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National Institute for Nanotechnology  
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**Education:** University of California, Riverside, B.S. in Chemistry, 1970  
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  
Erskine Fellow, University of Canterbury, New Zealand, 2014  
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 Interests:** Surface spectroscopy, molecular electronics,  
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, Coblenz 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. Canterbury, U. Otago (New Zealand), University of Quebec at Montreal, University of Buenos Aires  
2010-2012 Vice President, International Society of Electrochemistry  
2014- Virtual Researchers on Call, video conferences with K-12 classes and science camps, July 16, 2014, August 13, 2014

## **Service to NINT and University of Alberta**

2006- NINT Clean room Steering committee, chair  
2006- Graduate Curriculum committee, Chemistry  
2006-7 Analytical Faculty Search Committee  
2006-8 Arranged NINT lunch/seminar program  
2012-13 Analytical Chemistry Seminar chair  
2011-13 Group Leader, Alphagroup, NINT

### Publication List - R. L. McCreery

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

1. R.L. McCreery and D.T. Sawyer, "Gas Solid Chromatography Using Various Salt-modified Activated Aluminas and Magnesium Silicates," *Journal of Chromatographic Science*, **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 Supplementum*, **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," *Inorganic Chemistry*, **1972**, 11, 779.
4. R.N. Adams, E. Murrill, R.L. McCreery, L. Blank and M. Karolczak, "6-Hydroxy-dopamine, a New Oxidation Mechanism," *European Journal of Pharmacology*, **1972**, 17, 287.
5. A.W. Sternson, R.L. McCreery, B. Feinberg and R.N. Adams, "Electrochemical Studies of Adrenergic Neurotransmitters and Related Compounds," *Journal of Electroanalytical Chemistry*, **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," *Journal of Medicinal Chemistry*, **1976**, 19, 37.
9. C.L. Blank, R.L. McCreery, R.M. Wightman, W. Chey, R.N. Adams, J.R. Reid, and E.E. Smisssman, "Intracyclization Rates of 6-hydroxydopamine and 6-aminodopamine Analogs under Physiological Conditions," *Journal of Medicinal Chemistry*, **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," *European Journal of Pharmacology*, **1976**, 38, 221.
11. R.L. McCreery, "Oxidation Reactions of Hydroxylated Chlorpromazine Metabolites," *Journal of Pharmaceutical Sciences*, **1977**, 66, 367.
12. R.L. McCreery, "Thin Layer Technique for Monitoring Electrogenerated Reactive Intermediates," *Analytical Chemistry*, **1977**, 49, 206.

13. H.Y. Cheng and R.L. McCreery, "Potential Dependent Chronoamperometry; Experimental Verification," *Journal of Electroanalytical Chemistry*, **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," *Journal of the American Chemical Society*, **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," *Analytical Chemistry*, **1978**, 50, 645.
17. M. Neptune and R.L. McCreery, "Chemical and Electrochemical oxidation of 7-hydroxychlorpromazine," *Journal of Medicinal Chemistry*, **1978**, 21, 362.
18. H.Y. Cheng, P. Sackett, and R.L. McCreery, "Reactions of Chlorpromazine Cation Radical with Physiologically Occurring Nucleophiles," *Journal of Medicinal Chemistry*, **1978**, 21, 948.
19. M. Neptune and R.L. McCreery, "Characteristics and Reactions of Quinoneimines and Cation Radicals Derived from Hydroxylated Chlorpromazine Derivatives," *Journal of Organic Chemistry*, **1978**, 43, 5006.
20. M. Neptune, A.A. Manian, and R.L. McCreery, "Electrochemical Oxidation of Hydroxylated Phenothiazine and Imipramine Derivatives," *Journal of Medicinal Chemistry*, **1979**, 22, 196.
21. R.L. McCreery, R. Pruiksma, and R. Fagan, "Optical Monitoring of Electrogenerated Species via Specular Reflection at Glancing Incidence", *Analytical Chemistry*, **1979**, 51, 748.
22. P. Sackett and R.L. McCreery, "Effect of Structure on Phenothiazine Cation Radical Reactions in Aqueous Buffers," *Journal of Medicinal Chemistry*, **1979**, 22, 1447.
23. R. Pruiksma and R.L. McCreery, "Observation of Electrochemical Concentration Profiles Using Absorption Spectroelectrochemistry," *Analytical Chemistry*, **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," *Journal of Organic Chemistry*, **1980**, 45, 369.
25. J. Skully and R.L. McCreery, "Glancing Incidence External Reflection Spectroelectrochemistry Using a Continuum Source," *Analytical Chemistry*, **1980**, 52, 1885.

26. P. Rossi, C.W. McCurdy, and R.L. McCreery, "Diffractive Spectroelectrochemistry: Use of Diffracted Light for Monitoring Electrogenerated Chromophores," *Journal of the American Chemical Society*, **1981**, 103, 2524.
27. R. Pruiksma and R.L. McCreery, "Spectroelectrochemical Observation of Diffusion Profiles by the Parallel Absorption Method," *Analytical Chemistry*, **1981**, 53, 202.
28. R.S. Robinson and R.L. McCreery, "Absorption Spectroelectrochemistry with Microelectrodes." *Analytical Chemistry*, **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," *Journal of Medicinal Chemistry*, **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 Fourier, Hadamard and Hilbert Transforms in Chemistry, 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," *Analytical Chemistry*, **1982**, 54, 2356.
33. J. Mayausky and R.L. McCreery, "On the Mechanism of Chlorpromazine Cation Radical Decay in Aqueous Solution," *Acta Chemica Scandinavica 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," *Analytical Chemistry*, **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," *Journal of Electroanalytical Chemistry*, **1983**, 145, 117.
37. J. Mayausky and R.L. McCreery, "Spectroelectrochemical Examination of Charge Transfer Between Chlorpromazine Cation Radical and Catecholamines," *Analytical Chemistry*, **1983**, 55, 308.
38. P. Rossi and R.L. McCreery, "Diffractive Spectroelectrochemistry: A Sensitive Probe of the Diffusion Layer," *Journal of Electroanalytical Chemistry*, **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," *Analytical Chemistry*, **1984**, 56, 2256.
40. S.D. Schwab and R. L. McCreery, "Versatile, Efficient Raman Sampling with Fiber Optics," *Analytical Chemistry*, **1984**, 56, 2199.
41. R.S. Robinson and R.L. McCreery, "Submicrosecond Spectroelectrochemistry by External Reflection at Microdisk Electrodes," *Journal of Electroanalytical Chemistry*, **1985**, 182, 61.
42. C.C. Jan, B.K. Lavine, and R.L. McCreery, "High Sensitivity Spectroelectrochemistry Based on Electrochemical Modulation with Synchronous Detection," *Analytical Chemistry*, **1985**, 57, 752.
43. C.C. Jan, F.T. Gamble, and R.L. McCreery, "Diffusion Layer Imaging: Spatial Resolution of the Electrochemical Diffusion Layer," *Analytical Chemistry*, **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," *Journal of Applied Physics*, **1985**, 58, 355.
45. S.A. Schuette and R.L. McCreery, "Square Wave Voltammetry on Platinum Microdisk Electrodes Using Synchronous Demodulation," *Journal of Electroanalytical Chemistry*, **1985**, 57, 1763.
46. \* + R.L. McCreery, "Spectroelectrochemistry," in *Physical Methods in Chemistry*, 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," *Analytical Chemistry*, **1986**, 58, 1778.
48. S.D. Schwab, R. L. McCreery, and F.T. Gamble, "Normal and Resonance Raman Spectroelectrochemistry with Fiber Optics Collection," *Analytical Chemistry*, **1986**, 58, 2486.
49. M. Poon and R.L. McCreery, "In-situ Laser Activation of Glassy Carbon Electrodes," *Analytical Chemistry*, **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," *Analytical Chemistry*, **1986**, 58, 2771.
51. S.D. Schwab and R.L. McCreery, "Remote, Long Path Cell for High Sensitivity Raman Spectroscopy," *Applied Spectroscopy*, **1987**, 41, 126.

52. C.C. Jan and R.L. McCreery, "Spectroelectrochemical Analysis of Trace Materials by Diffusion Layer Imaging," *Journal of Electroanalytical Chemistry*, **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," *Analytical Chemistry*, **1987**, 59, 1615.
54. R.T. Packard and R.L. McCreery, "High Sensitivity Normal and Resonance Raman Spectroscopy: Applications to Transient Electrochemistry," *Analytical Chemistry*, **1987**, 59, 2631.
55. S.A. Schuette and R.L. McCreery, "Hydrodynamically Modulated Alternating Current Voltammetry," *Analytical Chemistry*, **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," *Progress in Analytical Spectroscopy*, **1988**, 11, 141.
58. M. Poon and R.L. McCreery, "Laser Activation of Carbon Electrodes: Relationship Between Laser Induced Surface Effects and Electron Transfer Activation," *Analytical Chemistry*, **1988**, 60, 1725.
59. R.T. Packard and R.L. McCreery, "Raman Monitoring of Reactive Electrogenerated Species: Kinetics of Halide Addition to Orthoquinones," *Journal of Physical Chemistry*, **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," *Journal of the Electrochemical Society*, **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," *Journal of Medicinal Chemistry*, **1988**, 31 1437.
62. A.L. Deputy and R.L. McCreery, "Spatially Resolved Spectroelectro-Chemistry for Examining an Electrochemically Initiated Homogeneous Electron Transfer Reaction," *Journal of Electroanalytical Chemistry*, **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,” *Journal of the American Chemical Society*, **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,” *Journal of the Electrochemical Society*, **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,” *Applied Spectroscopy*, **1989**, 43, 372.
  66. 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,” *Journal of Electroanalytical Chemistry*, **1989**, 263, 163.
  - 68.\* R.L. McCreery and R.T. Packard, “Raman Monitoring of Dynamic Electrochemical Events,” *Analytical Chemistry*, **1989**, 61, 775A.
  69. R. J. Rice and R.L. McCreery, “Quantitative Relationship between Electron Transfer Rate and Surface Microstructure of Laser-Modified Graphite Electrodes,” *Analytical Chemistry*, **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,” *Analytical Chemistry*, **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,” *Analytical Chemistry*, **1989**, 61, 2347.
  72. Y. Wang and R. L. McCreery, “Evaluation of a Diode Laser/Charge Coupled Device Spectrometer for Near-Infrared Raman Spectroscopy,” *Analytical Chemistry*, **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,” *Analytical Chemistry*, **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,” *Polymeric Materials: Science and Engineering*, **1989**, 61, 921.

75. A. Deputy and R.L. McCreery, "Spatially Resolved Absorption Examination of the Redox Catalysis Mechanism: Equilibrium and Near-Equilibrium Cases," *Journal of Electroanalytical Chemistry*, **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," *Journal of Physical Chemistry*, **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," *Journal of the American Chemical Society* **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," *Journal of the American Chemical Society* **1990**, 112, 4954.
79. 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," *Applied Spectroscopy* **1990**, 44, 1229.
80. K.D. Sternitzke and R.L. McCreery, "Laser Microfabrication and Activation of Graphite and Glassy Carbon Electrodes," *Analytical Chemistry*, **1990**, 62, 1339.
81. 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," *Chemistry of Materials*, **1990**, 2, 557.
- 83.\* R.L. McCreery, "Carbon Electrodes: Structural Effects on Electron Transfer Kinetics," in Electroanalytical Chemistry, 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," *Analytical Chemistry*, **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," *Journal of Vacuum Science and Technology 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," *Journal of the Electrochemical Society*, **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," *Journal of Electroanalytical*

*Chemistry*, **1991**, 310, 127.

88. 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," *Journal of the American Chemical Society*, **1992**, 114, 769.
90. C.D. Allred and R.L. McCreery, "Adsorption of Catechols on Fractured Glassy Carbon Electrode Surfaces," *Analytical Chemistry* **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," *Applied Spectroscopy*, **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," *Journal of Physical Chemistry* **1992**, 96, 3124.
93. N.M. Pontikos and R.L. McCreery, "Microstructural and Morphological Changes Induced in Glassy Carbon Electrodes by Laser Irradiation," *Journal of Electroanalytical Chemistry*, **1992**, 324, 229.
94. D.C. Alsmeyer and R.L. McCreery, "*In Situ* Raman Monitoring of Electrochemical Graphite Intercalation and Lattice Damage in Mild Aqueous Acids," *Analytical Chemistry* **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," *Analytical Chemistry*, **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," *Journal of Material Chemistry*, **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," *Proceedings of the Electrochemical Society*, **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," *Polymeric Materials: Science and Engineering*, **1992**, 67, 237.
100. W. Huang and R.L. McCreery, "Electron Transfer Kinetics of  $\text{Fe}(\text{CN})_6^{-3/4}$  on Laser-Activated and  $\text{CN}^-$ -modified Pt Electrodes," *Journal of Electroanalytical Chemistry*, **1992**, 326, 1.
101. 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," *Analytical Chemistry*, **1993**, 65, 937.
102. 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," *Applied Spectroscopy*, **1993**, 47, 387.
103. R.K. Jaworski and R.L. McCreery, "Laser-Induced Transient Currents on Glassy Carbon Electrodes," *Journal of the Electrochemical Society*, **1993**, 140, 1360.
104. 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," *Chemistry of Materials*, **1993**, 5, 1110.
105. C.A. McDermott, K.R. Kneten, and R.L. McCreery, "Electron Transfer Kinetics of Aqueated  $\text{Fe}^{+3/+2}$ ,  $\text{Eu}^{+3/+2}$  and  $\text{V}^{+3/+2}$  at Carbon Electrodes: Inner Sphere Catalysis by Surface Oxides," *Journal of the Electrochemical Society*, **1993**, 140, 2593.
106. 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," *Chemistry of Materials*, **1993**, 5, 1727.
107. M. Fryling, C.J. Frank, and R.L. McCreery, "Intensity Calibration and Sensitivity Comparisons for CCD/Raman Spectrometers," *Applied Spectroscopy*, **1993**, 47, 1965 (feature article).
108. C.J. Frank, D.C.B. Redd, T.S. Gansler, and R.L. McCreery, "Characterization of Human Breast Biopsy Specimens with Near-IR Raman Spectroscopy," *Analytical Chemistry*, **1994**, 66, 319.
109. R.L. McCreery, "CCD Array Detectors for Multichannel Raman Spectroscopy," in Charge Transfer Devices in Spectroscopy, J. Sweedler, K. Ratzlaff, and M. Denton, (Eds.), VCH, NY, **1994**, pp 227-279.

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237. R.L. McCreery, A.P. Bonifas, V. Wai-Sum Lui; “Metal Contacts for Molecular Device Junctions and Surface-Diffusion-Mediated Deposition” **2011** U.S. Patent #8,697,562 B2.
238. B. Das, B. Szeto, D. James, Y. Wu, R.L. McCreery; “Ion Transport and Switching Speed in Redox-Gated 3-Terminal Organic Memory Devices” *Journal of the Electrochemical Society* **2014**, 161, 12, H831-H838.
239. D.K. Paul, R.L. McCreery, K. Karan; “Proton Transport Property in Supported Nafion Nanothin Films by Electrochemical Impedance Spectroscopy” *Journal of The Electrochemical Society* **2014**, 161, F1395-F1402.
240. R.L. McCreery, A. Bergren, A. Morteza-Najarian, S.Y. Sayed, H. Yan; “Electron Transport in All-Carbon Molecular Electronic Devices” *Faraday Discussions* **2014**, 172, 9-25.
241. J.A. Fereiro, M. Kondratenko, A. Bergren, R.L. McCreery; “Internal Photoemission in Molecular Junctions: Parameters for Interfacial Barrier Determinations” *Journal of the American Chemical Society* **2015**, 137, 1296-1304.

242. R.L. McCreery, "Electron Transport and Redox Reactions in Solid-State Molecular Electronic Devices," in Nanoelectrochemistry, M. V. Mirkin and S. Amemiya (Ed.), CRC Press, **2015**, pp. 205-239.
243. R. L. McCreery, A. Bonifas, V. Lui, "Metal Contacts for Molecular Device Junctions and Surface-Diffusion-Mediated Deposition", U.S. Patent US # 8,697,562; **2014**
244. R. L. McCreery, A. Bergren, "Two- and Three-Terminal Molecular Electronic Devices with Ballistic Electron Transport", U.S. Patent # 9,024,297; **2015**

### **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 I  
 Winter, 2011 Chemistry 614, Advanced Electrochemistry  
 Fall, 2011 Chemistry 512, Optical Spectroscopy I  
 Winter, 2012 Chemistry 612, Advanced Optical Spectroscopy  
 Fall, 2012 Chemistry 512, Optical Spectroscopy I  
 Winter, 2013 Chemistry 614, Advanced Electrochemistry  
 Fall, 2014 Chemistry 512, Optical Spectroscopy I  
 Winter, 2015 Chemistry 612, Advanced Optical Spectroscopy

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

<u>Name</u>	<u>Degree</u>	<u>Position</u>
Hung-Yuan Cheng	Ph.D., 1978	Smith Kline Beecham Pharmaceuticals
Marilyn Szentirmay	Ph.D., 1979	Center for Bioanalytical Research
Patricia Sackett	Ph.D., 1979	The Pillsbury Company
Richard Pruiksma	Ph.D., 1980	practicing medicine in Texas
Joan Skully	M.S., 1980	homemaker



Terry Smith Jackson	M.S., 1982	OSU Newark
Barry Lavine	M.S., 1982	Clarkson University
Jack S. Mayausky	Ph.D., 1982	Monsanto
Paula Melaragno <sup>a</sup>	Ph.D., 1982	Denison University
Robert Robinson <sup>b</sup>	Ph.D., 1984	Bell Communications
Scott D. Schwab	Ph.D., 1986	Ethyl Petroleum Inc.
Chwu-Ching Jan <sup>b</sup>	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 Co.
Robert Bowling	Ph.D., 1989	Dow Chemical
Kent Sternitzke	Ph.D., 1990	Alcon Laboratory
Andrew Deputy	Ph.D., 1990	Miles Laboratory
Liqun Fu	M.S., 1990	Detroit Central Tool
Ronald Rice	Ph.D., 1990	Procter & Gamble
Daniel C. Alsmeyer <sup>d</sup>	Ph.D., 1992	Eastman Chemical
Yan Wang Alsmeyer <sup>d</sup>	Ph.D., 1992	Eastman Chemical
Li Li	M.S., 1992	Procter and Gamble
Nicholas Pontikos	Ph.D., 1992	Seagate Technology
Christie McDermott <sup>a,c</sup>	Ph.D., 1992	University of Alberta
Mark McDermott <sup>d</sup>	Ph.D., 1993	University of Alberta
Kristin Kneten Cline <sup>d</sup>	Ph.D., 1993	Wittenberg University
Daniel Zavitz	M.S., 1993	high school teacher, N.Y.
Christopher J. Frank <sup>b,e</sup>	Ph.D., 1994	Procter & Gamble Pharmaceuticals
Wenhua Huang	Ph.D., 1994	Mechanical Technologies
Mark Fryling <sup>d</sup>	Ph.D., 1994	General Mills
Olivier Schueller	Ph.D., 1995	Harvard U. postdoc
Mark Kagan <sup>f</sup>	Ph.D. 1996	International Paper

Peihong Chen	Ph.D. 1996	Smith, Kline, Beecham
Angela Horn	M.S. 1996	Pharmacy Graduate School
Yi-Chun Liu	Ph.D. 1997	Headway Technology
Jun Zhao	Ph.D. 1997	Chromex, Inc.
Kristin Frost	M.S. 1998	Law School
Kenneth Ray	Ph.D. 1998	Exxon, Houston
Tzu-Chi Kuo	Ph.D. 1999	Dow Chemical Co.
Hsueh-Hui Yang	Ph.D. 2000	Industrial Position in Taiwan
Lin Xia	PhD 2000	Wyeth Labs
Stacy DuVall	PhD 2000 <sup>d</sup>	Roche Pharmaceutical
Jeremy Ramsey	PhD, 2001 <sup>d</sup>	Naval Research Lab
Srikanth Ranganathan	PhD 2001	General Electric, India
William Clark	PhD 2002	Wittenberg University
Franklin Anariba	PhD 2005	Singapore Nanotech
Aletha Nowak	PhD 2004	Procter and Gamble
William McGovern	PhD 2005	Ashland Chemical
Haihe Liang	M.S. 2006	Semiconductor industry
Hong Tian	PhD 2008	Postdoctoral research
Jing Wu	PhD 2008	Scientist, Texas A&M University
Haijun Yan	PhD 2010	National Research Council
Xiao Xing	M.S. 2010	homemaker
Jie Ru	M.S. 2010	U. Alberta Chem. Eng.
Andrew Bonifas	Ph.D. 2011	3M Corporation
Amr Mahmoud	PhD. 2012	U. Alberta postdoc

- 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, Mexico City, 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
- 1981: 1. National ACS meeting, Atlanta, Symposium on Biological Electrochemistry  
2. National Electrochemical Society Meeting, Minneapolis, Symposium on Spectro-electrochemistry 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, Hawaii
  2. 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. 20<sup>th</sup> 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 7<sup>th</sup> Spring Meeting, Szczyrk, Poland, Plenary Lecture
  3. Materials Research Society Spring Meeting, San Francisco
  4. 92<sup>nd</sup> 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. 217<sup>th</sup> 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. 219<sup>th</sup> Electrochemical Society (ECS) Meeting, Montreal, invited speaker
  4. 13<sup>th</sup> 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  $\pi$ -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)
- 2014: 1. 225<sup>th</sup> Electrochemical Society (ECS) Meeting, Orlando (two invited lectures)  
2. ElecNano6, Paris  
3. Faraday Discussions, Sheffield, England  
4. Gordon Research Conference, Newport, Rhode Island  
5. 65<sup>th</sup> ISE Conference, Lausanne, Switzerland (plenary)  
6. Beilstein Nanotechnology Symposium, Potsdam, Germany  
7. SciX Conference, Reno, Nevada
- 2015: 1. International Society of Electrochemistry, Angra Dos Reis, Brazil (plenary)  
2. 4th Zing Electrochemistry Conference, Algarve, Portugal (plenary)

### **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 Hill  
2. University of Southampton, England
- 1982: 1. Indiana University  
2. 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 Arizona
  2. 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 University  
2. Clemson University
- 2001: 1. University of California, Riverside, Analytical seminar  
2. 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. Monash University, Melbourne, Australia
  4. Singapore National University
  5. Singapore University of Technology and Design, Distinguished Lecturer
  6. Indiana University
  7. Spectroscopy Society of Pittsburgh
  8. University of Pittsburgh
  9. University of Colorado Physics Seminar

- 2015:
1. University of Alberta Chemical and Materials Engineering Student Association
  2. University of Buenos Aires, Argentina
  3. University of Groningen, Netherlands
  4. University of Leiden, Netherlands
  5. University of Southampton, United Kingdom
  6. University of Paris, Diderot