

CURRICULUM VITAE

Thomas J. Wenzel, Department of Chemistry, Bates College, Lewiston, ME 04240,
twenzel@bates.edu

Date of Birth: October 14, 1953

EDUCATION

Ph.D., Analytical Chemistry, University of Colorado, 1981

Thesis Title: Metal Chelate Complexes as Nuclear Magnetic Resonance Shift Reagents, Paramagnetic Relaxation Reagents, and Fuel Additives

B.S., Chemistry, Northeastern University, 1976

EXPERIENCE

1997- : Charles A. Dana Professor of Chemistry, Bates College

1996-1997: President, Council on Undergraduate Research

1994-1997: Professor of Chemistry, Bates College

1994-1996: Chair, Program in Biological Chemistry, Bates College

1992-1996, 2003:

Chair, Department of Chemistry, Bates College

1989-1992, 1998:

Chair, Division of Science and Mathematics, Bates College

1988-1989: Visiting Associate Professor of Chemistry, Duke University, Durham, North Carolina (Sabbatical leave with Prof. Charles Lochmuller)

1988-1994: Associate Professor of Chemistry, Bates College

1981-1988: Assistant Professor of Chemistry, Bates College, Lewiston, Maine

CURRENT RESEARCH INTERESTS

-Chiral nuclear magnetic resonance shift reagents

-Lanthanide ions as luminescent chromophores for liquid chromatographic detection

-Selective sorbents and stationary phases for gas chromatography

AWARDS AND HONORS

Camille and Henry Dreyfus Scholar - 2003-2005

Council on Undergraduate Research Fellows Award - 2002

Analytical Division, American Chemical Society

J. Calvin Giddings Award for Excellence in Education - 1999

Carnegie Foundation Professor of the Year - State of Maine - 1997

Camille and Henry Dreyfus Scholar - 1990-1991

University of Colorado Award for Creative Research - 1981

National ACS Analytical Fellowship - Summer - 1980

Member of Phi Kappa Phi Honor Society - 1976

PUBLICATIONS (RESEARCH)

(Underlined names are those of undergraduate student assistants, double underlined are high school teachers.)

“Chiral Recognition in NMR spectroscopy Using Crown Ethers and their Ytterbium(III) Complexes,” Wenzel, T. J.; Freeman, B. E.; Sek, D. C.; Zopf, J. J.; Nakamura, T.; Yongzhu, J.; Hirose, K.; Tobe, Y, *Analytical and Bioanalytical Chemistry*, **2004**, 378, 1536-1547.

“Sulfated and Carboxymethylated Cyclodextrins and their Lanthanide Complexes as Chiral NMR Discriminating Agents,” Wenzel, T. J.; Amonoo, E. P.; Shariff, S. S.; Aniagyei, S. E., *Tetrahedron: Asymmetry*, **2003**, 14, 3099-3104.

“Calix[4]arene, Calix[4]Resorcarene, and Cyclodextrin Derivatives and their Lanthanide Complexes as Chiral NMR Shift Reagents,” Smith, K. J.; Wilcox, J. D.; Mirick, G. E.; Wacker, L. S.; Ryan, N. S.; Vensel, D. A.; Readling, R.; Domush, H. L.; Amonoo, E. P.; Shariff, S. S.; Wenzel, T. J., *Chirality*, **2003**, 15, S150-S158.

“Chiral Reagents for the Determination of Enantiomeric Excess and Absolute Configuration using NMR Spectroscopy,” Wenzel, T. J.; Wilcox, J. D., *Chirality*, **2003**, 15, 256-270.

“The Utility of Crown Ethers Derived from Methyl β -D-Galactopyranoside and their Lanthanide Couples as Chiral NMR Discriminating Agents”, Wenzel, T. J.; Thurston, J. E.; Sek, D. C.; Joly, J.-P.; *Tetrahedron: Asymmetry*, **2001**, 12, 1125-1130..

“Lanthanide-Chiral Solvating Agent Couples as Chiral NMR Shift Reagents,” Wenzel, T. J.; *Trends in Organic Chemistry*, **2000**, 8, 51-64.

“Enantiomeric Discrimination in the NMR Spectra of Underivatized Amino Acids and α -Methyl Amino Acids Using (+)-(18-Crown-6)-2,3,11,12-Tetracarboxylic Acid,” Wenzel, T. J.; Thurston, J. E., *Tetrahedron Letters*, **2000**, 41, 3769-3772.

“Lanthanide-Chiral Carboxylate and Chiral Ester Mixtures as NMR Shift Reagents,” Wenzel, T. J.; Brogan, K. L.; *Enantiomer*, **2000**, 5, 293-302.

“(+)-(18-Crown-6)-2,3,11,12-Tetracarboxylic Acid and its Ytterbium(III) Complex as Chiral NMR Discriminating Agents,” Wenzel, T. J.; Thurston, J. E., *Journal of Organic Chemistry*, **2000**, 65, 1243-1248.

“Dysprosium(III)-Diethylenetriaminepentaacetate complexes of Aminocyclodextrins as Chiral NMR Shift Reagents,” Wenzel, T.J.; Miles, R.D.; Zomlefer, K.; Frederique, D.E.; Roan, M.A.; Troughton, J.S.; Pond, B.V.; Colby, A.L., *Chirality*, **2000**, 12, 30-37.

“Solid-Phase Lanthanide Luminescence Detection in Liquid Chromatography,” Wenzel, T.J., Evertsen, R., Perrins, B.E., Light, Jr., T.B., Bean, A.C., *Analytical Chemistry*, **1998**, 70, 2085-2091.

"Chiral NMR Shift Reagents: Mixtures of Lanthanide Tris(β -Diketonates) with Chiral Carboxylate Anions," Wenzel, T.J.; Bean, A.C.; Dunham, S.L.; *Magnetic Resonance in Chemistry*, **1997**, *35*, 395-402.

"Lanthanide-Crown Ether Mixtures as Chiral NMR Shift Reagents for Amino Acid Esters, Amines, and Amino Alcohols," Weinstein, S.E., Vining, M.S., Wenzel, T.J., *Magnetic Resonance in Chemistry*, **1997**, *35*, 273-280.

"Chiral NMR Shift Reagents: Lanthanide Mixtures with 1-(1-Naphthyl)ethylurea derivatives of Amino Acids," Wenzel, T.J., Miles, R.D.; Weinstein, S.E., *Chirality*, **1997**, *9*, 1-9.

"Lanthanide Luminescence Detection of Bleomycins and Nalidixic Acid," Wenzel, T.J.; Zomlefer, K.; Rapkin, S.B.; Keith, R.H.; *Journal of Liquid Chromatography*, **1995**, *18*, 1473-1486.

"Lanthanide-Cyclodextrin Complexes as Probes for Elucidating Cyclodextrin-Substrate Interactions and Optical Purity by NMR Spectroscopy," Wenzel, T.J.; Bogyo, M.S.; Lebeau, E.L.; *Journal of the American Chemical Society*, **1994**, *116*, 4858-4865.

"Supercritical Fluid Extraction of Metal-Containing Selective Sorbents," Wenzel, T.J.; Townsend, K.J.; Frederique, D.E.; Baker, A.G.; *Journal of Chromatography*, **1993**, *637*, 187-194.

"Lanthanide-Chiral Resolving Agent Mixtures as Chiral NMR Shift Reagents," Wenzel, T.J.; Morin, C.A.; Brechtig, A.A.; *Journal of Organic Chemistry*, **1992**, *57*, 3594-3599.

"Lanthanide Shift NMR Studies of Bile Salt Aggregates," Meyerhoffer, S.M.; Wenzel, T.J.; McGown, L.B.; *Journal of Physical Chemistry*, **1992**, *96*, 1961-1967.

"Luminescence Spectrometric Studies of Silica-Bound and Adsorbed Molecules," Lochmuller, C.H.; Kersey, M.T.; Wenzel, T.J., in *Chemically Modified Oxide Surfaces*, Volume 3, D.E. Leyden, Ed., Gordon & Breach Publishers, NY, **1990**, pp. 109-126.

"Spectroscopic Studies of Pyrene at Silica Interfaces," Lochmuller, C.H.; Wenzel, T.J.; *Journal of Physical Chemistry*, **1990**, *94*, 4230-4235.

"NMR Shift Reagents for Organic Salts: Shift Mechanism, Bound Shifts, and Structural Analysis," Wenzel, T.J.; Cameron, K.; *Magnetic Resonance in Chemistry*, **1989**, *27*, 734-739.

"Application of Metal Beta-diketonate Polymers as Selective Sorbents in Complex Mixture Analysis and for Sulfur-Containing Compounds," Wenzel, T.J.; Bonasia, P.J.; Brewitt, T.; *Journal of Chromatography*, **1989**, *463*, 171-176.

"Liquid Chromatographic and Flow Injection Analysis of Tetracycline Using Sensitized Europium(III) Luminescence Detection," Wenzel, T.J.; Collette, L.M., Dahlen, D.T., Hendrickson, S.M., Yarmaloff, L.W., *Journal of Chromatography*, **1988**, *433*, 149-158.

"Lanthanide Ions as Luminescent Chromophores for the Liquid Chromatographic Detection of Polynucleotides and Nucleic Acids," Wenzel, T.J.; Collette, L.M., *Journal of Chromatography*, **1988**, 436, 299-307.

"The Shift Mechanism of Binuclear Lanthanide(III)-Silver(I) NMR Shift Reagents," Wenzel, T.J.; Russett, M.D., *Journal of Magnetic Resonance*, **1987**, 75, 493-501.

"Metal Beta-Diketonate Polymers as Selective Sorbents for Gas Chromatography," Wenzel, T.J.; Yarmaloff, L.W.; St.Cyr, L.Y.; O'Meara, L.J.; Donatelli, M.; Bauer, R.W.; *Journal of Chromatography*, **1987**, 396, 51-64.

"Organic-Soluble Lanthanide Nuclear Magnetic Resonance Shift Reagents for Sulfonium and Isothiouonium Salts," Wenzel, T.J.; Zaia, J.; *Analytical Chemistry*, **1987**, 59, 562-567.

"Binuclear Lanthanide(III)-Silver(I) NMR Shift Reagents: Investigations of New Achiral and Chiral Analogs," Wenzel, T.J.; Ruggles, A.C.; Lalonde, D.R., Jr.; *Magnetic Resonance in Chemistry*, **1985**, 23, 778-783.

"Lanthanide Ions as Luminescent Chromophores for Liquid Chromatographic Detection," DiBella, E.E.; Weissman, J.B.; Joseph, M.J.; Schultz, J.R., Wenzel, T.J.; *Journal of Chromatography*, **1985**, 328, 101-109.

"Lanthanide Tetrakis(beta-diketonates) as Effective NMR Shift Reagents for Organic Salts," Wenzel, T.J.; Zaia, J.; *Journal of Organic Chemistry*, **1985**, 50, 1322-1324.

"Metal Chelates of 2,2,7-Trimethyl-3,5-Octanedione, H(tod)," Wenzel, T.J.; Williams, E.J.; Sievers, R.E.; *Inorganic Synthesis*, **1985**, 23, 144-149.

"Studies of Metal Chelates With the Novel Ligand 2,2,7-Trimethyl-3,5-Octanedione," Wenzel, T.J.; Williams, E.J.; Haltiwanger, R.C.; Sievers, R.E.; *Polyhedron*, **1985**, 4, 369-378.

"A Better Solvent for Binuclear Lanthanide(III)-Silver(I) NMR Shift Reagent Studies," Wenzel, T.J.; *Journal of Organic Chemistry*, **1984**, 49, 1834-1835.

"Secondary Deuterium Isotope Effects with Lanthanide(III)-Silver(I) NMR Shift Reagents," Wenzel, T.J.; *Spectroscopy Letters*, **1984**, 17, 77-84.

"New Binuclear NMR Shift Reagents for Olefins and Aromatics," Wenzel, T.J.; Lalonde, D.R., Jr.; *Journal of Organic Chemistry*, **1983**, 48, 1951-1954.

"Binuclear Shift Reagents for Nuclear Magnetic Resonance Spectrometry of Aromatic and Polycyclic Aromatic Compounds," Wenzel, T.J.; Sievers, R.E.; *Analytical Chemistry*, **1983**, 54, 1602-1606.

"Water-Soluble Paramagnetic Relaxation Reagents for Carbon-13 Nuclear Magnetic Resonance Spectroscopy," Wenzel, T.J.; Ashley, M.E.; Sievers, R.E., *Analytical Chemistry*, **1982**, *54*, 615-621.

"Nuclear Magnetic Resonance Studies of Terpenes with Chiral and Achiral Lanthanide(III)-Silver(I) Binuclear Shift Reagents," Wenzel, T.J.; Sievers, R.E.; *Journal of the American Chemical Society*, **1982**, *104*, 382-388.

"Liquid Hydrocarbon-Soluble Rare Earth Chelates Prepared from the Novel Ligand 2,2,7-Trimethyl-3,5-Octanedione and Fuels Containing Same," Sievers, R.E.; Wenzel, T.J.; U.S. Patent 4,251,233, **1981**.

"Binuclear Complexes of Lanthanide(III) and Silver(I) and Their Function as Shift Reagents for Olefins, Aromatics, and Halogenated Compounds," Wenzel, T.J.; Sievers, R.E.; *Analytical Chemistry*, **1981**, *53*, 393-399.

"New Binuclear Lanthanide NMR Shift Reagents Effective for Aromatic Compounds," Wenzel, T.J.; Bettes, T.C.; Sadlowski, J.E.; Sievers, R.E.; *Journal of the American Chemical Society*, **1980**, *102*, 5903-5904.

PUBLICATIONS (EDUCATION)

"Peer-Assessment and Self-Assessment of Group Activities," Wenzel, T. J. *Analytical Chemistry*, in press

"The Teaching Learning Process in Analytical Chemistry," Wenzel, T. J.; *Microchimica Acta*, **2003**, *142*, 161-166.

"Controlling the Climate in Your Classroom," Wenzel, T. J.; *Analytical Chemistry*, **2003**, *75*, 311A-314A.

"Using Mistakes as Learning Opportunities," Wenzel, T. J.; *Analytical Chemistry*, **2002**, *74*, 439A-440A.

"Community-Based Projects in Analytical Chemistry Courses," Wenzel, T. J.; *Analytical Chemistry*, **2002**, *74*, 279A-280A.

"General Chemistry: Expanding the Goals Beyond Content and Lab Skills," Wenzel, T. J.; in *Gender, Science and the Undergraduate Curriculum: Building Two Way Streets*, Association of American Colleges and Universities, **2001**, 29-46.

"Problem-Based Learning: A Teaching Method in Need of Supporting Materials," Wenzel, T. J.; *Analytical Chemistry*, **2001**, *73*, 501A-502A.

“The Influence of Modern Instrumentation on the Analytical and General Chemistry Curriculum at Bates College,” Wenzel, T. J.; *Journal of Chemical Education*, **2001**, 78, 1164-1165.

“Environmental Chemistry in the Undergraduate Laboratory,” Wenzel, T. J.; Austin, R.N.; *Environmental Science and Technology*, **2001**, 35, 326A-331A.

“The Limits of Written Tests,” Wenzel, T. J., *Analytical Chemistry*, **2001**, 73, 43A-44A.

“Defining Course Goals,” Wenzel, T. J., *Analytical Chemistry*, **2000**, 72, 659A-660A.

“Undergraduate Research as a Capstone Learning Experience,” Wenzel, T. J., *Analytical Chemistry*, **2000**, 72, 547A-549A.

“Practical Tips for Cooperative Learning,” Wenzel, T. J., *Analytical Chemistry*, **2000**, 72, 359A-361A.

“Cooperative Student Activities as Learning Devices,” Wenzel, T. J., *Analytical Chemistry*, **2000**, 72, 293A-296A.

“All the World’s a Sample,” Wenzel, T. J., Award Address: J. Calvin Giddings Award for Excellence in Education, American Chemical Society, *Division of Analytical Chemistry Newsletter*, **2000**, Spring Issue, p. 1, 10-12.

“The Lecture as a Learning Device,” Wenzel, T. J., *Analytical Chemistry*, **1999**, 71, 817A-819A.

“Does Problem-Based Learning Sacrifice Content and Fundamentals?,” Wenzel, T.J., *Analytical Chemistry*, **1999**, 71, 693A-695A.

“Cooperative Group Learning in Undergraduate Analytical Chemistry,” Wenzel, T.J., *Analytical Chemistry*, **1998**, 70, 790A-795A.

"A New Approach to Undergraduate Analytical Chemistry," Wenzel, T.J.; *Analytical Chemistry*, **1995**, 67, 470A-475A.

"Isomerization of Dimethyl Maleate to Dimethyl Fumarate: An Undergraduate Experiment Utilizing High Performance Liquid Chromatography," Ledlie, D.B.; Wenzel, T.J.; Hendrickson, S.M.; *Journal of Chemical Education*, **1989**, 66, 781-782.

"Analysis of Xylene Mixtures Using Binuclear Lanthanide(III)-Silver(I) NMR Shift Reagents," Wenzel, T.J.; Russett, M.D., *Journal of Chemical Education*, **1987**, 64, 979-980.

PUBLICATIONS (BOOKS AND ENCYCLOPEDIA CHAPTERS)

“Europium, *tris*(6,6,7,7,8,8,8-heptafluoropropyl-2,3-dimethyl-3,5-octanedianato)”, Wenzel, J. J.; Ciak, J. M., *Electronic Encyclopedia of Reagents for Organic Synthesis*, Wiley, UK, in press.

“Europium, *tris*[3-[2,2,3,3,4,4,4-heptafluoro-1-(oxo-kO)butyl]-1,7,7-trimethyl[2.2.1]heptan-2-onato-kO]”, Wenzel, J. J.; Ciak, J. M., *Electronic Encyclopedia of Reagents for Organic Synthesis*, Wiley, UK, in press.

“Europium, *tris*[1,7,7-trimethyl-3-(trifluoroacetyl-kO)bicyclo[2.2.1]heptan-2-onato-kO]”, Wenzel, J. J.; Ciak, J. M., *Electronic Encyclopedia of Reagents for Organic Synthesis*, Wiley, UK, in press.

“Magnetic Resonance: Enantiomeric Purity Studies Using NMR,” Wenzel, T.J., in *Encyclopedia of Spectroscopy and Spectrometry*, Academic Press, **2000**, Vol. 1, pp. 411-421.

"Liquid Chromatography," Lochmuller, C.H.; Wenzel, T.J.; in *Physical Methods in Chemistry*, Wiley, **1993**, pp. 85-161.

Research in Chemistry at Primarily Undergraduate Institutions, Fifth Edition, Wenzel, T.J., Editor, Council on Undergraduate Research, **1993**. ISBN #0-941933-09-1, 346 pp.

NMR Shift Reagents, Wenzel, T.J.; CRC Press, Uniscience Series, **1987**, 286 pp.

"Binuclear Lanthanide(III)-Silver(I) NMR Shift Reagents," Wenzel, T.J.; Chapter 5 in *Lanthanide Shift Reagents in Stereochemical Analysis*, Verlag Chemie, **1986**, 151-173.

PUBLICATIONS (OTHER)

“Outcomes from the Undergraduate Research Summit,” Wenzel, T. J., *Cell Biology Education*, **2004**, in press.

“Creating Time for Research with no Additional Resources,” Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2004**, 24, 147.

“Enhancing Research in the Chemical Sciences at Predominantly Undergraduate Institutions: A Report from the Undergraduate Research Summit,” Wenzel, T. J., **2004** (64 pp).

“Enhancing Research in the Chemical Sciences at Predominantly Undergraduate Institutions: Recommendations of a Recent Undergraduate Research Summit,” Karukstis, K. K.; Wenzel, T. J., *Journal of Chemical Education*, **2004**, 81, 468-469.

“Why Faculty Members do not need to Directly Involve Students in their Scholarly Work,” *Council on Undergraduate Research Quarterly*, **2004**, 24, 109-110.

“Research Involving NMR Spectroscopy at Undergraduate Institutions in the United States,” Wenzel, T. J., *Analytical and Bioanalytical Chemistry*, **2004**, 378, 1411-1413.

“Support Staff for Multidisciplinary Science Departments,” Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2003**, 24, 78.

“A Time of Opportunity,” *Council on Undergraduate Research Quarterly*, **2003**, 24, 5.

“CUR 2004. Crossing Boundaries: Innovations in Undergraduate Research,” Bettison-Varga, L.; Husic, D., Wenzel T.; *Council on Undergraduate Research Quarterly*, **2003**, 24, 40-42.

“A Reviewer’s Perspective on the NSF REU Program,” *Council on Undergraduate Research Quarterly*, **2003**, 23, 162-164.

From the Editor-in-Chief in *Council on Undergraduate Research Quarterly*, **2003**, 23, 151.

“News Item: Art Ellis Begins Term as Director of the Division of Chemistry of the National Science Foundation,” in *Council on Undergraduate Research Quarterly*, **2002**, 23, 99.

“Report from CUR 2002: Workshops and Funding Opportunities,” in *Council on Undergraduate Research Quarterly*, **2002**, 23, 6-7.

“Posters on the Hill: How One Person’s Vision and Persistence Paid Off,” in *Council on Undergraduate Research Quarterly*, **2002**, 22, 178.

“The NSF Course, Curriculum, and Laboratory Improvement Program,” in *Council on Undergraduate Research Quarterly*, **2002**, 22, 100.

“New Features for the *CUR Quarterly*,” in *Council on Undergraduate Research Quarterly*, **2001**, 22, 52.

Review of the book “Academic Excellence: The Role of Research in the Physical Sciences at Undergraduate Institutions” in *Council on Undergraduate Research Quarterly*, **2001**, 22, 24-26.

“What is an Appropriate Teaching Load for a Research-Active Faculty Member at a Predominantly Undergraduate Institution?,” Wenzel, T.J., *Council on Undergraduate Research Quarterly*, **2001**, 21, 104-107.

Review of the textbook “Analytical Chemistry” in *Analytical Chemistry*, **1999**, 71, 212A-213A.

“What is Undergraduate Research,” President’s Column, *Council on Undergraduate Research Quarterly*, **1996**, 17, 163.

President’s Column, *Council on Undergraduate Research Quarterly*, **1996**, 17, 111.

“New Directions for CUR,” President’s Column, *Council on Undergraduate Research Quarterly*, **1996**, 17, 59.

“Highlights: CUR’s Sixth National Conference,” Wenzel, T.J.; Gaddini, S., *Council on Undergraduate Research Quarterly*, **1996**, *17*, 30-31.

President’s Column, *Council on Undergraduate Research Quarterly*, **1996**, *17*, 7.

"The Fifth National CUR Conference. The Bottom Line: Creating and Maintaining a Healthy Undergraduate Research Environment," Wenzel, T.J.; Mateja, J., *Council on Undergraduate Research Quarterly*, **1993**, *14*, 87-92.

"Sources of Research Funding Primarily for Chemists," *Council on Undergraduate Research Newsletter*, **1991**, *12*, 83-93.

"Sources of Research Funding Primarily for Chemists," *Council on Undergraduate Research Newsletter*, **1990**, *11*, 88-95.

"Sources of Research Funding Primarily for Chemists," *Council on Undergraduate Research Newsletter*, **1989**, *10*, 82-92.

"Research in Analytical Chemistry at Bates College," Wenzel, T.J., *Council on Undergraduate Research Newsletter*, **1988**, *9*, 27-33.

GRANTS - EXTERNAL

- 2003-2007** National Science Foundation - \$185,000
“Chiral NMR Shift Reagents”
- 2002-2005** Camille and Henry Dreyfus Foundation - \$105,000
“Scholar/Fellow Program”
- 2002-2004** National Science Foundation - \$78,630
“Undergraduate Research Summit: Bates College, Lewiston, ME; Summer 2003”
- 2001-2004** National Science Foundation - \$246,700
“Acquisition of a High Field Nuclear Magnetic Resonance Spectrometer for Use in Chemistry Research” (Partially matched by Bates)
- 2001** – Pfizer Pharmaceutical - \$5,000
“Chiral Calixarenes as NMR Shift Reagents”
- 2000** – National Science Foundation - \$134,250
“Chiral NMR Shift Reagents”
- 1999** – National Science Foundation - \$74,404
“General Chemistry in the Study of the Environment” (Matched by Bates)

- 1998** – National Science Foundation - \$21,789
“Capillary Electrophoresis in the Undergraduate Curriculum in Chemistry and Biological Chemistry” (Matched by Bates)
- 1997** – National Science Foundation - \$128,500
"Chiral NMR Shift Reagents"
- 1997** – Pfizer Pharmaceutical - \$5,000
"Lanthanide-Cyclodextrin Complexes as Chiral NMR Shift Reagents"
- 1996** – Pfizer Pharmaceutical - \$5,000
"Mixed Lanthanide β -Diketonate-Resolving Agent Complexes as Chiral NMR Shift Reagents"
- 1996** – Auburn Manufacturing - \$3,000
"Support for the Executive Committee Meeting, Council of Undergraduate Research"
- 1995** – National Science Foundation - \$7,890
"Chiral NMR Shift Reagents" - Supplement to purchase equipment
- 1995** – Pfizer Pharmaceutical - \$5,000
"Crown Ethers as Chiral NMR Shift Reagents"
- 1994** – National Science Foundation \$124,700
"Chiral NMR Shift Reagents"
- 1994** – National Science Foundation - \$74,875
"Instrumentation for Geochemical Study of Water, Soil, and Rock in an Undergraduate Curriculum" [Co-PI] (Matched by Bates College)
- 1994** – Kraft General Foods - \$36,350
"Data System for Gas Chromatograph-Mass Spectrometer"
- 1993** – New England Consortium for Undergraduate Science Education - \$1,160
"Travel support to the National Conference on Undergraduate Research - Two Students"
- 1993** – New England Consortium for Undergraduate Science Education - \$10,000
“Support for Speakers at the Fifth National Conference of the Council on Undergraduate Research”
- 1992** – National Science Foundation - \$5,000
“Chiral NMR Shift Reagents - Research Experience for Undergraduates”
- 1992** - Camille and Henry Dreyfus Foundation - \$15,000
"Summer Research Program for High School Teachers"

- 1992** – Pfizer Pharmaceutical - \$5,000
"Chiral NMR Shift Reagents"
- 1992** – Council on Undergraduate Research (AIURP Program) - \$2,500
"Chiral NMR Shift Reagents"
- 1992** – Auburn Manufacturing - \$2,500
"Support for the Fifth National Conference on Undergraduate Research"
- 1991** – National Science Foundation - \$88,800
"Chiral NMR Shift Reagents"
- 1991** – American Chemical Society - \$300
"Selective Sorbents for Gas Chromatography" (ACS Polymer Division)
- 1991** – Pfizer Pharmaceutical - \$4,000
"Selective Sorbents for Gas Chromatography"
- 1991** – Bristol-Myers Squibb Company - \$1,500
"Lanthanide Luminescence Detection of Bleomycins"
- 1990** – Camille and Henry Dreyfus Foundation - \$45,000
"Grant Program in Chemistry for Liberal Arts Colleges" (Post-doctoral mentor program)
- 1990** – National Science Foundation - \$140,800
"High Field Nuclear Magnetic Resonance Spectrometer" [Co-PI] (Partially matched by Bates College)
- 1990** – Research Corporation - \$21,500
"Lanthanide-Cyclodextrin Complexes as Chiral NMR Shift Reagents"
- 1987** – National Science Foundation - \$27,710
"Gas Chromatograph-Mass Spectrometer" (Matched by Bates College)
- 1986** – National Science Foundation - \$11,000
"Spectrofluorometer for Biochemical Research" (Matched by Bates College)
- 1986** – Research Corporation - \$9,000
Lanthanide Ions as Luminescent Chromophores for Liquid Chromatographic Detection"
- 1985** – National Science Foundation - \$12,592
"Gradient High Performance Liquid Chromatograph" (Matched by Bates College)
- 1985** – Petroleum Research Fund - \$15,000
"Polymeric Metal Chelates as Selective Sorbents and Stationary Phases for Gas Chromatography"

- 1985** – American Chemical Society - \$750
"Project SEED Program" (To hire a high school student for the summer)
- 1984** – Petroleum Research Fund - \$2,000
"American Chemical Society-Petroleum Research Fund Summer Research Fellowship"
(to hire a visiting student fellow)
- 1983** – Research Corporation - \$5,875
"Lanthanide Ions as Fluorescent Probes in Liquid Chromatographic Detection"
- 1983** – Petroleum Research Fund - \$15,000
"Polymeric Metal Chelates as Selective Sorbents and Stationary Phases for Gas Chromatography"
- 1983** – National Science Foundation - \$21,425
Gas Chromatograph for the Study of Polymeric Metal Chelates as Sorbents and Stationary Phases"
- 1982** – Pittsburgh Conference - \$2,000
"R.K. Scott Memorial Award" (To purchase equipment to update the instructional laboratory in analytical chemistry.
- 1981** - Research Corporation - \$10,000
"Lanthanide Ions as Fluorescent Probes in Liquid Chromatographic Detection"

GRANTS - INTERNAL

Roger C. Schmutz Faculty Grants:

- | | | |
|------|-----------|--|
| 1981 | (\$500) | "Selective Sorbents for the Simplification of Complex Gas Chromatograms" |
| 1982 | (\$500) | "Improved Chiral Nuclear Magnetic Resonance Shift Reagents for Olefins" |
| 1983 | (\$1,000) | "Selective Sorbents for Gas Chromatography" |
| 1984 | (\$1,000) | "NMR Shift Reagents for Organohalides and Organosulfides" |
| 1985 | (\$1,000) | "Lanthanide Ions as Luminescent Detection Chromophores" |
| 1986 | (\$1,000) | "Structural Studies with Binuclear Shift Reagents" |
| 1989 | (\$1,000) | "Metal Chelate Polymers as Selective Sorbents for Gas Chromatography" |

1994 (\$700) "Solid Phase Lanthanide Luminescence Detection in Liquid Chromatography"

President's Discretionary Award:

1985 (\$2,500) "Book entitled NMR Shift Reagents"

1988 (\$2,500) "Support for Sabbatical Leave at Duke University"

1992 (\$2,500) "Summer Student Stipend Support"

Dana Apprentice Program:

1986 (\$2,500) "Structural Analysis of Chemical Compounds"

Mellon Summer Research Grant:

1991 (\$3,000) "Dietary Reconstruction from Chemical Residues on Prehistoric Pottery"

1993 (\$3,000) "Lanthanide Luminescence Detection in Liquid Chromatography"

Mellon Professional Development Grant:

1991 (\$2,000) "Lanthanide Luminescence Detection in Liquid Chromatography (to undertake research at the Free University in Amsterdam during a Short Term leave)"

Hughes Grant:

1994 (\$8,000) "Lanthanide Luminescence Detection in Liquid Chromatography"

2000 (\$15,000) "Lanthanide-Crown Ether Couples as Chiral NMR Shift Reagents"

2001 (\$14,475) "High Performance Liquid Chromatography in the Chemistry Curriculum"

2003 (\$13,540) "Carboxymethylated Cyclodextrins and their Lanthanide Complexes as Chiral NMR Shift Reagents"

2004 (\$11,000) "Curriculum Development – Capillary Electrophoresis"

Faculty Development Grant:

1997 (\$10,000) To develop a new introductory course entitled "Chemical Structure and its Importance in the Environment"

Phillip J. Otis Faculty Curricular Development Grant:

1997 (\$2,500) To develop a new introductory course entitled “Chemical Structure and its Importance in the Environment.”

Merck Grant:

1999 (\$5,500) “Calixarenes and Resorcarenas as Chiral NMR Shift Reagents”

Student Research Apprenticeship:

2000 (\$3,000) “Gendered Language in the Presentation of Acid-Base Chemistry”

PRESENTATIONS

“Chemical Structure and its Importance in the Environment: An Alternative Introductory Course for Chemistry Majors at Bates College,” Conference of the Course, Curriculum, and Laboratory Improvement (CCLI) Program of the National Science Foundation, Crystal City, VA, April 16-18, **2004** (Invited).

“The Value of a Postdoctoral Experience at an Undergraduate Institution,” Wenzel, T. J.; Dignam, C. F., 2nd Convocation of Enhancing the Postdoctoral Experience for Scientists and Engineers, Washington, DC, April 15, **2004** (Invited).

“Components of a Research-Supportive Curriculum,” American Chemical Society National Meeting, Anaheim, CA, March 27-31, **2004** (Invited)

“Curricular Reform in Analytical Chemistry,” University of North Carolina, Chapel Hill, March 22, **2004** (Invited).

“Outcomes from the Undergraduate Research Summit Meeting,” Association of American Colleges and Universities Annual Meeting, Washington, DC, Jan 21-24, **2004**.

“Outcomes of the Undergraduate Research Summit: Goals and Assessment,” Gordon Research Conference on Chemistry Education Research and Practice, Ventura, CA, Jan. 1-9, **2004**. (Invited)

“Curricular Reform in Analytical Chemistry,” University of Delaware, Nov. 3, **2003** (Invited).

“Enantiodistinction in NMR Spectroscopy Using Lanthanide-Chiral Solvating Agent Couples,” 15th International Symposium on Chirality, Shizuoka, Japan, Oct. 20-23, **2003**.

“A Research-Supportive Curriculum,” Hendrix College, Conway, AR, Sept. 29, **2003** (Invited).

“Chiral Recognition in NMR Spectroscopy: Using Lanthanide-Chiral Solvating Agent Couples,” Hendrix College, Conway, AR, Sept. 29, **2003** (Invited).

“Teaching and Research at an Undergraduate Institution,” University of New Hampshire, April 11, **2003** (Invited).

“Writing a Follow-on Grant Proposal,” CUR Dialogue: The Art of Grantmanship, Fairfax, VA, Feb. 23-25, **2003** (Invited).

“NSF Research in Undergraduate Institutions (RUI) and Research Opportunities Awards (ROA) Programs,” CUR Dialogue: The Art of Grantmanship, Fairfax, VA, Feb. 23-25, **2003** (Invited).

“Proposal Writing: Tales from the Trenches,” CUR Dialogue: The Art of Grantmanship, Fairfax, VA, Feb. 23-25, **2003** (Invited opening plenary address).

“The Use of Lanthanide-Chiral Solvating Agent Couples as Chiral NMR Shift Reagents,” Bowdoin College, Nov. 15, **2002** (Invited).

“The Use of Lanthanide-Chiral Solvating Agent Couples as Chiral NMR Shift Reagents,” University of South Dakota, Nov. 4, **2002** (Invited).

“Panel Presentation: Models of Undergraduate Research and Creative Activity: A Dialogue with CUR Presidents,” University of South Dakota, Nov. 4, **2002** (Invited).

“Panel Presentation: Problem-Based Learning in Analytical Chemistry,” Federation of Analytical Chemistry and Spectroscopy Societies meeting, Providence, RI, Oct. 13-17, **2002** (Invited).

“Lanthanide-Chiral Solvating Agent Couples as Chiral NMR Shift Reagents,” 14th International Symposium on Chirality, Hamburg, Germany, Sept. 8-12, **2002** (Invited plenary address).

“What’s Involved in Doing ‘Productive’ Undergraduate Research at a Predominantly Undergraduate Institution,” 17th Biennial Conference on Chemical Education, Bellingham, WA, July 28 - August 1, **2002** (Invited).

“Analytical Science: Teaching in Ways that Promote Better Learning,” Education Forum 2002, Problem-Based Learning: The Way Forward, Royal Society of Chemistry, University of Huddersfield, United Kingdom, July 3, **2002** (Invited plenary address).

“Right-handed Sugar Doughnuts: Nutritional Food for Undergraduates,” Council on Undergraduate Research Fellows Award Address, CUR 2002 National Conference, New London, CT, June 19-22, **2002** (Invited).

“Funding Undergraduate Research: Importance and Availability of External Sources of Support,” American Chemical Society, National Conference, Orlando, FL, Apr. 7-10, **2002** (Invited).

“Undergraduate Research at Undergraduate Institutions: ‘Talking the Talk’ and ‘Walking the Walk’”, American Chemistry Society, National Conference, Orlando, FL, Apr. 7-10, **2002** (Invited).

“Curricular Reform in Analytical Chemistry,” University of Michigan, Nov. 30, **2001** (Invited).

“Problem-Based Learning in Analytical Chemistry: Panel Presentation,” American Chemical Society, National Conference, Chicago, IL, Aug. 26-29, **2001** (Invited).

“Impact of ILI and CCLI Awards on the General and Analytical Chemistry Curriculum at Bates College,” American Chemical Society, National Conference, Chicago, IL, Aug. 26-29, **2001** (Invited).

“What is Undergraduate Research,” Practice-Oriented Education Conference, Boston, MA, Apr. 25-27, **2001** (Invited).

“Problem-based Learning in Analytical Chemistry,” Pacificchem Conference, Honolulu, HI, Dec. 14-19, **2000** (Invited).

“Undergraduate Analytical Chemistry: Lessons from the Second Millennium as a Guide for Teaching in the Third,” Eastern Analytical Symposium, Atlantic City, NJ, Oct. 29-Nov. 3, **2000** (Invited).

“The Role of Textbooks in Problem-based Learning,” Federation of Analytical Chemistry and Spectroscopy Societies Conference, Nashville, TN, Sept. 24-28, **2000** (Invited).

“Succeeding as a Faculty Member at an Undergraduate Institution,” American Chemical Society, National Conference, Washington, DC, Aug. 19-23, **2000** (Invited)

“Best Practices in Analytical Chemistry - Panel Presentation,” Federation of Analytical Chemistry and Spectroscopy Societies Conference, Vancouver, BC, Oct. 24-29, **1999** (Invited).

“All the World’s a Sample,” American Chemical Society, National Conference, New Orleans, LA, Aug. 22-26, **1999** (Invited - Award Address)

“Active Learning in Analytical Chemistry,” American Chemical Society, National Conference, New Orleans, LA, Aug. 22-26, **1999** (Invited - Award Symposium)

“Lanthanide-Crown Ether Couples as Chiral NMR Shift Reagents” 11th International Symposium on Chiral Discrimination, Chicago, IL, July 25-28, **1999**.

“Institutionalizing Undergraduate Research: Why Its Important and Elements of Some Successful Program,” Northeastern University, December 1, **1998** (Invited).

“Undergraduate Research: Chemistry Education at its Best,” American Chemical Society, National Conference, Boston, MA, Aug. 23-26, **1998** (Invited)

“A New Approach to Teaching Undergraduate Analytical Chemistry,” American Chemical Society, National Conference, Boston, MA, Aug. 23-26, **1998** (Invited)

“A New Approach to Teaching Undergraduate Analytical Chemistry,” Pittsburgh Conference, New Orleans, LA, Feb. 28-March 4, **1998** (Invited).

“A New Approach to Teaching Undergraduate Analytical Chemistry,” University of Colorado, December 8, **1998** (Invited).

"A New Approach to Undergraduate Analytical Chemistry," at the Macro-Research Opportunity Awards Reunion, University of Kansas, July 10-12, **1997** (Invited guest speaker)

"A New Approach to Undergraduate Analytical Chemistry," at an NSF-sponsored workshop entitled "Curricular Development in Analytical Sciences," Atlanta, GA, Mar. 13-15, **1997** (Invited).

"Undergraduate Analytical Chemistry: Relegating the Quant/Instrumental Mentality to the Scrap Heap," University of New Hampshire, January 30, **1997** (Invited)

"Undergraduate Analytical Chemistry: Relegating the Quant/Instrumental Mentality to the Scrap Heap," 14th Biennial Conference on Chemical Education," Clemson, SC, Aug. 4-8, **1996**

"Undergraduate Research: Chemistry Education at Its Best," 14th Biennial Conference on Chemical Education," Clemson, SC, Aug. 4-8, **1996** (Invited)

"Lanthanide-Cyclodextrin Complexes as Chiral NMR Shift Reagents," 22nd Annual Conference of the Federation of Analytical Chemistry and Spectroscopy Societies, Cincinnati, OH, Oct. 15-20, **1995** (Invited).

"The Status of Undergraduate Research in Colleges and Universities," Sixth Annual Student/Faculty Research Days, University of New England, Biddeford, ME, May 4-5, **1995** (Invited Keynote Address).

"Mechanism and Use of Cyclodextrin-Lanthanide Ion Chelates as Chiral NMR Shift Reagents," Sixth National Conference on Chiral Discrimination, St. Louis, MO, Apr. 26-28, **1995** (Invited Keynote Address).

"Teacher-Scholar vs. Scholar-Teacher," Ninth National Conference on Undergraduate Research, Union College, Schenectady, NY, April 20-22, **1995** (Invited Panel Participant).

"An Alternative Format for Teaching Analytical Chemistry to Undergraduates," Fifth National Conference of the Council on Undergraduate Research, Lewiston, ME, June 23-25, **1994** (Invited).

"Lanthanide-Cyclodextrin Complexes as Chiral NMR Shift Reagents," Free University (Amsterdam), April 11, **1994** (Invited).

"Selective Sorbents for the Pre-Treatment of Environmental Samples," Bowdoin College, February 10, **1994** (Invited).

"The Role of the Council on Undergraduate Research in the Undergraduate Research Program," Eastern Analytical Symposium, Somerset, NJ, Nov. 15-18, **1993** (Invited).

"Supercritical Fluid Extraction of Metal-Containing Selective Sorbents," Free University (Amsterdam), July 8, **1993** (Invited).

"Chiral NMR Shift Reagents," Colby College, April 6, **1993** (Invited).

"NEAACC Inspiration - An Alternative Format for Teaching Analytical Chemistry to Undergraduates," New England Academic Analytical Chemistry Conference, Fairhaven, MA, Oct. 23-24, **1992**.

"Supercritical Fluid Extraction of Metal Chelate Polymers," Saint Joseph College, Oct. 22, **1992** (Invited).

"Supercritical Fluid Extraction of Metal-Containing Selective Sorbents," New England Academic Analytical Chemistry Conference, Kennebunkport, ME, Oct. 25-26, **1991**.

"NMR Shift Reagents - New Approaches to Chiral Resolution," University of Massachusetts at Amherst, Oct. 22, **1991** (Invited).

"Lanthanide Luminescence Detection in Liquid Chromatography," Bowdoin College, Mar. **1991** (Invited).

"Chiral Lanthanide NMR Shift Reagents," New England Academic Analytical Chemistry Conference, Bolton Valley, VT, Nov. 2-3, **1990**.

"Spectroscopic Studies of Pyrene on Silica Interfaces," University of Vermont, Nov. 1, **1990** (Invited)

"Spectral Anomalies in Pyrene Luminescence in Adsorbed and Covalently-Bound States", Pittsburgh Conference, Atlanta, GA, Mar. 3-7, **1989**.

"HPLC in the Undergraduate Curriculum in Chemistry," National American Chemical Society Meeting, New Orleans, August 30-September 4, **1987**.

"The Use of Terbium(III) and Europium(III) as Luminescent Chromophores for Liquid Chromatographic Detection," Rocky Mountain Conference on Analytical Chemistry, Denver, CO, August 4-7, **1986**. (Invited)

“The Use of Terbium(III) and Europium(III) as Luminescent Chromophores for Liquid Chromatographic Detection,” Tenth International Symposium on Column Liquid Chromatography, San Francisco, CA, May 18-23, **1986**.

“Metal Chelates as NMR Shift Reagents and Selective Sorbents for Gas Chromatography,” University of New Hampshire, October 11, **1983**. (Invited)

“Aqueous Relaxation Reagents for Carbon-13 and Nitrogen-15 NMR Spectroscopy,” Rocky Mountain Analytical Conference, Denver, CO, August **1981**.

“Water-Soluble Gadolinium(III) Chelates as NMR Paramagnetic Relaxation Reagents,” Second Chemical Congress of the North American Continent, Las Vegas, NV, August, **1980**.

“New Binuclear Shift Reagents for Altering NMR Spectra of Aromatic, Olefinic, and Halogenated Compounds, Rocky Mountain Analytical Conference, Denver, CO, August **1980**.

“Binuclear Complexes of Lanthanide(III) and Silver(I) and Their Function as Shift Reagents for Aromatic and Olefinic Compounds,” Southwest Regional American Chemical Society Meeting, Salt Lake City, UT, June **1980**.

“New Binuclear NMR Shift Reagents Effective for Altering the Spectra of Aromatic, Olefinic, and Phosphine Compounds,” National American Chemical Society Meeting, Houston, TX, March **1980**.

WORKSHOPS

Workshop Co-leader: “Starting a Successful Research Program with Undergraduates,” American Chemical Society National Meeting, Anaheim, CA, March 27-31, **2004**.

Workshop Leader: “Current Issues in Analytical Education,” Pittsburgh Conference, March 7-12, **2004**, Chicago, IL.

Short-course Leader: “Problem-Based Learning in Analytical Chemistry,” Pittsburgh Conference, March 9-14, **2003**, Orlando, FL.

Workshop Leader: “Problem-Based Learning Methods,” Education Forum 2002, Problem-Based Learning: The Way Forward, Royal Society of Chemistry, University of Huddersfield, United Kingdom, July 3, **2002**.

Workshop Leader: “Problem-Based Learning in Analytical Chemistry,” Pittsburgh Conference, March 17-21, **2002**, New Orleans, LA.

Workshop Leader: “Problem-Based Learning in Analytical Chemistry,” Pittsburgh Conference, March 4-8, **2001**, New Orleans, LA.

Workshop Leader: “Analytical Chemistry: Project-Based Laboratories,” July 9-21, **2000**, Bates College, Lewiston, ME. Organized through the Center for Chemical Education at Miami University, Ohio.

Workshop Leader: “Problem-Based Learning in Analytical Chemistry,” Pittsburgh Conference, March 11-13, **2000**, New Orleans, LA.

Workshop Leader: “Problem-Based Learning in Analytical Chemistry,” Pittsburgh Conference, March 7-8, **1999**, Orlando, Florida

Workshop Leader: “Problem-Based Learning in Analytical Chemistry,” Southeast Regional American Chemical Society Meeting, Nov. 6-8, **1998**, Research Triangle Park, North Carolina.

Workshop Leader: “Analytical Chemistry: Project-Based Laboratories,” July 6-17, **1998**, Bates College, Lewiston, ME. Organized through the Center for Chemical Education at Miami University, Ohio.

CHAired SYMPOSIA

Exploring Alliances and Partnerships in Undergraduate Research: Partnerships Involving Predominantly Undergraduate Institutions,” American Chemical Society National Meeting, Anaheim, CA, March 27-31, **2004**.

“Research at Undergraduate Institutions: Providing the Appropriate Infrastructure.” American Chemical Society National Meeting, Anaheim, CA, March 27-31, **2004**.

“Research at Undergraduate Institutions: The Vital Faculty” American Chemical Society National Meeting, Anaheim, CA, March 27-31, **2004**.

“The Role of Research in the Undergraduate Curriculum,” Gordon Research Conference on Chemistry Education Research and Practice, Ventura, CA, Jan 4-9, **2004**.

“New Models for Conducting Research at Undergraduate Institutions,” American Chemical Society, Chemical Education Division, National Conference, New Orleans, LA, March 23-26, **2003**.

“Problem-Based Learning in Analytical Chemistry,” Federation of Analytical Chemistry and Spectroscopy Societies conference, Providence, RI, Oct. 13-17, **2002**.

“Problem-Based Learning in Analytical Chemistry,” American Chemical Society, Chemical Education Division, National Conference, Chicago, IL, Aug. 26-30, **2001**.

“Best Practices in Analytical Chemistry,” Federation of Analytical Chemistry and Spectroscopy Societies Conference, Vancouver, BC, Oct. 24-29, **1999**.

“Problem-Based Learning in Analytical Chemistry,” American Chemical Society, Analytical Division, National Conference, Boston, MA, Aug. 23-26, **1998**.

“NMR Spectroscopy,” 22nd Annual Conference of the Federation of Analytical Chemistry and Spectroscopy Societies, Cincinnati, OH, Oct. 15-20, **1995**.

“Advances in Chromatography” Rocky Mountain Conference on Analytical Chemistry, Denver, CO, August 4-7, **1986**.

STUDENT PRESENTATIONS (by students working in my laboratory)

“Carboxymethylated Cyclodextrins and their Lanthanide Complexes as Chiral NMR Solvating Agents,” American Chemical Society National Meeting, Anaheim, CA, March 27-31, **2004** (Lauren Randall, Renee Blacken, Susan French).

“Carboxymethylated Cyclodextrins and their Lanthanide Complexes as Chiral NMR Solvating Agents,” American Chemical Society National Conference, New Orleans, LA, March 23-26, **2003** (Stella Aniagyei).

“Calix[4]arenes and Calix[4]resorcarenes as Chiral NMR Solvating Agents,” American Chemical Society National Conference, New Orleans, LA, March 23-26, **2003** (James Wilcox).

“Crown Ethers and their Ytterbium(III) Complexes as Chiral NMR Solvating Agents,” American Chemical Society National Conference, New Orleans, LA, March 23-26, **2003** (Bailey Freeman).

“Chiral Calixarenes and their Lanthanide Couples as Chiral NMR Shift Reagents,” American Chemical Society National Conference, Orlando, FL, Apr 7-10, **2002** (Kristin Smith)

“(+)-(18-Crown-6)-2,3,11,12-Tetracarboxylic Acid and Its Ytterbium(III) Complex as Chiral NMR Discriminating Agents,” National American Chemical Society Conference, San Francisco, CA, March 26-30, **2000** (Jolene Thurston)

“Lanthanide-Cyclodextrin Complexes as Chiral NMR Shift Reagents,” International Symposium on Chiral Discrimination, Chicago, IL, July 25-28, **1999** (Amanda Colby)

“Lanthanide-Chiral Carboxylate Complexes as Chiral NMR Shift Reagents,” International Symposium on Chiral Discrimination, Chicago, IL, July 25-28, **1999** (Laura DiLorenzo)

“Lanthanide-Crown Ether Couples as Chiral NMR Shift Reagents,” American Chemical Society National Conference, Boston, MA, August 23-27, **1998** (Melissa Vining)

“Synthesis of an Organic-Soluble Lanthanide-Encapsulating Ligand for use with NMR Spectroscopy,” Twelfth National Conference on Undergraduate Research, Salisbury, MD, April 23-25, **1998** (David Richard)

“Synthesis of an 18-Crown-6 Ether to be Used in Conjunction with Lanthanides as a Chiral Resolving Agent,” Twelfth National Conference on Undergraduate Research, Salisbury, MD, April 23-25, **1998** (Melissa Vining)

“A Study of Cyclodextrin Inclusion Complex Geometry Using NMR Spectroscopy,” Twelfth National Conference on Undergraduate Research, Salisbury, MD, April 23-25, **1998** (Jeffrey Troughton)

“Calixarenes as Chiral Resolving Agents in NMR Spectroscopy,” Twelfth National Conference on Undergraduate Research, Salisbury, MD, April 23-25, **1998** (Denby Johnson)

"Lanthanide Conjugates with Organic-Soluble Chiral Resolving Agents as NMR Shift Reagents," Eleventh National Conference on Undergraduate Research, Austin, TX, April 23-27, **1997** (Rhonda Crosson)

"Geometric Inclusion Studies of Cyclodextrin-Substrate Interactions Using NMR Spectroscopy," Eleventh National Conference on Undergraduate Research, Austin, TX, April 23-27, **1997** (Bethany Pond)

"Lanthanide-Chiral Carboxylate Complexes as NMR Shift Reagents," Eleventh National Conference on Undergraduate Research, Austin, TX, April 23-27, **1997** (Kathryn Brogan)

"Lanthanide-Crown Ether Couples as Chiral NMR Shift Reagents," Tenth National Conference on Undergraduate Research, Asheville, NC, April 18-20, **1996** (Sarah Weinstein)

"Lanthanide-Chiral Carboxylate Complexes as Chiral NMR Shift Reagents," Tenth National Conference on Undergraduate Research, Asheville, NC, April 18-20, **1996** (Kathryn Brogan)

"Lanthanide-Chiral Resolving Agent Mixtures as Organic-Soluble Chiral NMR Shift Reagents," 22nd Annual Conference of the Federation of Analytical Chemistry and Spectroscopy Societies, Cincinnati, OH, October 15-20, **1995** (Sarah Weinstein)

"Organic-Soluble Lanthanide Derivatives as Chiral Resolving Agents," Ninth National Conference on Undergraduate Research, Schenectady, NY, April 20-22, **1995** (Amy Bean)

"Utility of Relaxation Time Data with Cyclodextrin-Gadolinium(III) Complexes," Ninth National Conference on Undergraduate Research, Schenectady, NY, April 20-22, **1995** (Sarah Coulter)

"Cyclodextrin-Lanthanide Complexes as Chiral NMR Resolving Agents," Ninth National Conference on Undergraduate Research, Schenectady, NY, April 20-22, **1995** (Rebecca Miles)

"Solid-Phase Lanthanide Luminescence Detection in Liquid Chromatography," Ninth National Conference on Undergraduate Research, Schenectady, NY, April 20-22, **1995** (Brooke Perrins)

"Lanthanide Luminescence Detection of Bleomycins," Seventh National Conference on Undergraduate Research, Salt Lake City, UT, Mar 25-27, **1993**. (Sharon Rapkin)

"Lanthanide-Containing Chiral NMR Shift Reagents," Seventh National Conference on Undergraduate Research, Salt Lake City, UT, Mar 25-27, **1993**. (Sarah Dunham)

"Synthesis of Highly Luminescent Anion Exchange Lanthanide Complexes", 2nd Symposium on Undergraduate Research, Groningen, The Netherlands, Nov. 27, **1992** (Johannes Vissers)

"Metal Polymers as Selective Sorbents for Gas Chromatography, Sixth National Conference on Undergraduate Research, Minneapolis, MN, Mar 26-28, **1992**. (Karen Townsend)

"Chiral NMR Shift Reagents," Sixth National Conference on Undergraduate Research, Minneapolis, MN, Mar 26-28, **1992**. (Matthew Bogyo)

PROFESSIONAL ORGANIZATIONS AND ACTIVITIES

Analytical Chemistry – Contributing Editor, Educational Topics – (1999-)

American Chemical Society (Member since 1978)

Analytical Division – Coordinator of Speaker's Fund for Regional Meetings (2002-)

Analytical Sciences Digital Library – Advisory Board Member (2003-)

Council on Undergraduate Research (1989-)

Councilor - 1990-present

President-elect - 1995-1996

President - 1996-1997

Immediate Past-president - 1997-1998

Associate Editor, CUR Newsletter

Sources in Funding in Chemistry - 1989, 1990, 1991

Series: Research in Analytical Chemistry at Undergraduate Institutions

Editor: "Research in Chemistry at Primarily Undergraduate Institutions,"
Fifth Edition, 1993.

Conference Co-Chair: "The Fifth National Conference of the Council on Undergraduate Research and First National Conference of CUR Kids," Bates College, June 23-25, 1994.

Workshop and Poster Coordinator: "The Seventh National Conference of the Council on Undergraduate Research," Occidental College, June 25-28, 1998

Coordinator: CUR Institute, "How to Institutionalize Undergraduate Research,"
University of North Carolina, Asheville, Nov. 15-17, 1996.

Coordinator: CUR Institute, "Concerns of Mid-Career Faculty," Bates College,
May 8-10, 1998

Conference Co-chair, CUR 2004, The Tenth National Conference of the Council on
Undergraduate Research," to be held at the University of Wisconsin, La Crosse

Editor-in-Chief, Council on Undergraduate Research Quarterly, 2001-

National Science Foundation, Chemistry Division Workshops

Curricular Developments in the Analytical Sciences, Atlanta, GA, March 13-15, 1997
(Speaker/Participant)

Research Sites for Educators in Chemistry, Arlington, VA, March 8-10, 2002
(Participant)

Undergraduate Research Centers, Arlington, VA, March 30- April 1, 2003(Participant)

Workshop on the Postdoctorate, Arlington, VA, May 11-13, 2003 (Member of the
Steering Committee)

Undergraduate Research Summit, Bates College, Lewiston, ME, August 2-4, 2003 (Host
and Meeting Chair)