonding of Water at Liquid Interfaces as Studied by Vibrational Sum Frequency Spectroscopy", 215<sup>th</sup> American Chemical Society Meeting, Dallas, TX, March 1998.

"Molecular Structure and Hydrogen Bonding of Water Molecules at Liquid Surfaces and Interfaces", Pittsburgh Spectroscopy Conference, New Orleans, LA, March 1998.

"Vibrational Spectroscopy of Liquid Surfaces and Interfaces", Federation of Analytical Chemistry and Spectroscopy Societies 24<sup>th</sup> Annual Meeting, Providence, RI, October 1997.

"Molecular Structure and Bonding at Liquid/Liquid Interfaces", 214<sup>th</sup> American Chemical Society Meeting, Las Vegas, NV, September 1997.

"Vibrational Spectroscopy of Molecules at Liquid Surfaces and Interfaces", 214<sup>th</sup> American Chemical Society Meeting, Las Vegas, NV, September 1997.

"Spectroscopy of Molecules at Liquid/Liquid and Liquid/Air Interfaces", Chemistry at Interfaces Gordon Research Conference, New Hampshire, July 1996.

"Spectroscopic Studies of Surfactants at Liquid Surfaces and Interfaces", Photons and Chemistry Symposium, Estes Park, CO, April 1996.

"Molecular Structure and Ordering at Oil/Water Interfaces", American Physical Society Meeting, St. Louis, MO, March 1996.

"Photocorrosion and Passivation of n-GaAs: A Comparison of the (100), (110) and (111)B Faces", E.A. Miller and G.L. Richmond, 211th National American Chemical Society Meeting, New Orleans, LA, March 1996.

"Molecular and Ionic Interactions at Liquid/Liquid Interfaces", 211th National American Chemical Society Meeting, New Orleans, LA, March 1996.

"Vibrational Spectroscopy of Surfactants at Oil/Water Interfaces", 210th American Chemical Society Meeting, Chicago, Ill, August 1995.

"Molecular and Ionic Interactions at the Oil/Water Interface as Measured by Surface Second Harmonic Generation and Sum-Frequency Generation", Electrochemical Society Meeting, Reno, Nevada, May 1995.

"Dynamics of Photoinduced Processes at the n-GaAs/Electrolyte Interface", NSF Japan - US Conference of Semiconductor Surfaces, San Diego, CA, April 1995.

"Nonlinear Optical Studies of Oil/Water Interfaces", Western Spectroscopy Association Conference, Asilomar, CA, February 1995.

"Nonlinear Optical Studies of Liquid/Liquid Interfaces", Electrochemistry Gordon Research Conference, Ventura, CA, January 1995.

"Sum Frequency Generation of Surfactants at Oil/Water Interfaces", SPIE Meeting, San Diego, CA, July 1995.

"Nonlinear Optical Studies of Surfaces and Interfaces", Surface Studies by Nonlinear Optical Spectroscopies, Kassel, Germany, May 1994.

"Second Harmonic Generation Studies of Liquid Interfaces", 27th Heyrovsky Discussions, Trest, Czech Republic, June 1994.

"Nonlinear Optical Studies of Surfaces and Interfaces", American Vacuum Society Meeting, Seattle, WA, November 1993.

"Electrode/Electrolyte Interactions as Probed by Nonlinear Optical Methods", 206th National American Chemical Society, Chicago, Ill, August 1993.

"Picosecond Studies of Photoinduced Processes at N-GaAs/Electrolyte Interfaces" International Laser Science/Optical Science Association Meeting, Toronto, October 1993.

"Surface Science Under Water: Probing the GaAs/Electrolyte Interface", Gordon Research Conference on Analytical Chemistry, August 1993.

"Surface Science Under Water", Iota Sigma Pi Convention, Cleveland, OH, June 1993.

"Surface Science Under Water", Department of Education Fellowship Workshop, University of Southern California, February 1993.

"What Can SHG Tell Us About Surface Atomic and Electronic Structure of Metal Electrode Surfaces", Deutsche Bunsengesellschaft für Physikalische Chemie, Mainz, Germany, Oct. 1992.

"Wavelength Dependent Studies of Noble Metal Surfaces by SHG", 204th National American Chemical Society Meeting, Washington, DC, Aug. 1992.

"Comparison of Surface Properties in Solution and in UHV by Second Harmonic Generation", 18th Annual FACSS Meeting, Anaheim, CA, October 1991.

"What Can SHG Tell Us About Surface Atomic and Electronic Structure of Metal Surfaces", 178th National Meeting of the Electrochemical Society, Phoenix, AZ, October, 1991.

"Lasers in Chemistry", NSTA National Meeting, Shell Lecture, Houston, TX, March 1991.

"Surface Science Under Water", Gordon Research Conference on Electrochemistry, January 1991, Ventura, CA.

17th Annual FACSS Meeting, Cleveland, OH, "What Can SHG Tell Us About the Electrochemical Double Layer?", October 1990.

"What Can SHG Tell Us About the Electrochemical Double Layer?", 17th Annual FACSS Meeting, Cleveland, OH, October 1990.

"Linear and Nonlinear Laser Interactions and Molecular Dynamics", USSR-USA Joint Workshop on Laser Spectroscopy, Moscow - Leningrad, USSR, June 1990.

"Nonlinear Optics as a Probe of Buried Interfaces", Gordon Research Conference on High Temperature Chemistry, August 1990.

"Comparison of SHG from Metals in Solution and UHV", SPIE Meeting, Los Angeles, CA, January 1990.(given by R. Georgiadis)

"Probing Interfacial Structure and Dynamics by SHG", LASST-ACSIS Workshop on Interfacial Phenomena, Campabello Island, New Brunswick, Canada, August 1989.

"Optical Second Harmonic Generation as a Probe of Dynamics In Situ", 198th National ACS Meeting, Miami, FL, Sept. 1989.(Given by J. Robinson)

"Second Harmonic Generation and the Solid/Liquid Interface", Frontiers of Molecular Spectroscopy and Dynamics Workshop, Princeton, NJ, June 1989

"Second Harmonic Generation and the Single Crystal Electrode Surface", 42nd Annual Summer Symposium on Analytical Chemistry, Blacksburg, VA, July 1989.

"Surface Second Harmonic Generation: What Have We Learned?", Columbus Spectroscopy Conference, Columbus, OH, June 1989.

"Recent Advances in the Use of Second Harmonic Generation to Monitor Thin Film Electrodeposition", 175th National Meeting of the Electrochemical Society, Los Angeles, CA, May 1989.

"Examining the Structure and Dynamics of Thin Film Deposition by SHG", Pittsburgh Conference, Atlanta, GA, March 1989.

"Second Harmonic Generation as a Probe of Solid/Liquid Interfacial Processes", 197th National ACS Meeting, Dallas, Texas, April 1989.

"Probing the Structure and Dynamics of Thin Film Growth by Nonlinear Optical Methods", 197th National ACS Meeting, Dallas, Texas, April 1989.

"Nonlinear Optics as a Probe of the Solid/Liquid Interface", Bunsen-Kolloquium, Heidelberg, West Germany, April 1989.

"The Structure and Dynamics of Thin Film Deposition on Crystalline Metal Electrode Surfaces by Optical Second Harmonic Generation", 1989 Materials Research Society Meeting, San Diego, CA, April 1989.

"Nonlinear Optical Probes of Electrochemical Interfaces", International Meeting on the Chemistry and Physics of Electrified Interfaces, Bologna, Italy, August 1988.

"Second Harmonic Generation as Probe of Interfacial Structure and Dynamics at the Solid/Liquid Interface", ILS-IV Conference, Atlanta, GA, October 1988.

"What Can SHG Tell Us About the Structure of the Solid/Liquid Interface?" Gordon Research Conference on Vibrational Spectroscopy, Wolfeboro, NH, Aug. 1988.

195th National ACS Meeting/Joint 3rd North American Chemical Congress, Toronto, Canada, "Nonlinear Optics as a Probe of Interfacial Structure and Dynamics at Buried Interfaces", June 1988.

"Measurements of the Structure and Dynamics of Film Growth on Metal Electrode Surfaces by Second Harmonic Generation", 41st Annual Summer Symposium on Analytical Chemistry, Stanford University June 1988.

"SHG as an In-Situ Probe of Surface Structure During Thin Film Deposition", 173rd Meeting of the Electrochemical Society, Atlanta, GA, May 1988.

"Electrochemical Studies Using Second Harmonic Generation", 14th Annual FACSS Meeting, Detroit, MI September 1987.

"Interactions at the Solid-Liquid Interface as Measured by Second Harmonic Generation", Gordon Research Conference on The Physics and Chemistry of Liquids, Plymouth, NH, August 1987.

"Probing the Solid-Liquid Interface with Nonlinear Optics" Gordon Research Conference on Analytical Chemistry, New Hampton School, NH, August 1987.,

- "Probing Interfacial Structure and Dynamics Using Second Harmonic Generation," 194th National ACS Meeting, New Orleans, August, 1987.
- "In-Situ Characterization of Interfacial Phenomena", Chemically Modified Surfaces Symposium, Ft. Collins, CO, June 1987.
- "In-Situ Characterization of Solid/Liquid Interfaces by Optical Second Harmonic Generation", Electrochemical Society Meeting, Philadelphia, PA May 1987.
- "Nonlinear Optical Studies of Electrochemical Interfaces", 13th Annual FACSS Meeting, St. Louis, MO September 1986.
- "Nonlinear Optics: A Probe of Interfacial Structure and Dynamics", Joint DEAP/DCP Meeting of the APS, Eugene, OR, June 1986.
- "Nonlinear Optics as Probe of Electrochemical Interfaces", National Research Council, Denver CO, October 1985.
- "Optical Studies of Electrochemical Surfaces by Second Harmonic Generation and Photoacoustic Spectroscopy", 190<sup>th</sup> National ACS Meeting, Miami, FL, May 1985.
- "Optical Studies of Electrochemical Interfaces", Materials Science Symposium, Corvallis, OR, March 1985.
- "Laser Spectroscopic Studies of Molecular Adsorption at Electrochemical Interfaces", Western Spectroscopy Conference, Asilomar CA, January 1985.

**Research Seminars and Colloquia have also been given at:**

- Carleton College, Department of Chemistry, Northfield, MN, April 2010
- Iowa State University, Department of Chemistry, Ames, IA, April 2010 (2 lectures)
- University of Alberta, Department of Chemistry, Alberta, Canada, March 2010 (3 lectures)
- Hope College, Department of Chemistry, Holland, MI, January 2010
- University of Kansas, Department of Chemistry, Lawrence, KS, November 2009
- University of Indiana, Department of Chemistry, Bloomington, IN, September 2009.
- The Pennsylvania State University, Department of Chemistry, State College, PA, April 2009
- West Virginia University, Department of Chemistry, March 2009
- Virginia Tech, Department of Chemistry, Blacksburg, VA, February 2009
- California Institute of Technology, Department of Chemistry, Pasadena, CA, February 2009
- Northwestern University, Department of Chemistry, Evanston, IL, September 2008
- Pacific University, Department of Chemistry, Forest Grove, OR, October 2008
- California State University, Los Angeles, Dept. of Chemistry, LA, CA, October 2008
- California State University, San Luis Obispo, Dept. of Chemistry, San Luis Obispo, CA, October 2008
- University of California, Berkeley, Department of Chemistry, Berkeley, CA, March 2008.
- Rohm and Haas Company, Spring House, PA, March 2008
- Lewis and Clark College, Department of Chemistry, Portland, OR, March 2008

College of St. Catherine, Department of Chemistry, St. Paul, MN, March 2008  
Washington State University, Departments of Chemistry & Physics, Pullman, WA, January 2008  
University of Denver, Department of Chemistry, Denver, CO, October 2007  
University of Northern Iowa, Department of Chemistry, Cedar Falls, IA, October 2007  
University of Delaware, Department of Chemistry, Newark, DE, September 2007  
Texas A&M University, Department of Chemistry, Kingsville, Texas, April 2007  
University of Illinois, Chicago, Chicago, IL, March 2007  
Stanford University, Department of Chemistry, Palo Alto, CA, February 2007  
George Fox University, Department of Chemistry, December 2006  
Linfield College, Department of Chemistry, McMinnville, OR, November 2006  
University of Colorado, Department of Chemistry, Boulder, CO, November 2006  
Seattle University, Department of Chemistry, Seattle, WA, November 2006  
Whitman College, Department of Physics, Walla Walla, Washington, March 2006  
Cornell College, Department of Chemistry, Mt. Vernon, Iowa, February 2006  
Georgia Institute of Technology, Department of Chemistry, Atlanta, GA, October 2005  
L'Ecole Polytechnique Fédérale de Lausanne (EPFL), Institute of Chemical Sciences and Engineering,  
Switzerland, April 2005  
University of Berne, Department of Chemistry and Biochemistry, Berne, Switzerland, April 2005  
University of Neuchâtel, Institute of Chemistry, Neuchâtel, Switzerland, April 2005  
University of Geneva, Department of Chemical Physics, Geneva, Switzerland, April 2005  
University of Wisconsin, Department of Chemistry, November 2004  
Harvard University, (Joint Harvard-MIT colloquium), Department of Chemistry, Cambridge,  
MA, March 2004  
Columbia University, Department of Chemistry, Cambridge, MA, March 2004  
Western Washington University, Department of Chemistry, Bellingham, WA, January 2004  
University of Illinois, Department of Chemistry, Urbana, IL, May 2003  
Joint Institute for Laboratory Astrophysics (JILA), University of Colorado, Boulder, CO, May 2003  
University of Minnesota, Department of Chemistry, April 2003  
North Carolina State University, Department of Chemistry, Asheville, NC, November, 2002  
Oregon State University, Department of Chemistry, Corvallis, OR, November 2002  
University of Pennsylvania, Department of Chemistry, Philadelphia, PA, April 2002  
Marquette University, Department of Chemistry, Milwaukee, WI, February 2002  
Yale University, Department of Chemistry, New Haven, Conn., January 2002  
University of Chicago, Department of Chemistry, Chicago, IL, January 2002  
Director's Lectureship, Pacific Northwest National Laboratory, January 2002

University of Washington, Department of Chemistry, Seattle, May 2001  
Stanford University, Department of Chemistry, April 2001  
University of British Columbia, Department of Chemistry, Vancouver, BC, March 2001  
Naval Research Laboratory Colloquium Series, Arlington, VA, February 2001  
Carleton College, Department of Chemistry, November 2000  
University of Maryland, Chemical Physics Program, College Park, MD, October 2000  
University of Idaho, Department of Chemistry, September 2000  
Cornell University, Department of Chemistry, Ithaca, NY, April 2000  
Univ. of Wisc., Oshkosh, Department of Chemistry, WI, April 2000  
Texas A&M Univ., Department of Chemistry, College Station, TX, Feb. 2000  
University of Pittsburgh, Department of Chemistry, Pittsburgh, PA, February 2000  
Duquesne University, Department of Chemistry, Pittsburgh, PA, February 2000.  
Portland State University, Department of Chemistry, Portland, OR, January 2000  
California State San Luis Obispo, Department of Chemistry, December 1999  
McGill University, Department of Chemistry, Montreal, Canada, November 1999  
Pennsylvania State University, Department of Chemistry, State College, PA, April 1999  
Cal State University, Department of Chemistry, Fresno, March 1999  
Central Washington University, Department of Chemistry, Ellensburg, WA, February 1999  
University of Delaware, Department of Chemistry, Newark, DE, February 1999  
Gonzaga College, Spokane, Department of Chemistry, WA, February 1999  
Western Washington University, Department of Chemistry, Bellevue, WA, October 1998.  
Willamette University, Department of Chemistry, Salem, OR, November 1998.  
Western Washington University, Department of Chemistry, Bellevue, WA, October 1998.  
Los Alamos National Laboratory, Los Alamos, NM, May 1998.  
Univ. of California, Irvine, Department of Chemistry, April 1998.  
University of Indiana, Department of Chemistry, Bloomington, IN, March 1998.  
University of Tennessee, Department of Chemistry, Knoxville, TN, February 1998.  
University of Utah, Department of Chemistry, Salt Lake City, UT, February 1998.  
Mount Holyoke College, Department of Chemistry, November 1997.  
Naval Research Laboratory, Washington, DC, April 1997  
National Institute of Standards and Technology, Gaithersburg, MD, April 1997.  
Furman University, Department of Chemistry, Greenville, SC, April 1997.  
Pomona College, Department of Chemistry, Claremont, CA, March 1997.  
Kansas State University, Department of Chemistry, Manhattan, KS, February 1997.  
Carroll College, Department of Chemistry, WI, February, 1997.  
University of Minnesota, Department of Chemistry, Minneapolis, MN, December 1996.  
University of North Dakota, Department of Chemistry, Fargo, ND, December 1996.

University of Missouri, Department of Chemistry, Columbia, MO, November 1996.  
Reed College, Department of Chemistry, Portland, OR, November 1996.  
SUNY Buffalo, Graduate Symposium, Buffalo, NY, May 1996.  
Olin Chemical, Cheshire, Conn., May 1996.  
University of California, Department of Chemistry, Los Angeles, CA, April 1996.  
Princeton University, Department of Chemistry, Princeton, NJ, April 1996.  
Michigan State University, Department of Chemistry, February 1996.  
University of Michigan, Department of Chemistry, Ann Arbor, MI, February 1996.  
University of California, Berkeley, Department of Chemistry, Berkeley, CA, October 1995.  
University of Colorado, Department of Chemistry, Boulder, CO, November 1995.  
Haverford College, Department of Chemistry, Haverford, PA, February 1995.  
University of California, Department of Chemistry, Santa Cruz, CA, June 1995.  
Purdue University, Department of Chemistry, West Lafayette, IN, March 1995.  
Lewis and Clark College, Department of Chemistry, Portland, OR, April 1994.  
University of British Columbia, Department of Chemistry, Vancouver, BC, November 1994.  
University of Arizona, Department of Chemistry, Tucson, AZ, June 1994.  
California Institute of Technology, Department of Chemistry, Pasadena, CA, November 1993.  
Washington State University, Department of Physics, Pullman, WA, February 1993.  
Pomona College, Department of Chemistry, Pomona, CA, February 1991.  
University of Arizona, Department of Chemistry, Tucson, AZ, April 1991.  
University of Utah, Department of Chemistry, Salt Lake City, UT, April 1991.  
University of Toronto, Department of Physics, Toronto, Canada, April 1991.  
Oberlin College, Department of Chemistry, Oberlin, OH, April 1991.  
IBM Almaden Research Laboratories, San Jose, CA, May 1991.  
Oakridge National Laboratory, Division of Analytical Chemistry, Oak Ridge, TN, October 1990.  
University of Chicago, Department of Chemistry, Chicago, IL, November 1990.  
Oregon Graduate Institute, Department of Chemistry, Portland, OR, October 1990.  
Iowa State University, Department of Chemistry, Ames, IA, February 1990.  
Cornell University, Department of Chemistry, Ithaca, NY, March 1990.  
University of Wisconsin, Department of Chemistry, Madison, WI, April 1990.  
University of Heidelberg, Department of Chemistry, Heidelberg, GDR, April 1989  
Fritz-Haber Institute, Physical Chemistry Division, Berlin GDR, April 1989.  
University of Pittsburgh, Department of Chemistry, Pittsburgh, PA, February 1989.  
University of Akron, Department of Chemistry, Akron, OH, February 1989.  
University of California, Department of Chemistry, Berkeley, CA, April 1988.  
University of Texas, Department of Chemistry, Austin, TX, March 1988.  
AT & T Bell Laboratories, Murray Hill, NJ, April 1988.  
Exxon Laboratories, Clinton, NJ, April 1988.

University of Rochester, Department of Chemistry, Rochester, NY, October 1988.  
Fort Lewis College, Department of Chemistry, Durango, CO, November 1988.  
Reed College, Department of Chemistry, Portland, OR, November 1988.  
Polaroid Corporation, Boston, MA, November 1988.  
University of California, Department of Chemistry, Davis, CA, November 1988.  
University of California, Department of Chemistry, Irvine, CA, 1988.  
Oregon State University, Department of Chemistry, Corvallis, OR, 1988.  
DuPont de Nemours, Central Research Laboratories, Wilmington, DE, 1988.  
University of Cincinnati, Department of Chemistry, Cincinnati, OH, October 1987  
National Bureau of Standards, Chemistry Division, Gaithersburg, MD, October 1987.  
Harvard University, Department of Chemistry, Cambridge, MA, November 1987.  
University of California, Department of Chemistry, Riverside, CA, June 1987.  
Brigham Young University, Department of Chemistry, Provo, UT, February 1987.  
IBM Almaden Research Laboratories, San Jose, CA, March 1987.  
Stanford Research Institute, Department of Chemistry, Palo Alto, CA, March 1987.  
Standard Oil Research Laboratories, Cleveland, OH, April 1987.  
University of Virginia, Department of Chemistry, Richmond, VA, April 1987.  
Portland State University, Department of Chemistry, Portland, OR, May 1987.  
Dow Chemical Company, Midland, MI, October 1986.  
University of Illinois, Department of Chemistry, Urbana, November IL, 1986  
University of Washington, Department of Chemistry, Seattle, WA, December 1986.  
Polaroid Corporation, Cambridge, MA, March 1986.  
University of Nevada, Department of Chemistry, Reno, NV, March 1986.  
University of California, Department of Chemistry, Santa Cruz, CA, May 1986.  
Oregon State University, Department of Chemistry, Corvallis, OR, March 1986.  
E. I. DuPont de Nemours, Central Research, Wilmington, DE, December 1985.  
Duke University, Department of Chemistry, Raleigh, NC, October 1985.  
Argonne National Laboratories, Chemistry Division, Argonne, IL, December 1985.  
Allied Corporation, Murray Hill NJ, April 1985.  
Kansas State University, Department of Chemistry, Manhattan, KS, December 1985.  
A T & T Bell Laboratories, Murray Hill, NJ, February 1985.  
University of California, Department of Chemistry, Los Angeles, February 1985.  
Texas A & M University, Department of Chemistry, College Station, TX, March 1985.  
University of Pennsylvania, Department of Chemistry, Philadelphia, PA, November 1985.  
University of Oregon, Department of Chemistry, Eugene, OR, January 1985.  
Naval Research Laboratory, Arlington, VA, July 1984.  
Exxon Research Center, Clinton, NJ, June 1984.  
The Pennsylvania State University, Department of Chemistry, November 1984.

Purdue University, Department of Chemistry, November 1984.

University of California, Los Angeles, December 1984.

Temple University, Department of Chemistry, April 1983.

University of Delaware, Department of Chemistry, Wilmington, DE, March 1983.

## **INVITED TALKS TO GENERAL AUDIENCES ON SCIENCE RELATED TOPICS**

“Professional Skills Training for Graduate Students: What They Left Out of the Lab Manual”,  
Department of Chemistry, Iowa State University, April 2010.

“Women: We’ve Come A Long Way Maybe?” Eugene City Club, Eugene, OR, February 2010.

“Diversity in Science and Engineering: Why is it so important? What can we do about it?”  
Department of Chemistry, Hope College, January 2010.

“Potholes and Speed Bumps on the Road to Diversity: COACh Efforts to Smooth the Ride”,  
National Science Foundation, Mathematical and Physical Science Division, Distinguished  
Lecture Series, Arlington, VA, January 2010.

“Science Savvy Women: Breaking through the Plexiglass Ceiling”, Science Savvy Month of  
Events, UO Portland, Portland, OR, October 2009.

“Diversity in Science and Engineering: Why is it so important? Why is it so difficult to  
achieve?”, Department of Chemistry, University of Indiana, Bloomington, IN, September  
2009.

“COACh Strategies for Increasing Minority Players on the Chemistry Professional Roster”, 235<sup>th</sup>  
National American Chemical Society Meeting, Washington, DC, August 2009.

“Battling Bias and Barriers: Necessary Steps our Academic Institutions Must Take to Assure a  
Strong Science and Engineering Workshops”, Eberly College of Arts and Sciences  
Distinguished Lecturer, West Virginia University, March 2009.

“Don’t Ask, Don’t Get”, Women in Technology, Invitrogen, Eugene, OR, April 2009.

“Quilting Together a Professional Career in Science”, AWIS Chapter, Virginia Tech, Blacksburg,  
VA, March 2009.

“Powering Up: Women as Leaders in the Scientific Enterprise, ADVANCE Virginia Tech  
Distinguished Lecture, Virginia Tech, Blacksburg, VA, March 2009.

“COAChing for Better Science - Workshops for Graduate Students, Faculty and Administrators”,  
ADVANCE Program, University of North Carolina at Charlotte, February 2009.

“When Scientific Brilliance Isn’t Enough”, Carroll King Memorial Lecture, Northwestern  
University, September 2008.

“COAChing STEM Women Graduate Students in Effective Negotiation and Communication  
Techniques”, Washington State University, October 2008.

“Professional Skills Development for STEM Faculty”, Clare Booth Luce Professors and  
Postdoctoral Associates Meeting, Washington, DC, August 2008.

“Professional Skills for Pursuing a Career in Academia”, Clare Booth Luce Graduate Fellows  
Meeting, Washington, DC, August 2008.

- “Gender Equity Workshops for Chairs of the Top Physics and Chemistry Departments in the U.S.: What’s the Impact?” Society for Industrial and Applied Mathematics Annual Meeting, San Diego CA, July 2008.
- “Beyond Bias and Barriers: Necessary Steps Federal Agencies Must Take to Assure a Strong Science and Engineering Workforce”, 2008 Federal Interagency Title IX Symposium: Gender Equity in Science, Technology, Engineering and Mathematics, Washington, DC, July 2008.
- “COACHing for Better Science: Lessons Learned from our Toils in the Trenches”, NSF Annual ADVANCE Meeting, Alexandria, VA, May 2008.
- “Quilting Together a Professional Life in Science”, Girl Scouts Western Rivers Council Annual Meeting, Springfield, OR, April 2008.
- “The Common Thread between Scientists and Quilters”, Eugene Rotary Club, Eugene, OR, April 2008.
- “What they Left Out of the Lab Manual: Professional Skills Training for Graduate Students, Postdocs - and Maybe Even a Few Faculty”, 233<sup>nd</sup> National American Chemical Society Meeting, Boston, MA, New Orleans, LA, April 2008.
- “Winning ACS Awards: The Good, the Bad and the Unknown”, 233<sup>nd</sup> National American Chemical Society Meeting, Boston, MA, April 2008.
- “Quilting Together a Professional Life in Science”, Sr. Mary Thompson Scholar Lectureship, College of St. Catherine, St. Paul, MN, March 2008.
- “Don’t Ask – Don’t Get: Effective Communication and Negotiation Tactics for Career Advancement”, Rohm and Haas Company, Spring Hill, PA, March 2008.
- “Negotiating for What You Need for a Successful Scientific Career”, Women in Science Luncheon, Washington State University, Pullman, WA, January 2008.
- "Beyond Bias and Barriers: Necessary Steps Academic Institutions Must Take To Assure and Strong Science and Engineering Workforce," Washington State University, Pullman, WA, January 2008.
- “Women as Leaders in the Scientific Enterprise”, Assembly Meeting VI of the Association of Women Investigators and Technologists, Madrid, Spain, November 2007.
- “The Magic and Mysteries of Water”, Leland Wilson Lectureship, University of Northern Iowa, Cedar Falls, IA, October 2007.
- “Quilting Together a Professional Life in Science”, Women in Technology and Science Luncheon, University of Oregon, Eugene, October 2007.
- "Beyond Bias and Barriers: Necessary Steps Academic Institutions Must Take To Assure and Strong Science and Engineering Workforce, WISE Program, University of Delaware, Newark, DE, September 2007.
- “Powering Up: Women as Leaders in the Scientific Enterprise”, Conference on Women in Science: The Way Forward, Heidelberg, Germany, May 2007.
- "Beyond Bias and Barriers: Necessary Steps Academic Institutions Must Take To Assure and Strong Science and Engineering Workforce", WISE Seminar Program, University of Southern California, March 2007.

- "Beyond Bias and Barriers: Necessary Steps Academic Institutions Must Take To Assure and Strong Science and Engineering Workforce", Leadership Seminar Series, University of Illinois, Chicago, March 2007.
- "Be Smart: Negotiating for What You Need to Achieve Your Personal and Professional Goals", Graduate Student Mentoring Seminar, Stanford University, Palo Alto, CA, February 2007.
- "Beyond Bias and Barriers: Necessary Steps Academic Institutions Must Take To Assure and Strong Science and Engineering Workforce", University of Southern California, Los Angeles, CA, February 2007.
- "Coaching Women to Succeed in Academic Science", University of Colorado, Boulder, CO, November 2006.
- "Women in Science and Engineering in Higher Education", 199<sup>th</sup> Annual National Association of State Universities and Land Grant Colleges (NASULGC), Houston, Texas, November 2006.
- "COACH: Leveling the Field for Women in Science", XXVII Latin American Chemistry Congress and the VI International Congress on Chemistry and Chemical Engineering, Havana, Cuba, October 2006.
- "Negotiating for What You Need to Achieve Your Personal and Professional Goals", Department of Chemistry, University of Virginia, September 2006.
- "Women in Academic Science and Engineering: Challenges and Opportunities", Science and Society, Joint Workshop Between U.S. and Iranian Scientists, Triellis, France, June 2006.
- "COACHing Women to be Successful in the Sciences", Council on Chemical Research, Tucson, AZ, May 2006.
- "COACHing Women to Succeed in Science", Stanford Think Tank Meeting on Title IX, Stanford University, April 2006.
- "Career in Science: Things I Wish I'd Known Before Morphing into a Lab Rat", Keynote Speaker, National Conference on Undergraduate Research, Asheville, NC, April 2006.
- "Quilting Together a Professional Life in Science", Brode Lectureship, Whitman College, Walla, Walla, WA, March 2006.
- "Negotiating for What You Need to Achieve Your Personal and Professional Goals" 231<sup>st</sup> National American Chemical Society Meeting", Atlanta, GA, March 2006.
- "Quilting Together a Professional Life in Science: A Female Faculty Perspective", Donna Fox Lectureship, Cornell College, Mount Vernon, Iowa, February 2006.
- "The Fascinating Properties of Water", Learning in Retirement Group, Eugene, OR, November 2005.
- "Quilting Together a Professional Life in Science", American Association of University Women, Eugene, OR, November 2005.
- "Quilting Together Professional Career in Science", Keynote Speaker, Karen Wetterheim Symposium, Women in Science Program, Dartmouth College, Hanover, NH, May 2005.
- "The Impact of COACH on Women Faculty in Academic Science", Joint meeting of the XXXV International Congress of Physiological Sciences and Experimental Biology, San Diego, CA, April 2005.

"COACH: Working to Level the Playing Field for Women Chemists in Academia", 229th National American Chemical Society Meeting, San Diego, CA, March 2005.

"Quilting Together a Professional Life in Science", Science Careers in Search of Women Conference, Argonne National Laboratory, Argonne, IL, February 2005.

"COACHing Women in Leadership Roles in Academia", Women's Leadership Alliance Meeting, University of California, San Diego, January 2005.

"What is COACH", "A Chemistry Ph.D? Why Bother? ", Presidential Symposium on Changing Needs in Doctoral Education, 228th National American Chemical Society Meeting, August 2004.

"Taking the Sigh out of Science", Tenth Cottrell Scholar Conference, Research Corporation, Tucson, AZ, July 2004.

"Women in the Chemical Workforce: Comparing the US and European Countries", panel discussion, German Chemical Society Meeting, Munich, Germany, October 2003.

"COACH: Advancing the Careers of Women Scientists", Department of Chemistry, University of Minnesota, April 2003.

"RSECs: Providing Leadership Opportunities for All Participants", 224<sup>th</sup> National American Chemical Society Meeting, Boston, MA, August 2002.

"Quilting Together a Professional Life in Science", Department of Chemistry, Women in Science Group, University of Pennsylvania, Philadelphia, PA, April 2002.

"COACH: Assisting Women Faculty", Department of Chemistry, University of Washington, Seattle, WA, April 2001.

"COACHing Women for Successful Careers in the Chemical Sciences", 220<sup>th</sup> National American Chemical Society Meeting, Washington, DC, August 2000.

"Teaching Science to Nonscientists", APS Distinguished Lectureship, University of Wisconsin, Oshkosh, Oshkosh, WI, April 2000.

"Taking the Sigh Out of Science: Teaching Science to Nonscientists", Frontiers in Science Lectureship, Texas A&M University, College Station, TX, February 2000.

"Striving for a Healthy Equilibrium Between Work and Home", Women in Science and Engineering Conference, Texas A&M University, College Station, TX, February 2000.

"Teaching Science to Nonscientists", Clifford B. Purves Lectureship, McGill University, Montreal Canada, November 1999.

"Quilting Together a Professional Life in Chemistry" Women Chemists Committee, California Section, Mills College, Oakland, CA, October 1999.

"Taking the Sigh Out of Science: Demonstrations for K-12 Science Classes", 4-J Teachers In Service Day Workshop, Eugene, OR, October 1999.

"Taking the Sigh Out of Science" Northwest Regional American Chemical Society Meeting, Portland, OR, June 1999.

"Quilting Together a Professional Life in Science", 54<sup>th</sup> Northwest Regional American Chemical Society Meeting, Portland, OR, June 1999. (Women's Luncheon)

"Mentoring and Recruiting Women Chemistry Faculty and Students", Western Chemistry Chair Conference, Western Washington University, October 1998.

"Quilting Together a Professional Life in Science", Emeritus Faculty Meeting, University of Oregon, Eugene, November 1998.

- "Taking the Sigh out of Science", Portland Alumni Lecture Series, Multnomah Club, Portland, OR, April 1998.
- "Striving for a Healthy Balance Between Work and Home", 215<sup>th</sup> American Chemical Society Meeting, Dallas, TX, March 1998.
- "Quilting Together a Professional Life in Science", Mount Holyoke College, November 1997.
- "Women in Science: A Quilting Perspective", Sweet Briar College, Conference on Supporting Women in Science, April 1997.
- "Women Scientists of Today", Symantec Corporation, Eugene, OR, June 1996.
- "Quilting Together a Professional Life", Women's Chemist Luncheon, American Chemical Society Meeting, St. Louis, MO, March 1996.
- "Importance of Undergraduate Research", NSF Sponsored Symposium for Undergraduate Science Majors, Corvallis, OR, March 1995, October 1995, October 1996.
- "Tenure and Tots", Younger Chemist Committee Panel Discussion, American Chemical Society Meeting, American Chemical Society Meeting, Chicago, Ill, August 1995.
- "Balancing a Science Career and Children", Panel Discussion, Western Spectroscopy Association, Asilomar, CA, January 1995.
- "Taking the Sigh Out of Science", University of Oregon Alumni, Portland, OR, October 1994.
- "Communicating Science: Bonding with the NonScientist", Women's Chemist Luncheon, American Chemical Society Meeting, Washington DC, August 1994.
- "Women in Science", Banquet speaker for the Saturday Academy, Portland Oregon, March 1991.
- "Women in Science: We've Come a Long Way, Maybe?", Luncheon speaker at Women in Action Meeting, Vancouver, WA, March 1988.
- "Lasers in Chemistry" Dinner speaker at the Cincinnati Division of the American Chemical Society, Cincinnati, OH, October 1987.
- "Teaching about Lasers in Chemistry", Dinner speaker at annual meeting of Science Teachers in the Eugene School District, Eugene, OR November 1987.
- "Careers in Chemistry: Laser Research", "Expanding Your Horizons" symposium for female high school science students, Eugene, OR, Feb. 1986.
- "Education and Employment of Scientists and Engineers in Academia", Consultant for Office of Technology programs, Congress of the United States, Washington, DC, 1985-1986.
- "Women and Minorities in Science", Workshop panelist for the Conference on the Utilization of Science Ph.D.'s in the Eighties, Cornell University, April 1985.
- "Can Women Scientists Make a Difference?", Seminar series sponsored by the Educators for Social Responsibility, Philadelphia, PA, March 1985.

\*\* Numerous talks have also been given at local high schools, grade schools and to K-12 teacher groups in the area and in the state about chemistry, lasers in chemistry, career options in chemistry, women in chemistry and teaching chemistry.

## **PARTICIPANTS IN RICHMOND RESEARCH PROGRAM**

### **CURRENT PARTICIPANTS**

Dr. Hristina Staleva, Postdoctoral Associate  
Dr. Michael Brindza, Postdoctoral Associate  
Stephanie Ota – Ph.D. Candidate  
Patrick Blower – Ph.D. Candidate  
Dan Beaman – Ph.D. Candidate  
Adam Hopkins – Ph.D. Candidate  
Eric Shamay - Ph.D. Candidate  
Ellen Robertson – Ph.D. Candidate  
Laura Sofen – Undergraduate student  
Anthony Overton – Undergraduate student  
Nathan Campbell – Undergraduate student

### **PREVIOUS POSTDOCTORAL RESEARCH ASSOCIATES AND VISITING FACULTY**

Dr. Simon Schrodle, BASF, Germany  
Prof. Davida Brown - Linfield College  
Prof. Dennis Hore - University of Victoria, Canada  
Prof. Christy Landes – University of Houston  
Prof. Robert Walker – University of Maryland  
Prof. Donna Jaramillo-Fellin – University of California, Merced (Laboratory Coordinator)  
Prof. Heather Allen – Ohio State University  
Prof. Marie Messmer – Lehigh University  
Prof. Barbara Balko – Lewis and Clarke College  
Prof. John Kauffman – University of Missouri  
Prof. Andreas Friedrich – Institut für Energieverfahrenstechnik  
Prof. Rosina M. Georgiadis – Boston University  
Dr. Mac Brown – Los Alamos National Laboratory  
Dr. Beth Smiley – Brown University  
Dr. John Daschbach – Pacific Northwest National Laboratory  
Dr. Jeanne M. Robinson – Los Alamos National Laboratories  
Dr. Victoria Shannon – Novellus, Portland, Santa Jose (formerly Tektronix)  
Dr. Hossein Rojhtalab – Intel Corporation, Portland, OR

### **PREVIOUS PH.D AND MS GRADUATE STUDENTS**

Prof. Betsy Raymond – Western Washington University (Fall 2006)  
Prof. Derek Gragson – California Polytechnic State University  
Prof. John Conboy – University of Utah  
Prof. Mark Watry – Spring Hill College  
Prof. Paul Bunson – Lawrence University  
Prof. Safwan Arekat – University of Bahrain (jointly with Prof. Kevan)

Dr. Cathryn McFearin – UC San Diego  
 Dr. Dave Walker – Triquint, Portland, OR  
 Dr. Melissa Kido – Boston, MA  
 Dr. Theresa Tarbuck – Spring Hill College  
 Dr. Larry Scatena – University of Oregon (Laser Laboratory Director)  
 Dr. Kevin Becraft – Lam Research, Fremont, CA  
 Dr. Travis Abshere – Triquint, Portland, OR  
 Dr. Eric Miller – Wachter Siltronic, Portland OR  
 Dr. Pam Fischer – Intel Corporation, Portland, OR  
 Dr. Eric Wong – Intel Corporation, Portland  
 Dr. Richard Bradley – Flex Products, Santa Clara  
 Dr. Daniel Koos – Motorola, France (formerly Tektronix)  
 Dr. Luanne Rolly – Hewlett Packard, Corvallis  
 Dr. Susan Fitzpatrick – Merck Sharpe and Dohm  
 Dr. Dave Walker – Triquint, Beaverton  
 Matt Hamamoto – (MS) University of Oregon Internship Program  
 Megan Leich – (MS) – Northern California High School (Teacher)  
 Jennifer King – (MS) – Sun River High School (Teacher)  
 Steve Stuckmeyer – (MS)  
 Bayrn McCarty – Texas (MS)  
 Roseanne Kozlowski – (MS)  
 Jay O'Brien – Boulder, CO (MS)  
 Ms. Joanne Maule-Schmidt, (MS) Philadelphia School System (Teacher)

#### **PREVIOUS VISITING FACULTY**

Prof. Fred Moore (Visiting Faculty Member from Whitman College)  
 Prof. Lee Sharpe (Visiting Faculty Member from Grinnell College)  
 Prof. Shane Ohline (Visiting Faculty Member from Wellesley College)  
 Prof. Ron Swisher (Oregon Institute of Technology)  
 Prof. Leslie Lyons (Visiting Faculty Member from Grinnell College)

#### **PREVIOUS UNDERGRADUATE RESEARCH STUDENTS**

Abigail Wagner (NSF REU 2008)	
Ellen Robertson – (NSF REU 2007)	Brittany Willis (NSF REU 2007)
Elizabeth Surano – (NSF REU 2005)	Rachel Pollock (NSF REU 2006)
Libby MacKinnon – (NSF REU 2005)	Scott Wren (NSF REU 2004)
Dan Parks (NSF REU 2004)	Gregory Dyer (NSF REU 2003)
Hillary Van Anda (NSF REU 2003)	Jessie Marcum (NSF REU 2002)
Brittany Lee - (NSF REU 2001)	Tran Phang - (NSF REU 2000)
Dan Solis (NSF REU 2000)	Ben Paxton – (U of Oregon, 1999-2000)
Allison Vejtruba – (NSF-REU 1999)	Cindy Regal – (NSF-REU 1999)
Theresa Hannon (NSF-REU 1997)	Dave Walker (NSF-REU 1998)
Betsy Raymond (NSF-REU 1996)	Julie Gruetzmacher (NSF-REU 1996)

Stephanie Laska (NSF-REU 1994)  
Doug Demarest (NSF-REU 1994)  
Vince Woldt (NSF-REU 1991-1992)  
Hannah Morris (NSF-REU 1990)  
Scott Kellar (U of Oregon, 1988-1989, NSF-REU)  
Dalibar Smetke (U of Oregon, 1987-1988)  
Peggy Mares (U of Oregon, 1986-1987)  
Pam Chu (Bryn Mawr College, 1983-1985)  
Susan Emlen (Bryn Mawr College, 1983-1985)  
Ishita Mukerji (Bryn Mawr College, 1983-1984)  
Margaret Schulz (Bryn Mawr College, 1982-1983)  
Sally Hair (Bryn Mawr College, 1981-1982)  
Penny Peterson (Bryn Mawr College, 1981-1982)  
Swee Lian Tan (Bryn Mawr College, 1980-1981)  
Joann Neth (Bryn Mawr College, 1980-1981)  
Patricia Angueira (Bryn Mawr College, 1980-1981)

Mark Culley - (U of Oregon, 1994)  
Henry Ajo (NSF-REU 1994)  
David DeGraw (NSF-REU 1993)  
Grace Neff (NSF-REU, 1989)  
Lisa Pansoy (U of Oregon, 1988-1989, NSF-REU)  
Pauline Tan (U of Oregon, 1986-1987)  
Todd Wagner (U of Oregon, 1985-1986)  
Tammy Maeda (Bryn Mawr College, 1983-1985)  
Michele Donovan (Bryn Mawr College, 1984-1985)  
Mindy Fleisher (Bryn Mawr College, 1982-1983)  
Dana Tribula (Bryn Mawr College, 1982-1983)  
Helen Collins (Bryn Mawr College, 1981-1982)  
Kyong Mi Chang (Bryn Mawr College, 1981-1982)  
Mary Lee (Bryn Mawr College, 1980-1981)  
Julia Yang (Bryn Mawr College, 1980-1981)