

CURRICULUM VITAE (Updated on June 7, 2017)

Thomas J. Wenzel, Department of Chemistry, Bates College, Lewiston, ME 04240,
twenzel@bates.edu, (<http://www.bates.edu/chemistry/faculty/thomas-wenzel>)

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
2014-2015 STEM Coordinator, Bates College
2006-2010 Chair, Environmental Studies Program, 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

American Chemical Society Fellow - 2016
American Chemical Society
Award for Research at an Undergraduate Institution - 2010
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

PROFESSIONAL ORGANIZATIONS AND ACTIVITIES

Conference Chair of the 27th International Symposium on Chiral Discrimination – Chirality 2015, Boston, MA, June 28-July 1, 2015.

Journal Editorial Responsibilities

Analytical and Bioanalytical Chemistry – (Published by Springer) – Editor for a column titled “ABC’s of Analytical Science Education and Professional Development”, 2013-

Analytical Chemistry – (Published by the American Chemical Society), Contributing Editor, Educational Topics (1999-2003)

Chirality – (Published by Wiley Press) – Editorial Board Member (2005 -)

Council on Undergraduate Research Quarterly – (Published by the Council on Undergraduate Research) – Editor-in-Chief, 2001-2005

American Chemical Society (Member since 1978)

Analytical Division – Coordinator of Speaker’s Fund for Regional Meetings (2002-2006)

Committee on Professional Training – 2011 –
Chair – 2015-
Vice-chair – 2014

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

Beckman Foundation – Executive Committee Member, Beckman Scholars Program (2005-2009)

Council on Undergraduate Research (1989-)

Councilor - 1989-2005

Councilor (President Emeritus Status) – (2005-)

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," University of Wisconsin, La Crosse, June 23-26, 2004.

Editor-in-Chief, *Council on Undergraduate Research Quarterly*, 2001-2005

Steering Committee Member – CUR Dialogue Meeting, April 2-4, 2009

Steering Committee Member – CUR Summit Meeting on Transformative Research, June 11-12, 2009

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)

National Science Foundation – Chemistry Division, Research Experiences for Undergraduates Program Leadership Group (2007-2010)

National Science Foundation – Chemistry Division, Committee of Visitors (2016)

Research Corporation, Models in Academic Leadership Conference, Tucson, AZ, July 29-31, 2004 - special guest

Petroleum Research Fund (American Chemical Society) – Participant in the PRF External Review Workshop, January 10-11, 2007

PUBLICATIONS (RESEARCH)

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

“Phosphated Cyclodextrins as Water-soluble Chiral NMR Solvating Agents for Cationic Compounds,” Mollings Puentes, C.; Wenzel, T.J.; *Beilstein Journal of Organic Chemistry*, **2017**, *13*, 43-53.

"Expedited Selection of NMR Chiral Solvating Agents for Determination of Enantiopurity", Yang, L.; Wenzel, T.; Williamson, R.T.; Christensen, M.; Schafer, W.; Welch, C.J.; *ACS Central Science*, **2016**, *2*, 332-340.

“Synthesis and Utilization of Trialkylammonium-substituted Cyclodextrins as Water-Soluble Chiral NMR Solvating Agents for Anionic Compounds”, Dowey, A.E.; Mollings Puentes, C.; Carey-Hatch, M.; Sandridge, K.L.; Krishna, N.B.; Wenzel, T.J.; *Chirality*, **2016**, *28*, 299-305.

“Utilization of (18-Crown-6)-2,3,11,12-tetracarboxylic Acid as a Chiral NMR Solvating Agent for Diamines and β -Amino Acids,” Rodriguez, Y.C.; Duarte, T.M.; Szakonyi, Z.; Forró, E.; Fülöp, F.; Wenzel, T.J.; *Chirality*, **2015**, *27*, 708-715.

“Calixarenes and Calix[4]resorcinarenes as Chiral NMR Solvating Agents,” Wenzel, T.J.; *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, **2014**, *78*, 1-14.

“Diamagnetic Lanthanide Tris β -diketonate Complexes with Aryl-containing Ligands as Chiral NMR Discriminating Agents, Clark, R.L.; Wenzel, B.T.; Wenzel, T.J.; *Tetrahedron: Asymmetry*, **2013**, *24*, 297-304.

“Enantiomeric Discrimination of Isoxazoline Fused β -Amino Acid Derivatives Using (18-Crown-6)-2,3,11,12-tetracarboxylic Acid as a Chiral NMR Solvating Agent, Howard, J.A.; Fülöp, F.; Nonn, M.; Wenzel, T.J., *Chirality*, **2013**, *25*, 48-53.

“Chiral Discrimination of Aliphatic Amines and Amino Alcohols Using NMR Spectroscopy,” Wenzel, T.J.; Rollo, R.D.; Clark R.L.; *Magnetic Resonance in Chemistry*, **2012**, *50*, 261-265.

“A Water-soluble Calix[4]resorcinarene with L-Pipecolinic Acid Groups as a Chiral NMR Solvating Agent”, Pham, N.H.; Wenzel, T.J., *Chirality*, **2012**, *24*, 193-200.

“A Sulfonated Calix[4]resorcinarene with L-Pipecolinic Acid Groups as a Water-soluble Chiral NMR Solvating Agent”, Pham, N.H.; Wenzel, T.J., *Tetrahedron: Asymmetry*, **2011**, *22*, 1574-1580.

“Using NMR Spectroscopic Methods to Determine Enantiomeric Purity and Assign Absolute Stereochemistry,” Wenzel, T.J.; Chisholm, C.D., *Progress in NMR Spectroscopy*, **2011**, *59*, 1-63.

“A Sulfonated Calix[4]resorcinarene with α -Methyl-L-prolinylmethyl Groups as a Water-soluble Chiral NMR Solvating Agent,” Pham, N.H.; Wenzel, T.J., *Tetrahedron: Asymmetry*, **2011**, 22, 641-647.

“Assignment of Absolute Configuration Using Chiral Reagents and NMR Spectroscopy,” Wenzel, T.J.; Chisholm, C.D., *Chirality*, **2011**, 23, 190-214.

“Enantiomeric Discrimination of Aromatic-containing Anionic Substrates Using Cationic Cyclodextrins”, Chisholm, C.D.; Wenzel, T.J. *Tetrahedron: Asymmetry*, **2011**, 22, 62-68.

“A Water-soluble Calix[4]resorcinarene with α -Methyl-L-prolinylmethyl Groups as a Chiral NMR Solvating Agent,” Pham, N.H.; Wenzel, T.J., *Journal of Organic Chemistry*, **2011**, 76, 986-989.

“Enantiomeric Discrimination of Cyclic β -Amino Acids Using (18-Crown-6)-2,3,11,12-tetracarboxylic Acid as a Chiral NMR Solvating Agent, Chisholm, C.D.; Fülöp, F.; Forró, E.; Wenzel, T.J., *Tetrahedron: Asymmetry*, **2010**, 21, 2289-2294.

“Carboxymethylated Cyclodextrins and their Complexes with Pr(III) and Yb(III) as Water-soluble Chiral NMR Solvating Agents for Cationic Compounds,” Provencher, K.A.; Weber, M.A.; Randall, L.A.; Cunningham, P.R.; Dignam, C.F.; Wenzel, T.J., *Chirality*, **2010**, 22, 336-346.

“Water-soluble Calix[4]resorcinarenes as Chiral NMR Solvating Agents for Bicyclic Aromatic Compounds,” O. Farrell, C.M.; Hagan, K.A.; Wenzel, T.J., *Chirality*, **2009**, 21, 911-921.

“(18-Crown-6)-2,3,11,12-tetracarboxylic Acid as a Chiral NMR Solvating Agent for Determining the Enantiomeric Purity and Absolute Configuration of β -Amino Acids,” Wenzel, T.J.; Bourne, C.E.; Clark, R.L., *Tetrahedron: Asymmetry*, **2009**, 20, 2052-2060.

“Water-soluble Calix[4]resorcinarenes with Hydroxyproline Groups as Chiral NMR Solvating Agents for Phenyl- and Pyridyl-containing Compounds,” Hagan, K.A.; O’Farrell, C.M.; Wenzel, T.J., *European Journal of Organic Chemistry*, **2009**, 4825-4832.

“Selective Retention of Explosives and Related Compounds on Gas-Chromatographic Capillary Columns Coated with Lanthanide(III) β -diketonate Polymers,” Harvey, S.D., Wenzel, T.J. *Journal of Chromatography A*, **2009**, 1216, 6417-6423.

“Diamagnetic Lanthanide Tris β -Diketonates as Organic-soluble Chiral NMR Shift Reagents,” Wenzel, T.J.; Wenzel, B.T., *Chirality*, **2009**, 21, 6-10.

“Carboxymethylated Cyclodextrins and their Paramagnetic Lanthanide Complexes as Water-soluble Chiral NMR Solvating Agents,” Provencher, K.A.; Wenzel, T.J., *Tetrahedron: Asymmetry*, **2008**, 19, 1797-1803.

“Water-soluble Calix[4]resorcinarenes as Chiral NMR Solvating Agents for Phenyl-containing Compounds”, O’Farrell, C.M.; Wenzel, T.J., *Tetrahedron: Asymmetry*, **2008**, *19*, 1790-1796.

“Selective Gas-phase Capture of Explosives on Metal β -diketonate Polymers,” Harvey, S.D.; Wenzel, T.J., *Journal of Chromatography A*, **2008**, *1192*, 212-217.

“Water-soluble Calix[4]resorcinarenes with Hydroxyproline Groups as Chiral NMR Solvating Agents.” O’Farrell, C.M.; Chudomel, J.M.; Collins, J.M.; Dignam, C.F.; Wenzel, T.J., *Journal of Organic Chemistry*, **2008**, *73*, 2843-2851.

“Chiral NMR Discrimination of Amines: Analysis of Secondary, Tertiary and Prochiral Amines using (18-Crown-6)-2,3,11,12-tetracarboxylic Acid,” Lovely, A. E., Wenzel, T. J., *Chirality*, **2008**, *20*, 370-378.

“Chiral NMR Discrimination of Piperidines and Piperazines Using (18-Crown-6)2,3,11,12-tetracarboxylic Acid,” Lovely, A.E.; Wenzel, T.J., *Journal of Organic Chemistry*, **2006**, *71*, 9178-9182.

“Chiral NMR Discrimination of Pyrrolidines Using (18-Crown-6)2,3,11,12-tetracarboxylic Acid,” Lovely, A.E.; Wenzel, T.J., *Tetrahedron Asymmetry*, **2006**, *17*, 2642-2648.

“Chiral NMR Discrimination of Secondary Amines Using (18-Crown-6)2,3,11,12-tetracarboxylic Acid,” Lovely, A.E.; Wenzel, T.J., *Organic Letters*, **2006**, *8*, 2823-2826.

“Carboxymethylated Cyclodextrin Derivatives as Chiral NMR Discriminating Agents,” Dignam, C.F.; Randall, L.A.; Blacken, R.D.; Cunningham, P.R.; Lester, S.-K.G.; Brown, M.J.; French, S.C.; Aniagyei, S.E.; Wenzel, T.J., *Tetrahedron Asymmetry*, **2006**, *17*, 1199-1208.

“Water-Soluble Calix[4]resorcarenes as Enantioselective NMR Shift Reagents for Aromatic Compounds,” Dignam, C. F.; Zopf, J. J.; Richards, C. J.; Wenzel, T. J., *Journal of Organic Chemistry*, **2005**, *70*, 8071-8078.

“An Enantioselective NMR Shift Reagent for Cationic Aromatics,” Dignam, C. F.; Richards, C. J.; Zopf, J. J.; Wacker, L. S.; Wenzel, T. J., *Organic Letters*, **2005**, *7*, 1773-1776.

“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.; Brechtling, 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 (BOOKS)

Discrimination of Chiral Compounds Using NMR Spectroscopy, Wenzel, T.J.; Wiley Press, **2007**, ISBN 978-0-471-76352-9, 549 pp.

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**, ISBN 0-8493-5298-3, 286 pp.

PUBLICATIONS (RESEARCH-RELATED BOOK CHAPTERS, ENCYCLOPEDIA ARTICLES)

"Enantiomeric Purity Studied Using NMR," Wenzel, T.J., in *Chemistry, Molecular Sciences and Chemical Engineering, Encyclopedia of Spectroscopy and Spectrometry* (Third Edition), **2017**, 490-502.

"Advances in the use of Lanthanide Enolates as Nuclear Magnetic Resonance Shift Reagents," Wenzel, T. J.; Patton, W. R., in *The Chemistry of Metal Enolates*, 2nd Edition and *PATAI'S Chemistry of Functional Groups*, Wiley, **2016**, 1-22 (DOI: 10.1002/9780470682531.pat0903). Published online on Sept. 19, **2016**.

"Chiral Derivatizing Agents, Macrocycles, Metal Complexes and Liquid Crystals for Enantiomeric Differentiation in NMR Spectroscopy," Wenzel, T.J., in *Topics in Current Chemistry*, Springer, **2013**, *341*, 1-68.

"Determination of Enantiomeric Purity and Absolute Configuration by NMR Spectroscopy," Wenzel, T.J., in *Stereoselective Synthesis of Drugs and Natural Products*," Wiley, **2013**, 1505-1528.

"Enantiomeric Purity Studied Using NMR," Wenzel, T.J., in *Chemistry, Molecular Sciences and Chemical Engineering, Encyclopedia of Spectroscopy and Spectrometry* (Second Edition), **2013**, 1-14.

Spectroscopic Analysis: NMR and Shift Reagents, Wenzel, T.J., in *Comprehensive Chirality*, Elsevier, **2012**, *8*, 545-570.

"Receptors for Chiral Recognition," Wenzel, T.J.; Pham, N.H., in *Artificial Receptors for Chemical Sensors*," Wiley, **2011**, 191-248.

“Lanthanide Enolates as Nuclear Magnetic Resonance Shift Reagents,” Wenzel, T. J.; Provencher, K. A., in *The Chemistry of Metal Enolates*, Wiley, **2009**, 787-822.

“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, **2004**, 26 pp, (www.mrw.interscience.wiley.com/eros/doc/00001/00003545.htm).

“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, **2004**, 8 pp, (www.mrw.interscience.wiley.com/eros/doc/00001/00003546.htm).

“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, **2004**, 6 pp, (www.mrw.interscience.wiley.com/eros/doc/00001/00003547.htm).

“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.

"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 (EDUCATION)

“Inclusion of Synthetic Polymers within the Curriculum of the ACS Certified Undergraduate Degree”, Kosbar, L.L.; Wenzel, T. J., *Journal of Chemical Education*, **2017**, in press.

“Active Learning Materials for Molecular and Atomic Spectroscopy”, Wenzel, T.J., *Analytical and Bioanalytical Chemistry*, **2014**, 406, 5245-5248.

“The Analytical Sciences Digital Library: A Resource to Promote Active Learning,” Wenzel, T.J.; Larive, C.K., *Reviews in Analytical Chemistry*, **2014**, 33, 1-9.

“Students Focus on the Androscoggin River,” Costlow, J.; Wenzel, T., *Lewiston Sun-Journal*, January 15, **2012**.

“Role of Undergraduate Research in an Excellent and Rigorous Undergraduate Chemistry Curriculum”, Wenzel, T.J.; Larive, C.K.; Frederick, K, *Journal of Chemical Education*, **2012**, 89, 7-9.

“Active Learning Materials for Equilibrium Chemistry and Separation Science,” Wenzel, T.J., *Analytical and Bioanalytical Chemistry*, **2011**, 400, 637-640.

“Obtaining Equipment Through Curriculum Development Grants,” Wenzel, T.J., *Journal of Chemical Education*, **2010**, 87, 1128-1130.

“Collaborative and Project-based Learning in Analytical Chemistry,” Wenzel, T.J., in *Active Learning: Models from the Analytical Sciences*, American Chemical Society, Washington, DC, **2007**, pp. 54-68.

“Cooperative Learning and Project-based Laboratories as a Way to Broaden Learning Outcomes,” Wenzel, T.J., in *Developing and Sustaining a Research-Supportive Curriculum: A Compendium of Successful Practices*, Council on Undergraduate Research, Washington, DC, **2007**, 21-39.

“Evaluation Tools to Guide Students’ Peer-Assessment and Self-Assessment in Group Activities for the Lab and Classroom,” Wenzel, T. J., *Journal of Chemical Education*, **2007**, 84, 182-186.

“General Chemistry: Expanding the Learning Outcomes and Promoting Interdisciplinary Connections through the Use of a Semester-long Project,” Wenzel, T. J., *CBE Life Sciences Education*, **2006**, 5, 76-84.

“Systemic Reform of the Undergraduate Science Curriculum,” Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2004**, 25, 59-61.

“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 (OTHER)

“Why ACS Approval Matters for a Chemistry Program,” Wenzel, T.J; Kosbar, L., *Chemical and Engineering News*, December 5, **2016**, p. 45.

“ChemIDP: Mapping Your Career,” Krone, D.; Wenzel, T.J, *Chemical and Engineering News*, May 23, **2016**, p. 36.

Book Review of *The Assignment of Absolute Configuration by NMR Using Chiral Derivatizing Agents: A Practical Guide*, by J.M. Seco, E. Quiñoá and R. Riguera, *Analytical and Bioanalytical Chemistry*, **2015**, 407, 8381-8382.

“An Overview of the Changes in the 2015 ACS Guidelines for Bachelor’s Degree Programs,” Wenzel, T.J.; McCoy, A.B.; Landis, C.R., *Journal of Chemical Education*, **2015**, 92, 965-968.

“Revised Undergraduate Guidelines,” Wenzel, T.J.; Landis, C.R., *Chemical and Engineering News*, June 1, **2015**, p. 33.

“ACS Guidelines for Bachelor’s Degree Programs: Revisions Near Completion,” McCoy, A.B.; Wenzel, T.J.; *Chemical and Engineering News*, Nov. 17, **2014**, p. 45.

Book Review of *Basics of Analytical Chemistry and Chemical Equilibria*, by Tissue, B.M., *Analytical and Bioanalytical Chemistry*, **2014**, 406, 657-658.

Book Review of *Fundamentals of Analytical Chemistry*, 9th Ed. by Skoog, D.A.; West, D.M.; Holler, F.J.; Crouch, S.R., *Analytical and Bioanalytical Chemistry*, **2013**, 405, 7903-7904.

“Writing more Competitive Grant Proposals for NMR Spectrometers: Research and Curriculum Programs of the National Science Foundation,” Wenzel, T.J., in *NMR Spectroscopy in the Undergraduate Curriculum*, American Chemical Society, Washington, DC, **2013**, 321-334.

“Why Should Undergraduates and Undergraduate Institutions be Involved in Transformative Research?,” Wenzel, T. J., in *Transformative Research at Predominately Undergraduate Institutions*, Council on Undergraduate Research, Washington, DC, **2010**, 1-5.

“Obtaining Instructional Equipment through the National Science Foundation,” Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2006**, 26, 192.

“It’s Time to Roam the Sidelines,” Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2005**, 25, 104-105.

“Tips for Writing Competitive Proposals to the NSF-RUI Program,” Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2004**, 25, 82-85.

“CUR Loses a Friend,” Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2004**, 25, 61.

“Outcomes from the Undergraduate Research Summit,” Wenzel, T. J., *Cell Biology Education*, **2004**, 3, 150-151.

“CUR National Conference Report: Plenary Address Highlights,” Griffith, K.; Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2004**, 25, 30-31.

“CUR National Conference Report: Funding Opportunities,” Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2004**, 25, 28-29.

“Institutional Support for Sponsored Research,” Wenzel, T. J., *Council on Undergraduate Research Quarterly*, **2004**, 25, 5.

“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

2017-2019 National Science Foundation - \$25,000
“Involvement of Faculty from 2-Year Colleges in Active Learning”

- 2016-2019** National Science Foundation - \$900,000 (\$632,071 to Bates; \$267,929 to University of Iowa)
“Collaborative Research: Moving Faculty from Experimentation With to Long-term Adoption of Engaged Student Learning in Analytical Chemistry”
- 2015** – National Science Foundation - \$50,000
“Active Learning Workshop for Faculty Members at Historically Black and Hispanic-serving Institutions”
- 2014** – Merck Pharmaceutical - \$20,000
“Chiral NMR Solvating Agents”
- 2012** – National Science Foundation - \$159,150
“Chiral NMR Shift Reagents”
- 2011-2017** National Science Foundation - \$600,000
“Development of E-Learning Modules for Analytical Chemistry”
- 2010** – Research Corporation - \$5,000
“American Chemical Society Research at an Undergraduate Institution Award”
- 2008** – National Science Foundation - \$200,000 (\$99,278 to Bates; \$100,722 to University of California Riverside)
“Collaborative Research: Development of Contextual E-Learning Modules for Analytical Chemistry”
- 2008** – Beckman Foundation, Beckman Scholars Program - \$77,200
- 2007** – National Science Foundation - \$204,000
“Chiral NMR Shift Reagents”
- 2003** – National Science Foundation - \$185,000
“Chiral NMR Shift Reagents”
- 2002** – Camille and Henry Dreyfus Foundation - \$105,000
“Scholar/Fellow Program”
- 2002** – National Science Foundation - \$78,630
“Undergraduate Research Summit: Bates College, Lewiston, ME; Summer 2003”
- 2001** – 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:

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| 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 <u>NMR Shift Reagents</u> "
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"
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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)"
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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”
2005	(\$975)	“Carboxymethylated Cyclodextrins and their Lanthanide Complexes as Chiral NMR Shift Reagents”
2005	(\$7,000)	“Calix[4]resorcarenes as Chiral NMR Shift Reagents”
2006	(\$7,000)	“Crown Ethers as Chiral NMR Shift Reagents”
2007	(\$10,000)	“Calix[4]resorcarenes as Chiral NMR Shift Reagents”

Faculty Development Grant:

1997	(\$10,000)	To develop a new introductory course entitled “Chemical Structure and its Importance in the Environment”
2010	(\$2,000)	To support visits to two other laboratories during an upcoming sabbatical Leave
2013	(\$5,520)	To support a summer research student
2014	(\$10,600)	To support two summer research students
2015	(\$5,000)	To support 27 th International Symposium on Chirality – I am chair of this international research conference

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.”
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Merck Grant:

1999	(\$5,500)	“Calixarenes and Resorcarenes as Chiral NMR Shift Reagents”
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Student Research Apprenticeship:

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

“Writing More Competitive Research Grant Proposals,” Franklin and Marshall College, May 16, **2017** (Invited).

“Writing More Competitive Research Grant Proposals,” Penn State Altoona, May 10, **2017** (Invited).

“2015 ACS Guidelines and Evaluation Procedures for Bachelor’s Degree Programs,” American Chemical Society-Sociedad Cubana de Quimica Meeting, University of Utah, Salt Lake City, UT, Apr. 7-8, **2017** (Invited).

“The Role of Undergraduate Research in the ACS Certified Bachelor’s Degree,” American Chemical Society National Meeting, San Francisco, CA, Apr. 3-6, **2017** (Invited)

“Active Learning in the Classroom and Laboratory,” Xavier University, New Orleans, LA, March 9, **2017** (Invited).

“The Use of NMR Spectroscopy for Chiral Differentiation,” Xavier University, New Orleans, LA, March 9, **2017** (Invited).

“Writing More Competitive Curriculum Development Proposals,” Beyond the Basics Workshop, Washington, DC, February 18-19, **2017** (Invited).

“Writing More Competitive NSF-MRI Proposals,” CUR Dialogue, Washington, DC, February 16-18, **2017** (Invited).

“Writing More Competitive NSF-RUI Proposals,” CUR Dialogue, Washington, DC, February 16-18, **2017** (Invited).

“Writing more Competitive Research Grant Proposals,” St. Mary’s University, February 3, **2017** (Invited).

“Writing more Competitive Curriculum Grant Proposals,” St. Mary’s University, February 3, **2017** (Invited).

“Succeeding as a Faculty Member at a Primarily Undergraduate Institution (PUI),” Louisiana State University, November 14, **2016** (Invited).

“Writing more Competitive Curriculum Grant Proposals,” Alcorn State University, November 8, **2016** (Invited).

“Writing more Competitive Research Grant Proposals,” Georgia Southern University, November 5, **2016** (Invited).

“New Macromolecular, Supramolecular, Mesoscale and Nanoscale Requirement in the ACS Guidelines for Approved Chemistry Programs,” Biennial Conference on Chemistry Education, University of Northern Colorado, July 31-Aug. 4, **2016** (Invited).

“Fostering Alignment Between the ACS Guidelines for Degree Programs at 2-Year and 4-Year Institutions,” Biennial Conference on Chemistry Education, University of Northern Colorado, July 31-Aug. 4, **2016** (Invited).

“The Active Learning Site of the Analytical Sciences Digital Library,” Canadian Chemistry Conference, Halifax, Nova Scotia, June 5-9, **2016** (Invited)

“Teaching Analytical Chemistry: A Panel Discussion on Challenges and Successes,” Canadian Chemistry Conference, Halifax, Nova Scotia, June 5-9, **2016** (Invited)

“E-Learning Modules that Incorporate Active Learning into the Undergraduate Analytical Chemistry Curriculum,” Transforming STEM Pedagogy through Active Learning, Southwestern University, June 1-3, **2016** (Invited)

“The Use of NMR Spectroscopy for Chiral Differentiation”, Merck & Company, Rahway, NJ, May 6, **2016** (Invited).

“E-Learning Modules that Incorporate Active Learning into the Undergraduate Analytical Chemistry Curriculum,” Envisioning The Future of Undergraduate STEM Education, Research and Practice, AAAS/NSF, April 27-29, **2016** (Invited)

“Active Learning in the Classroom and Laboratory of Undergraduate Analytical Chemistry Courses,” American Chemical Society National Meeting, San Diego, CA, Mar. 13-17, **2016** (Invited)

“Focus on Career Preparation within the Requirements of the ACS Certified Degree in Chemistry,” American Chemical Society National Meeting, San Diego, CA, Mar. 13-17, **2016** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, San Diego, CA, Mar. 13-17, **2016** (Invited)

“Writing More Competitive NSF-MRI Proposals,” CUR Dialogue, Washington, DC, February 18-20, **2016** (Invited).

“Writing More Competitive NSF-RUI Proposals,” CUR Dialogue, Washington, DC, February 18-20, **2016** (Invited).

“Development of E-Learning Modules that Incorporate Active Learning Exercises in the Undergraduate Analytical Chemistry Curriculum”, Pacifichem, Honolulu, HI, Dec 16-18, **2015** (Invited).

“Pedagogies to Promote Skill Development in the Undergraduate Chemistry Curriculum”, American Chemical Society National Meeting, Boston, MA, Aug. 16-20, **2015**.

“Desirable Features of a Foundation Course in Analytical Chemistry”, American Chemical Society National Meeting, Boston, MA, Aug. 16-20, **2015** (Invited).

“2015 ACS Guidelines and Evaluation Procedures for Bachelor’s Degree Programs,” Council on Chemical Research Conference, Washington, DC, May 4, **2015** (Invited)

“2015 ACS Guidelines and Evaluation Procedures for Bachelor’s Degree Programs,” Southeastern Chemistry Chair’s Conference, Birmingham, AL, Apr. 2-4, **2015** (Invited)

“Components of a Research-rich Undergraduate Chemistry Curriculum,” American Chemical Society National Meeting, Denver, CO, Mar. 22-26 **2015**

“The Active Learning Project of the Analytical Sciences Digital Library,” American Chemical Society National Meeting, Denver, CO, Mar. 22-26 **2015** (Invited)

“Replacing Lectures with More Effective Collaborative Learning Activities,” American Chemical Society National Meeting, Denver, CO, Mar. 22-26 **2015** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, Denver, CO, Mar. 22-26 **2015** (Invited)

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, Denver, CO, Mar. 22-26 **2015** (Invited)

“Writing More Competitive NSF-MRI Proposals,” CUR Dialogue, Washington, DC, February 19-21, **2015** (Invited).

“Writing More Competitive NSF-RUI Proposals,” CUR Dialogue, Washington, DC, February 19-21, **2015** (Invited).

“Writing More Competitive Research Grant Proposals,” Radford University, October 31, **2014** (Invited).

“Writing More Competitive Curriculum Grant Proposals,” Radford University, October 31, **2014** (Invited).

“Writing More Competitive Research Grant Proposals,” Adelphi University, September 26, **2014** (Invited).

“Writing More Competitive Curriculum Grant Proposals,” Adelphi University, September 26, **2014** (Invited).

“Receptor Compounds and Lanthanide Chelates as Enantioselective NMR Shift Reagents,” Chirality 2015, Prague, Czech Republic, July 27-30, **2014** (Invited).

“Assessment of Active Learning in the Classroom and Laboratory”, Southwestern University, June 10, **2014** (Invited).

“Active Learning in the Classroom and Laboratory”, Southwestern University, June 9, **2014** (Invited).

“Writing More Competitive Research Grant Proposals,” Willamette University, June 7, **2014** (Invited).

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, Dallas, TX, March 16-19, **2014** (Invited)

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, Dallas, TX, March 16-19, **2014** (Invited)

“Using NMR Spectroscopy for Chiral Differentiation,” Colby College, March 7, **2014** (Invited).

“Sustaining Scholarly Productivity Throughout Your Career,” Panel Moderator, CUR Dialogue, Washington, DC, February 20-22, **2014** (Invited).

“Writing More Competitive NSF-MRI Proposals,” CUR Dialogue, Washington, DC, February 20-22, **2014** (Invited).

“Writing More Competitive NSF-RUI Proposals,” CUR Dialogue, Washington, DC, February 20-22, **2014** (Invited).

“The Role of Undergraduate Research in the Certified Chemistry Major,” Eastern Analytical Symposium, Somerset, NJ, Nov. 17-20, **2013** (Invited).

“Right-handed Sugar Doughnuts: Nutritional Food for Undergraduates,” Pennsylvania State System of Higher Education Undergraduate Research Conference in STEM, Slippery Rock, PA, November 15, **2013** (Keynote Address – Invited).

“Writing More Competitive Research and Curriculum Development Grants,” Slippery Rock University, November 15, **2013** (Invited).

“Developing and Utilizing Active Learning Exercises in the Science Classroom and Laboratory,” AAC&U Conference on Transforming STEM Education, San Diego, CA, Oct. 31-Nov. 2, **2013**.

“Writing More Competitive Research Grant Proposals,” Hobart William Smith Colleges, October 11, **2013** (Invited).

“Writing More Competitive Curriculum Development Proposals,” Hobart William Smith Colleges, October 11, **2013** (Invited).

“The Use of NMR Spectroscopy for Chiral Differentiation,” Illinois Wesleyan University, September 13, **2013** (Invited).

“Writing More Competitive Research Grant Proposals,” Illinois Wesleyan University, September 14, **2013** (Invited).

“Writing More Competitive Curriculum Development Proposals,” Illinois Wesleyan University, September 14, **2013** (Invited).

“E-Learning Modules that Incorporate Active Learning into the Undergraduate Analytical Chemistry Curriculum,” ASIANALYSIS XII, Fukuoka, Japan, August 22, **2013** (Invited)

“Development of E-Learning Modules for Analytical Chemistry,” Canadian Chemistry Conference, Quebec City, May 26-30, **2013** (Invited).

“Writing More Competitive Curriculum Grant Proposals,” Southwestern University, May 14, **2013** (Invited)

“Active Learning in the Classroom and Laboratory,” Southwestern University, May 13, **2013** (Invited)

“Writing More Competitive Research Grant Proposals”, University of Evansville, May 6, **2013** (Invited)

“Writing More Competitive Curriculum Grant Proposals”, University of Evansville, May 6, **2013** (Invited)

“Writing More Competitive Proposals for the Major Research Instrumentation (MRI) and Research Experiences for Undergraduates (REU) Programs”, University of Evansville, May 6, **2013** (Invited)

“Writing More Competitive Research Grant Proposals”, Southern Connecticut State University, May 2, **2013** (Invited)

“Writing More Competitive Curriculum Grant Proposals”, Southern Connecticut State University, May 2, **2013** (Invited)

“Writing More Competitive Proposals for the Major Research Instrumentation (MRI) and Research Experiences for Undergraduates (REU) Programs”, Southern Connecticut State University, May 2, **2013** (Invited)

“Writing More Competitive Grant Proposals for NMR Spectrometers,” American Chemical Society National Meeting, New Orleans, LA, Apr. 7-11, **2013** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, New Orleans, LA, Apr. 7-11, **2013** (Invited)

“Development of E-Learning Modules for Analytical Chemistry,” American Chemical Society National Meeting, New Orleans, LA, Apr. 7-11, **2013** (Invited)

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, New Orleans, LA, Apr. 7-11, **2013** (Invited)

“Replacing Analytical Chemistry Lectures with more Effective Collaborative Learning Activities,” Pittsburgh Conference, Philadelphia, PA, March 17-19, **2013** (Invited).

“Writing More Competitive NSF-MRI Proposals,” CUR Dialogue, Washington, DC, February 21-23, **2013** (Invited).

“Writing More Competitive NSF-RUI Proposals,” CUR Dialogue, Washington, DC, February 21-23, **2013** (Invited).

“Development of E-learning Modules for Analytical Chemistry,” National Science Foundation TUES Grant PI Meeting, Washington, DC, January 23-25, **2013** (Invited).

“Receptor Compounds and Diamagnetic Lanthanide Tris β -Diketonates as Enantioselective NMR Shift Reagents,” American Chemical Society National Meeting, Philadelphia, PA, August 19-22, **2012** (Invited).

“The Role of Undergraduate Research in the Certified Chemistry Major”, 22nd Biennial Conference on Chemical Education, Pennsylvania State University, July 29-Aug 2, **2012** (Invited)

“Receptor Compounds and Diamagnetic Lanthanide Tris β -Diketonates as Enantioselective NMR Shift Reagents,” Chirality 2012, Fort Worth, Texas, June 10-13, **2012** (Invited).

“Analytical Sciences Digital Library (ASDL) and Curricular Reform,” SUNY Buffalo, May 30, **2012** (Invited).

“Chiral Receptor Compounds as NMR Shift Reagents and Catalysts for Curricular Reform,” Florida Gulf Coast University, April 17, **2012** (Invited).

“Chiral Receptor Compounds as Enantioselective NMR Shift Reagents and Catalysts for Curricular Reform,” Central Michigan University, April 9, **2012** (Invited).

“NSF-funded Project Aimed at Developing Active-Learning Materials for the Undergraduate Analytical Chemistry Curriculum,” American Chemical Society National Meeting, San Diego, CA, Mar. 25-28, **2012** (Invited).

“Research and Curriculum Grant Funding to Secure an NMR Spectrometer,” American Chemical Society National Meeting, San Diego, CA, Mar. 25-28, **2012** (Invited).

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, San Diego, CA, Mar. 25-28, **2012** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, San Diego, CA, Mar. 25-28, **2012** (Invited)

“Overcoming Obstacles to Initiating Curricular Change,” Pittsburgh Conference, Orlando, FL, March 11-14, **2012** (Invited).

“Writing More Competitive NSF-MRI Proposals,” CUR Dialogue, Washington, DC, February 23-25, **2012** (Invited).

“Writing More Competitive NSF-RUI Proposals,” CUR Dialogue, Washington, DC, February 23-25, **2012** (Invited).

“Writing More Competitive Research and Curriculum Grant Proposals,” Bates College, January 17, **2012** (Invited).

“Chiral Receptor Compounds as Enantioselective NMR Shift Reagents and Catalysts for Curricular Reform,” University of Colorado, August 29, **2011** (Invited).

“Development of Contextual E-Learning Modules for Analytical Chemistry,” Gordon Research Conference, Chemistry Education Research and Practice, Davidson College, June 26-July 1, **2011** (Invited).

“Writing More Competitive Research and Curriculum Grant Proposals,” Quinnipiac University, April 26, **2011** (Invited)

“Creating an Institutional Culture of Research,” Iona College, April 19, **2011** (Invited)

“Writing More Competitive Research Grant Proposals,” State University of New York, Pottsdam, April 5, **2011** (Invited)

“NMR Spectroscopy at an Undergraduate Institution: From Undergraduate Research to its Use in Courses,” American Chemical Society National Meeting, Anaheim, CA, Mar. 27-30, **2011**.

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, Anaheim, CA, Mar. 27-30, **2011** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, Anaheim, CA, Mar. 27-30, **2011** (Invited)

“Components of a Research-Supportive Undergraduate Chemistry Curriculum,” Pittsburgh Conference, Atlanta, GA, Mar. 13-17, **2011** (Invited).

“Writing More Competitive Proposals to the National Science Foundation Research at Undergraduate Institutions Program,” CUR Dialogue, Washington, DC, February 24-26, **2011** (Invited)

“Development of E-Learning Modules for Analytical Chemistry,” National Science Foundation CCLI Meeting for PIs, Washington, DC, Jan. 24-25, **2011** (Invited).

“The Use of NMR Spectroscopy for Chiral Discrimination,” University of Texas, Arlington, Dec. 8, **2010** (Invited).

“Succeeding as a Faculty Member at a Primarily Undergraduate Institution,” University of California, Riverside, Nov. 10, **2010** (Invited).

“Chiral Receptor Compounds as Enantioselective NMR Shift Reagents and Catalysts for Curricular Reform,” University of California, Riverside, Nov. 4, **2010** (Invited).

“Conceptual Issues about Undergraduate Research,” International Perspectives on Undergraduate Research and Inquiry, Liverpool, England, Oct. 19, **2010** (Opening plenary address - invited).

“National Science Foundation – Transforming Undergraduate Education in STEM (TUES) Program,” Bethel College, June 3-4, **2010** (Invited).

“Creating Time for Scholarly Work”, Bethel College, June 3-4, **2010** (Invited).

“Funding for Scholarly Work and Curriculum Development”, Bethel College, June 3-4, **2010** (Invited).

“Calix[4]resorcinarenes as Water-Soluble Enantioselective NMR Shift Reagents (and Asymmetric Catalysts?)”, NSF-sponsored Workshop in Inorganic Chemistry, Santa Fe, NM, May 18-21, **2010** (Invited).

“Initiating and Sustaining a Productive Research Program at a Predominantly Undergraduate Institution” American Chemical Society National Meeting, San Francisco, CA, March 20-25, **2010** (Award Address – ACS Award for Research at an Undergraduate Institution)

“Development and Dissemination of E-Learning Modules Through the Analytical Sciences Digital Library,” American Chemical Society National Meeting, San Francisco, CA, March 20-25, **2010** (Invited)

“Initiating and Sustaining Research at Predominantly Undergraduate Institution” Pittsburgh Conference, Orlando, FL, February 28-March 3, **2010** (Invited)

“Collaborative- and Project-based Learning in the Undergraduate Analytical Chemistry Curriculum,” Pittsburgh Conference, Orlando, FL, February 28-March 3, **2010**

“Initiating and Sustaining a Research Program at a Predominantly Undergraduate Institution,” CUR Dialogue, Washington, DC, February 25-27, **2010** (Invited plenary address)

“Writing More Competitive Proposals to the National Science Foundation Research at Undergraduate Institutions Program,” CUR Dialogue, Washington, DC, February 25-27, **2010** (Invited)

“Balancing the Demands: Succeeding at a Faculty Position at a Predominantly Undergraduate Institution,” Vermont Genomics Network Professional Development Seminar, St. Michael’s College, Burlington VT, January 23, **2010** (Invited keynote address).

“Chiral Receptor Compounds as Enantioselective NMR Shift Reagents and Catalysts for Curricular Reform,” Indiana University-Purdue University Indianapolis, November 4, **2009** (Invited).

“The Analytical Sciences Digital Library,” Euroanalysis 2009, Innsbruck, Austria, Sept 6-10, **2009** (Invited keynote address).

“Development of Curricular Material for Chemical Equilibrium and Separation Science,” Analytical Sciences Digital Library Curriculum Development Workshop, University of Kansas, July 19-23, **2009** (Invited).

“Why Should Undergraduates and Undergraduate Institutions be Involved in Transformative Research,” Council on Undergraduate Research Transformative Research Summit, Snowbird, UT, June 10-12, **2009** (Invited opening plenary address).

“Instituting Research at a Predominantly Undergraduate Institution,” Butler University, April 23, **2009** (Invited).

“Writing More Competitive NSF-Research at Undergraduate Institutions Proposals,” CUR Dialogue, Alexandria, VA, April 2-4, **2009**.

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, Salt Lake City, UT, March 22-26, **2009** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, Salt Lake City, UT, March 22-26, **2009** (Invited)

“Collaborative and Project-Based Learning in Analytical Chemistry,” Pittsburgh Conference, Chicago, IL, March 6-11, **2009** (Invited)

“Chiral Receptor Compounds as Enantioselective NMR Shift Reagents and Catalysts for Curricular Reform,” Middlebury College, February 13, **2009** (Invited).

“Succeeding as a Faculty Member at a Primarily Undergraduate Institution,” Indiana University, December 4, **2008** (Invited).

“Chiral Receptor Compounds as Enantioselective NMR Shift Reagents and Catalysts for Curricular Reform,” Brigham Young University, October 16, **2008** (Invited).

“Nefertari, Vishnu, Pencils, and Thalidomide: Stories of Molecular and Other Handedness,” Eastern Oregon University, October 9, **2008** (Invited).

“Writing More Competitive Grant Proposals,” American Chemical Society Petroleum Research Fund Workshop, Washington, DC, August 5-7, **2008**. (Invited)

“Writing More Competitive NSF-Research at Undergraduate Institutions Proposals,” CUR 2008 National Conference, St. Joseph, Minnesota, June 21-24, **2008**.

“Writing More Competitive NSF Course, Curriculum and Laboratory Improvement Proposals,” CUR 2008 National Conference, St. Joseph, Minnesota, June 21-24, **2008**.

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, New Orleans, LA, April 4-9, **2008** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, New Orleans, LA, April 4-9, **2008** (Invited)

“Teaching Pedagogy: The Advantage of Non-traditional Approaches,” Pittsburgh Conference, New Orleans, LA, March 3-7, **2008** (Invited)

“External Grant Support for Instruction and Research,” Hobart and William Smith Colleges, Geneva, NY, February 23, **2008** (Invited).

“Nefertari, Vishnu, Pencils, and Thalidomide: Stories of Molecular and other Handedness”, Birmingham and Southern College, Birmingham, AL, October 4, **2007** (Invited).

“Cyclodextrins, Crown Ethers, and Calix[4]resorcurenes as Enantioselective NMR Shift Reagents, Chirality **2007**: ISCD 19, San Diego, CA, June 8-11 (Invited Keynote Address)

“External Grant Support for Instruction and Research,” Hobart and William Smith Colleges, Geneva, NY, May 19, **2007** (Invited).

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, Chicago, IL, March 24-29, **2007** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, Chicago, IL, March 24-29, **2007** (Invited)

“NSF Research at Undergraduate Institutions Program: Advice on Writing more Competitive Proposals,” Council on Undergraduate Research Dialogue, Arlington, VA, March 8-10, **2007** (Invited)

“Calix[4]resorcarenes, Cyclodextrins, and Crown Ethers as Chiral NMR Shift Reagents,” University of Richmond, Richmond, VA, November 3, **2006** (Invited).

“Inquiry-based Instructional Methods in the Classroom and Laboratory,” Grambling State University, Grambling, LA, April 26, **2006** (Invited).

“Components of a Research-supportive Curriculum,” American Chemical Society National Meeting, Atlanta, GA, March 26-30, **2006** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, Atlanta, GA, March 26-30, **2006** (Invited)

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution?,” American Chemical Society National Meeting, Atlanta, GA, March 26-30, **2006** (Invited)

“Creating Time for Scholarly Work,” Luther College, Decorah, IA, February 14, **2006** (Invited)

“Water-soluble Calix[4]resorcarenes as Enantioselective NMR Shift Reagents for Aromatic Compounds,” International Chirality Symposium, Parma, Italy, September 11-14, **2005**.

“Chiral NMR Shift Reagents – Broader Impacts,” at the Broader Impacts Showcase, American Chemical Society National Meeting, Washington, DC, August 29-September 2, **2005** (Invited)

“Succeeding in a Faculty Position at a Predominantly Undergraduate Institution,” University of Arizona, July 26, **2005** (Invited).

“Succeeding in a Faculty Position at a Predominantly Undergraduate Institution,” University of Massachusetts, Amherst, July 19, **2005** (Invited).

“NSF Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA),” Council on Undergraduate Research Dialogue, Arlington, VA, April 17-19, **2005** (Invited)

“Outcomes of the Undergraduate Research Summit: Supporting Undergraduate Research through Extramural Grants,” Council on Undergraduate Research Dialogue, Arlington, VA, April 17-19, **2005**.

“What is Undergraduate Research and Why do Research at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, San Diego, CA, March 13-17, **2005** (Invited)

“Writing More Competitive Grant Proposals,” American Chemical Society National Meeting, San Diego, CA, March 13-17, **2005** (Invited)

“What do we Need and Hope to Learn Through Assessment Studies of Undergraduate Research,” American Chemical Society National Meeting, San Diego, CA, March 13-17, **2005** (Invited)

“Why Use Cooperative and Problem-based Learning,” Pittsburgh Conference, Orlando, FL, Feb. 28-March 3, **2005** (Invited)

“Undergraduate Research as a Vehicle and Inspiration for Enhanced Student Learning,” Middle Tennessee State University, Murfreesboro, TN, February 1, **2005** (Invited).

“Right-handed Sugar Doughnuts: Nutritional Food for Undergraduates and Their Faculty,” Belmont University, Nashville, TN, January 31, **2005** (Invited – Vaughn Distinguished Scientist Lecture)

“Outcomes of the Undergraduate Research Summit,” Southeast Regional American Chemical Society Meeting, Raleigh, NC, November 10-13, **2004**.

“The Attributes of a General Education in the Sciences,” General Education Science Workshop 2004, Union College, Schenectady, NY, Oct 14-16, **2004** (Featured speaker).

“Outcomes of the Undergraduate Research Summit,” Southwest Regional American Chemical Society Meeting, Fort Worth, TX , September 28-Oct 2, **2004**.

“Outcomes of the Undergraduate Research Summit,” Implications of the NIH Roadmap For Undergraduate Life Sciences Education, Juniata College, Huntingdon, PA, August 9-10, **2004** (Invited).

“Carboxymethylated Cyclodextrins and their Lanthanide Complexes as Chiral NMR Solvating Agents,” Chirality 2004 – International Chirality Symposium, New York City, July 11-14, **2004**.

“Pastoral Visions, Wilderness Dreams,” The McLaughlin Foundation, South Paris, ME, July 8, **2004** (Invited).

“Successful NSF-CCLI and CAREER Proposals: Reviewer’s Perspectives,” CUR 2004 National Conference, La Crosse, WI, June 23-26, **2004**.

“Undergraduate Research in Chemistry Involving Partnerships,” CUR 2004 National Conference, La Crosse, WI, June 23-26, **2004**.

“Outcomes from the Undergraduate Research Summit in Chemistry,” CUR 2004 National Conference, La Crosse, WI, June 23-26, **2004**.

“Curricular Elements that Enhance Undergraduate Research,” CUR 2004 National Conference, La Crosse, WI, June 23-26, **2004**.

“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,” Pacifichem 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**.

CHAired WORKSHOPS

“Writing More Competitive Grant Proposals,” Franklin and Marshall College, May 15-16, **2017** (Invited).

“Grant Writing Workshop,” Penn State Altoona, May 10-11, **2017**.

“Proposal Writing: Beyond the Basics: Research Grants in the Sciences,” CUR Dialogue, Washington, DC, February 18-19, **2017**.

“Proposal Writing: Research and Curriculum Grants,” St. Mary’s University, February 2-3, **2017**.

“Development of Active Learning Materials for the Classroom and Laboratory,” Alcorn State University, November 8-10, **2016**.

“Writing More Competitive Grant Proposals,” Georgia Southern University, November 5, **2016**.

“Chiral Methods and Applications”, Small Molecule and NMR Conference (SMASH 2016), La Jolla, CA, Sept. 11-14, **2016**.

“Active Learning in Analytical Chemistry,” Bloomington, IN, May 23-25, **2016**.

“Proposal Writing: Beyond the Basics: Research Grants in the Sciences,” CUR Dialogue, Washington, DC, February 20-21, **2016**.

“Proposal Writing: Beyond the Basics: Research Grants in the Sciences,” CUR Dialogue, Washington, DC, February 21-22, **2015**.

“Writing More Competitive Grant Proposals,” Radford University, October 31, **2014**.

“Writing More Competitive Grant Proposals,” Adelphi University, September 26, **2014**.

“Active Learning in Analytical Chemistry,” Atlanta, GA, June 26-28, **2014**.

“Development of Active Learning Materials for the Classroom and Laboratory”, Southwestern University, June 8-11, **2014**.

“Writing More Competitive Research Grant Proposals,” Willamette University, June 7, **2014**.

“Proposal Writing: Beyond the Basics: Research Grants in the Sciences,” CUR Dialogue, Washington, DC, February 22-23, **2014**.

“Proposal Writing: Research and Curriculum Grants,” Hobart William Smith Colleges, October 11, **2013**.

“Proposal Writing: Research and Curriculum Grants,” Illinois Wesleyan University, September 14, **2013**.

“Development of Active Learning Materials for the Classroom and Laboratory, Southwestern University, May 12-15, **2013**.

“Proposal Writing: Research and Curricular Grants”, University of Evansville, May 2-3, **2013**.

“Proposal Writing: Research and Curricular Grants”, University of Southern Connecticut, May 2-3, **2013**.

“Proposal Writing: Beyond the Basics: Research and Curriculum Grants in the Sciences,” University of Texas at El Paso, April 13, **2013**.

“Proposal Writing: Beyond the Basics: Research Grants in the Sciences,” CUR Dialogue, Washington, DC, February 23-24, **2013**.

“Proposal Writing: Beyond the Basics: Research Grants in the Sciences,” CUR Dialogue, Washington, DC, February 25-26, **2012**.

“Proposal Writing: Research and Curricular Grants in the Natural and Social Sciences,” Quinnipiac University, April 26, **2011**.

“Proposal Writing: Research and Curricular Grants,” Iona College, April 19, **2011**.

“Proposal Writing: Research and Curricular Grants,” State University of New York, Pottsdam, April, 5, **2011**.

“Proposal Writing: Beyond the Basics: Research Grants in the Sciences,” CUR Dialogue, Washington, DC, February 26-27, **2011**.

“Inquiry-Based Learning,” National Science Foundation CCLI Meeting for PIs, Washington, DC, Jan. 24-25, **2011**.

“Proposal Writing: Beyond the Basics: Research Grants in the Sciences,” CUR Dialogue, Washington, DC, February 27-28, **2010**.

Workshop Leader: “Research Grants in the Sciences,” CUR Dialogue, Alexandria, VA, April 5-6, **2009**.

Workshop Leader: “Writing More Competitive Research and Curriculum Grant Proposals,” Hobart and William Smith Colleges, Geneva, NY, February 23, **2008**.

Workshop Leader: “Writing More Competitive Research and Curriculum Grant Proposals,” Hobart and William Smith Colleges, Geneva, NY, May 19, **2007**.

Workshop Leader: “Problem-Based Learning in Analytical Chemistry,” Pittsburgh Conference, March 12-16, Orlando, FL, **2006**.

Workshop Leader: “Problem-Based Learning in Analytical Chemistry,” Pittsburgh Conference, February 28-March 3, Orlando, FL **2005**.

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

“Active Learning in the Undergraduate Analytical Chemistry Curriculum,” American Chemical Society National Meeting, San Francisco, CA, Apr. 3-6, **2017** (Invited)

“The Role of Research Experiences in the ACS Certified Degree,” American Chemical Society National Meeting, San Francisco, CA, Apr. 3-6, **2017** (Invited)

“ACS Guidelines for Approved Chemistry Programs – The New Macromolecular, Supramolecular, Mesoscale and Nanoscale Requirement, Biennial Conference on Chemistry Education, University of Northern Colorado, July 31-Aug. 4, **2016**.

“Current Issues in Teaching Analytical Chemistry”, Pacifichem, Honolulu, HI, Aug. 16-18, **2015**.

“Promoting Engaged Student Learning Through the ACS Guidelines”, American Chemical Society National Meeting, Boston, MA, Aug. 16-20, **2015**.

“Active Learning in the Undergraduate Analytical Chemistry Curriculum,” American Chemical Society National Meeting, Denver, CO, Mar. 22-26 **2015**.

“Active Learning in the Undergraduate Analytical Chemistry Curriculum,” American Chemical Society National Meeting, San Diego, CA, Mar. 25-28, **2012**.

“Sustaining Research at a Predominately Undergraduate Institution: Faculty, Departmental, and Institutional Strategies for Success.” American Chemical Society National Meeting, Salt Lake City, UT, March 22-26, **2009**.

“Designing a Research-supportive Undergraduate Curriculum,” American Chemical Society National Meeting, Atlanta, GA, March 26-30, **2006**.

“Conducting Research at a Predominantly Undergraduate Institution: Faculty Strategies for Success,,: American Chemical Society National Meeting, Atlanta, GA, March 26-30, **2006**.

“Research at Undergraduate Institutions: Establishing a Departmental Culture of Research,” American Chemical Society National Meeting, San Diego, CA, March 13-17, **2005**.

“Undergraduate Research as a Way to Recruit and Retain Students in Chemistry,” American Chemical Society National Meeting, San Diego, CA, March 13-17, **2005**.

“Starting a Successful Research Program at a Predominantly Undergraduate Institution,” American Chemical Society National Meeting, San Diego, CA, March 13-17, **2005**.

“Outcomes of the Undergraduate Research Summit,” Southeast Regional American Chemical Society Meeting, Raleigh, NC, November 10-13, **2004**.

“Outcomes of the Undergraduate Research Summit,” Southwest Regional American Chemical Society Meeting, Fort Worth, TX , September 28-Oct 2, **2004**.

“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**.

SHORT COURSES

“Chiral NMR Shift Reagents: Mechanism and Use,” Chirality 2012, Fort Worth, Texas, June 10-13, **2012**.

“Seminar on NMR Spectroscopy Methods for Studying Chirality”, Chirality 2008: ISCD 20, Geneva, Switzerland, July 6-9, **2008**.

“Seminar on NMR Spectroscopy Methods for Studying Chirality”, Chirality 2007: ISCD 19, San Diego, CA, June 8-11, **2007**.