Richard L. McCreery

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Date of Birth: October 8, 1948, Los Angeles, California

| Education: | University of California, Riverside, B.S. in Chemistry, 1970 |
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| | University of Kansas, Ph.D. in analytical chemistry under Ralph N. Adams, 1974 |
| Experience: | The Ohio State University; Assistant Professor (1974-1979), |
| | Associate Professor (1979-1983), Professor (1983-1998), |
| | Dow Professor of Chemistry (1998-2006) |
| | University of Alberta; Professor of Chemistry (2006-) |
| | Senior Research Officer, National Institute for Nanotechnology, (2006-) |
| | Visiting Professor, University of Southampton, 1981 |
| | Visiting Professor, University of Paris, Diderot, 2011 |
| | Associate Editor, Analytical Chemistry, 2005- |
| Honors: | NSF Predoctoral Fellow, 1970 - 1973 |
| | Woodrow Wilson Fellow, 1970 - 1971 |
| | Alfred P. Sloan Fellow, 1981 - 1985 |
| | Ohio State University Distinguished Research Award, 1982 |
| | Ashland Oil Foundation Research Award, 1982 |
| | Fellow of the American Association for the Advancement of Science, 1992- |
| | President, Society of Electroanalytical Chemistry, 1995-1997 |
| | George Rappoport Award, Society of Applied Spectroscopy, 1996 |
| | American Chemical Society Award in Electrochemistry, 2000 |
| | Charles N. Reilley Award, Society of Electroanalytical Chemistry, 2003 |
| | Fellow of the Electrochemical Society, 2003- |
| | Ernest Yeager Award, Cleveland Electrochemical Society Section, 2006 |
| | Alberta Ingenuity Scholar, 2006- 2011 |
| | Elected Vice President, International Society of Electrochemistry, 2008 |
| | Charles Mann Award, Fed. of Analytical Chemistry and Spec. Societies, 2010 |
| | Alberta Innovates Industrial Chair, 2012-2016 |
| | David Grahame Award, Electrochemical Society, 2013 |
| | Fellow of the Society of Applied Spectroscopy, 2013- |
| Research | Surface spectroscopy, molecular electronics, |
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Interests: electrochemical kinetics, advanced carbon materials

Organizations American Chemical Society

The American Association for the Advancement of Science The Electrochemical Society Society of Electroanalytical Chemistry Society of Applied Spectroscopy

Service to the Science Community

| 1978-04 | National Institutes of Health Special Study Section (8 meetings) | | |
|-----------|--|--|--|
| 1984-85 | Divisional Editor, Journal of the Electrochemical Society | | |
| 1984- | Selection committees for three national awards in chemistry (identities confidential) | | |
| 1986-88 | National Research Council Committee for Grant Proposal Review | | |
| 1987 | Host and Organizer, Midwest Universities Analytical Chemistry Conference, Columbus, November 6-8 | | |
| 1975 | Reviewer for National Science Foundation, Army Research Office, Department of Energy, NIH, Guggenheim Foundation, ACS Petroleum Research Fund, etc. | | |
| 1975 | Reviewer for Journal of American Chemical Society, Science, Analytical Chemistry, Journal of Electroanalytical Chemistry, Journal of Electrochemical Society, Journal of Medicinal Chemistry, Journal of Physical Chemistry, Applied Spectroscopy, Corrosion Science etc. | | |
| 1986-1991 | Board of Directors, Society of Electroanalytical Chemists | | |
| 1991 | NSF Postdoctoral Fellowship Evaluation Panel | | |
| 1991-94 | Honors and Awards Committee, The Electrochemical Society, DeNora Award subcommittee, chairman | | |
| 1992-95 | Awards Canvassing Committee, American Chemical Society | | |
| 1993-6 | Lippincott Award Committee, SAS and OSA | | |
| 1993-2004 | Editorial Board, Applied Spectroscopy | | |
| 1994 | DOE Review of Hanford Nuclear Waste Monitoring | | |
| 1994 | NSF Review Panel for Small Business Technology Transfer Proposals | | |
| 1995-97 | President, Society of Electroanalytical Chemistry | | |
| 1997-2002 | Board of Directors, Coblentz Society | | |
| 2001-2004 | Editorial Advisory Board, Analytical Chemistry | | |
| 2004- | Associate Editor, Analytical Chemistry | | |
| 2007- | Presentations and discussions about ACS editorial policy: U. Alberta, Iowa State | | |
| | U., Chinese Academy of Sciences, Tongji U., U. Wyoming, Southwestern | | |
| | U.(Beibei), U. Cantergury, U. Otago (New Zealand), | | |

Service to NINT and University of Alberta

| 2006- | NINT Clean room Steering committee, chair |
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| 2006- | Graduate Curriculum committee, Chemistry |
| 2006-7 | Analytical Faculty Search Committee |
| 2006-8 | Arranged NINT lunch/seminar program |

- Analytical Chemistry Seminar chair Group Leader, Alphagroup, NINT 2012-13
- 2011-13

Publication List - R. L. McCreery

(* denotes invited publication, all items referred except those indicated by a +)

- 1. R.L. McCreery and D.T. Sawyer, "Gas Solid Chromatography Using Various Saltmodified Activated Aluminas and Magnesium Silicates,", *J. Chromatog. Sci.*, **1970**, 8, 122.
- 2. D.T. Sawyer, R.Y. Komai and R.L. McCreery, "Electrochemical Studies of Flavins and of Metal-flavin Interaction in Aprotic Solvents," *Experientia*, *Suppl.*, **1971**, 18, 563.
- 3. D.T. Sawyer and R.L. McCreery, "Electrochemical Studies of the Interactions of Riboflavin and its Reduction Products with Metal Ions in Dimethylsulfoxide," *Inorg. Chem.*, **1972**, <u>11</u>, 779.
- 4. R.N. Adams, E. Murrill, R.L. McCreery, L. Blank and M. Karolczak, "6-Hydroxydopamine, a New Oxidation Mechanism," *Eur. J. Pharmacol.*, **1972**, 17, 287.
- 5. A.W. Sternson, R.L. McCreery, B. Feinberg and R.N. Adams, "Electrochemical Studies of Adrenergic Neurotransmitters and Related Compounds," *J. Electroanal. Chem.*, **1973**, 46, 313.
- 6. R.L. McCreery, R. Dreiling and R.N. Adams, "Voltammetry in Brain Tissue, Quantitative Studies of Drug Interactions," *Brain Research*, **1974**, 73, 23.
- 7. R.L. McCreery, R. Dreiling and R.N. Adams, "Voltammetry in Brain Tissue, the Fate of 6-hydroxydopamine," *Brain Research*, **1974**, 73, 15.
- 8. D. C.S. Tse, R.L. McCreery, and R.N. Adams, "Potential Oxidative Pathways of Brain Catecholamines," *J. Med. Chem.*, **1976**, 19, 37.
- 9. C.L. Blank, R.L. McCreery, R.M. Wightman, W. Chey, R.N. Adams, J.R. Reid, and E.E. Smissman, "Intracyclization Rates of 6-hydroxydopamine and 6-aminodopamine Analogs under Physiological Conditions," *J. Med. Chem.*, **1976**, 19, 178.
- 10. R.R. Ruffalo, Jr., R.L. McCreery, and P.N. Patil, "A Kinetic Analysis of a Catechol Specific Binding Site in the Microsomal Fraction from the Rabbit Aorta," *Eur. J. Pharmacol.*, **1976**, 38, 221.
- 11. R.L. McCreery, "Oxidation Reactions of Hydroxylated Chlorpromazine Metabolites, *J. Pharm. Sci.*, **1977**, 66, 367.
- 12. R.L. McCreery, "Thin Layer Technique for Monitoring Electrogenerated Reactive Intermediates," *Anal. Chem.*, **1977**, 49, 206.
- 13. H.Y. Cheng and R.L. McCreery, "Potential Dependent Chronoamperometry; Experimental Verification," *J. Electroanal. Chem.*, **1977**, 85, 361.

- 14.^{*} R.L. McCreery, "Bioelectrochemistry: An Examination of Some Examples", *CRC critical reviews in Analytical Chemistry*, **1978**, 7, 89.
- 15. H.Y. Cheng, P.H. Sackett, and R.L. McCreery, "Kinetics of Chlorpromazine Cation Radical Decomposition in Aqueous Buffers," *J. Am. Chem. Soc.*, **1978**, 100, 962.
- 16. H.Y. Cheng and R.L. McCreery, "Simultaneous Determination of Reversible Potential and Rate Constant for a First-order Ec Reaction by Potential Dependent Chronoamperometry," *Anal. Chem.*, **1978**, 50, 645.
- 17. M. Neptune and R.L. McCreery, "Chemical and Electrochemical oxidation of 7hydroxychlorpromazine," *J. Med. Chem.*, **1978**, 21, 362.
- 18. H.Y. Cheng, P. Sackett, and R.L. McCreery, "Reactions of Chlorpromazine Cation Radical with Physiologically Occurring Nucleophiles," *J. Med. Chem.*, **1978**, 21, 948.
- 19. M. Neptune and R.L. McCreery, "Characteristics and Reactions of Quinoneimines and Cation Radicals Derived from Hydroxylated Chlorpromazine Derivatives," *J. Org. Chem.*, **1978**, 43, 5006.
- 20. M. Neptune, A.A. Manian, and R.L. McCreery, "Electrochemical Oxidation of Hydroxylated Phenothiazine and Imipramine Derivatives," *J. Med. Chem.*, **1979**, 22, 196.
- 21. R.L. McCreery, R. Pruiksma, and R. Fagan, "Optical Monitoring of Electrogenerated Species via Specular Reflection at Glancing Incidence", *Anal. Chem.*, **1979**, 51, 748.
- 22. P. Sackett and R.L. McCreery, "Effect of Structure on Phenothiazine Cation Radical Reactions in Aqueous Buffers," *J. Med. Chem.*, **1979**, 22, 1447.
- 23. R. Pruiksma and R.L. McCreery, "Observation of Electrochemical Concentration Profiles Using Absorption Spectroelectrochemistry," *Anal. Chem.*, **1979**, 51, 2253.
- 24. D.R. Henton, R.L. McCreery, and J.S. Swenton, "Anodic Oxidation of 1,4 Dimethoxy Aromatic Compounds. A Facile Route to Functionalized Quinone Bisketals," *J. Org. Chem.*, **1980**, 45, 369.
- 25. J. Skully and R.L. McCreery, "Glancing Incidence External Reflection Spectroelectrochemistry Using a Continuum Source," *Anal. Chem.*, **1980**, 52, 1885.
- P. Rossi, C.W. McCurdy, and R.L. McCreery, "Diffractive Spectroelectrochemistry: Use of Diffracted Light for Monitoring Electrogenerated Chromophores," *J. Am. Chem. Soc.*, 1981, 103, 2524.
- 27. R. Pruiksma and R.L. McCreery, "Spectroelectrochemical Observation of Diffusion Profiles by the Parallel Absorption Method," *Anal. Chem.*, **1981**, 53, 202.

- 28. R.S. Robinson and R.L. McCreery, "Absorption Spectroelectrochemistry with Microelectrodes." *Anal. Chem.*, **1981**, 53, 997.
- 29. P.H. Sackett, J.S. Mayausky, T. Smith, S. Kalus, and R.L. McCreery, "Side Chain Effects on Phenothiazine Cation Radical Reactions," *J. Med. Chem.*, **1981**, 24, 1342.
- 30.^{*} J.S. Mayausky, H.Y. Cheng, P.H. Sackett, and R.L. McCreery, "Spectro-electrochemical Examination of the Reactions of Chlorpromazine Cation Radical with Physiological Nucleophiles," *ACS Advances in Chemistry*, **1982**, Series 201, Chap. 19.
- 31.* R.L. McCreery, "Optical Diffraction by Electrodes: Use of Fourier Transforms in Spectroelectrochemistry," in <u>Fourier, Hadamard and Hilbert Transforms in Chemistry</u>, A.G. Marshall (Ed.), Plenum, **1982**, pp. 527-548.
- 32. R.S. Robinson, C.W. McCurdy, and R.L. McCreery, "Microsecond Spectroelectrochemistry by External Reflection from Cylindrical Microelectrodes," *Anal. Chem.*, **1982**, 54, 2356.
- 33. J. Mayausky and R.L. McCreery, "On the Mechanism of Chlorpromazine Cation Radical Decay in Aqueous Solution," *Act. Chem. Scand. B.* **1982**, 36, 713.
- 34.+ R.L. McCreery, C.W. McCurdy, and P. Rossi, "Diffractive Spectroelectrochemistry," **1983**, U.S. Patent #4,395,312.
- 35. R.L. McCreery, P.H. Hendra, and M. Fleischmann, "Fiber Optic Probe for Remote Raman Spectroscopy," *Anal. Chem.*, **1983**, 55, 146.
- 36. J.S. Mayausky and R.L. McCreery, "Spectroelectrochemical Examination of the Reactions of Chlorpromazine Cation Radical with Mono- and Bifunctional Nucleophiles," *J. Electroanal. Chem.*, **1983**, 145, 117.
- J. Mayausky and R.L. McCreery, "Spectroelectrochemical Examination of Charge Transfer Between Chlorpromazine Cation Radical and Catecholamines," *Anal. Chem.*, 1983, 55, 308.
- 38. P. Rossi and R.L. McCreery, "Diffractive Spectroelectrochemistry: A Sensitive Probe of the Diffusion Layer," *J. Electroanal. Chem.*, **1983**, 151, 47.
- 39. E. Hershenhart, R. D. Knight, and R. L. McCreery, "*In Situ* Cleaning and Activation of Solid Electrode Surfaces by Pulsed Laser Light," *Anal. Chem.*, **1984**, 56, 2256.
- 40. S.D. Schwab and R. L. McCreery, "Versatile, Efficient Raman Sampling with Fiber Optics," *Anal. Chem.*, **1984**, 56, 2199.
- 41. R.S. Robinson and R.L. McCreery, "Submicrosecond Spectroelectrochemistry by External Reflection at Microdisk Electrodes," *J. Electroanal. Chem*, **1985**, 182, 61.

- 42. C.C. Jan, B.K. Lavine, and R.L. McCreery, "High Sensitivity Spectroelectrochemistry Based on Electrochemical Modulation with Synchronous Detection," *Anal. Chem.*, **1985**, 57, 752.
- 43. C.C. Jan, F.T. Gamble, and R.L. McCreery, "Diffusion Layer Imaging: Spatial Resolution of the Electrochemical Diffusion Layer," *Anal. Chem.*, **1985**, 57, 1763.
- 44. S. Schwab, K.C. Cummings, and R.L. McCreery, "The Effect of Surface Chemistry on the Morphology, Resistance, and Colloidal Properties of Small Silver Particles," *J. Appl. Phys.*, **1985**, 58, 355.
- 45. S.A. Schuette and R.L. McCreery, "Square Wave Voltammetry on Platinum Microdisk Electrodes Using Synchronous Demodulation," *J. Electroanal. Chem.*, **1985**, 57, 1763.
- 46.^{*+} R.L. McCreery, "Spectroelectrochemistry," in <u>Physical Methods in Chemistry</u>, Vol. 2, B. Rossiter (Ed.), John Wiley, **1986**, pp. 591-662.
- 47. S.A. Schuette and R.L. McCreery, "Efficient Hydrodynamic Modulation at Microcylinder Electrodes," *Anal. Chem.*, **1986**, 58, 1778.
- 48. S.D. Schwab, R. L. McCreery, and F.T. Gamble, "Normal and Resonance Raman Spectroelectrochemistry with Fiber Optics Collection," *Anal. Chem.*, **1986**, 58, 2486.
- 49. M. Poon and R.L. McCreery, "*In-situ* Laser Activation of Glassy Carbon Electrodes," *Anal. Chem.*, **1986**, 58, 2745. (Reprinted as "Milestone in Analytical Chemistry," American Chemical Society, 1994).
- 50. C.-C. Jan and R.L. McCreery, "High Resolution Spatially Resolved Visible Spectrometry of the Electrochemical Diffusion Layer," *Anal. Chem.*, **1986**, 58, 2771.
- 51. S.D. Schwab and R.L. McCreery, "Remote, Long Path Cell for High Sensitivity Raman Spectroscopy," *Appl. Spectros.*, **1987**, 41, 126.
- 52. C.C. Jan and R.L. McCreery, "Spectroelectrochemical Analysis of Trace Materials by Diffusion Layer Imaging," *J. Electronanal. Chem.*, **1987**, 220, 41.
- 53. M. Poon and R.L. McCreery, "Repetitive *In-situ* Renewal and Activation of Carbon and Platinum Electrodes: Applications to Pulse Voltammetry," *Anal. Chem.*, **1987**, 59, 1615.
- 54. R.T. Packard and R.L. McCreery, "High Sensitivity Normal and Resonance Raman Spectroscopy: Applications to Transient Electrochemistry," *Anal. Chem.*, **1987**, 59, 2631.
- 55. S.A. Schuette and R.L. McCreery, "Hydrodynamically Modulated Alternating Current Voltammetry," *Anal. Chem.*, **1987**, 59, 2692.

- 56. R. Bowling and R. L. McCreery, "Diagnosis of Adsorption with Semi-Integral Voltammetry," *Anal. Chem.*, **1988**, 60, 605.
- 57.^{*} R. L. McCreery, "Electronic and Vibrational Spectroscopy of Electrode Surfaces," *Prog. in Anal. Spectros.*, **1988**, 11, 141.
- M. Poon and R.L. McCreery, "Laser Activation of Carbon Electrodes: Relationship Between Laser Induced Surface Effects and Electron Transfer Activation," *Anal. Chem.*, 1988, 60, 1725.
- 59. R.T. Packard and R.L. McCreery, "Raman Monitoring of Reactive Electrogenerated Species: Kinetics of Halide Addition to Orthoquinones," *J. Phys. Chem.*, **1988**, 92, 6345.
- 60. R. Bowling, R.T. Packard, and R.L. McCreery, "Raman Spectroscopy of Carbon Electrodes: Correlation Between Defect Density and Heterogeneous Electron Transfer Rate," *J. Electrochem. Soc.*, **1988**, 135, 1605.
- 61. D.T. Witiak, S.K. Kim, A.K. Tehim, K.D. Sternitzke, R.L. McCreery, S.U. Kim, D.R. Feller, K.J. Romstedt, V.S. Kamanna, and H.A. Newman, "Synthetic aci-reductones: 3,4-Dihydroxy-2H-1-benzopyran-2-ones and their cis- and trans-4a,5,6,7,8,8a-Hexahydro Diastereomers. Antiaggregatory, Antilipidemic, and Redox Properties Compared to Those of the 4-Substituted 2-Hydroxytetronic Acids," *J. Med. Chem.*, **1988**, 31 1437.
- 62. A.L. Deputy and R.L. McCreery, "Spatially Resolved Spectroelectro-Chemistry for Examining an Electrochemically Initiated Homogeneous Electron Transfer Reaction," *J. Electroanal. Chem.*, **1988**, 257, 57.
- 63. R. Bowling, R. Packard, and R.L. McCreery, "Activation of Highly Ordered Pyrolytic Graphite for Heterogeneous Electron Transfer: Relationship between Electrochemical Performance and Carbon Microstructure," *J. Am. Chem. Soc.*, **1989**, 111, 1217.
- 64. H-P. Wu and R.L. McCreery, "Spatially Resolved Absorption Spectro-electrochemistry: Spectra and Concentration Profiles of Species Generated and Consumed at Single and Twin Electrodes," *J. Electrochem. Soc.*, **1989**, 136, 1375.
- 65. J. Williamson, R. Bowling, and R.L. McCreery, "Near Infrared Raman Spectroscopy with a 783 nm Diode Laser and CCD Array Detector," *Appl. Spectros.*, **1989**, 43, 372.
- R. Bowling, R.T. Packard, and R.L. McCreery, "Mechanism of Electrochemical Activation of Carbon Electrodes: Role of Graphite Lattice Defects," *Langmuir*, 1989, 5, 683.
- 67. R. Rice, C. Allred, and R.L. McCreery, "Fast Heterogeneous Electron Transfer Rates for Glassy Carbon Electrodes without Polishing or Activation Procedures," *J. Electroanal. Chem.*, **1989**, 263, 163.

- 68.^{*} R.L. McCreery and R.T. Packard, "Raman Monitoring of Dynamic Electrochemical Events," *Anal. Chem.*, **1989**, 61, 775A.
- R. J. Rice and R.L. McCreery, "Quantitative Relationship between Electron Transfer Rate and Surface Microstructure of Laser-Modified Graphite Electrodes," *Anal. Chem.*, 1989, 61, 1637.
- 70. K. Sternitzke, R.L. McCreery, C. Bruntlett, and P.T. Kissinger, "*In Situ* Laser Activation of Glassy Carbon Electrochemical Detectors for Liquid Chromatography: Demonstration of Improved Reversibility and Detection Limits," *Anal. Chem.*, **1989**, 61, 1989.
- 71. H-P. Wu and R.L. McCreery, "Observation of Concentration Profiles at Cylindrical Microelectrodes by a Combination of Spatially Resolved Absorption Spectroscopy and the Abel Inversion," *Anal. Chem.*, **1989**, 61, 2347.
- 72. Y. Wang and R. L. McCreery, "Evaluation of a Diode Laser/Charge Coupled Device Spectrometer for Near-Infrared Raman Spectroscopy," *Anal. Chem.*, **1989**, 61, 2647.
- 73. R. Bowling, R.L. McCreery, C.M. Pharr, and R.C. Engstrom, "Observation of Kinetic Heterogeneity on Highly Ordered Pyrolytic Graphite Using Electrogenerated Chemiluminescence," *Anal. Chem.* **1989**, 61, 2763.
- 74. M. Callstrom, R.L. McCreery, D. Alsmeyer, and T. Neenan, "Doped Glassy Carbon Materials: Their Synthesis and Investigation of Their Properties," *Polym. Mater. Sci. Eng.*, **1989**, 61, 921.
- 75. A. Deputy and R.L. McCreery, "Spatially Resolved Absorption Examination of the Redox Catalysis Mechanism: Equilibrium and Near-Equilibrium Cases," *J. Electroanal. Chem.*, **1990**, 285, 1.
- 76. A. Deputy, H-P. Wu, and R.L. McCreery, "Spatially Resolved Spectro-electrochemical Examination of the Oxidation of Dopamine by Chlorpromazine Cation Radical," *J. Phys. Chem.*, **1990**, 94, 3620.
- 77. R.J. Rice, N. Pontikos, and R.L. McCreery, "Quantitative Correlations of Heterogeneous Electron Transfer Kinetics with Surface Properties of Glassy Carbon Electrodes," *J. Am. Chem. Soc.* **1990**, 112, 4617.
- 78. M.R. Callstrom, T.X. Neenan, R.L. McCreery, and D.C. Alsmeyer, "Doped Glassy Carbon Materials (DGC): Low Temperature Synthesis, Structure and Catalytic Behavior," *J. Am. Chem. Soc.* **1990**, 112, 4954.
- C. D. Allred and R.L. McCreery, "Near Infra-red Raman Spectroscopy of Liquids and Solids with a Fiber-Optic Sampler, Diode Laser, and CCD Detector," *Appl. Spectros*. 1990, 44, 1229.

- 80. K.D. Sternitzke and R.L. McCreery, "Laser Microfabrication and Activation of Graphite and Glassy Carbon Electrodes," *Anal. Chem.*, **1990**, 62, 1339.
- P.J. Treado, A. Govil, M.D. Morris, K. Sternitzke, and R.L. McCreery, "Hadamard Transform Raman Microscopy of Laser Modified Graphite Electrodes," *Appl. Spectros.*, 1990, 44, 1270.
- 82. Y. Wang, D. Alsmeyer, and R.L. McCreery, "Raman Spectroscopy of Carbon Materials: Structural Basis of Observed Spectra," *Chem. Mater.*, **1990**, 2, 557.
- 83.^{*} R.L. McCreery, "Carbon Electrodes: Structural Effects on Electron Transfer Kinetics," in <u>Electroanalytical Chemistry</u>, A.J. Bard (Ed.), Dekker, NY, **1991**, Vol. 17, pp. 221-374.
- 84. Y.W. Alsmeyer and R.L. McCreery, "Surface Enhanced Raman Spectroscopy of Carbon Electrodes following Silver Electrodeposition," *Anal. Chem.*, **1991**, 63, 1289.
- 85. R.S. Robinson, K. Sternitzke, and R.L. McCreery, "Scanning Tunneling Microscopy of Laser Activated Carbon Electrodes Used in Studies of Electrochemical Charge Transfer Reactions," *J. Vac. Sci. Technol. B*, **1991**, 9, 960.
- 86. R.S. Robinson, K. Sternitzke, M.T. McDermott, and R.L. McCreery, "Morphology and Electrochemical Effects of Defects on Highly Ordered Pyrolytic Graphite," *J. Electrochem. Soc.*, **1991**, 138, 2412.
- 87. R.J. Rice and R.L. McCreery, "Effects of Wavelength, Pulse Duration, And Power Density on Laser Activation of Glassy Carbon Electrodes," *J. Electroanal. Chem.*, **1991**, 310, 127.
- Y.W. Alsmeyer and R.L. McCreery, "Surface Enhanced Raman Examination of Carbon Electrodes: Effects of Laser Activation and Electrochemical Pretreatment," *Langmuir*, 1991, 7, 2370.
- 89. N.L. Pocard, D.C. Alsmeyer, R.L. McCreery, T.X. Neenan, and M.R. Callstrom, "Nanoscale Platinum(0) Clusters in Glassy Carbon: Synthesis, Characterization, and Uncommon Catalytic Activity," *J. Am. Chem. Soc.*, **1992**, 114, 769.
- 90. C.D. Allred and R.L. McCreery, "Adsorption of Catechols on Fractured Glassy Carbon Electrode Surfaces," *Anal. Chem.* **1992**, 64, 444.
- 91. C.D. Newman, G.G. Bret, and R.L. McCreery, "Fiber Optic Sampling Combined with an Imaging Spectrograph for Routine Raman Spectroscopy," *Appl. Spectros.*, **1992**, 46, 262.
- 92. M.T. McDermott, K. Kneten, and R.L. McCreery, "Anthraquinonedisulfonate Adsorption, Electron-Transfer Kinetics, and Capacitance on Ordered Graphite Electrodes: The Important Role of Surface Defects," *J. Phys. Chem.* **1992**, 96, 3124.

- 93. N.M. Pontikos and R.L. McCreery, "Microstructural and Morphological Changes Induced in Glassy Carbon Electrodes by Laser Irradiation," *J. Electroanal. Chem.*, **1992**, 324, 229.
- D.C. Alsmeyer and R.L. McCreery, "In Situ Raman Monitoring of Electrochemical Graphite Intercalation and Lattice Damage in Mild Aqueous Acids," Anal. Chem. 1992, 64, 1528.
- 95. K.R. Kneten and R.L. McCreery, "Effects of Redox System Structure on Electron-Transfer Kinetics at Ordered Graphite and Glassy Carbon Electrodes," *Anal. Chem.*, **1992**, 64, 2518.
- 96. N.L. Pocard, D.C. Alsmeyer, R.L. McCreery, T.X. Neenan, and M.R. Callstrom, "Doped Glassy Carbon: A New Material for Electrocatalysis," *J. Mater. Chem.*, **1992**, 2, 771.
- 97.+ R.L. McCreery, "NIR/CCD Raman Spectroscopy: Second Battle of a Revolution?," Proc. SPIE-Int. Soc. Opt. Eng., **1992**, 1439, 25.
- 98. R.L. McCreery, M.R. Callstrom, D.C. Alsmeyer, M.T. McDermott, and K.R. Kneten, "Application of Raman Spectroscopy to the Study of Carbon Surfaces Including Platinum-Modified Doped Glassy Carbon," *Proc. Electrochem. Soc.*, **1992**, 92, 324.
- 99. H.D. Hutton, D.C. Alsmeyer, R.L. McCreery, T.X. Neenan, and M.R. Callstrom, "Synthesis, Characterization and Electrochemical Activity of Halogen-Doped Glassy Carbon," *Polym. Mater. Sci. Eng.*, **1992**, 67, 237.
- 100. W. Huang and R.L. McCreery, "Electron Transfer Kinetics of Fe(CN)₆^{-3/-4} on Laser-Activated and CN⁻modified Pt Electrodes," *J. Electroanal. Chem.*, **1992**, 326, 1.
- M.T. McDermott, C.A. McDermott, and R.L. McCreery, "Scanning Tunneling Microscopy of Carbon Surfaces: Relationships between Electrode Kinetics, Capacitance, and Morphology for Glassy Carbon Electrodes," *Anal. Chem.*, **1993**, 65, 937.
- C.J. Frank, R.L. McCreery, D.C.B. Redd, and T.S. Gansler, "Detection of Silicone in Lymph Node Biopsy Specimens by Near-Infrared Raman Spectroscopy," *Appl. Spectros.*, 1993, 47, 387.
- 103. R.K. Jaworski and R.L. McCreery, "Laser-Induced Transient Currents on Glassy Carbon Electrodes," *J. Electrochem. Soc.*, **1993**, 140, 1360.
- H.D. Hutton, W. Huang, D.C. Alsmeyer, J. Kometani, R.L. McCreery, T.X. Neenan, and M.R. Callstrom, "Synthesis, Characterization, and Electrochemical Activity of Halogen-Doped Glassy Carbon," *Chem. Mater.*, **1993**, 5, 1110.

- 105. C.A. McDermott, K.R. Kneten, and R.L. McCreery, "Electron Transfer Kinetics of Aquated Fe^{+3/+2}, Eu^{+3/+2} and V^{+3/+2} at Carbon Electrodes: Inner Sphere Catalysis by Surface Oxides," *J. Electrochem. Soc.*, **1993**, 140, 2593.
- H.D. Howard, H.L. Pocard, D.C. Alsmeyer, O.J.A Schueller, R.J. Spontak, M.E. Huston, W. Huang, R.L. McCreery, T.X. Neenan, and M.R. Callstrom, "Preparation of Nanoscale Platinum(0) Clusters in Glassy Carbon and Their Catalytic Activity," *Chem. Mater.*, 1993, 5, 1727.
- 107. M. Fryling, C.J. Frank, and R.L. McCreery, "Intensity Calibration and Sensitivity Comparisons for CCD/Raman Spectrometers," *Appl. Spectro.*, **1993**, 47, 1965 (feature article).
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- L.C.T. Shoute, Y. Wu, R.L. McCreery; "Direct Spectroscopic Monitoring of Conductance Switching in Polythiophene Memory Devices" *Electrochimica Acta* 2013, 110, 437-445.
- 235. B. Das, R.G. Pillai, Y. Wu, R.L. McCreery; "Redox-Gated Three-Terminal Organic Memory Devices: Effect of Composition and Environment on Performance" *Applied Materials & Interfaces* **2013**, 5, 11052-11058.

Chemistry Courses Taught at University of Alberta

- Winter, 2007 Chemistry 415, Electroanalytical Chemistry
- Winter, 2008 Chemistry 417, Analytical Spectroscopy
- Fall, 2008 Chemistry 415, Analytical Electrochemistry
- Winter, 2009 Chemistry 523, Analytical Chemistry Techniques for Practicing Scientists
- Fall, 2009:RLM led a complete reorganization of the graduate curriculum in Analytical
Chemistry, resulting in modular "core" and "advanced" courses, with the intent to
provide all Analytical graduate students with a firm basis in advanced

| | electrochemistry, mass spec, optical spectroscopy, and separations, plus the | |
|--------------|--|--|
| | opportunity to take specialized modules in a wide range of topics. | |
| Winter, 2010 | Chemistry 623, Advanced Special Topics | |
| Fall, 2010 | Chemistry 512, Optical Spectroscopy & Electrochemistry | |
| Winter, 2011 | Chemistry 614, Advanced Analytical Chemistry | |
| Fall, 2011 | Chemistry 512, Optical Spectroscopy & Electrochemistry | |

Students advised by R.L. McCreery, with their permanent positions

| Name | Degree | Position |
|-------------------------------------|-------------|------------------------------|
| Hung-Yuan Cheng | Ph.D., 1978 | Smith Kline Beecham |
| Marilvn Szentirmav | Ph.D., 1979 | Cntr for Bioanal.Resch |
| Patricia Sackett | Ph.D., 1979 | The Pillsbury Company |
| Richard Pruiksma | Ph.D., 1980 | practicing medicine in Texas |
| Joan Skully | M.S., 1980 | homemaker |
| Terrv Smith Jackson | M.S. 1982 | OSU Newark |
| Barrv Lavine | M.S. 1982 | Clarkson Universitv |
| Jack S. Mavauskv | Ph.D., 1982 | Monsanto |
| Paula Melaragno ^a | Ph.D., 1982 | Denison University |
| Robert Robinson ^b | Ph.D., 1984 | Bell Communications |
| Scott D. Schwab | Ph.D., 1986 | Ethvl Petroleum Inc. |
| Chwu-Ching Jan ^b | Ph.D., 1986 | Allied Signal |
| Sheila A. Schuette | Ph.D., 1987 | Monsanto Agricultural Co. |
| Melanie Poon | Ph.D., 1987 | Dow Chemical |
| Richard Packard | Ph.D., 1988 | Sherex, Inc. |
| Huan-Ping Wu | Ph.D., 1989 | Yellow Springs Instrument |
| Robert Bowling | Ph.D., 1989 | Dow Chemical |
| Kent Sternitzke | Ph.D., 1990 | Alcon Laboratorv |
| Andrew Deputy | Ph.D., 1990 | Miles Laboratory |
| Ligun Fu | M.S., 1990 | Detroit Central Tool |
| Ronald Rice | Ph.D., 1990 | Procter & Gamble |
| Daniel C. Alsmever ^d | Ph.D., 1992 | Eastman Chemical |
| Yan Wang Alsmever ^d | Ph.D., 1992 | Eastman Chemical |
| Li Li | M.S. 1992 | Procter and Gamble |
| Nicholas Pontikos | Ph.D., 1992 | Seagate Technology |
| Christie McDermott ^{a,c} | Ph.D., 1992 | University of Alberta |
| Mark McDermott ^d | Ph.D., 1993 | University of Alberta |
| Kristin Kneten Cline ^d | Ph.D., 1993 | Wittenberg University |
| Daniel Zavitz | M.S., 1993 | high school teacher, N.Y. |
| Christopher J. Frank ^{b,e} | Ph.D 1994 | Procter & Gamble |
| Wenhua Huang | Ph.D 1994 | Mechanical Technologies |

| Ph.D 1994 | General Mills |
|------------------------|--|
| Ph.D., 1995 | Harvard Univ.postdoc |
| Ph.D. 1996 | International Paper |
| Ph.D. 1996 | Smith. Kline. Beecham |
| M.S. 1996 | Pharmacv Graduate School |
| Ph.D. 1997 | Headwav Technologv |
| Ph.D. 1997 | Chromex, Inc. |
| M.S. 1998 | Law School |
| Ph.D. 1998 | Exxon, Houston |
| Ph.D. 1999 | Dow Chemical Co. |
| Ph.D. 2000 | Industrial Position in Taiwan |
| PhD 2000 | Wveth Labs |
| PhD 2000 ^d | Roche Pharmaceutical |
| PhD. 2001 ^d | Naval Research Lab |
| PhD 2001 | General Electric. India |
| PhD 2002 | Wittenberg University |
| PhD 2005 | Singapore Nanotech |
| PhD 2004 | Procter and Gamble |
| PhD 2005 | Ashland Chemical |
| M.S. 2006 | Semiconductor industrv |
| PhD 2008 | Postdoctoral research |
| PhD 2008 | Scientist, Texas A&M |
| PhD 2010 | National Research Council |
| M.S. 2010 | |
| M.S. 2010 | U. Alberta Chem. Eng. |
| Ph.D. 2011 | U. Illinois postdoc |
| PhD. 2012 | U. Alberta postdoc |
| | Ph.D., 1995 Ph.D., 1996 Ph.D., 1996 M.S., 1996 Ph.D., 1997 Ph.D., 1997 M.S., 1998 Ph.D., 1998 Ph.D., 1998 Ph.D., 1999 Ph.D, 2000 PhD, 2000 PhD, 2000 PhD, 2000 PhD, 2001 PhD, 2001 PhD, 2001 PhD, 2001 PhD, 2005 PhD, 2005 PhD, 2005 PhD, 2005 PhD, 2005 M.S., 2006 PhD, 2008 PhD, 2010 M.S., 2010 Ph.D, 2011 |

- a. University Fellow
- b. Winner of Chemistry Dissertation Award (one winner/year)
- c. Awarded ACS Analytical Chemistry Fellowship (4/year nationally)
- d. Industrial Fellowship for Dissertation Year
- e. Winner of Society of Applied Spectroscopy National Student Award (one/year nationally)
- f. Presidential fellow

INVITED LECTURES AT SCIENTIFIC MEETINGS

- 1975: 1. ACS National Meeting, Philadelphia, Symposium on Biological Electrochemistry
 - 2. First Chemical Congress of The North American Continent, Symposium on Chemistry of Electrode Surfaces

- 1976: Gordon Conference on Analytical Chemistry, New Hampshire
- 1977: Electrochemical Society National Meeting, Philadelphia, Symposium on Future Aspects of Electrochemistry
- 1978: ACS Regional Meeting, Indianapolis, Symposium on Analytical Electrochemistry
- 1980: Electrochemical Society National Meeting, St. Louis, Symposium on Organic Electrochemistry
- 1. National ACS meeting, Atlanta, Symposium on Biological Electrochemistry
 2. National Electrochemical Society Meeting, Minneapolis, Symposium on Spectroelectrochemistry of Biological Systems
- 1982: 1. ACS National meeting, symposium to honor Ralph Adams
 - 2. National Electrochemical Society meeting, two lectures in symposium on Biological Redox Systems
 - 3. Gordon Conference on Analytical Chemistry
 - 4. ACS course on surface science, lecture on Raman Spectroscopy
- 1983: Organizer and chairman of a symposium entitled "Mechanistic and Analytical Electrochemistry of Biological Systems," Regional ACS meeting, Oxford, Ohio
- 1984: 1. Pittsburgh Conference, First Reilley award symposium
 - 2. 165th Electrochemical Society National Meeting, Cincinnati, two lectures in symposia on microelectrodes and bioelectrochemistry
 - 3. American Chemical Society Summer Analytical Symposium, Washington
 - 4. Eastern Analytical Symposium, New York
- 1985: 1. Pittsburgh Conference, New Orleans
 - 2. International Electroanalytical Symposium, Chicago
- 1986: 1. Gordon Conference on Electrochemistry
 - 2. NSF Microelectrode workshop, Salt Lake City
 - 3. National ACS meeting, New York
 - 4. Organized and chaired a symposium on Biological Electrochemistry, Regional ACS meeting, Bowling Green, Ohio
 - 5. Speaker at Local ACS Meeting, Evansville, Indiana
 - 6. Academy of Pharmaceutical Science National Meeting, Washington
- 1987: 1. Eastern Analytical Symposium, New York
 2. Organized Spectroelectrochemistry Symposium for Japanese/American Electrochemical Society Meeting, Honolulu

- 3. National Capital Electrochemical Society Meeting, Washington, D.C.
- 1988: 1. Society of Analytical Chemistry of Pittsburgh (Joint with local Electrochemical Society meeting)
 - 2. Chairman and Speaker, Fifth Reilley Award Symposium, Pittsburgh Conference on Analytical Chemistry, New Orleans
 - 3. Third Chemical Congress of North America, Toronto
 - 4. ACS Summer Analytical Symposium, Stanford University
 - 5. International Society of Electrochemistry, Glasgow
 - 6. National ACS meeting, Los Angeles
 - 7. FACSS meeting, Boston (2 lectures)
- 1989: 1. Gordon Conference on Electrochemistry, Ventura, California
 - 2. Society of Applied Spectroscopy, Cincinnati, OH
 - 3. Pittsburgh Conference on Analytical Chemistry, Atlanta, GA.
 - 4. ACS Summer Analytical Symposium, Blacksburg, VA
 - 5. Gordon Conference on Analytical Chemistry, New Hampshire
 - 6. Organizer of Kendall Award Symposium, ACS National Meeting, Dallas, TX.
 - 7. Symposium on Modified Electrodes, ACS National Meeting, Dallas, TX
 - 8. Conference on Modern Methods in Electrochemistry, Bielsko, Poland
 - 9. Japan/U.S. Spectroelectrochemistry Symposium, Honolulu
 - 10. Organizer and Speaker, Electrochemical Society National Meeting, Hollywood, Florida, (speaker in symposia on sensors, in-situ electrode characterization and high speed electrochemistry)
 - 11. ACS National Meeting, Miami, Electrochemistry Award Symposium
- 1990: 1. ACS National Meeting, Washington, Symposium on Diode Lasers
 - 2. Gordon Conference on Vibrational Spectroscopy, New Hampshire
 - 3. ACS Frontiers of Chemistry: Materials by Design conference, Columbus
 - 4. International Conference on Scientific Imaging, Cayman Islands
- 1991: 1. Symposium on Solid Electrodes, ACS National Meeting, Atlanta
 - 2. Symposium on Fundamental Processes, Electrochemical Society National Meeting, Washington
 - 3. Pittsburgh Spectroscopy Award Symposium (honoring R.P. Van Duyne), Pittsburgh Conference, Chicago
 - 4. FACSS, Anaheim, symposia on array detectors and Surface Raman Spectroscopy
 - 5. DOE Symposium on Oxygen Reduction and In-situ spectroelectrochemistry, Cleveland
- 1992: 1. SPIE, Los Angeles, symposium on laser applications in analytical spectroscopy
 - 2. Pittsburgh Conference, New Orleans, symposia on diode lasers and carbon materials.
 - 3. FACSS, Philadelphia, Symposium on Industrial Raman Spectroscopy
 - 4. Conference on Scientific Imaging, Cayman Islands
- 1993: 1. Gordon Conference on Electrochemistry, Ventura

- 2. Pittsburgh Conference, symposium on array detectors in spectroscopy, Atlanta
- 3. Central Regional ACS meeting, Pittsburgh
- 4. Electrochemical Society National Meeting, New Orleans
- 5. Eastern Analytical Symposium, New York
- 1994: 1. Engineering Foundation Conference on Interfacial Phenomena, Kona, Hawaii2. Association of Official Analytical Chemists National Meeting, Philadelphia
- 1995: 1. SPIE National meeting, Symposium on Biomedical Optics, San Jose
 - 2. FACSS National Meeting, Cincinnati, Three invited symposium presentations
 - 3. National AOAC meeting, Nashville, Symposium on Raman Spectroscopy
- 1996: 1. European Science Foundation Workshop, Copenhagen
 - 2. International Conference on Raman Spectroscopy, Pittsburgh
 - 3. Electrochemical Society, Cleveland section
 - 4. FACSS National Meeting, Kansas City, three invited symposium presentations
- 1997: 1. Great Lakes Regional ACS meeting, Midland, Michigan
 - 2. Joint International Society of Electrochemistry/Electrochemical Society Meeting, Paris, France
 - 3. FACSS National Meeting, short course on Raman Spectroscopy, and Symposium on Industrial Raman spectroscopy, Providence, Rhode Island
 - 4. Eastern Analytical Symposium, Somerset, New Jersey
 - 5. American Association of Pharmaceutical Science, short course on Raman spectroscopy
 - 6. Electrochemistry of Carbon and Its Allotropes, Cleveland, Speaker and advisory board
- 1998: 1. Pittsburgh conference, New Orleans
 - 2. Heyrovsky Discussions, Prague, Plenary Lecturer
 - 3. Symposium on Diamond Electrodes, Tokyo, principal speaker
 - 4. FACSS National Meeting, symposia on Biomedical spectroscopy and drug analysis
- 1999: 1. American Chemical Society, Columbus Section
 - 2. Electrochemical Society National Meeting, Seattle, 3 invited talks
 - 3. Japanese Society of Analytical Chemistry National Meeting, Kobe
 - 4. Society of Applied Spectroscopy, Chicago Section, Workshop on Raman Spectroscopy
 - 5. FACSS National meeting, short course on Analytical Raman Spectroscopy
- 2000: 1. Gordon Conference on Aqueous Corrosion
 - 2. Gordon Conference on Synthetic Diamond Films
 - 3. From Femto to Tera-amps Conference, Southampton, England
 - 4. Central Region ACS meeting, Covington, KY, symposium on biosensors
 - 5. Awards Symposium, National ACS meeting, Washington, DC.
 - 6. Electrochemical Society National Meeting, Phoenix, symposia on Carbon electrodes and Aqueous Corrosion

- 2001: 1. AFOSR Review meeting on aqueous corrosion, Florida
 - 2. Process Analytical Chemistry Meeting, Wilmington, Delaware
- 2002: 1. Tri-Service Corrosion Conference, San Antonio
 - 2. Pittcon 2002, New Orleans, Symposium on Long Range Electron Transfer
 - 3. CIMTEC 2002 conference on advanced materials, Florence, Italy
 - 4. XVI National Chemistry Conference, Konya, Turkey
 - 5. National Electrochemical Society meeting, Salt Lake City, two symposia
- 2003: 1. Gordon Conference on Electrochemistry, Ventura, CA
 - 2. Pittcon 2003, Orlando, C.N. Reilley Award Address
 - 3. Pittcon 2003, Organizer of two Nanostructures symposia, speaker in one.
 - 4. Alberta regional ECS meeting, Edmonton
 - 5. Tri-service Corrosion Conference, Las Vegas
 - 6. Eastern Analytical Symposium, Somerset, New Jersey
 - 7. Miami Nanotechnology Symposium, Oxford, Ohio
- 2004: 1. Electrochemical Society National Meeting, San Antonio
 - 2. Carbon 2004, Providence, R.I., Keynote lecture
 - 3. International Conference on Electrode Processes, Szczyrk, Poland
- 2005: 1. Pittcon 2005, Orlando, Symposium on Carbon Surface Chemistry
 - 2. Pittcon 2005, Organizer of Ralph N. Adams Award symposium
 - 3. Frontiers in Nanoscience, Snowbird, Utah
 - 4. Carbons for a Green Planet, Pennsylvania State University
 - 5. Faraday Discussion on Molecular Wires, Manchester, England
 - 6. Federation of Analytical Chemistry and Spectroscopy Societies National Meeting, Quebec City
- 2006: 1. ECHEMS meeting, La Palma, Spain, Keynote lecture
 - 2. Symposium on Analytical Chemistry, Canakkale, Turkey, Plenary Lecture
 - 3. Electrochemical Society International Meeting, Cancun
- 2007: 1. Third International Conference on Advanced Materials and Nanotechnology Wellington, New Zealand, Plenary lecture
 - 2. Canadian Society of Chemistry Annual Meeting, Post-Modern Electrochemistry" Symposium, Winnipeg
 - 3. Symposium on Molecular Conduction, Purdue University
 - 4. Chemistry of Electronic Materials Mount Holyoke College, Massachusetts
 - 5. China/Canada Symposium on Analytical Chemistry, Edmonton
 - 6. Nanotechnology short course, National Institute for Nanotechnology
 - 7. International Society of Electrochemistry, Banff, tutorial on Nanotechnology
 - 8. Materials Research Society, symposium on carbon electronics, Boston

- 2008: 1. International Society for Theoretical Chemical Physics, Vancouver, Plenary Lecture.
 - 2. 20th Canadian Materials Science Conference, Edmonton
 - 3. Canadian Society of Chemistry, Edmonton, organized symposium on Nanoscale Phenomena in Electrochemistry
 - 4. Gordon Research Conference on Electrodeposition
 - 5. American Chemical Society National Meeting, Philadelphia
 - 6. Analytical Chemistry Conference, Hsinchu, Taiwan
 - 7. International Chemical Conference, Taipei, Taiwan, Plenary Lecture
- 2009: 1. Pittcon 2009 Symposia, Chicago, Invited Speaker
 - 2. International Society of Electrochemistry 7th Spring Meeting, Szczyrk, Poland, Plenary Lecture
 - 3. Materials Research Society Spring Meeting, San Francisco
 - 4. 92nd Canadian Society of Chemistry Conference, Hamilton
 - 5. Nano and Giga Challenges in Microelectronics, 14th Canadian Semiconductor Technology Conference, Hamilton, Plenary Speaker
 - 6. nanoUtah Conference, Salt Lake City, Keynote Speaker
 - 7. ICE: The Tech Conference, Edmonton
- 2010: 1. Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA) conference, Edmonton
 - 2. 217th Electrochemical Society (ECS) Meeting, Vancouver
 - 3. Canadian Association of Physicists (CAP) Congress, Toronto
 - 4. International Symposium on Integrated Functionalities (ISIF), Puerto Rico
 - 5. International Conference on the Electrified Interface, Geneva, N.Y.
 - 6. International Society of Electrochemistry, Nice, France
 - 7. Federation of Analytical Chemistry and Spectroscopy Societies, Raleigh, Mann Award Address, and also Anachem symposium
 - 8. Nanocarbon workshop, NRC, Ottawa
- 2011: 1. Pittcon 2011, symposium on Advanced Carbon Materials, speaker and organizer (highlighted in Chemical and Engineering News, April 4, 2011)
 - 2. Materials Research Society (MRS) Spring Meeting, San Francisco, invited speaker
 - 3. 219th Electrochemical Society (ECS) Meeting, Montreal, invited speaker
 - 4. 13th International Symposium on Electroanalytical Chemistry, Changchun, China, plenary speaker
 - 5. Federation of Analytical Chemistry and Spectroscopy Societies, symposium on Emerging Raman Spectroscopy, invited speaker, Reno, Nevada
 - 6. Matériaux et Nanostructures π -Conjugués, Strasbourg, invited speaker
- 2012: 1. Gordon Conference on Electrochemistry, Ventura
 - 2. Materials Research Society, San Francisco
 - 3. Canadian Society of Chemistry, Calgary
 - 4. International Conference on Raman Spectroscopy, Bangalore, India

- 5. International Society of Electrochemistry, Prague
- 6. SCIX/FACSS, Kansas City, Symposium on Raman of Electronic Materials
- 2013: 1. Pittcon, Symposium on Pivotal Ideas in Electrochemistry, Philadelphia
 - 2. International Society of Electrochemistry, Querétaro, Mexico (plenary)
 - 3. Symposium on In-vivo Analytical Chemistry, Beijing
 - 4. Beijing Conference and Exhibition on Instrumental Analysis, China (plenary)
 - 5. Canadian Section of the Electrochemical Society, Montreal (keynote)

INVITED SEMINARS AND COLLOQUIA

- 1977: University of Cincinnati
- 1978: University of Delaware
- 1980: 1. University of Kansas
 - 2. University of Oklahoma
 - 3. University of California, Riverside
 - 4. Technicon Instruments, New York
- 1981: 1. University of North Carolina, Chapel Hill2. University of Southampton, England
- 1982: 1. Indiana University2. Texas A&M University
- 1984: 1. Chevron Research Company
 - 2. Youngstown State University
 - 3. University of Pittsburgh
 - 4. Northwestern University
 - 5. Smith, Kline and French, Philadelphia
- 1985: 1. Dow Chemical, Michigan
 - 2. Pennsylvania State University
 - 3. University of Tennessee
 - 4. Duquesne University
 - 5. University of Kansas
- 1986: 1. Kent St. University
 - 2. Stanford University Industrial Affiliates Program
 - 3. University of California, Berkeley
 - 4. Utah State University
 - 5. University of Utah
 - 6. University of Nebraska
 - 7. University of Kansas
- 1987: 1. State University of New York, Buffalo

- 2. University of Texas, Austin
- 3. Texas A&M University
- 4. University of Houston
- 5. University of West Virginia
- 6. National Bureau of Standards
- 1988: 1. Purdue University
 - 2. Iowa State University (departmental and divisional lectures)
 - 3. Case Western Reserve University
 - 4. Union Carbide, Parma, OH
- 1989: 1. University of Cincinnati
 - 2. University of Delaware
 - 3. Tufts University
 - 4. IBM, Endicott, New York
 - 5. University of Warsaw, Poland
 - 6. University of Southampton, England
 - 7. University of Michigan
- 1990: 1. University of Arizona2. University of California, Riverside (dept and divisional)
- 1991: 1. Guelph-Waterloo Graduate Center
 - 2. Chromex Corporation, Albuquerque
 - 3. Bell Communications Research
 - 4. Indiana U. Purdue U., Indianapolis
 - 5. Indiana University, Bloomington
 - 6. Ohio University, Athens
- 1992 1. Kansas State University
 - 2. University of Kansas
 - 3. Dow Chemical Company, Midland
- 1993: 1. University of Florida
 - 2. University of North Carolina, Chapel Hill
 - 3. Duke University
 - 4. Los Alamos National Laboratory
 - 5. Kansas State University
- 1994: 1. Northwestern University
 - 2. University of New Mexico
 - 3. Pennsylvania State University (SACP lecturer)
 - 4. Michigan State University
 - 5. Texas A&M University

- 6. University of Utah
- 7. University of Wyoming
- 8. Massachusetts Institute of Technology
- 9. Hoffman LaRoche, Nutley, N.J.
- 10. Union Carbide, Charleston, W.V.
- 1995: 1. Society of Applied Spectroscopy Tour Speaker, California, Nevada, Arizona, New Mexico Sections
 - 2. Wabash College
 - 3. Acton Corporation, Boston
 - 4. Chromex, Inc, Albuquerque
- 1996: 1. University of South Dakota, Haines Lecture
 - 2. Florida State University
 - 3. University of Louisville
 - 4. Symposium on Biosensor Interfaces, University of Tuebingen, Germany
- 1997: 1. University of Oklahoma, J. Clarence Karcher Lecture
 - 2. Abbott Laboratories, Chicago
 - 3. Procter and Gamble, Cincinnati, short course on Raman Spectroscopy
 - 4. National Institute on Standards and Technology
 - 5. Bowling Green State University, Ohio
- 1998: 1. University of Georgia
 - 2. Illinois State University
 - 3. University of Tokyo
 - 4. Waseda University, Tokyo
 - 5. Utah State University
 - 6. Air Force Institute of Technology
- 1999: 1. University of Kyoto, Japan
 - 2. Southern Illinois University
 - 3. Seoul National University, Korea
 - 4. Sogang University, Korea
 - 5. Northwestern University
- 2000: 1. Iowa State University2. Clemson University
- 2001: 1. University of California, Riverside, Analytical seminar2. Northwestern University Theory Seminar
- 2002: 1. University of California, Riverside, departmental colloquium
- 2003: 1. University of Wisconsin, Madison

- 2. Iowa State University, departmental and divisional seminars
- 3. University of Alberta, Edmonton
- 4. ZettaCore, Inc., Denver
- 2004: 1. University of California at Irvine, seminar
 - 2. Washington State University, seminar
 - 3. University of California, San Diego, seminar
 - 4. California Institute of Technology, Pasadena, seminar
 - 5. University of Oregon, Eugene, seminar
 - 6. National Institute of Standards and Technology, CSTL colloquium
 - 7. University of Vermont, Department of Chemistry
- 2005: 1. University of West Virginia, Department of Chemistry
 - 2. Applied Materials, Santa Clara, California
 - 3. Stanford University
 - 4. University of Manitoba
 - 5. University of Alberta/National Institute for Nanotechnology
 - 6. North Carolina State University
 - 7. University of North Carolina, Chapel Hill
 - 8. Vanderbilt University, Conover Lecture
- 2006: 1. Arizona State University
 - 2. University of Arizona
 - 3. University of Northern Florida
 - 4. ZettaCore, Inc.
- 2007: 1. University of Victoria, British Columbia
 - 2. Steacie Institute for Molecular Sciences, Ottawa
 - 3. Biomedical Research Institute, Montreal
- 2008: 1. University of Lethbridge, Canada
 - 2. Molecular Forum Lecture, Chinese Academy of Sciences, Beijing
 - 3. Xiamen University, China
 - 4. University of Calgary
- 2009: 1. University of Twente, Netherlands
 - 2. Phillips/Eindhoven High Tech Campus, Netherlands
 - 3. Michigan State University
 - 4. University of Guelph
 - 5. Simon Fraser University
 - 6. Xerox Research Corporation of Canada
- 2010: 1. Ralph Adams symposium, University of Kansas
 - 2. NINT/National Institute of Advanced Industrial Science and Technology (Japan) Workshop
 - 3. University of Alberta, Analytical Chemistry Seminar

- 2011: 1. University of Geneva, Switzerland
 - 2. University of Paris, Diderot, series of 3 lectures on molecular electronics
 - 3. Imperial College, London
 - 4. University of Rennes, France
 - 5. Institute for Molecular Science, Chinese Academy of Science, Beijing
 - 6. Clifford C. Hach Lecture, University of Wyoming
- 2012: 1. University of Toronto
 - 2. Indian Institute of Technology, Delhi
- 2013: 1. Velmer Fassel Lecture, Iowa State University
 - 2. University of Paris, Diderot
 - 3. Facultad de Estudios Superiores Cuautitlán, Universidad Nacional Autónoma de México (FESC-UNAM), Mexico City
 - 4. El Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (Cinvestav), Querétaro, Mexico
 - 5. Southwestern University, Chongqing, China
 - 6. Tongji University, Shanghai, China
 - 7. University of Washington, Seattle
 - 8. University of Quebec at Montreal
 - 9. McGill University, Montreal
- 2014: 1. University of Canterbury, New Zealand
 - 2. University of Otago, New Zealand
 - 3. Singapore National University
 - 4. Singapore University of Technology and Design, Distinguished Lecturer