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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

- 2006 Elected Member, American Academy of Arts and Sciences
- 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
- 2001 Oregon Academy of Science, Oregon Outstanding Scientist Award
- 2001 ADVANCE Leadership Award, National Science Foundation
- 2000 Research Creativity Award, National Science Foundation
- 1998 Soroptomist International, Women Helping Women Award
- 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 Award, National Science Foundation
- 1989 Coblenz 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
- 1977 Outstanding Undergraduate Teaching Award, UC Berkeley

APPOINTMENTS ON GOVERNING AND ADVISORY BOARDS (SELECTED LIST)

- 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)
- 1998-2008 *Chair and Founder*, Committee on the Advancement of Women Chemists (COACh)
- 2006-2008 *Chair*, Science Advisory Committee, Stanford Synchrotron Radiation Laboratory
- 2006-2008 Journal of Chemical Physics Advisory Board Member
- 2005-2010 *Associate Editor*, Annual Review of Physical Chemistry
- 2005-2006 Steering Committee, Workshop on Gender Equity in the Chemical Sciences, NSF, NIH & DOE
- 2005-2006 COSEPUP Committee on Women in Academic Science and Engineering, NAS
- 2005 Research Corporation Presidential Advisory Panel
- 2003-2008 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 Advisory Board Member
- 1991-1994 Accounts of Chemical Research 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 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, Coblenz 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

DISTINGUISHED LECTURESHIPS AND ADDRESSES

- Donna Russell Fox Lecturer, Cornell College, 2006
Keynote Address, 20th Anniversary of the National Conference on Undergraduate Research, 2006
Howard S. Brode Memorial Lecturer, 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 Lecturer, University of Wisconsin, 2004
Spiers Memorial Lecturer, Faraday Council of the Royal Society of Chemistry, Cambridge, UK 2004
H.H. King Lecturer, Kansas State University, 2004
Cottrell Scholars Lecturer, Research Corporation, 2004
Kolthoff Distinguished Lecturer, University of Minnesota, 2003
S. Dexter Squibb Distinguished Lecturer, North Carolina State, Asheville, 2002
Nakamoto Lecturer, Marquette University, 2002
Bergmann Lecturer, Yale University, 2002
Gerhard L. Closs Lecturer, University of Chicago, 2002
Dexter Squibb Distinguished Lecturer, North Carolina State, Asheville, 2002
Directors Lectureship, Pacific Northwest National Laboratory, 2002
Distinguished Lecturer, 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 Lecturer, McGill University, 1999
Lucy W. Pickett Lecturer, Mount Holyoke College, 1997
Phillips Distinguished Lecturer, Haverford College, 1995
Shell Lecturer, National Science Teachers Association, 1991

LEGISLATIVE TESTIMONY

- 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.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Association for the Advancement of Science
American Chemical Society
American Physical Society
Society for Applied Spectroscopy
Association for Women in Science

PUBLICATIONS

- (1) "Spectrophotometric-Kinetic Determination of Thio Ketones, G. Richmond, C. Rainey, C.E. Meloan, *Anal. Lett.*, 9 (105-107) 1976.
- (2) "The Structure of the $[C_6H_6O].bul.^+$ ion: An Ion Kinetic Energy Spectrometry Study", M.K. Hoffman, M.D. Friesen and G. Richmond, *Org. Mass Spectrom.*, 12 (150-160) 1977.
- (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.
- (4) "HF Rotational Laser Emission from the ClF/H₂ Reaction: Time Evolution of the Gain", G.L. Richmond and G.C. Pimentel, *J. Chem. Phys.*, 80 (1162-1170) 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.
- (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.
- (7) "Optical Second Harmonic Generation as a Surface Probe of Silver Electrodes", G.L. Richmond, *Surf. Sci.*, 147 (115-126) 1984.
- (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.
- (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.
- (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.
- (11) "Characterization of the Silver-Aqueous Electrolyte Interface by Optical Second Harmonic Generation", G.L. Richmond, *Langmuir*, 2 (132-139) 1986.
- (12) "Experiments on Optical Second Harmonic Generation as a Surface Probe of Electrodes", G.L. Richmond, H.M. Rojhantalab, J.M. Robinson and V.L. Shannon, *J. Opt. Soc. Amer. B*, 4 (228-236) 1986.
- (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.

- (14) "Monitoring Surface Structure and Interfacial Properties via Second Harmonic Generation", J.M. Robinson, H.M. Rojhantalab, V.L. Shannon, D.A. Koos and G.L. Richmond, *Pure Appl. Chem.*, 59 (1263-1268) 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.
- (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).
- (17) "SHG and Differential Capacitance Studies of Smooth Silver Electrode-Aqueous Electrolytes", H.M. Rojhantalab and G.L. Richmond, in Advances in Laser Science-II, M. Lapp and G.A. Kenney-Wallace, eds. (Am. Inst. of Physics, NY 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).
- (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.
- (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.
- (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.
- (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.
- (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.
- (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.
- (25) "Characterization of the Ag/Aqueous Electrolyte Interface by Optical Second Harmonic Generation and Differential Capacitance", H.M. Rojhantalab and G.L. Richmond, *J. Phys. Chem.*, 93 (3269-3275) 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.
- (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.
- (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.

- (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.
- (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.
- (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.
- (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.
- (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.
- (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.
- (35) "Wavelength Dependent Second Harmonic Generation from Ag(111) in Solution", R. Georgiadis and G.L. Richmond, *J. Phys. Chem.* 95 (2895-2899) 1991.
- (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.
- (37) "Anionic Adsorption on the Surface of Polycrystalline Copper by Optical Second Harmonic Generation", *Gaodeng Zuezhiao Huaxue Zuebao*, 11 (863) 1990.
- (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.
- (39) "Picosecond Studies of Photowashing on GaAs", J. Kauffman and G.L. Richmond, *Appl. Phys. Lett.*, 59 (561-563) 1991.
- (40) "SHG and the Single Crystal Electrode Surface", G.L. Richmond, *Spectroscopy International*, 3 (18-21) 1991.
- (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.
- (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.
- (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.
- (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.

- (45) "Letter to the Editor", G.L. Richmond, *Science*, 79 (256) 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.
- (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.
- (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.
- (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.
- (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.
- (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.
- (52) "SHG and the Single Crystal Electrode Surface", G.L. Richmond, *Spectroscopy*, 7 (18-21) 1992.
- (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.
- (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.
- (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.
- (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.
- (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.
- (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.
- (59) "Surface Second Harmonic Studies of Stepped Ag(111) Electrode Surfaces", G.L. Richmond, *Chem. Phys. Lett.*, 213 (491-497) 1993.
- (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.
- (61) "Surface Second Harmonic Studies of Si(111)/Electrolyte and Si(111)/SiO₂/Electrolyte Interfaces" P.R. Fischer, J.L. Daschbach and G.L. Richmond, *Chem. Phys. Lett.*, 218 (200-205) 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.
- (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.
- (64) "Sensitivity of Second Harmonic Generation to Space Charge Effects at the Si(111)/Electrolyte and Si(111)/SiO₂/Electrolyte Interfaces", P.R. Fischer, J.L. Daschbach and G.L. Richmond, *J. Vac. Sci. Tech.*, 12 (2617-2624) 1994.
- (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.
- (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.
- (67) "Picosecond Photoluminescence Studies of Photocorrosion and Passivation of n-GaAs in Na₂S Containing Solutions", B.A. Balko, E.A. Miller and G.L. Richmond, *J. Phys. Chem.* 95, (4124-4131) 1995.
- (68) "Observation of the Potential-Dependent Second Harmonic Response from the Si(111)/Electrolyte and Si(111)/SiO₂/Electrolyte Interfacial Regions", J.L. Daschbach, P.R. Fischer, D. Demarest and G.L. Richmond, *J. Phys. Chem.*, 99 (3240-3250) 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.
- (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.
- (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.
- (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.
- (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.
- (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.

- (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.
- (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.
- (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.
- (78) "Quilting Together a Professional Life in Science", G.L. Richmond, *Association for Women in Science Newsletter*, 25 (38-39) 1996.
- (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.
- (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.
- (81) "Photocorrosion of n-GaAs and Passivation by Na₂S: Comparison of the (100), (110) and (111)B Faces", E.A. Miller and G.L. Richmond, *J. Phys. Chem. B*, 101 (2669-2677) 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.
- (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.
- (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.
- (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.
- (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.
- (87) "Vibrational Spectroscopy of Molecules at Liquid Surfaces and Interfaces", G.L. Richmond, *Anal. Chem.*, 69 (536A-543A) 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.
- (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. B*, 107 (9687-9690) 1997.
- (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.
- (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.
- (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.
- (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.
- (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.
- (95) "Effect of Alkyl Chain Length on the Conformation and Order of Simple Ionic Surfactants Adsorbed at the D₂O/CCl₄ Interface as Studied by Sum-Frequency Vibrational Spectroscopy", J.C. Conboy, M.C. Messmer and G.L. Richmond, *Langmuir*, 14 (6722-6727) 1998.
- (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.
- (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.
- (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.
- (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.
- (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.
- (101) "Assembly of Long Chain Phosphatidylcholines at a Liquid-Liquid Interface", B. Smiley and G.L. Richmond, *Biopolymers (Biospectroscopy)*, 57 (117-125) 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.
- (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.
- (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.
- (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.
- (106) " Structure and Bonding of Molecules at Aqueous Surfaces", G.L. Richmond, *Ann. Rev. of Phys. Chem.*, 52, (357-389), 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.
- (108) "Water at Hydrophobic Surfaces: Weak Hydrogen Bonding and Strong Orientation Effects", L.F. Scatena and G.L. Richmond, *Science*, 292 (908-911) 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.
- (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.
- (111) "In Situ Vibrational Spectroscopic Studies of the CaF₂/H₂O Interface", K. Becraft and G.L. Richmond, *Langmuir*, 17 (7721-7724) 2001.
- (112) "Molecular Bonding and Interactions at Aqueous Surfaces as Probed by Vibrational Sum Frequency Spectroscopy ", G.L. Richmond, *Chemical Reviews*, 102 (2693-2724) 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.
- (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.
- (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.
- (116) "Challenges in Interpreting Vibrational Sum Frequency Spectra: Deconvoluting Spectral Features as Demonstrated in the CaF₂/H₂O/SDS System", F.G. Moore, K.A. Becraft and G.L. Richmond, *Applied Spectroscopy*, 56 (1600-1610) 2002.
- (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.
- (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.
- (119) "Hydrogen Bonding Interactions at the Vapor/Water Interface as Investigated by Vibrational Sum Frequency Spectroscopy of HOD/H₂O/D₂O 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.
- (120) "Charge Reversal Behavior at the CaF₂/H₂O/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.
- (121) "Aqueous Solvation of Charge at Hydrophobic Surfaces", L. F. Scatena and G.L. Richmond, *Chem. Phys. Lett.*, 383 (491-495) 2004.
- (122) "Evidence for a Diffuse Interfacial Region at the Dichloroethane/Water Interface", D. S. Walker, M.G. Brown, C. L. McFearn and G. L. Richmond, *J. Phys. Chem. B*, 108 (2111-2114) 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.
- (124) "In-Situ Spectroscopic Investigations of Surfactant Adsorption at the CaF₂/Aqueous Solution Interface", K. A. Becraft, F. G. Moore, and G.L. Richmond, *Chemical Physics-Phys. Chem.*, 6 (1880-1889) 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.
- (126) "Ti:Sapphire-based Picosecond Visible-Infrared Sum-Frequency Spectroscopy from 900-3100 cm⁻¹", D.K. Hore, M.Y. Hamamoto and G.L. Richmond, *Applied Spectros.* 58 (1377-1384), 2004.
- (127) "Mid-Infrared Second Order Surface Susceptibility of α -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.
- (128) "Recent Experimental Advances in Studies of Liquid/Liquid Interfaces", M.A. Leich and G.L. Richmond, *Faraday Discuss.* 129 (1-21), 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.
- (130) "COACHing Women to Succeed in Academic Careers in the Chemical Sciences", *J. Chem. Ed.*, 82 (351-353) 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.
- (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.
- (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.
- (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 (16846-1651) 2005.
- (135) "Redressing the Balance: Training Series for Women Scientists Expands", G. L. Richmond, *Nature*, 437 (592) 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.
- (137) “SO₂:H₂O Surface Complex Found at the Vapor/Water Interface” T. L. Tarbuck and G.L. Richmond, *J. Amer. Chem. Soc.*, 127 (16806-16807) 2005.
- (138) “And Gladly Teach, A Resource Book for Chemists Considering Academic Careers”, 2nd Edition, A. T. Schwartz, R.A. Archer, A.K.El-Ashmawy, D.K. Lavallee, S. McGuire, G. Richmond, R. Eikey, American Chemical Society, 2006.
- (139) “Investigations of the Solid-Aqueous Interface with Vibrational Sum Frequency Spectroscopy, A. J. Hopkins, C. L. McFearin and G.L. Richmond, in press.
- (140) “Adsorption and Reaction of CO₂ and SO₂ at a Water Surface”, T. L. Tarbuck and G.L. Richmond, *J. Am. Chem. Soc.* 128 (3256-3267) 2006.
- (141) “Differing Orientational Behavior of Environmentally Important Cyanophenol Isomers at the Air-Water Interface”, M. Soule, D.K. Hore, D. Jaramillo-Fellin and G.L. Richmond, in press.
- (142) “Spectroscopic Studies of Solvated Hydrogen and Hydroxide Ions at Aqueous Surfaces”, T. L. Tarbuck, S. T. Ota and G.L. Richmond, submitted.
- (143) “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, submitted.
- (144) “Is the Hofmeister Series Applicable to Understanding Organic Adsorption at the Surface of Aqueous Salt Solutions? ”, M. C. Kido Soule and G.L. Richmond, submitted.

RECENT INVITED TALKS ON SCIENTIFIC RESEARCH (SINCE 1995)

National Meetings and Symposia

- “Understanding Molecular Interactions at Fluid Interfaces”, Pittsburgh Spectroscopy Conference, Orlando, FL, March, 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” 37th 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,” 225th National American Chemical Society Meeting, New Orleans, LA, March 2003.
- “Adsorption at the CaF₂/H₂O Interface by Vibrational Sum Frequency Spectroscopy”, 225th National American Chemical Society Meeting, New Orleans, LA, March 2003.
- “Vibrational Spectroscopy of Liquid Surfaces: Going Nonlinear”, 224th 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”, 224th National American Chemical Society Meeting, Boston, MA, August 2002.
- “Structure and Hydrogen Bonding of Water at Hydrophobic Liquid Surfaces”, 224th 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", 220th 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", 219th 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" 26th 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", 217th 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", 23rd 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", 215th 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.
- "Molecular Structure and Interactions at Liquid Surfaces and Interfaces as Measured by Vibrational Sum Frequency Spectroscopy", Engineering Foundation Conference on Surface Characterization of Adsorption and Interfacial Reactions II, Kona, Hawaii, Jan. 1998.
- "Vibrational Spectroscopy of Liquid Surfaces and Interfaces", Federation of Analytical Chemistry and Spectroscopy Societies 24th Annual Meeting, Providence, RI, October 1997.
- "Molecular Structure and Bonding at Liquid/Liquid Interfaces", 214th American Chemical Society Meeting, Las Vegas, NV, September 1997.

- "Vibrational Spectroscopy of Molecules at Liquid Surfaces and Interfaces", 214th American Chemical Society Meeting, Las Vegas, NV, September 1997.
- "Vibrational Spectroscopy of Surfactants at Oil/Water Interfaces", 210th American Chemical Society Meeting, Chicago, IL, 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, NV, 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.
- "Spectroscopy of Molecules at Liquid/Liquid and Liquid/Air Interfaces", Gordon Research Conference on Chemistry at Interfaces, Meriden, NH, 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 American Chemical Society Meeting, New Orleans, LA, March 1996.
- "Molecular and Ionic Interactions at Liquid/Liquid Interfaces", 211th American Chemical Society Meeting, New Orleans, LA, March 1996.
- "Nonlinear Optical Studies of Liquid/Liquid Interfaces", Gordon Research Conference on Electrochemistry, Ventura, CA, January 1995.
- "Sum Frequency Generation of Surfactants at Oil/Water Interfaces", SPIE Meeting, San Diego, CA, July 1995.

Recent Research Seminars and Colloquia have also been given at: (since 1995)

- Whitman College, Department of Physics, Walla Walla, Washington, March 2005.
- Cornell College, Department of Chemistry, Mt. Vernon, Iowa, February 2006.
- Department of Chemistry, Georgia Institute of Technology, 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.
Northwestern University, Department of Chemistry, Evanston, IL, November 1998.
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.
Graduate Symposium, Department of Chemistry, SUNY Buffalo, May 1996.
Olin Chemical, Cheshire, CT, 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, Lansing, MI, 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.

RECENT INVITED TALKS ON SCIENCE EDUCATION AND MENTORING (SINCE 1995)

- “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” 231st 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”, 224th 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", 220th 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", 54th 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", 215th 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.

** 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. Dennis Hore, Postdoctoral Associate

Dr. Simon Schrodle, Postdoctoral Associate

Stephanie Ota – Ph.D. Candidate

Patrick Blower – Ph.D. Candidate

Megan Leich – Ph.D. Candidate

Dan Beaman – Ph.D. Candidate

Theresa Tarbuck – Ph.D. Candidate

Dave Walker – Ph.D. Candidate

Melissa Kido - Ph.D. Candidate

Adam Hopkins – Ph.D. Candidate

Cathryn McFearin – Ph.D. Candidate

Mathew Hamamoto – Ph.D. Candidate

Rachel Pollock – Undergraduate Student

Prof. Fred Moore – Whitman College (visiting faculty member)

PREVIOUS POSTDOCTORAL RESEARCH ASSOCIATES AND VISITING FACULTY

Prof. Christy Landes – University of Houston (Fall 2006)

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 – Rocky Mountain College
Prof. Paul Bunson – Lawrence University
Prof. Safwan Arekat – University of Bahrain (jointly with Prof. Kevan)
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

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 Wellseley College)
Prof. Ron Swisher (Oregon Institute of Technology)
Prof. Leslie Lyons (Visiting Faculty Member from Grinnell College)

PREVIOUS UNDERGRADUATE RESEARCH STUDENTS

Elizabeth Surano – (NSF REU 2005)
Libby MacKinnon – (NSF REU 2005)
Dan Parks (NSF REU 2004)
Hillary Van Anda (NSF REU 2003)
Brittany Lee - (NSF REU 2001)
Dan Solis (NSF REU 2000)
Allison Vejtruba – (NSF-REU 1999)
Theresa Hannon (NSF-REU 1997)
Betsy Raymond (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)
Scott Wren (NSF REU 2004)
Gregory Dyer (NSF REU 2003)
Jessie Marcum (NSF REU 2002)
Tran Phang - (NSF REU 2000)
Ben Paxton – (U of Oregon, 1999-2000)
Cindy Regal – (NSF-REU 1999)
Dave Walker (NSF-REU 1998)
Julie Gruetzmacher (NSF-REU 1996)
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)
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Mary Lee (Bryn Mawr College, 1980-1981)
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