

WILLIAM F. WACHOLTZ

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EDUCATIONAL EXPERIENCE

1982-1987 Ph.D., Physical Inorganic Chemistry, Tulane University
1979-1982 B.S., Inorganic Chemistry, University of Washington

PROFESSIONAL EXPERIENCE

2008-2013 Co-Chair, Department of Chemistry, University of Wisconsin Oshkosh
2007-2009 President, Faculty Senate, University of Wisconsin Oshkosh
2004-2005 Sabbatical, University of New Mexico (Dr. J. Brozik)
2008-Pres. Distinguished Professor of Chemistry, University of Wisconsin Oshkosh
1999-2006 Professor of Chemistry, University of Wisconsin Oshkosh
1995-1999 Associate Professor, University of Wisconsin Oshkosh
1989-1995 Assistant Professor, University of Wisconsin Oshkosh
1987-1989 NSF Teaching Postdoctoral Fellow, Washington State University

AWARDS & HONORS

2016 University of Wisconsin Oshkosh Faculty Mentor Award
2010 Barbara G. Sniffen Faculty Governance Service Award, University of Wisconsin Oshkosh
2004 Distinguished Teaching Award, University of Wisconsin Oshkosh
2003 Commencement Address: 129th Spring Commencement, University of Wisconsin Oshkosh
2000 Curricular Innovation Award, University of Wisconsin Oshkosh (Co-Winner: C. Gibson)
1992 Regents Teaching Excellence Award, University of Wisconsin Oshkosh

PEER-REVIEWED PUBLICATIONS (undergraduate co-authors in bold)

1. Wacholtz, W. F.; Auerbach, R. A.; Schmehl, R. H.; Ollino, M. A.; Cherry, W. R. "Correlation of Ligand Field Excited State Energies with Ligand Field Strength in (Polypyridine) Ruthenium(II) Complexes", *Inorg. Chem.* **1985**, 24, 1758-60.
2. Wacholtz, W. F.; Auerbach, R. A.; Schmehl, R. H. "Independent Control of Charge Transfer and Metal Centered Excited States in Mixed Ligand Polypyridine Ruthenium(II) Complexes via Specific Ligand Design", *Inorg. Chem.* **1986**, 25, 227-34.
3. Schmehl, R. H.; Auerbach, R. A.; Wacholtz, W. F.; Elliott, C. M.; Freitag, R. A.; Merkert, J. W. "Formation and Photophysical Properties of Tetranuclear Bipyridyl Complexes of the Type $\{[(bpy)_2Ru(L-L)]_3Fe\}$ ", *Inorg. Chem.* **1986**, 25, 2440-45.
4. Valencia, S.; Schmehl, R. H.; Wacholtz, W. F.; Myers, B. "Absorption and Emission Spectra of Fluorescein in Skin", *Plastic and Reconstructive Surgery* **1987**, 4, 667-69.
5. Wacholtz, W. F.; Auerbach, R. A.; Schmehl, R. H. "Preparation, Characterization, and Photophysical Properties of Covalently Linked Ruthenium Bipyridyl Complexes", *Inorg. Chem.* **1987**, 26, 2989-94.
6. Schmehl, R. H.; Auerbach, R. A.; Wacholtz, W. F. "Intramolecular Energy Transfer in the Covalently Linked Dimeric Complex $[(bpy)_2Ru(b-b)Ru(biq)_2]^{4+}$ ", *J. Phys. Chem.* **1988**, 92, 6202-06.

7. Jordan, K. J.; Wacholtz, W. F.; Crosby, G. A. "Structural Dependence of the Luminescence from Bis(substituted-benzenethiol)-(2,9-dimethyl-1,10-phenanthroline) Zinc(II) Complexes", *Inorg. Chem.* **1991**, *30*, 4588-4593.
8. Wacholtz, W. F.; Shaw, J. R.; **Fischer, S. A.**; Arnold, M. R.; Auerbach, R.A.; Schmehl, R. H. "Photosensitized Reduction of Alkyl and Aryl Halides Using Ru(II) Diimine Complexes: Inner- and Outer-Sphere Approaches", in *Photosensitive Metal-Organic Systems*, Kutal, C. and Serpone, N. Eds.; American Chemical Society *Advances in Chemistry Series* No. 238; American Chemical Society: Washington D.C., **1993**; Chapter 6.
9. Timmers, F.; Wacholtz, W. F. "An Advanced Inorganic Laboratory Experiment Using Synthesis and Reactivity of Cycloheptatriene Molybdenum Complex", *J. Chem. Ed.*, **1994**, *71*, 987-990.
10. Halvorsen, K.; Crosby, G. A.; Wacholtz, W. F. "Synthesis and Structural Determinations of Zinc(II) Complexes Containing Dithiol and N,N-Heterocyclic Ligands", *Inorg. Chim. Acta.*, **1995**, *228*, 81-88.
11. **Gronlund, P. J.**; Burt, J. A.; Wacholtz, W. F. "Synthesis and Characterization of Luminescent Mixed Ligand Zinc (II) Complexes Containing A Novel Dithiol Ligand", *Inorg. Chim. Acta.*, **1995**, *234*, 13-18.
12. **Gronlund, P. J.**; Mague, J. T.; Wacholtz, W. F. "Structural Characterization of a Mixed Ligand Zinc (II) Complex Containing A Bridging Dithiolate Ligand", *Acta. Cryst. Sec. C*, **1995**, *C51*, 1540-1543.
13. Shaw, J. R.; Sadler, G. S.; Wacholtz, W. F.; Ryu, C. K., Schmehl, R. H. "Toward the Development of Supramolecular Metal Complex Light Harvesting Arrays: Factors Affecting Photoinduced Energy Transfer in Bimetallic Complexes", *New J. Chem.*, **1996**, *20*, 749-758.
14. Fister, J. C.; **Rank, D. L.**; Wacholtz, W. F.; Harris, J. M. "Molecular Photophysics and Dynamics of Acridine Yellow Studied by Phosphorescence and Delayed Fluorescence" *J. Chem. Ed.*, **1997**, *74(10)*, 1208-1212.
15. **Vang, S.**; Berge, D. G.; Wacholtz, W. F.; Mague, J. T. "Structural Characterization of Substituted Thiophenylaldehyde Quinolyldrazones", *Acta. Cryst. Sec. C*, **1997**, *C53*, 973-979.
16. Wacholtz, W. F.; Mague, J. T. "Bis(benzenethiolato-S)(2,9-dimethyl-1,10-phenanthroline-*N,N'*)cadmium(II)," *Acta. Cryst. Sec. C.*, **2001**, *C57*, 1400-1402.
17. **Lowther, M. D.**; Wacholtz, W. F.; Mague, J. T. "Synthesis and Structural Characterization of a Luminescent Five-Coordinate Cadmium(II) Complex Containing a Bridging Dithiolate Ligand," *J. Chem. Cryst.*, **2001**, *31*, 295-300.
18. Rozak, P. R.; Seiser, R. M.; Wacholtz, W. F.; Wise, R. R. "Rapid, Reversible Alterations in Spinach Thylakoid Appression Upon Changes in Light Intensity," *Plant, Cell & Environment*, **2002**, *25*, 421-429.
19. **Hatch, D. M.**; Wacholtz, W. F.; Mague, J. T. "A Heteroleptic Five-Coordinate Zinc(II) Complex Containing a Non-motionally Restricted N,N-Heterocyclic Ligand," *Acta. Cryst. Sec. C.*, **2003**, *C59*, 452-453.
20. Schrader, S. M.; Wise, R. R.; Wacholtz, W. F.; Ort, D. R.; Sharkey, D. T. "Thylakoid Membrane Responses to Moderately High Leaf Temperature in Pima Cotton," *Plant, Cell & Environment*, **2004**, *27(6)*, 725-735.
21. **Dodge, M. W.**; Wacholtz, W. F.; Mague, J. T. "Structural Characterization and Excited State Properties of Luminescent *tris*-(μ -3-methyl-5-trifluoromethylpyrazolato)trigold(I)," *J. Chem. Cryst.*, **2005**, *35(1)*, 5-12.
22. **Hatch, D. M.**; Wacholtz, W. F.; Mague, J. T. "Structural Characterization and Photophysical Properties of a Luminescent Trinuclear Zinc(II) Complex Exhibiting Multiple Coordination Geometries," *J. Chem. Cryst.*, **2005**, *35(4)*, 327-338.

23. Wenzel, C. G.; Wacholtz, W. F.; Janssen, D. A.; Bengtson, B. P. "Weight Measurement and Volumetric Displacement of Breast Implants and Tissue Expanders: Why Port and Shell Volume Matter in Breast Reconstruction, Augmentation, and Revision", *Clinics in Plastic Surgery*; Clinics Review Articles; Elsevier, **2015**, 42(4), 481-491.
24. Kedrowski, B. L.; Wacholtz, W. F. "Thematic Use of Ribavirin as an Example to Illustrate NMR Principles and Techniques" In *NMR Spectroscopy in the Undergraduate Curriculum, Volume 3*; ACS Symposium Series; American Chemical Society: Washington, DC, **2016**, hardcover book chapter in press, published online at <http://pubs.acs.org/doi/abs/10.1021/bk-2016-1225.ch002>.
25. **Schoechert, H. R.; Klein, I. M.; Kraft, S. J.**; Cunningham, K. L. H.; Mague, J. T.; Wacholtz, W. F. "Synthesis, Structural Characterization and Luminescent Behavior of Heteroleptic Zinc(II) Complexes Employing Novel Asymmetric *N,N*-Heterocyclic Ligands," *Inorg. Chim. Acta.*, re-submission of manuscript in final preparation (draft available upon request).

SELECT RECENT PRESENTATIONS (undergraduate co-authors in bold)

Schoechert, H. R.; Klein, I. M.; Kraft, S. J.; Cunningham, K. L. H.; Mague, J. T.; Wacholtz, W. F. "Synthesis, Structural Characterization and Luminescent Behavior of s20 Heteroleptic Zinc(II) Complexes Employing Novel Asymmetric *N,N*-Heterocyclic Ligands," 251st National ACS meeting, San Diego, LA (INOR 813, March 13-17, 2016).

Wacholtz, W. F.; Kedrowski, B. L. "Thematic Use of Ribavirin as an Example to Illustrate NMR Principles and Techniques", 2014 Biennial Conference on Chemical Education, Allendale, MI, (BCCE P660, August 5, 2014).

Kedrowski, B. L.; Wacholtz, W. F. "Thematic Use of Ribavirin as an Example to Illustrate NMR Principles and Techniques", NMR Spectroscopy in the Undergraduate Curriculum Symposium, 245th National ACS meeting, New Orleans, LA (CHED 57, April 2013).

Wacholtz, W. F.; Kedrowski, B. L. "Development of an Advanced NMR-Centered Undergraduate Interpretive Spectroscopy Course", 245th National ACS meeting, New Orleans, LA (CHED 146, April 2013).

Dickinson, D.; Wacholtz, W. F.; Helling, M.; Hoberg, J. "Synthesis of Bis-2,2'-bipyridine Scaffolds for Rhenium Complexation and Hydrogen Production", Celebration of Scholarship, UW Oshkosh, April 2011 (P18).

Dickinson, D.; Wacholtz, W. F. "Tiflation reactions of 1,4,5,8,9,12-Hexaazatriphenylene (HAT) Rhenium Chloride Complexes", Honor's Thesis Symposium (Part II), UW Oshkosh, May 2011.

Krug, A. M.; Wacholtz, W. F. "Synthesis and Characterization of a Novel Thiophene Ligand and Its Incorporation in Low Dimensional Platinum(II) Complexes", 35th Annual UW System Chemistry Faculties Meeting, University of Wisconsin Eau Claire, October, 2008.

Wacholtz, W. F. "Luminescence: The Emissive Process and How Light Interacts with Matter", Annual Rock and Mineral Exposition, Oshkosh, WI, September 2008.

Wacholtz, W. F.; . "Structural and Photophysical Properties of Unusual Electronically Communicating Low Dimensional Materials", Invited Sigma Xi presentation, University of Wisconsin Oshkosh, April, 2007.

Krug, A. M.; Wacholtz, W. F. "Synthesis and Characterization of a Novel Thiophene Ligand and Its Incorporation in Low Dimensional Platinum(II) Complexes", 14th Annual Celebration of Scholarship Event, UW Oshkosh, April, 2007, P15 (**winner of the Deans' Outstanding Undergraduate Research Award**).

Davis, R. W.; Brozik, J. A.; **Richards, A. L.**; Wacholtz, W. F.; . "Investigations of Columnar Photomechanically Active Rhodium(I) Complexes", 14th Annual Celebration of Scholarship Event, UW Oshkosh, April 26, 2007, P17.

Davis, R. W.; Brozik, J. A.; **Richards, A. L.**; Wacholtz, W. F.; . “Investigations of Columnar Photomechanically Active Rhodium(I) Complexes”, 33rd Annual UW System Chemistry Faculties Meeting, University of Wisconsin Oshkosh, October, 2006.

Wacholtz, W. F. “Investigations of Unusual Electronically Communicating Low Dimensional Materials”, UW Oshkosh Department of Chemistry Seminar, November, 2005.

Wacholtz, W. F. “Synthesis, Theoretical Modelling, and Photophysical Investigations of d⁸ Square Planar Complexes”, University of New Mexico Chemistry Department Seminar, June, 2005.

Emmert, L. A.; Choi, W.; Meyer, L. A.; Wacholtz, W. F.; Brozik, J. A. “Time-Resolved FTIR Spectroscopy and the Localization of Long-Lived Excited States”, Chemistry Department Research Poster Session: Physical Division, University of New Mexico, November, 2004.

RECENT GRANT ACTIVITY

2016 NSF-MRI: Acquisition of a Nuclear Magnetic Resonance Spectrometer, NSF-MRI, (Co-authors: B. Kedrowski, S. Lense, \$355,244-funded).

2009 NSF-CRIF: Acquisition of Two Cyber-Enabled Gas Chromatography-Mass Spectrometer Systems, NSF-CHE:Chemical Instrumentation, (Co-authors: K. Crawford, B. Kedrowski, \$258,422-denied).

STTR Phase I: Multifunctional Quantum Dot Phosphors, NSF-IIP-STTR Phase I Program, (Co-author: C. Gibson, \$149,148-denied).

Novel Direct-White Quantum Dot Phosphors for Solid State Lighting, DOE/Office of Science Program: Basic Energy Sciences (Co-author: C. Gibson, denied)

2007 “Nanophase Phosphors with Potential Use in Solid-State Lighting (SSL) Devices”, UW System Applied Research Grant (I am named as “OTHER INVESTIGATORS”, \$113,040 funded).

“An Excited State IR Instrument for Charge Transfer Investigations of Photomechanically Active Organometallic Complexes”, NSF-MRI (\$100,300-denied).

2006 “Synthesis of Novel Diethynyl Bridging Ligands and Their Use in Square Planar Platinum(II) Complexes”, Faculty/Undergraduate Collaboration Grant Program, UW Oshkosh, (Co-Author: C. Wentzel-\$3,000-denied).

2005 “Multi-Use System for Flash Photolysis and Raman Investigations”, National Science Foundation (NSF): CHE-Major Research Instrumentation (Co-Author: J. Gutow-\$354,456-denied).

2004 “Collaborative Research: Center for Science Education”, National Science Foundation (NSF): CHE-Special Projects: Chemistry Education (Co-authors M.R. Ondrias, J. A. Brozik, D. G. Evans, D. J. Keller, R. K. Watt [UNM], M.M. Richter [SMSU], D. Striplin [Davidson], and J. W. Kenney [Concordia, Irvine]- \$2.7 million-denied).

“Multi-Use System for Flash Photolysis and Raman Investigations”, National Science Foundation (NSF): CHE-Major Research Instrumentation (Co-Author: J. Gutow-\$336,563-denied).

2003 “Investigations of Columnar and Laminar Gold(I) and Photomechanically Active Rhodium(I) Complexes”, Faculty Development Program: Sabbatical Component, UW Oshkosh (Approved 1 year)

COURSES TAUGHT AT UW OSHKOSH

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| 1.General Chemistry I (CHEM 105): | This is a first year chemistry course for pre-professional students with lecture, laboratory and discussion components. |
| 2.General Chemistry II (CHEM 106): | This is a first year chemistry course for pre-professional students with lecture, laboratory and discussion components. |
| 3.Organometallics (CHEM 360): | This is an upper-level elective course which I developed and is taught as a special topics course for chemistry majors with a recently added laboratory component. |
| 4.Interpretive Spectroscopy (CHEM 435): | This is an upper-level elective laboratory course which I helped develop and recently enhanced. It has both a lecture and laboratory component. |
| 5.Independent Study (CHEM 246 or 446): | These courses are elective courses that involve faculty supervised collaborative laboratory research. |
| 6.Inorganic Chemistry (CHEM 470): | This is an upper-level core course for the chemistry major. This course has both a lecture and an advanced laboratory component. |
| 7.Chemistry Seminar (CHEM 490): | A seminar course for senior chemistry majors. |

TEACHING INNOVATIONS AND ENHANCEMENTS

- Developed a set of Molecular Model kits based on the Darling Molecular Vision Models™ for both the lower and upper-level chemistry courses with which I have been involved.
- Employed peer-learning approaches on conceptual “real-world” problems in the general chemistry discussion sections enhancing communication and problem-solving skills.
- Introduced student-centered discovery based project style laboratory exercises into the first year general chemistry laboratory sections (resulting in the 2000 COLS Curriculum Innovation Award).
- Augmented the upper-level Interpretive Spectroscopy laboratory with additional experiments which force the students to tackle more difficult spectroscopic identification problems and present their results in a professional meeting format.
- In collaboration with Dr. B. Kedrowski, enhanced the upper-level Interpretive Spectroscopy laboratory by developing a set of NMR-centric laboratory experiments focusing on all of the many collection and analysis capabilities of a modern FT-NMR instrument.
- Developed a new course with laboratory under our special topics offerings (CHEM 360: Organometallics) that examines the unique and versatile chemistry of organometallic systems.
- Introduced real-world project based laboratory exercises into the advanced laboratory component of the Inorganic Chemistry course (CHEM 470).

SERVICE

1. **Department:**
 - a. Co-chair of the Department of Chemistry
 1. Math/Science Division Representative
 2. L&S Council Member
 - b. Budget and Permanent Property, chair & member
 - c. Recruitment Committee (5), chair & member
 - d. Personnel Committee, chair & member
 - e. Social Committee, chair & member
 - f. Space Utilization Committee, member
 - g. Chemistry Majors advisor
2. **College of L & S:**
 - a. Co-chair of the Department of Chemistry
 1. Math/Science Division Representative
 2. L&S Council Member
 - b. CAPP Liaison and Department representative for CAPP Chemistry (CHEM 105/106) for 20 years.
 - c. COLS Promotion Committee, member
 - d. COLS Student Academic Committee, chair & member
 - e. COLS Faculty mentor for six probationary science faculty through the University Induction/Mentoring program.
3. **University:**
 - a. Faculty Senate, member for 15 years
 1. Faculty Senate President, 2007-2009.
 2. Faculty Senate Executive Committee, member (11 years).
 3. Faculty Senate Hearing Committee, chair (6 years).
 4. Faculty Senate Elections Committee, member & chair (10 years).
 - b. U-Plan Committee, member
 - c. Provost Administrative Staff, Faculty Senate Representative
 - d. Associate Provost Handbook Council, Faculty Senate Representative
 - e. Faculty Representative for AAC& U Conference (2009)
 - f. Co-Faculty Representative to the UW System for UW Oshkosh Faculty Senate
 - g. Liberal Education Reform Team (LERT)
 - h. Faculty Equity Reform Committee
 - i. Provost Evaluation Summit
 - j. The *ad hoc* Personnel Rules Working Group
 - k. Emergency Procedures & Communication Committee, Faculty Senate Representative
 - l. Textbook Policy Review Committee, Faculty Senate Representative
 - m. AODA Advisory Committee, Faculty Senate Representative
 - n. UW Oshkosh Endowed Chair Selection Committee, member
 - o. Restructuring Committee, member & chair
 - p. Student Non-Academic Misconduct Hearing Committee, member & chair.
 - q. University Budget Development Committee (UBDC)
4. **Extra-Institutional:**
 - a. President of UW Oshkosh Chapter of Sigma Xi (2002-2003)
 - b. Presided at presentation sessions at American Chemical Society (ACS) meetings:
 1. 25th Great Lakes regional ACS meeting
 2. 47th Northwest regional ACS meeting
 - c. Peer reviewer for numerous professional journals and granting agencies
 - d. Science Olympics Volunteer and judge.
 - e. Science Fair Judge