

## CURRICULUM VITA    Scott E. McKay, Ph.D.

### 1. PERSONAL DATA

University of Central Missouri  
W.C. Morris 419  
Warrensburg, MO 64093  
Wk. (660)-543-4949  
mckay@ucmo.edu  
Dept. Web Page <http://www.ucmo.edu/chemphys/about/facstaff/mckay.cfm>  
CAFES Web Site [www.CAFESatUCM.com](http://www.CAFESatUCM.com)

### 2. EDUCATION

<b>B.S.</b>	Eastern Kentucky University, Richmond,	KY	Geology	8/87
<b>B.A.</b>	Eastern Kentucky University, Richmond,	KY	Chemistry	8/87
<b>M.S.</b>	Eastern Kentucky University, Richmond,	KY	Chemistry	8/89
<b>Ph.D.</b>	Florida Institute of Technology, Melbourne,	FL	Chemistry	12/95

### 3. PROFESSIONAL EXPERIENCE

**Department Chair: Biochemistry, Chemistry & Physics**  
University of Central Missouri, Warrensburg, MO (07/01/09-present)

**Director: Center for Alternative Fuels and Environmental Systems (CAFES)**  
University of Central Missouri, Warrensburg, MO (11/20/08-present)

**Professor of Chemistry**  
University of Central Missouri, Warrensburg, MO (8/15/07-present)

**Associate Professor of Chemistry**  
Central Missouri State University, Warrensburg, MO (8/22/02-8/15/07)

**Assistant Professor of Chemistry**  
Central Missouri State University, Warrensburg, MO (8/22/99-8/21/2002)

**Assistant Professor of Chemistry**  
Lincoln Memorial University, Harrogate, TN (8/15/98 – 7/22/99)

**Adjunct Faculty**  
North Lake College, Irving, TX (1/13/97-5/31/97)

**Teaching Assistant**  
FIT - 9/22/90 - 12/16/95 organic Labs (FIT)

**Teaching Assistant**  
EKU - 9/01/87 - 8/03/89 Freshman Labs (EKU), Biochemistry Labs (EKU)

**Courses Taught:**  
General Chemistry I  
General Chemistry II  
Introduction to the Sciences: Chemistry  
General/Organic/Biochemistry for non-majors  
Biochemistry  
Organic Chemistry I  
Organic Chemistry II  
Modern Organic Chemistry  
Advanced Organic Chemistry  
Computational Organic Chemistry  
Chemical Communication Skills

### 4. SCHOLARSHIPS AND FELLOWSHIPS

### **Postdoctoral Associate**

University of Alabama, Tuscaloosa, AL (Hydrogen bond and weak intermolecular interactions; x-ray crystallography, 97-98)

### **Visiting Scientist**

Lehigh University, Bethlehem, PA (Area: Process and development of commercial diazoaromatics, 1996)

## **5. RESEARCH INTERESTS**

Synthetic Photochemistry, Theoretical Chemistry, Organometallic Chemistry, Physical Organic Chemistry, Crystal Engineering, Alternative Fuel Research

## **6. GRANTS *some 39 funded & pending grants; 84 grants have been applied for between 1998-2009.***

*Funded Grants most indicative of primary research areas*

Renovation of Existing Research Space Supporting Multiple Chemical Disciplines and Alternative Energy Research in a Predominantly Undergraduate Institution, McKay, Geme, Pumure, Stalick, Holland, NSF-ARI-2, **\$484,097**, 8/24/09, preliminarily funded.

“Development of an alternative fuel stream for forward operating bases”, Harvey Buhr (Hi-Tec) & Scott McKay (UCM), Leonard Wood Institute (LWI); submitted LWI-Army, April 22, 2008, funded **\$788,600**

“Converting plastics, tires waste, oils and lubricants into fuels suitable for use in diesel generators found on forward operating bases”, Harvey Buhr (Hi-Tec) & Scott McKay (UCM), October 3, 2007. funded LWI-Army **\$498,000**

*Evaluating the Nature of C-H...O Hydrogen Bonds and Donor-Acceptor Interactions in Heterocyclic-N-oxides.* Scott E. McKay, Petroleum Research Foundation Grant, June 27, 2002 funded. **\$35,000**

*Initiation and Integration of Teaching and Research at a Traditionally Undergraduate Regional University,* Scott E. McKay, Passer Grant (*American Chemical Society*), January 28<sup>th</sup>, 2000. Funded **\$1000**

*Other funded or pending Grants*

Acquisition of an 400 MHZ NMR Spectrometer to support Chemical, Interdisciplinary, Collaborative and Undergraduate Research and Training, McKay, Geme, Pumure, Stalick, Holland, BooneNSF-MRI-2, \$339,000, 4/22/10, pending.

Kraig Wheeler (Eastern Illinois University PI)- Senior Personnel Scott McKay NSF-MRI: (\$351,000)\_Acquisition of a Single Crystal X-ray Diffractometer. 6/15/07, funded.

Scott McKay, CST Creative Assistance, Construction of an Alternative Fuel bioreactor, Funded \$3,000.

Cambridge Structural Database (CSD) System, PDA, UCM, Warrensburg, MO 64093, November 20, 2008, funded \$550.

“Calorimetric Determination of Grasses and Estimation of Biomass Using Geotechniques: Maximizing Biomass to Fuel Conversion in Central Missouri”, Scott McKay, and Keshav Bhattarai, submitted Show-Me-Energy, April 1, 2008. \$9750.

“Methodological Sulfonation Studies Toward Polyetherether ketone Monomers”, Scott McKay, submitted 4/07/08, \$4980, funded.

Cambridge Structural Database (CSD) System, PDA, UCM, Warrensburg, MO 64093, November 15, 2007, funded

\$550.

*"Boron and Biology"*, *The Greer Oppenheimer Grants*, UCM, Warrensburg, MO 64093, October 10, 2007, \$ 355 funded for \$190.

*"Boron and Biology"*, *Sigma Xi*, UCM-chapter, Warrensburg, MO 64093, October 10, 2007, \$100, funded.

"Converting plastics, tires waste, oils and lubricants into fuels suitable for use in diesel generators found on forward operating bases", Harvey Buhr (Hi-Tec) & Scott McKay (UCM), Leonard Wood Institute (LWI), October 3, 2007. funded \$498,000.

Orbital Mapping, URC Grant, December 18, 2006, \$2053, funded.

Arts and Sciences Creative/Scholarship Award, Scott E. McKay, Central Missouri State University, Warrensburg, MO 64093, December 2006, funded. \$2500.

CSD, Scott E. McKay, PDA-Grant, Central Missouri State University, Warrensburg, MO 64093, October 6, 2006 \$550 funded.

*"Green Chemistry"*, *The Greer Oppenheimer Grants*, Central Missouri State University, Warrensburg, MO 64093, October 5, 2006 \$ 200 funded.

*"Green Chemistry"*, *The Greer Oppenheimer Grants*, *Sigma Xi*, 2006 \$ 100 funded.

Hamilton Company Chemical Education Grant Program, \$2341, funded on 6/14/2006.

Instructional Research and Development Grant, CTL, CMSU, Warrensburg, MO 64093, February 21, 2006 \$ 3,000 funded.

HPLC, Scott E. McKay, PDA-Grant, Central Missouri State University, Warrensburg, MO 64093, November 15, 2005 \$ 600 funded.

Arts and Sciences Creative/Scholarship Award, Scott E. McKay, Central Missouri State University, Warrensburg, MO 64093, August 2005, funded. \$2500.

*Chromatography*, Scott E. McKay, PDA-Grant, Central Missouri State University, Warrensburg, MO 64093, April 15, 2005 \$ 634 funded.

*Synthesis and X-ray Determination of Aromatic Diazine-N-oxides and Pyridine N-oxide Moieties*, Scott E. McKay, University Research Grant \$5000.00, November 3, 2004, funded.

*Reactions in Inert Atmospheres*, Scott E. McKay, PDA-Grant, Central Missouri State University, Warrensburg, MO 64093, November 1, 2004 \$ 572, funded.

APS Scholars Travel Funds-host, October 1, 2004 \$ 500, funded.

*Crystallography for Organic Chemists: ACS-PRF Summer School*, UCSD, August 2, 2004-August 13, 2004. Travel, room board, meeting, funded est. 5,000.

National Science Foundation - CCLI Adaptation and Implementation Grant: "A computer laboratory to support integration of visualization and computation into the curriculum," Renée Cole PI, Steven Boone, Scott McKay, Somnath Sarkar, Glenn Petrie, Jason Holland, (\$79,020 June 20<sup>th</sup>, 2004 funded.

*Chromatography in Organic Synthesis*, Scott E. McKay, PDA-Grant, Central Missouri State University, Warrensburg, MO 64093, November 1, 2003 \$ 590 funded.

APS Scholars Travel Funds-host, October 1, 2004 \$ 500, funded.

*Continuous Extractive Methods*, Scott E. McKay, PEC-Grant, Central Missouri State University, Warrensburg, MO 64093, November 10, 2002 \$ 547.45 funded.

*Evaluating the Nature of C-H...O Hydrogen Bonds and Donor-Acceptor Interactions in Heterocyclic-N-oxides*. Scott E. McKay, PRF-Grant \$35,000, June 27, 2002 funded.

*High Vacuum Apparatus for the Chemistry Laboratory*, Scott E. McKay, PEC-Grant, Central Missouri State University, Warrensburg, MO 64093, March 19, 2002 \$ 492, funded.

*Efficient Hydrogen Fuel Cells: The Preparation of Aromatic-based Monomers Containing Acidic Groups as Polyelectrolytic Materials (PEM)*. Scott E. McKay, University Research Grant \$4860.00, October 15, 2001, funded.

Central Technology Grant (multimedia), Department of Chemistry and Physics, Central Missouri State University, Warrensburg, MO 64093, October, 15 2001 \$ 7077, funded.

*A Computational and Mechanistic Study: The Role Basicity plays in the Oxygenation of halogenated 1,4-diazines*. Scott E. McKay, NSF- HAMP, outside funds internally funded, August 20, 2001, \$2900, funded

*Convenient Syntheses of Aromatic Diazine-N-oxides and Water Soluble Compounds*, Scott McKay, NSF-HAMP, outside funds internally funded, May 15, 2001, \$ 2400, funded.

*Access to the Cambridge Structural Database*, Scott E. McKay, Professional Development Assistance Grant, April 16, 2001, \$ 420, funded.

Central Technology Grant, Department of Chemistry and Physics, Central Missouri State University, Warrensburg, MO 64093, December 1, 2000 \$ 10,000, funded.

*Required Reference Materials for Chemical Research*, Scott E. McKay, PEC-Grant, Central Missouri State University, Warrensburg, MO 64093, February 25, 2000 \$ 430, funded.

*Initiation and Integration of Teaching and Research at a Traditionally Undergraduate Regional University*, Scott E. McKay, Passer Grant (*American Chemical Society*), Warrensburg, MO 64093, January 28<sup>th</sup>, 2000. \$ 1000, funded.

*Organometallic Molecular Wires*, Scott E. McKay, GEM Award, Central Missouri State University, Warrensburg, MO, November, 2, 1999, \$1000, funded.

*Development of a Computational Organic Chemistry Course*, Scott McKay, PEC-Instructional Development Fund, Central Missouri State University, Warrensburg, MO, October, 18, 1999, \$699.00, funded.

## 7. **PUBLICATIONS**

“Syntheses of Bipyridine-N-oxides and Bipyridine-N,N'-dioxides,” Scott E. McKay, Lincoln W. Maina, Robert W. Lashlee, Kraig A. Wheeler, Alan Brown, *Heterocyclic Communications*, **2009**, 3(15), 181-188.

Navigating the Challenges of Interdisciplinary Research in the Undergraduate Sciences: An Undergraduate Physics Student’s Perspective, Robert W. Lashlee, Scott McKay, *MJUCR*, *In Press*, **2010**.

“Modern Sport and Chemistry: What a Golf Fanatic Should Know,” Scott E. McKay\*, Timothy Robbins, and Renée S. Cole, *J. Chem. Educ.*, **2008**, 85, 1319-1322.

“Developing an Undergraduate Capstone Course in the Chemical Sciences: A Needed Augmentation to the Undergraduate Research Experience,” Scott E. McKay, Renee S. Cole, and Alan B. Brown, *MJUCR*, **2008**, 9, 41-47.

“Providing an Appropriate Research Environment for a Physical Science Department,” McKay\*, S.E.; Lashlee, R.W. *CUR Quarterly Bulletin*, **2007**, 3 (27), 131-134.

“An Undergraduate Interdisciplinary Course in Computational and Theoretical Chemistry: Two Approaches Are Better Than One.” Scott E. McKay\* and Renee S. Cole, CUR Developing and Sustaining a Research - Supportive Curriculum: A Compendium of Successful Practices: publication released on February 21st, **2007** at the National Press Club in Washington, D.C.

“Chemical Separation and Characterization of Compounds In the Organic Laboratory Sequence: An Investigative Exercise” Scott McKay\*, Jason Holland, Ashley Millham, and Deblina Pakhira, *Transactions of Missouri Academy of Science*, **2007**, 40, 67-73.

“2,2':6',2''-Terpyridine 1,1''-dioxide and Tetracyanobenzene ” McKay\*, S.E.; Wheeler, K.A., Holthouse, B. *Zeitschrift für Kristallographie NCS* 221 (**2006**) 91-92.

“A computational study of sulfur bridged cyclooctatetraenophanes: towards the syntheses of polymeric organometallic molecular wires,” McKay\*, S.E.; Lashlee, R.W.; Holthouse, B.A.; Kiprof, P. *J. Mol. Graphics Modell*, **2006**, 4(25), 543-548.

“Fire Accelerants: Determination of Molar Mass and Molecular Formula via Gas Chromatography / Mass Spectrometry in the Freshman Chemistry Laboratory,” McKay\*, S.E.; Lashlee, R.W.; Petrie, G.A. Moody, S.M. *Chem. Educ.* **2006**, 5(11), 317-318.

“A molecular salt of tricyanomethanide anion and a *N,N'*-dianisylphenazinium dication forms extended supramolecular assemblies that consist of unusual methoxy...methoxy and C≡N...N<sup>+</sup> intermolecular contacts,” McKay\*, S.E.; Wheeler, K.A.; Blackstock, S.C., *CrystEngCommun.* , **2006**, 8, 129 - 131.

“Synthesis of a New Sulfonated Proton Exchange Membrane Monomer,” McKay\*, S.E.; Lashlee, R.W.; Kopitzke, R.W. *Heteroatom Chemistry* **2005**, 16, 553-556.

“Navigating the Challenges of Interdisciplinary Research in the Undergraduate Sciences: An Undergraduate Physics Student’s Perspective,” Lashlee, R.W; McKay, S.E. *J. Chem. Educ.* submitted June 2005.

“2,2':6',2''-Terpyridine 1,1''-dioxide dihydrate,” Wheeler, K.A; McKay, S.E.; Lashlee, R. W. III, *Acta. Cryst.* (2005), **E61**, 645-647.

“2,2':6',2''-Terpyridine N,N',N''-trioxide,” McKay\*, S.E.; Wheeler, K.A; Blackstock, S.C., *Acta. Cryst.* (2004), **E60**, 2258-2260.

“Meeting General Chemistry Laboratory Goals at a Comprehensive University with Web Based Tools,” S. E. McKay\*, R. W. Lashlee III, S. R. Boone, *The Chemical Education Journal* (CEJ), Vol. 8, No. 1 (Serial No. 14) 2004.

“Oxidation Methods for Aromatic Diazines. Part II. Chlorinated Pyrazine N-oxides”, McKay\*, S.E , Sooter, J.A., Marshall, T.P., *Heterocyclic Communications*, **2003**, vol 9 no. 3 p. 221-224.

“Modern Sport and Chemistry: What a Chemically Aware Sports Fanatic Should Know”, McKay\*, S.E.; Giffin, G.A.; Boone, S.R.; Cole, R.S.; Kopitzke, R.; *Journal of Chemical Education*, **2002**, 79, 813-819. **Note: Received the cover and the feature molecule.**

“Oxidation Methods for Aromatic Diazines: Substituted Pyrazine-N-oxides, Pyrazine-N,N-dioxides, Chloropyrazine-N-oxides and Terpyridine-1,1'-N,N-Di-oxide”, McKay\*, S. E.; Sooter, J.A.; Blackstock, S.C. *Heterocyclic Communications*, Vol. 7, Issue 4 (**2001**) page no. 307-312.

“An Early Emphasis on Symmetry and a Three-Dimensional Perspective in the Chemistry Curriculum”, McKay\*, S.E.; Boone, S.R. *The Journal of Chemical Education*, **2001**, 78, 1487.

“Material Science: Internet and WebCT Enhanced Laboratory in General Chemistry”, McKay\*, S.E.; Marshall T.P.; Short, M.; Boone, S.R. *The Transactions of The Missouri Academy of Science*, Volume 35, **2001**, pages 39 - 46.

“Organic Crystal Engineering with Heterocyclic N-Oxides. Donor-Acceptor Bonding and CH–O Hydrogen Bonding in a Pyrazinedioxide-Pyromellitic Dianhydride Cocrystal”, Bodige, S.G.; Selby, T.D.; McKay, S.E.; Blackstock, S.C. *Transactions of the American Crystallographic Association*, **1998**, 33, 135-143.

"Heterocyclic N-oxide CH--O Hydrogen Bonding (Part 2)", Bodige, S.G.; Zottola, M.A.; McKay, S.E.; Blackstock, S.C. *Crystal Engineering*, **1998**, 1, 243-253.

"The Structure of Hexamethyl Dewar Benzene, Revisited by *Ab Initio* Theory", Brown, A.B.; Kiprof, P.; McKay, S.E.; I. Beros, I. *Internet J. Chem.* **1998**, 1, 18 URL: <http://www.ijc.com/articles/1998v1/18>.

"An *Ab Initio* Study of Annulation Effects on the Valence Isomerism of Benzene", A.B. Brown, S. E. McKay, and P.Kiprof, *J. Mol. Struct. (Theochem)* **1997**, 419, 185-189.

"Scope and Stereochemistry of [2+2] Photocycloadditions Between Cyclopentenones and 1,2-Dichlorocycloalkenes", Brown, A.B.; McKay, S.E.; Meeroff, D.E., *Synth. Commun.* **1997**, 27, 1989-2011 (1997).

"The Effects of Annulation on Cyclobutadiene Bond Alternation: A Comparison Study of Semi-Empirical and *Ab Initio* Methods", S.E. McKay, A.B. Brown, and P. Kiprof, *J. Mol. Struct. (Theochem)*, 368 (1996) 197-204.

"Dichotomous Reactivity of  $\text{PCl}_5$  and  $\text{PBr}_5$  Toward Cyclic Ketones: A One-Step Preparation of 1,1,2-Trichlorocycloalkanes." *Synth. Commun.* **1995**, 25 (4) 485-501. Brown, A. B.; Chronister, C. W.; Watkins, D. M.; Mazzaccaro, R. J.; Rajski, S. R.; Fountain, M. G.; McKay, S. E.; and Gibson, T. L.

#### **Other Publications:**

##### **Book Chapters:**

Scott E. McKay and Renee S. Cole, “An Undergraduate Interdisciplinary Course in Computational and Theoretical Chemistry: Two Approaches Are Better Than One.” in *Developing and Sustaining a Research-Supportive Curriculum: A Compendium of Successful Practices*; Editors: Kerry Karukstis and Timothy Elgren; Learning through Research Series, Council on Undergraduate Research: Washington, D.C., 2007.

General Chemistry I Laboratory Manual, CMSU, Steven Boone, Jason Holland, Scott McKay, Glenn Petrie, Fall 2004.

Test Bank 2004 Organic Chemistry Structure and Reactivity 5E, Houghton Mifflin Sayhan Ege, Brian P. Coppola, Steven R. Boone and Scott E. McKay.

#### **Invited Speaker or Exhibitor: Energy and CAFES:**

1. Rep. Ike Skelton Procurement Conference, Warrensburg, MO May 29, 2009
2. MOBIO Missouri BioScience Legislative Tour, Warrensburg, MO July 28, 2009
3. Alternative Energy Alliance Meeting, UCM October, 20, 2009
4. Green Energy Expo and for the Roundtable, Ingram’s Magazine, Warrensburg, MO April 19, 2010.
5. MTC Missouri Technology Corporation meeting including Senator Pearce and Representative Hoskins and MTC Board members, Warrensburg, MO May 27, 2010
6. Solar Challenge Innovation/Energy Fair , Jefferson City, MO State Capital, June 22, 2010
7. MO State Fair Energy Day SCOPE for the Annual Science Street Fair at the Fair event, August 14, 2010

H. Papers Presented at Professional Society Meetings:

84. Gini, A., McKay, S.E. Sulfonation Studies of Proton Exchange Membranes, Missouri Academy of Science, April 16<sup>th</sup>, Springfield, MO 2010.
83. Banach, B., Ragon, J., Holcomb, E., McKay, S., Geme, G. Ensuring environmental stability for the production of biomass for alternative fuel through N-P-K determination and monitoring in soil, ACS National meeting in San Francisco, CA March 21-25, 2010.
82. Geme, G., Banach B., Seelenger, R., Short, H. Gant, D, McKay, S. Environmental analysis of switchgrass impact on soil and utilization of biomass, ACS National meeting in San Francisco, CA March 21-25, 2010.
81. Preliminary Studies of Switchgrass Impact on Soil, Jayme Gibson, Brian Banach, Dana Gant, Travis Whisler, Scott McKay, Gija Geme, Fanson Kidwaro, ACS Midwest Regional, Des Moines, Iowa October 20-22, 2009.
80. Reduction of carbon footprint at a Midwest regional university, Christopher Brown, Scott McKay, Patrick Barnett, Gija Geme, Kristopher Beach, Fanson Kidwaro, Wayne Stalick and Keshav Bhattarai, ACS Midwest Regional, Des Moines, Iowa October 20-22, 2009.
79. Utilization of Biomass at UCM, Scott McKay, Gija Geme, Patrick Barnett and Keshav **Bhattarai**, Missouri Energy Summit, Columbia, Missouri, April 22-23, 2009.
78. Modern Sport and Chemistry: What a Golf Fanatic Should Know, Timothy Robbins, Scott E. McKay, and Renée S. Cole, Central Scholar Symposium, Central Scholar Symposium, April 7-8, 2009.
77. Utilization of Biomass at UCM, Scott McKay, Gija Geme, Patrick Barnett and Keshav Bhattarai, Missouri Energy Summit, Columbia, Missouri, April 22-23, 2009.
76. Modern Sport and Chemistry: What a Golf Fanatic Should Know, Timothy Robbins, Scott E. McKay, and Renée S. Cole, ACS National Meeting, Salt Lake City, Utah, March 22-26, 2009.
75. Sulfonation of Proton Exchange Membranes, Lin Liu, Scott McKay, Central Scholar Symposium, April 7-8, 2009.
74. The Synthesis and Structural Characterization of Dipyridyl Compounds: From Literature to Space Group Determination: A Quintessential Undergraduate Project. Scott McKay, Kraig Wheeler, Alan Brown, Lincoln Maina, 2008 CUR National Conference, St. Joseph, Minnesota, June 21-24, 2008.
73. An Undergraduate Interdisciplinary Course in Computational and Theoretical Chemistry: Two Approaches Are Better Than One. Scott E. McKay and Renée S. Cole, , 2008 National CUR Conference St. Joseph, Minnesota, June 21-24, 2008.
72. "Developing an Undergraduate Capstone Course in the Chemical Sciences: A Needed Augmentation to the Undergraduate Research Experience," Scott E. McKay, Renee S. Cole, and Alan Brown, 2008 National CUR Conference St. Joseph, Minnesota, June 21-24, 2008.
71. A molecular salt of tricyanomethanide anion and a N,N'-dianisylphenazinium dication: cooperative affects of methoxy...methoxy and  $C\equiv N\cdots N^+$  intermolecular contacts, Scott McKay, Kraig Wheeler, Silas Blackstock, MWACS, Kansas City, MO, November 7-10, 2007.
70. N-oxidation of 2,4-bipyridine and 4,4-bipyridine via dimethyl dioxirane Lincoln Maina, Scott McKay, Kraig Wheeler, Alan Brown, The 233rd ACS National Meeting, Chicago, IL, March 25-29, 2007.
69. Tricyanomethanide as a new supramolecular synthon, Radha Garlapati, Scott E. McKay, and Kraig Wheeler, 41<sup>st</sup> MidWest American Chemical Society Meeting, Quincy IL, October 25-27 2006.
68. Fire Accelerants: Determination of Molar Mass and Molecular Formula via Gas Chromatography / Mass

- Spectrometry in the Freshman Chemistry Laboratory,” McKay, S.E.; Lashlee, R.W.; Petrie, G.A.; Moody, S.M., 41<sup>st</sup> MidWest American Chemical Society Meeting, Quincy IL, October 25-27 2006.
67. Interactions in the 2,2':6',2"-Terpyridine 1,1"-dioxide and Tetracyanobenzene cocrystal McKay, S.E.; Wheeler, K.A., Holthouse, B. 41<sup>st</sup> MidWest American Chemical Society Meeting, Quincy IL, October 25-27 2006.
66. Chemical Separation and Characterization of Compounds In the Organic Laboratory Sequence: An Investigative Exercise” Scott McKay, Jason Holland, Ashley Millham, and Deblina Pakhira, 41<sup>st</sup> MidWest American Chemical Society Meeting, Quincy IL, October 25-27 2006. accepted.
65. “Comprehensive Regional Universities: In Pursuit of a Research Identity”, Scott E. McKay, CUR 2006 National Meeting, Greencastle, IN June 25, 2006.
64. “Determination of Molar Mass and Molecular Formula via Gas Chromatography / Mass Spectrometry of unknown liquids in the General Chemistry Laboratory,” Scott E. McKay, Robert W. Lashlee III, Glenn A. Petrie, Sariah M. Moody, and Lincoln Maina, Kirksville, MO April 21-22, 2005.
63. “Oxidation Methods for 4,4'-bipyridine and 2,4'-bipyridines, McKay, S.E. and Maina, L.W. Missouri Academy of Science, Kirksville, MO April 21-22, 2005.
62. “A Structural Account of 2,2':6',2"-Terpyridine N,N',N"-trioxide,” Scott E. McKay and Kraig Wheeler, 40<sup>th</sup> ACS MidWest Regional Meeting 2005, Joplin, MO October 26-29, 2005.
61. “Ab Initio MP2 level Study of Annulation Effects on the Valence Isomerism of [6]Paracyclophanes” Paul Kiprof and Alan B. Brown, Scott E. McKay The Tenth Electronic Computational Chemistry Conference, April 2005, Paper #46.
60. “The Characterization of Proton Exchange Membrane Monomers Through the use of NMR,” Robert Lashlee III, Scott McKay, National Undergraduate Argonne Symposium, Argonne, IL November 5-6, 2004.
59. “Synthesis of 2,2':6',2"-Terpyridine-1,1"-Dioxide and X-ray Determination of Terpyridine Dioxide / Tetracyanobenzene Donor-Acceptor Cocrystal, Bryce A. Holthouse,” Scott E. McKay, Robert W. Lashlee III, National Undergraduate Argonne Symposium, Argonne, IL November 5-6, 2004.
58. “Complete Two Dimensional NMR Assignment and Characterization of Sulfonated and Unsulfonated Poly(ether ether ketone) (PEEK) Monomers,” Scott E. McKay, Robert W. Lashlee III, Danielle Moul, Bryce Holthouse, Robert W. Kopitzke, 39<sup>th</sup> ACS MidWest Regional Meeting 2004, Manhattan, KS October 20-22, 2004.
57. “X-ray Crystallography and Crystal Engineering,” Scott E. McKay, University of California-San Diego, August 12<sup>th</sup> 2004.
56. “Finding an Appropriate Research Model for a Physical Science Department,” Scott E. McKay, Robert W. Lashlee III, 2004 National CUR Meeting, La Crosse, WI June 23 – June 26<sup>th</sup>.
55. “The Preparation of PolyEtherEtherKetone (PEEK) Monomers,” S. E. McKay, R. W. Kopitzke, R. W. Lashlee III, 2004 National CUR Meeting, La Crosse, WI June 23 – June 26<sup>th</sup>.
54. “Using electronic technology to better prepare a time-stressed or alternative student population for the general chemistry laboratory,” Scott E. McKay, Steven R. Boone, Robert W. Lashlee III, 18<sup>th</sup> BCCE, Ames, IA (Iowa State University, July 18-22, 2004.
53. “Convenient Syntheses of Substituted Pyrazine N-oxides, Pyrazine N,N'-dioxides, Terpyridine-1,1'-di-N-oxide, and chlorinated Pyrazine N-oxides,” S.E. McKay, T.P. Marshall, J.A. Sooter, R.W. Lashlee III, UK Regional Undergraduate Poster Competition, Lexington, KY April 24<sup>th</sup>, 2004.
52. “Student friendly context modules that may enrich the classroom experience for beginning chemistry students,” Scott



E. McKay, Steven R. Boone, Renee S. Cole, Guinevere A. Giffin, Robert Kopitzke, 227<sup>th</sup> ACS National Meeting, Anaheim, CA March 28 – April 1 2004.

51. “Web based tools in the general chemistry laboratory,” Scott E. McKay, Steven R. Boone, Robert W. Lashlee III, 227<sup>th</sup> ACS National Meeting, Anaheim, CA March 28 – April 1 2004.

50. “Syntheses of Proton Exchange Membrane (PEM) Monomers,” McKay, S.E., Lashlee III, R.W., Kopitzke, R.W. Midwest Regional Meeting American Chemical Society (Columbia, MO November 5-7, 2003).

49. “Syntheses of Proton Exchange Monomers,” Robert Lashlee III, Scott McKay, Central Scholar Symposium, March 3, 2004.

48. “Convenient Syntheses of Substituted Pyrazine N-oxides, Pyrazine N,N'-dioxides, Terpyridine-1,1'-di-N-oxide, and chlorinated Pyrazine N-oxides,” S.E. McKay, T.P. Marshall, J.A. Sooter, S.C. Blackstock, R.W. Lashlee III, HLC Showcase (Warrensburg, MO, March 1, 2004).

47. “Modern Sport and Chemistry: What a Chemically Aware Sports Fanatic Should Know,” McKay, S.E., Giffin, G.A.; Boone, S.R.; Kopitzke, R., HLC Showcase (Warrensburg, MO, March 1, 2004).

46. “Syntheses of Proton Exchange Monomers,” Robert Lashlee III, Scott McKay, National Undergraduate Argonne Symposium, Argonne, IL October 24-25 2003.

45. “Syntheses of Sulfonated PEEK Monomers,” McKay, S.E., Lashlee III, R.W., Kopitzke, R.W. Midwest Regional Meeting American Chemical Society (Lawrence, KS October 23-25, 2002).

44. “Meeting General Chemistry Laboratory Goals With the Rapidly Changing Demographics at a Comprehensive Midwest Regional University,” McKay, S.E. and Boone, S.R., 17<sup>th</sup> Biennial Conference on Chemical Education (Bellingham, WA July 28-August 1, 2002).

43. “Using Student Friendly Context Modules to Enrich the Classroom Experience for Beginning Chemistry Students,” McKay, S.E., Boone, S.R., Giffin, G.A., Cole, S.R. and R.W. Kopitzke, 17<sup>th</sup> Biennial Conference on Chemical Education (Bellingham, WA July 28-August 1, 2002).

42. “The Introduction of Nontraditional Disciplines of Chemistry Into the General Chemistry Curriculum Using Web Based Resources,” McKay, S.E. and S.R. Boone, 17<sup>th</sup> Biennial Conference on Chemical Education (Bellingham, WA July 28-August 1, 2002).

41. “Convenient Syntheses of Substituted Pyrazine-N-oxides, Pyrazine-N,N'-dioxides and Terpyridine-1,1'-di-N-oxide,” McKay, S.E.; Sooter, J.A. and S.C. Blackstock, SIUC Poster Show (Carbondale, IL April 20, 2002).

40. “A Crystallographic Study and Evaluation of Putative Interactions in Pyridine Derivatives,” McKay, S.E.; Marshall, T.P.; Sooter, J.A. and Blackstock, S.C. SIUC Poster Show (Carbondale, IL April 20, 2002).

39. “Ring-size Effects on Valence Isomerism of (1,2)Dewar-Cyclophanes.” Brown, A.B. and McKay, S.E., 223<sup>rd</sup> ACS National Meeting (Orlando, FL April 7-11, 2002).

38. “CH··O Hydrogen Bonds in the Crystal Structure of 2,2':6',2''-Terpyridine Trioxide. McKay, S.E., Sooter, J.A., and Blackstock, S.C., 36<sup>th</sup> Midwest Regional ACS Meeting (Lincoln, NE, October 23-25, 2001).

37. “Using Electronic Forums about Materials Science to Increase the Interactive and Relevant Components of General Chemistry.” McKay, S.E., Marshall, T.P., and Boone, S.R. 36<sup>th</sup> Midwest Regional ACS Meeting (Lincoln, NE, October 23-25, 2001).

36. “An *Ab Initio* Study of Annulation Effects on Valence Isomerism of [6]Paracyclophanes”, Alan B. Brown, A.B., McKay, S.E., Kiprof, P. 37<sup>th</sup> National Organic Symposium (Bozeman, MT, June 10-14, 2001).

35. “Oxidation Methods for Aromatic Diazines: Substituted Pyrazine-N-oxides and Chloropyrazine-N-oxides”, Sooter, J.A. and S.E. McKay. Department of Chemistry, Central Missouri State University. Missouri Academy of Science

(Joplin, MO, April 20-21, 2001).

34. "Modern Sport and Chemistry: What a Chemically Aware Sports Fanatic Should Know." Giffin, G.A., Marshall, T.P., Boone, S.R. and S.E. McKay. Central Missouri State University. R. Kopitzke. Winona State University. Missouri Academy of Science (Joplin, MO, April 20-21, 2001).

33. "Material Science: Internet and WebCT Enhanced Laboratory in General Chemistry, Short, M., Boone, S.R., Marshall, T.P. and S.E. McKay. Central Missouri State University. Missouri Academy of Science (Joplin, MO, April 20-21, 2001).

32. "The Development of Attractive Methods to Introduce Polymers, Drugs and High Performance Materials to Beginning Chemistry Students", Marshall, T. P.; Giffin, G. A.; Boone, S. R.; McKay, S. E., NCUR 2001 (Lexington, KY 40475, March 15-17, 2001).

31. "Noncovalent Interactions in Terpyridine-N-oxides", Marshall, T. P.; Blackstock, S. C.; McKay, S. E., NCUR 2001 (Lexington, KY 40475, March 15-17, 2001).

30 "Crystal Engineering: CH $\cdots$ O Hydrogen Bonding Interactions in Crystal Engineering", McKay, S. E., American Chemical Society Mo-Kan-Ok section invited speaker, November 14<sup>th</sup>, 2000, Cottey College, Nevada, MO.

29. "Oxidation Methods for Aromatic Diazines: Substituted Pyrazine-N-oxides and Chloropyrazine-N-oxides", McKay, S. E.; Sooter, J. A.; Blackstock, S. C., 35<sup>th</sup> Midwest Regional ACS Meeting (St. Louis, MO, October 25-28, 2000); abstract # 295

28. "Chemistry Curriculum: Symmetry Enhanced Chemical Education", Boone, S. R.; McKay, S. E. 35<sup>th</sup> Midwest Regional ACS Meeting (St. Louis, MO, October 25-28, 2000); Abstract # 271

27. "Modern Sport and Chemistry: What a Chemically Aware Sports Fanatic Should Know." Giffin, G. A.; Boone, S. R.; McKay, S. E.; Kopitzke, R. 35<sup>th</sup> Midwest Regional ACS Meeting (St. Louis, MO, October 25-28, 2000); Abstract # 273

26. "An Ab Initio Study of Annulation Effects on the Valence Isomerism of [6]Paracyclophanes", Brown, A.B.; McKay, S.E.; Kiprof, P. 2000 Florida ACS Meeting and Exposition (Orlando, Fla., May 12-13, 2000); Abstract # P28.

25. "Crystal Packing of Heterocyclic N-oxides Mediated by CH $\cdots$ O Intermolecular Interactions, Scott E. McKay, Gwen Giffin, Silas C. Blackstock and Satish G. Bodge, Eight National Conference of the Council on Undergraduate Research, (Wooster, OH, June 22-24, 2000).

24. "Extensive Use of Symmetry in Chemical Education: An Across the Curriculum Approach", Scott E. McKay and Steven R. Boone, 16<sup>th</sup> Biennial Conference on Chemical Education, (Ann Arbor, MI, July 30-August 3, 2000).

23. "Intermolecular Interactions Influence Upon Supramolecular Chemistry", Scott E. McKay, Silas C. Blackstock and Satish G. Bodge, Missouri Academy of Science (Columbia, MO, April 14-15, 2000).

22. "Donor-acceptor and CH $\cdots$ O Hydrogen Bond Interactions in Crystal Engineering, McKay, S.E., Blackstock, S. C., Selby, T. and Bodge, S.G., Missouri Academy of Science (Columbia, MO, April 14-15, 2000).

21. "Symmetry Across the Curriculum", McKay, S.E., and Boone, S.R., Missouri Academy of Science (Columbia, MO, April 14-15, 2000).

20. "Pyrazine-N-monoxides and Chloropyrazine-N-monoxides: Synthesis and Intermolecular Interactions", Scott McKay, Gwen Giffin, and J. Aaron Sooter, Silas C. Blackstock and Satish G. Bodge, University of Kentucky Regional Poster Competition (Lexington, KY, April 8<sup>th</sup>, 2000).

19. "Additivity of Ring-Size Effects on Isomerization Energies of (2,3)(5,6)Dewar-Cyclophanes", A.B. Brown, S.E. McKay and P. Kiprof, 36<sup>th</sup> National Organic Chemistry Symposium (Madison, Wis., June 13-17, 1999).

18. "Weak Intermolecular Interactions in Supramolecular Chemistry", Justice, W.; McKay, S.E., University of Kentucky Regional Undergraduate Chemistry Poster Competition (Lexington, KY, April 24, 1999).

17. "Crystal Engineering in Organic Chemistry", Justice, W.; McKay, S.E. Proceedings of The 6<sup>th</sup> Annual Blueridge

Undergraduate Conference, (Cleveland, TN, March 3, 1999).

16. "Additivity of Ring-Size Effects on Isomerization Energies of (2,3)(5,6)Dewar-Cyclophanes", A.B. Brown, S.E. McKay and P. Kiprof, 1999 Florida ACS Meeting and Exposition (Orlando, Fla., May 7-8, 1999); Abstract #P-18.
15. "Dewar-Phane Nomenclature: A Concise, Unambiguous Formalism for Bridged and Polybridged Dewar Arenes. Alan B. Brown, Scott E. McKay, J. Clayton Baum, Tracy L. Gibson, and Paul Kiprof, 1998 Annual Meeting of the Florida Sections, American Chemical Society (Orlando, Fla., May 8-9, 1998).
14. "The Structure of Hexamethyl Dewar Benzene, Revisited by *Ab Initio* Theory", A.B. Brown, P. Kiprof, S.E. McKay, and I. Beros, 4th Electronic Computational Chemistry Conference (DeKalb, Ill., Nov. 1-30, 1997); Abstract #14.
13. "Preparation of 1,3,5-Tri-*t*-butylbenzene from *t*-Butylbenzene, a Friedel-Crafts Alkylation for the Sophomore Organic Laboratory", F.L. Austin, T.L. Gibson S.E. McKay, A.D. Canastar, R.N. Pellegrin, Jr., A.B. Brown and P. Kiprof 1997 Annual Meeting of the Florida Sections, ACS (Orlando, FL, May 2-3, 1997); Abstract #78.
12. "An *Ab Initio* Study of Annulation Effects on the Valence Isomerism of Benzene", A. B. Brown, S. E. McKay, and P. Kiprof, The Third Electronic Computational Chemistry Conference November 1996, Paper #28.
11. "An *Ab Initio* Study of Annulation Effects on the Valence Isomerism of Benzene", A. B. Brown, S. E. McKay, and P. Kiprof, 212<sup>th</sup> National Meeting, ACS (Orlando, Fla., August 1996); Abstract # ORGN 338.
10. "Scope and Stereochemistry of [2+2] Photocycloadditions Between Cyclopentenones and 1,2-Dichlorocyclohexenes", A. B. Brown and S. E. McKay, 212th National Meeting, ACS (Orlando, Fla., August 1996); Abstract # ORGN 339.
9. "The Effects of Annulation on Cyclobutadiene Bond Alternation: A Comparative Study of Semi-empirical and *Ab Initio* Methods." Scott E. McKay, Paul Kiprof and Alan B. Brown. The Second Electronic Computational Chemistry Conference November 1995, Paper #16.
8. "Synthetic Approaches To Annulated Dewar Benzene Homologues", Scott E. McKay, Alan B. Brown\*, 1995 Annual Meeting of the Florida Sections, ACS (Orlando, Fla., May 5-6, 1995); Abstract #134.
7. "A Theoretical Investigation Of The Valence Isomerism Of [N]Paracyclophanes, And Perturbation Thereof Via 2,3-Annulation, Scott E. McKay, Alan B. Brown, 1995 Annual Meeting of the Florida Sections, ACS (Orlando, Fla., May 5-6, 1995); Abstract #131.
6. "Synthetic Approaches To 1,2-Dihalocycloalkenes", Scott E. McKay, Daniel E. Meeroff, Alan B. Brown, Paul D. Gaska, Jennifer R. Lawrence, Jonathan A. Phillips, Michael S. Morton, and John M. Parant, 1995 Annual Meeting of the Florida Sections, ACS (Orlando, Fla., May 5-6, 1995); Abstract #p-26.
5. "Annulation Effects On Valence Isomerism of [5]Paracyclophane, and [6]Paracyclophane: Theory", A.B. Brown, S.E. McKay, and I. Beros, 1994 Annual Meeting of the Florida Sections, American Chemical Society (Orlando, Fla., May 5-7, 1994); Abstract #153.
4. "Synthetic Approaches To An Annulated [5]Paracyclophanes", S.E. McKay and A.B. Brown, 1994 Annual Meeting of the Florida Sections, American Chemical Society (Orlando, Fla., May 5-7, 1994); Abstract #107.
3. "Annulation Effects On Benzene Valence Isomerism: AM1 Calculations", A.B. Brown, I. Beros, and S.E. McKay, 33rd National Organic Symposium (Bozeman, Mont., June 13-17, 1993); Abstract #A-31.
2. "Approaches To Enone-Cycloalkyne [2+2] Cycloadditions", A.B. Brown and S.E. McKay, 1993 Annual Meeting of the Florida Sections, ACS (Orlando, Fla., May 6-8, 1993); Abstract #18.
1. "The nSiO And dSiO Modes Of Silicates and Aluminosilicates, Scott E. McKay and Howard Powell, 31st Rocky Mountain Conference, Denver, Colo., July 30 - August 4, 1989.

## H. Television Appearances and News Articles:

8/10/2009 9:02 AM

Recycling tires could aid troops

Warrensburg - Turning used tires into fuel could save the lives of U.S. troops, including in Afghanistan and Iraq. ...

8/10/2009 9:01 AM

UCM holds open house at Energy Park and Learning Center facility

Warrensburg - At the Energy Park and Learning Center open house, **Hitec** LLC General Manager Harvey Buhr said he has a long family connection to the University of Central Missouri. ...

7/24/2009 8:59 AM

UCM's Alternative Fuels, Environmental Systems offers students research

Warrensburg - Recognizing the need for the development of alternative energy from sustainable sources, the University of Central Missouri's Center for Alternative Fuels and Environmental Systems brings consulting expertise, product development and opportunities for student research together in one location. ...

Unterrified democrat 8-19-09

Buhr's tire conversion has generated Plenty of interest.

Unterrified Democrat, Sept. 2, 2009

For the Record

**Sedalia Democrat, UCM's CAFES program seeks to extend alternative energy assistance, 6-11, 2010**

<http://www.sedaliademocrat.com/news/span-24605-font-style.html>

## 8. DIRECTED STUDENT RESEARCH

### A. Students Directed by Scott McKay:

Christopher Brown	9/20/09	BS Chemistry
Aviel Gini	9/20/09	BS Chemistry
Tony Cordozo	9/1/08-present	BS Chemistry
Mary Gatheri	9/1/08-present	BS Chemistry
Nathan Glaspie	9/1/08-present	BSED Chemistry
Betsy Vile	9/1/08-present	BS Biology
Lisa Jordan	5/1/08-12/15/08	BS Chemistry

Kayla Higgins	4/01/08-present	BS Chemistry
Timothy Robbins	2/15/08-present	BS Chemistry
Christopher Beach	8/07-present	BS Chemistry
Lin Liu	6/07-present	BS Chemistry
Lynne Boone	2/1-8/07	Pre-Med
John Carderella	2/07-5/07	BA chemistry
Ashley Millham	5/15/5/07	Pre-med
Deblina Pakhira	1/6/06- 5/07	BS Chemistry
Jordan Leininger	8/15/05-8/1/06	Pre-Pharm
Lincoln Maina	8/25/05-5/07	BS Chemistry
Sariah Moody	5/05-12/05	Biology major
Jonathon Robinson	9/04-5/05	Pre-Pharm
Alexandra Hurst	11/04	Chemistry major
Moul, Brenda	1/03-12/04	BA Chemistry
Bryce Holthouse	8/03-8/05	Physics major
Nahlik, Andrew	8/03- 5/05	BS Physics
Robert W. Lashlee III	1/02-8/1/06	BS Physics
Melissa Short	1/01- 8/01	BS Biology
Tadd Marshall	8/00-5/04	BS Chemistry
Joseph Aaron Sooter	5/00- 5/03	BS Chemistry
Guinevere A. Giffin	5/00- 5/02	BS Chemistry
Walt Justice Jr.	11/98-5/99	BS Chemistry
Yolanda Yvonne Janiga	11/98-5/99	BS Chemistry

## 9. PROFESSIONAL SOCIETIES AND HONORARIES

### A. Membership:

Council on Undergraduate Research (CUR)  
American Chemical Society (ACS)  
Sigma Xi  
Missouri Academy of Science  
National Science Teachers Association / Society of College Science Teachers (NSTA/SCST)

### B. Service:

Assistant Editor of the Missouri Academy of Sciences Transactions 2006-2009  
Missouri Journal of Undergraduate Chemical Research co-editor 8/28/99-present  
CUR Faculty Mentor 2006- present  
Missouri NanoAlliance 2006- present  
Reviewer Journal of Molecular Graphics and Modeling 11/1/06-present  
Reviewer Canadian Journal of Chemistry since 6/1/04-present  
Reviewer The Journal of Chemical Education since 11/1/00-present  
Reviewer for The Chemical Educator since 11/1/00-present  
Reviewed "Essential Chemistry", Chang 2<sup>nd</sup> Edition, 1/20/01  
Council on Undergraduate Research (CUR)-UCM **liaison 2002-present**  
Sigma Xi-membership officer (2002-2004)  
Sigma Xi- Treasurer (2006-2008)  
Sigma Xi-President (2008-2009)

### C. Listings in Honorary Publications and Awards:

Dreyfus Teacher-Scholar Award Nominee 2006  
2005-2006 Faculty Research Days Paper Competition, Second Place Award  
Dreyfus Teacher-Scholar Award Nominee 2005  
9<sup>th</sup> Edition of *Who's Who Among America's Teachers*, 2004-2005  
University of California-San Diego, Best Presentation 2004  
Crystallography for Organic Chemists (UCSD), 2004  
8<sup>th</sup> Edition of *Who's Who Among America's Teachers*, 2003-2004

Arts and Sciences Faculty Achievement Award, CMSU, 2002  
ACSSA Teacher of the Year, Honorable Mention, CMSU, 2002  
Lincoln Award Nominee, Most Outstanding Faculty Member, LMU, 1999  
ACS Orlando Section Graduate of The Year, FIT, 1994  
Sigma Xi Student Paper of the Year nomination, FIT, 1994  
Dean's list, EKV, 1987  
Departmental Outstanding Graduate Student, FIT, 1994, FIT

D. Consulting

Hi-Tec, LLC (Bonnets Mill and Jefferson City, MO)  
Universal Asset Management (Harrisonville, MO)  
Mid-America Renewable Energy Solutions (Lone Jack, MO)  
Pave Guard LLC (Lee's summit)  
Institute for Entrepreneurial Studies & Development (Warrensburg, MO)  
Show-Me Energy (Centerview, MO)  
D & Y Laboratory (Holden, MO)  
Ameret, LLC (Lenexa, KS)  
Watkins Products Co., Extraction 11/01/09-present  
Reviewed "Chemistry", Chang 9<sup>th</sup> Edition, 3/15/06  
Test Bank 2003 for Organic Chemistry 5E, Scott E. McKay, Steven R. Boone, and Sayhan Ege, Houghton Mifflin  
Reviewed "Essential Chemistry", Chang 2<sup>nd</sup> Edition, 1/20/01

**10. UNIVERSITY SERVICE University/College/Departmental Services**

A. University and College Committees:

Faculty Load Committee 10-present  
Academic Council 09-present  
University Research Council 00-02  
Human Subjects committee 02-04  
College of A&S: P & T Policy and Development Committee 04-05  
Greer-Oppenheimer Committee college (chair 04-05) 03-05  
Faculty Salary and Fringe Benefits Committee 05-07  
Human Subjects 06-present  
Human Subjects Chair 07-08.

B. Chemistry Department Committees:

Awards Committee 1999- 2008  
Colloquium and Seminar Planning Committee: Chair 1999- present  
Department Web page developer 2000- present  
Department Enhancement Committee 2000-present  
Department Promotion and Tenure committee (chairman) 2004-present  
Chair Search Committee 2003-2004  
HPLC Acquisition Committee 01/05-11/05  
Biochemists Search Committee  
Analytical Search Committee 2005 and 2006  
Promotion Committee  
Tenure Committee  
WCM Morris Renovation Committee 05-07  
Department P&T guideline committee ad hoc 05-06  
Department Student evaluation and Annual Report guideline Committee ad hoc  
Department Recruitment and Retention Committee 06-present  
Graduate Coordinator 07-present

C. Student Activities:

Faculty advisor to B.A. program	1999-present
Faculty advisor to pre-professional studies	1999-present
Faculty advisor to BS Forensic Chemistry	2008-present
ACS-Student Affiliates faculty advisor	1999-2003
Science Olympiad (Judge) annual	1999-present
Science Day (Judge) annual	1999-present
Science Day coordinator	2008-present
Faculty Work Load committee	2010-present
PCOS commission	2010-present
Earth Day committee	2010-present

D. other

Nominated to be a member of the Energy Efficiency and Renewable Energy Advisory Committee (ERAC) which advises the US Secretary of Energy. July 2010.