

Thomas B. Rauchfuss

Birthdate:

September 11, 1949

Degrees and Training:

Research Fellow, Australian National University, with D. A. Buckingham, 1976-77

Ph.D. Chemistry, Washington State University, with D. M. Roundhill, 1971-76

B.S. Chemistry, University of Puget Sound, 1971

Appointments at UIUC:

Program Officer (SYN&CAT in CHE), National Science Foundation, 2018-2020

Research Professor, UIUC 2015-

Professor of Chemistry, UIUC, 1987-2015

Director, School of Chemical Sciences, 1999-2006

Visiting Assist., Assist., Assoc. Professor of Chemistry, UIUC 1978-87

Visiting Professorships:

Technische Universität Karlsruhe, 1993, 1999

Université Louis Pasteur, Strasbourg, 1991

University of Auckland, 1984

Recognition:

- *National and International:* ACS Award for Distinguished Service in the Advancement of Inorganic Chemistry (2018); Nyholm Medal, Royal Soc. Chem. (2014); ACS Fellow (2009, inaugural); ACS Award in Inorganic Chemistry (2002), Fellow, Royal Society of Chemistry (2000); Senior Scientist, Alexander von Humboldt Foundation, (1998); Fellow, Japan Society for the Promotion of Science (1997); Fellow, J. S. Guggenheim Memorial Foundation (1991); Alfred P. Sloan Fellow (1983); Camille and Henry Dreyfus Teacher-Scholar (1982); Union Carbide Innovation Recognition Award, (1981); DuPont Young Faculty Fellow (1979).

Regional recognition: Larry Faulkner Professorship (2012-2015); Janet and William Lyan Professorship (2007-2012); Alumni Achievement Award, Washington State Univ. (2004); UIUC Scholar Award (1987).

Selected Professional Activities:

Consultant Tennessee-Eastman Corp (2018-); NIH Chemical Warfare Study Section, May, 2016 Baltimore. Coorganizer, DoE Contractors Meeting, July 2016; External Advisory Board, EFRC on Electrocatalysis, PNNL, 2015-; Member, Institute for Integrated Catalysis, PNNL, 2012-; Cochair, DoE CO₂ Summit, 2011; Mich. State. Chem. Deptl Review, 2010; DoE Young Invest. Panelist, 2009; Special Emphasis Panel NIH, 2009; with Hidetake Seino and Guo-Xin Jin, Pacificchem Symp. Organizer, 2010 "Metal-Sulfide Chemistry"; Ext. reviewer, PNNL, 2009; Guest Editor, *Inorganic Syntheses* volume 35; Chair, Inorganic Division ACS (2006); DOE BES Catalysis Prgm Rev. Committee (2004); DOE Workshop on H₂ (2003); Univ. Maryland Chem. Deptl Review (2002); DoE Workshop on Catalysis/Nanoscience (2002); DOE Nanoscale Catalysis Initiative Review (2002); with T. Chapman, "Frontiers in Separations" Symposium at the AIChE National Meeting (2002); NSF Green Separations Review (2000); with C. G. Young, K. Matsumoto, co-organized the symposium "Metal

Chalcogenides in Organometallic, Industrial, and Biological Chemistry" at the Pacific Basin Meeting (2000); with M. Y. Darensbourg, D. E. Wigley, organized the symposium "Reactivity at Metal-N, -P, -S Bonds" at the ACS National Meeting in New Orleans (1996); ACS Councilor, University of Illinois Section (1988-1992); with J. A. Ibers, organized the symposium "Soluble Metal Chalcogenides" at the ACS National Meeting in Washington (1990); with T. Chivers, organized the symposium "Novel Main Group Element Ligands" at the Chemical Congress of North America in Toronto (1988).

Editorial Advisory Boards:

Advisory Board for the Institute for Integrated Catalysis at the Pacific Northwest National Laboratory (2013-); *Inorganic Chemistry* (2003-5); *Central European Journal of Chemistry* (2002-9); *Polyhedron* (1999-2015); *Organometallics* (1989-92); *Inorganic Syntheses* (1989-); *Chemical Reviews* (1987-2016).

External Funding:

- "Co-operative Metal-Ligand Ensembles in Catalysis and Organometallic Chemistry" \$450,000 total costs by the Department of Energy; Jan, 2015 through Dec, 2018.
- "Bioorganometallic Iron-Sulfur Assemblies Related to the Hydrogenases" \$780,000 (direct costs) by the National Institutes of Health; Aug, 2014 through July, 2018. Renewal submitted.
- "Synthesis & Reactivity of Alkoxsilanoates & Derivatives", Sept, 2016-August, 2017. \$180,000/y total costs/y.

Invited Lectures (since 1990):

2017: Univ. Amsterdam, GRC Inorg. Mech. (Galveston), CTMN-MNAGC Workshop (Paphos), UC-Irvine, Univ. S. Cal., ACS San Francisco Nat'l Meeting (Darensbourg Symposia). **2016:** ACS San Diego Nat'l Meeting (Kanatzidis and Sattelberger Symposia). Rice Univ., Univ. Texas. Int. Conf. Coordin. Chem. (Brest). **2015:** Chem. & Biol. Iron-Sulfur Clusters (Grenoble); ACS Nat'l Meeting (Boston, Bullock Awd. Symp.), Keynote DoE Contractors Mtg. (Annapolis), Telluride Conf. On Hydrogenase Mimics; Ga. Tech.; Univ of Utah, ACS Nat'l Meeting (Denver, Catalysis Symposium, Evans Awd Symp.). **2014:** Nyholm Medal tour: Univ. St. Andrews, Univ. Loughborough, Imperial Coll.; Princeton Univ.; "Catalytic Systems for Chemical Energy Conversion" (Muelheim), "Enzyme Interfaces Workshop" (London); Dow Lectures, UC-Berkeley; Frontiers Lectures, Texas A&M. **2013:** Univ. Chicago; ACS Meeting Indianapolis, Werner & Hartwig Symposia; Northwestern Univ.; Univ. Wisconsin, ACS Nat'l Meeting (New Orleans, DuBois Symposium). **2012:** "Future challenges in CO₂-reduction" Bremen Center; Univ. Amsterdam; S-Se-Te Symposium, ACS Nat'l Meeting (Phila); CalTech.; Univ. Notre Dame (Reilly Lectures). **2011:** Australian Nat. Univ. (Craig Lectures); New Zealand Chem. Conf (Plenary Lect); Univ. N. Carolina; Univ. Vermont; Metals in Biology GRC, Ventura; PNNL Director's Lecture; Portland State University. **2010:** Pacificchem, Honolulu (Metal Sulfido Symp., Noninnocent Ligand Symp); IUPAC Conf. On Green Chem. (Ottawa); Int. Conf. Organometallic Chem., Taipei; Int. Hydrogenase Conf., Uppsala; Universities of Neuchatel, Lausanne, Basel, Geneva, Fribourg; MIT. **2009:** U. California, Berkeley; Symposium on Concerto Catalysis, Sapporo; Kyushu Univ.; ANSER Symp, Northwestern Univ.; Northern Ill. Univ.; ACS Nat'l Meeting, Salt Lake (Zank Awd Symp.). **2008:** Columbia U.; U. Of Michigan; Gordon Conference on Inorg. Chem.; ACS Nat'l Meeting, Philadelphia (Dithiolene Symp. And Noninnocent Ligand Symp.). **2007:** Kenyon Coll.; International Karlsruhe Nanoscience Workshop; Dalton Pharma Plenary Lecture (U. Toronto); 8th; Int. Conf. Molec. Biology of

Hydrogenases (Boulder); "Bio-inspired Chemistry for Energy Applications" National Academies' Chem. Sci. Roundtable; ACS Natl Meeting, Chicago (Sustainable Energy Symp.); South Africa Chemical Institute Inorg. Chem. Conf. (Plenary Lecture); Clemson U. **2006**: Univ. Of Oregon; Crano Memorial Lecture, Univ. Akron; Akron ACS Section Speaker; Gordon Conf. On Photosynthesis, ACS Natl Meeting, Atlanta (Dimetallic Catalysis Symp.); Illinois State Univ. **2005**: Univ. Delaware; Yale Univ.; XIIth Int. Conf. Bioinorg. Chem. (ICBIC), Ann Arbor; ACS Natl Meeting, San Diego (Wm. Evans Awd. Symp.); Nagoya Symposium on Dynamic Complexes; Nagoya Symposium on Metals in Biology. **2004**: Univ. Louisville; 7th Int. Conf. On Molec. Biology of Hydrogenases- Reading; Int. Conf. On Bio-Organometallic Chemistry - Zurich (Plenary Lecture); Univ. Chicago; Univ. Of Washington; W. Washington Univ.; Washington St. Univ. (Stevens Lecture); Univ. Of Idaho; Netherlands Chemistry and Catalysis Conf. V (Keynote Lecture). **2003**: N. Dakota State Univ.; ACS Natl Meeting, NYC (JOMC Lectureship); Aust. Natl Univ.; Aust. Inorganic Chem. Conf. (Plenary Lecture); Univ Alberta; Univ. Calgary; ACS Symp. On Transition Metal-Main Group Hybrid Clusters. **2002**: Northwestern Univ. (ACS Awd Lecture); Univ. S. Carolina (Lipscomb Lecture); ACS Nat. Meeting (ACS Awd present'n) Orlando; Univ. Kentucky. **2001**: Mich. State Univ.; ACS Nat'l Meeting - Multifunctional Ligand Symp.; UC-Irvine; Univ. Wisconsin; DOE Contractors Meeting on Separations, San Diego. **2000**: Univ. Florida; 6th Int. Conf. On Molecular Biology of Hydrogenases-Potsdam; Symposium on New Materials from Organometallics and Coord. Chem., Pacific Basin Conference (Honolulu). **1999**: Univ. Maryland; Univ. California - Berkeley; Univ. California - Santa Cruz; Texas A&M Univ.; Rice Univ.; Gordon Res. Conf. (Inorg. Chem.); Univ. Kaiserslautern; Univ. Karlsruhe; Univ. Aachen; Univ. Versailles; Univ. Erlangen; Univ. Göttingen; Tech. Univ. Berlin; Univ. Marburg; Inst. Louis Pasteur, Strasbourg. **1998**: Univ. California - LA; Univ. Of S. California; UCSD; Shell-Houston; N.C. St. Univ.; 4th DOE/BES Homogeneous Catalysis/Organometallic Chem. Conf. (Baltimore); XXXIII Int. Conf. Coordination Chem. (Florence -section lecturer); Univ. Of Toronto. **1997**: Center of Excellence Conference (Nagoya, section lecturer); Univ. Of Florida; Brown Univ.; Univ. Michigan; Tohoku Univ.; Osaka City Univ.; Nagoya Univ.; Tokyo Univ., Faculty of Science; Tokyo Univ., Faculty of Eng.; Waseda Univ.; Mobil Technical Center (Paulsboro). **1996**: Calvin College; Hope College; Univ. Nevada - Reno; Northwestern Univ.; ACS Nat'l Meeting - Symp. On Reactivity at M-N, -P, -S Bonds (New Orleans); Notre Dame Univ. **1995**: ACS Natl. Meeting - Symp. On Naked Main Group Elements as Ligands (Anaheim); Electrochemical Society, Symp. On Metal-Fullerenes (Reno); Symp. On Metal-Sulfur Chemistry, Int. Chem. Congress (Honolulu). **1994**: Ball State Univ.; Iowa State Univ.; ACS Reg'l Meeting - Symp. On Metal Sulfides (Ann Arbor); Univ. Leipzig; Univ. Halle; Univ. Greifswald; Univ. Potsdam; International Symp. On Inorg. Ring Systems (Banff, section lecturer). **1993**: Univ. Louisville; Monsanto Chemicals, Akron; INTEVEP, S. A. (Caracas); Venezuelan Catalysis Meeting (Valencia); Univ. München; Univ. Würzburg; ACS Nat'l Meeting - Symp. On HDS (Chicago); Univ. Windsor; Indiana Univ. **1992**: Univ. Köln; Univ. Münster; Univ. Of Delaware; Johns Hopkins Univ.; ACS Reg'l Meeting - Morley Award Symp. (Cleveland); ACS Reg'l Meeting - Symp. On Metal Sulfides (Albany); Gordon Conf. On Inorganic Chemistry; Univ. Of Missouri, Columbia; Stanford Univ.; Univ. California, Davis; Univ. Of California, Berkeley; Univ. Illinois Colloquium. **1991**: Exxon Research Laboratory, Annandale; Univ. Of Colorado; ACS Nat'l Meeting - Symp. On High Oxidation State Organometallics and Garvan Awd Symp. (Atlanta); Clemson Univ.; Univ. S. Carolina; Ohio State Univ.; D.O.E. Organometallics and Catalysis Conf. (Madison); Int. Symp. On Inorganic Ring Systems (Berlin); Univ. De Rennes I; Albert-Ludwig Univ. Freiburg; Univ.-GH, Essen; Univ. De Bourgogne; Phillips Univ. Marburg; Univ. Tübingen; Univ. Karlsruhe; Techn. Univ. München; Univ. Regensburg; Max-Planck-Institut für Festkörperforschung, Stuttgart; Univ. Louis Pasteur,

Strasbourg; Ministère de la Recherche et la Technologie (Paris). **1990**: ACS Nat'l Meeting - Symposium. On HDS (Boston); Univ. West Virginia; Univ. Toledo; Shell Rsch Labs (Houston); Gordon Conf. On Organometallic Chemistry; ACS Nat'l Meeting - Symp. On Soluble Transition Metal Chalcogenides (Washington); ACS Symp. On Organometallic Electrochemistry, (Washington); Michigan State Univ.

Publications:

1. "Reversible Carbonylation of a Rhodium(I) Complex of *o*-(Diphenylphosphino)-*N,N*-dimethylaniline Involving Displacement of the Dimethylamino Group of the Chelate", Rauchfuss, T. B.; Roundhill, D. M., *J. Organometal. Chem.* **1973**, *59*, C30.
2. "Synthesis and Reactions of Nucleophilic Complexes of Rhodium(I) Complexes *o*-(Diphenylphosphino)-*N,N*-dimethylaniline" Rauchfuss, T. B.; Roundhill, D. M., *J. Am. Chem. Soc.* **1974**, *96*, 3098.
3. "Platinum Metal Complexes of Amine and Ether Substituted Phosphines" Rauchfuss, T. B.; Patino, F. T.; Roundhill, D. M., *Inorg. Chem.* **1975**, *14*, 652.
4. " $\text{Rh}_6(\text{CO})_{16}$: A Homogeneous Catalyst for the Oxidation of Carbon Monoxide to Carbon Dioxide and the Oxidative Cleavage of C-C Bonds in Ketones to Carboxylic Acids", Mercer, G. D.; Shu, J. S.; Rauchfuss, T. B.; Roundhill, D. M., *J. Am. Chem. Soc.* **1975**, *97*, 1967.
5. "Synthesis and Reactions of New Complexes of Nickel, Palladium, and Platinum with 1,2-Ethanedithiol, 2-(Methylthio)ethanethiol, and 2-(Methylthio)ethane Disulfide", Rauchfuss, T. B.; Roundhill, D. M., *J. Am. Chem. Soc.* **1975**, *97*, 3386.
6. "Interconversion Reactions Between Substituted Phosphinous Acid-Phosphinito Complexes of Platinum(II) and their Capping Reactions with Boron Trifluoride-Etherate", Beaulieu, W. B.; Rauchfuss, T. B.; Roundhill, D. M., *Inorg. Chem.* **1976**, *14*, 1733.
7. "Oligomeric Thiolate Complexes of the Nickel Triad: Synthetic and Spectroscopic Properties", Rauchfuss, T. B.; Shu, J. S.; Roundhill, D. M., *Inorg. Chem.* **1976**, *15*, 2096.
8. "Synthesis and Reactions of, and Catalytic Hydrogenation by Chlorocarbonyl *o*-(diphenylphosphino)-*N,N*-dimethylaniline Iridium(I) and Chlorocarbonyl *o*-(diphenylphosphino)-*N,N*-dimethylbenzylamine Iridium(I)", Rauchfuss, T. B.; Clements, J. L.; Agnew, S. F.; Roundhill, D. M., *Inorg. Chem.* **1977**, *16*, 775.
9. "Observations on the Sulfur 2p Binding Energies in Transition Metal Complexes of Sulfur-Containing Ligands", Best, S. A.; Brant, P.; Feltham, R. D.; Rauchfuss, T. B.; Roundhill, D. M.; Walton, R. A., *Inorg. Chem.* **1977**, *16*, 1976.
10. "*o*-Diphenylphosphinophenol and its Coordination Compounds", Rauchfuss, T. B., *Inorg. Chem.* **1977**, *16*, 2966.
11. "Iron Porphyrins Containing Appended Sulfur Ligands", Buckingham, D. A.; Rauchfuss, T. B., *J. Chem. Soc., Chem. Commun.* **1978**, 705.
12. "New Imine-Phosphine Chelating Agents and their Molybdenum(0) Derivatives", Rauchfuss, T. B., *J. Organometal. Chem.* **1978**, *162*, C19.
13. "Transition Metal Activation of Aldehydes: Platinum Metal Derivatives of *o*-Diphenylphosphinobenzaldehyde", Rauchfuss, T. B., *J. Am. Chem. Soc.* **1979**, *101*, 1045.
14. "Metal Complexes of Hemilabile Ligands. The Reactivity and Structure of *trans*-Dichlorobis(*o*-diphenylphosphinoanisole)ruthenium(II)", Jeffrey, J. C.; Rauchfuss, T. B., *Inorg. Chem.* **1979**, *18*, 2653.

15. "Transition Metal Activation of Aldehydes: Models for the Homogeneously Catalyzed Reactions" Rauchfuss, T. B. In *Fundamental Research in Homogeneous Catalysis* Tsutsui, M., Ed., Vol. 3, Pergamon Press, New York, **1979**, pp. 1021.
16. "Metal Complexes of Diiminodiphosphines. Structural and Reactivity Patterns", Jeffery, J. C.; Rauchfuss, T. B.; Tucker, P. A., *Inorg. Chem.* **1980**, *19*, 3329.
17. "Directed Synthesis of Mixed Metal Chalcogenide Clusters: Oxidative Additions of $\text{Fe}_2(\mu_2\text{-E}_2)(\text{CO})_6$ (E = S, Se, Te)" Lesch, D. A.; Rauchfuss, T. B., *J. Organometal. Chem.* **1980**, *199*, C6.
18. "Platinum Metal Complexes of Substituted Aryl Phosphines", Rauchfuss, T. B., *Platinum Metals Reviews* **1980** *24*, 95.
19. "Isolation and Characterization of $\text{Fe}_2(\mu\text{-Te}_2)(\text{CO})_6$ and its Conversion to $\text{Fe}_3(\mu_3\text{-Te}_2)(\text{CO})_x$ (x = 9, 10)", Lesch, D. A.; Rauchfuss, T. B., *Inorg. Chem.* **1981**, *20*, 3583.
20. "Synthesis and Characterization of a Cyclic Complex of the Trisulfide Ion", Bolinger, C. M.; Rauchfuss, T. B.; Wilson, S. R., *J. Am. Chem. Soc.* **1981**, *103*, 5620.
21. "Synthesis and Structure of a 'Dicuprophane,' a Dicopper(I) Complex Derived from [*o*-Diphenylphosphino]benzoyl]pinacolone", Rauchfuss, T. B.; Wilson, S. R.; Wroblewski, D. A., *J. Am. Chem. Soc.* **1981**, *103*, 6769.
22. "Metal Complexes of Iminophosphine and Iminoarsine Chelating Agents", Hoots, J. E.; Rauchfuss, T. B.; Schmidt, S. P.; Jeffery, J. C.; Tucker, P. A., *A.C.S. Adv. Chem. Ser.* **1981**, *196*, 303.
23. "New Aspects of the Coordination Chemistry of Carbonyl Phosphines", Landvatter, E. F.; Rauchfuss, T. B., *A.C.S. Symposium Series* **1981**, 493.
24. " $\text{Fe}_2(\mu\text{-E}_2)(\text{CO})_6$ (E = S, Se, Te) as Reagents for the Preparation of Mixed-Metal Chalcogenide Clusters", Day, V. W.; Lesch, D. A.; Rauchfuss, T. B., *J. Am. Chem. Soc.* **1982**, *104*, 1290.
25. "The Reactivity of $\text{Fe}_3(\mu_3\text{-Te})_2(\text{CO})_9$ toward Lewis Bases", Lesch, D. A.; Rauchfuss, T. B., *Organometallics* **1982**, *1*, 499.
26. "Chelate-Assisted Oxidative Addition of Functionalized Phosphines to Iridium(I)", Landvatter, E. F.; Rauchfuss, T. B., *Organometallics* **1982**, *1*, 506.
27. "Synthetic Approaches to Coordinatively Unsaturated Heterobimetallic Complexes", Wroblewski, D. A.; Rauchfuss, T. B., *J. Am. Chem. Soc.* **1982**, *104*, 2314.
28. "Roussin's Red Salt Revisited: Reactivity of $\text{Fe}_2(\mu\text{-E})_2(\text{NO})_4^{2-}$ (E = S, Se, Te) and Related Compounds", Rauchfuss, T. B.; Weatherill, T. D., *Inorg. Chem.* **1982**, *21*, 827.
29. "Intermetallic Chalcogenide Atom Transfer and the Synthesis of 1,4- $[(\text{CH}_3\text{C}_5\text{H}_4)_2\text{Ti}]_2\text{S}_4$ ", Bolinger, C. M.; Hoots, J. E.; Rauchfuss, T. B., *Organometallics* **1982**, *1*, 223.
30. "Heterobimetallic Cooperativity in the Reduction of Methyl Isocyanide by $(\text{C}_5\text{H}_5)_2\text{W}(\text{SH})_2$ ", Rauchfuss, T. B.; Ruffing, C. J., *Organometallics* **1982**, *1*, 400.
31. "Synthesis of a Mixed-Valence Copper Complex via Free-Radical Additions to a Copper(I) Dimer", Wroblewski, D. A.; Wilson, S. R.; Rauchfuss, T. B., *Inorg. Chem.* **1982**, *21*, 2114.
32. "Template Syntheses of 1,2-Alkenedichalcogenide Chelates via the Addition of Activated Acetylenes to Bis(cyclopentadienyl)titanium Pentachalcogenides", Bolinger, C. M.; Rauchfuss, T. B., *Inorg. Chem.* **1982**, *21*, 3947.
33. "Oxidation-Reduction of Bis(*o*-formylphenyl)phenylphosphine by Water", Landvatter, E. F.; Rauchfuss, T. B., *J. Chem. Soc., Chem. Commun.* **1982**, 1170.

34. "The Structure of $(C_5H_4CH_3)_2V_2S_5$ and its Acetylene Addition Reaction", Bolinger, C. M.; Rauchfuss, T. B.; Rheingold, A. L., *Organometallics* **1982**, *1*, 1551-3.
35. Synthesis of Organovanadium Sulfide Cluster Compounds via Bis(methylcyclopentadienyl)divanadiumtetrasulfide", Bolinger, C. M.; Rauchfuss, T. B.; Wilson, S. R., *J. Am. Chem. Soc.* **1982**, *104*, 7313.
36. "Synthesis of Heterometallic Cluster Compounds From $Fe_3(\mu_3-Te)_2(CO)_9$ and Comparisons with Analogous Sulfide Clusters", Bogan, L. E., Jr.; Lesch, D. A.; Rauchfuss, T. B., *J. Organometal. Chem.* **1983**, *250*, 429.
37. "Synthesis and Reactivity of $[Ir(\eta^2-E_2R)(Ph_2PCH_2CH_2PPh_2)_2]^{2+}$ (E = S, Se; R = H, CH_3)", Hoots, J. E.; Rauchfuss, T. B., *Inorg. Chem.* **1983**, *22*, 2806.
38. "Synthesis, Reactivity, and ^{125}Te NMR Studies of $(C_5H_5)RhFe_2Te_2(CO)_x$ (x = 6, 7)", Lesch, D. A.; Rauchfuss, T. B., *Inorg. Chem.* **1983**, *22*, 1854.
39. "Synthesis and Structures of $(i-PrC_5H_4)_2V_2S_4$ and $(C_5H_5)_2V_2S_2(S_2C_2(CF_3)_2)$: The Influence of π -Bonding on the Geometry of the $\mu-S_2$ Ligand", Bolinger, C. M.; Rauchfuss, T. B.; Rheingold, A. L., *J. Am. Chem. Soc.* **1983**, *105*, 6321.
40. "Stepwise Assembly of Heterometallic M_4S_4 Clusters. The Structure of $(MeCp)_2V_2Fe_2(NO)_2S_4$, a 58e Cubane", Rauchfuss, T. B.; Weatherill, T. D.; Wilson, S. R.; Zebrowski, J. P., *J. Am. Chem. Soc.* **1983**, *105*, 6508.
41. "The First Transition Metal Thiosulfinate and Sulfenate Esters: $[Ir(\eta^2-S_2OCH_3)(dppe)_2]^{2+}$ and $[Ir(\eta^1-SOCH_3)(CH_3NC)(dppe)_2]^{2+}$ ", Hoots, J. E.; Rauchfuss, T. B.; Wilson, S. R., *J. Chem. Soc., Chem. Commun.* **1983**, 1226.
42. "Functionalized Tertiary Phosphines and Related Ligands in Organometallic Coordination Chemistry and Catalysis", Rauchfuss, T. B., in *Homogeneous Catalysis by Metal Phosphine Complexes*, Pignolet, L. Ed., Plenum Press, New York, **1983**.
43. "Synthesis, Structure, and Atom Transfer Reactivity of a New Class of Titanium Thiophosphoryl Compounds", Zank, G. A.; Rauchfuss, T. B., *Organometallics* **1984**, *3*, 1191.
44. "Alkylidene bis(Perthiolates): A New Class of Organosulfur Ligands Prepared from $(C_5H_5)_2TiS_5$ ", Giolando, D. M.; Rauchfuss, T. B., *Organometallics* **1984**, *3*, 487.
45. "Peracid Oxidation of Inorganic Chalcogen Ligands in Transition Metal Complexes", Hoots, J. E.; Lesch, D. A.; Rauchfuss, T. B., *Inorg. Chem.* **1984**, *23*, 3130.
46. "Oxygenation of $[Cu_2(o-Ph_2PC_6H_4C(O)CHC(O)C(CH_3)_3)]_2$: Carbon-Carbon Bond Scission and Formation of a Mixed-Valence Cu(I), Cu(II) Complex of a Compartmentalized Ligand", Wroblewski, D. A.; Rauchfuss, T. B.; Rheingold, A. L.; Lewis, K. A., *Inorg. Chem.* **1984**, *23*, 3124.
47. "Synthesis and Characterization of "Hard-Soft" Heterobimetallic Complexes Derived from *o*-Diphenylphosphinobenzoylpinacolone (HacacP). The Structure of $PtCl_2\{Cu(acacP)_2\}$ ", Wroblewski, D. A.; Day, C. S.; Goodman, B. A.; Rauchfuss, T. B., *J. Am. Chem. Soc.* **1984**, *106*, 5379.
48. "Synthesis and Structure of a Stable, S-Bound Dibenzothiophene Complex: $RuCl_2(4-R_2P-dibenzothiophene)_2$ ", Bucknor, S. M.; Draganjac, M.; Rauchfuss, T. B.; Ruffing, C. J.; Fultz, W. C.; Rheingold, A. L., *J. Am. Chem. Soc.* **1984**, *106*, 5464.
49. "Rearrangement of $(C_5H_5)_2TiS_5$ Involving Migration of the Organic Fragment from Metal to Sulfur", Giolando, D. M.; Rauchfuss, T. B.; Wilson, S. R., *J. Am. Chem. Soc.* **1984**, *106*, 6455.

50. "Synthesis and Structures of Molecular Sulfosalts. $(\text{MeCp})_3\text{Ti}_2\text{AsS}_3\text{O}$, $[\text{Mo}_2\text{O}_2\text{As}_4\text{S}_{14}]^{2-}$, and $[\text{Mo}_4\text{O}_4\text{As}_4\text{S}_{14}]^{4-}$ ", Zank, G. A.; Rauchfuss, T. B.; Wilson, S. R., *J. Am. Chem. Soc.* **1984**, *106*, 7621.
51. "4-Phenyl-1,3,4-triazoline-3,5-dione: A Prosthesis for the $\mu\text{-}\eta^1\text{S}_2$ Ligand in Organovanadium Sulfide Chemistry", Bolinger, C. M.; Rauchfuss, T. B.; Wilson, S. R., *J. Am. Chem. Soc.* **1984**, *106*, 7800.
52. "Synthesis and Reactivity Studies on $(\text{C}_5\text{H}_5)_2\text{Ti}(\mu\text{-SH})_2\text{Mo}(\text{CO})_4$ and Related Compounds", Ruffing, C. J.; Rauchfuss, T. B., *Organometallics* **1985**, *3*, 524.
53. "Synthesis and Structures of $(\text{C}_5\text{H}_5)_2\text{Mo}_2\text{Fe}_x\text{Te}_2(\text{CO})_7$ ($x = 1, 2$). Cluster Assembly Mechanisms and the Role of the Tellurium", Bogan, L. E., Jr.; Rauchfuss, T. B.; Rheingold, A. L., *J. Am. Chem. Soc.* **1985**, *107*, 3843.
54. " $(\text{RC}_5\text{H}_4)\text{MoFe}(\text{Te}_2\text{X})(\text{CO})_5$: Carbonyl Clusters Containing Hypervalent Main Group Centers", Bogan, L. E., Jr.; Rauchfuss, T. B.; Rheingold, A. L., *Inorg. Chem.* **1985**, *24*, 3722.
55. "Transition Metal Polysulfides: Coordination Compounds with Purely Inorganic Chelate Ligands" Draganjac, M. E.; Rauchfuss, T. B., *Angew. Chem. Int. Ed. Engl.* **1985**, *24*, 742.
56. "A Model for Thiophene Chemisorption: A Stabilized of a $\eta^1\text{-S}$ Bound Thiophene Complex and its Relationship to η^5 Coordination", Draganjac, M. E.; Ruffing, C. J.; Rauchfuss, T. B., *Organometallics* **1985**, *4*, 1909.
57. "Organometallic Derivatives of the Tetrathiometallates: Syntheses, Structures, and Reactions of $\text{MS}_4[\text{Rh}(\text{COD})]_2$ and $\text{MS}_4[(\text{C}_5\text{H}_5)\text{Ru}(\text{PPh}_3)]_2$ ($\text{M} = \text{Mo}, \text{W}$)", Howard, K. E.; Rauchfuss, T. B.; Rheingold, A. L., *J. Am. Chem. Soc.* **1986**, *108*, 297.
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[a] Dr. X. Zhou, Prof. T. B. Rauchfuss
Department of Chemistry
University of Illinois at Urbana-Champaign
600 South Mathews Avenue, Urbana, IL 61801 (USA)
Fax: (+1) 217-244-3186
E-mail: rauchfuz@illinois.edu

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364. Zhang, F.; Woods, T. J.; Rauchfuss, T. B.; Arrigoni, F.; Zampella, G. CO Substitution by PPh₃ in Fe₂S₂(CO)₆ Proceeds via a Novel Fe₂S Intermediate. *Chem. Commun.* **2021**, *57*, 5079 - 5081.
365. Zhang, Y.; Woods, T. J.; Rauchfuss, T. B. Homoleptic Rhodium Pyridine Complexes for Catalytic Hydrogen Oxidation. *J. Am. Chem. Soc.* **2021**, *143*, 10065-10069.
366. Zhang, F.; Woods, T.; Richers, C. P.; Rauchfuss, T. B. Surprising Condensation Reactions of the Azadithiolate Cofactor. *Angew. Chem. Int. Ed.* **2021**.

Procedures published in *Inorganic Syntheses*

1. "Substituted Triaryl Phosphines", Hoots, J. E.; Rauchfuss, T. B.; Wroblewski, D. A., *Inorg. Synth.* **1982**, *21*, 175.
2. "Bis(methylcyclopentadienyl)titanium pentasulfide, Bis(methylcyclopentadienyl)divanadium pentasulfide, Bis(methylcyclopentadienyl)divanadium tetrasulfide", Darkwa, J.; Giolando, D. M.; Murphy, C. J.; Rauchfuss, T. B., *Inorg. Synth.* **1990**, *27*, 51.
3. "Fe₂(S₂)(CO)₆ and Fe₃Te₂(CO)_{9,10}", Brandt, P. F.; Lesch, D. A.; Stafford, P. R.; Rauchfuss, T. B., *Inorg. Synth.* **1997**, *31*, 112.

4. "(Et₄N)ReS₄", Goodman, J. T.; Rauchfuss, T. B., *Inorg. Synth.*, **2002**, *33*, 107-110.
5. "Cyanide Compounds. Tricyanometalate Building Blocks and Organometallic Cyanide Cages", Contakes, S. M.; Klausmeyer, K. K. And Rauchfuss, T. B., *Inorg. Synth.* **2004**, *34*, 166-71.
6. "(1,3-Propanedithiolato)hexacarbonyldiiron and Cyanide Derivatives" Mack, A. E.; Rauchfuss, T. B. *Inorg. Synth.* **2011**, *35*, 142-147.
7. "Electrochemical Synthesis of Tetraethylammonium Tetrathiooxalate Tetraethylammonium Tetrathiooxalate" Breitzer, J. G.; Holloway, G. A.; Rauchfuss, T. B.; Salata, M. R. *Inorg. Synth.* **2014**, *36*, 201-203.
8. "A Nickel-Iron Thiolate and its Hydride" Schilter, D.; Rauchfuss, T. B. *Inorg. Synth.* Submitted to volume 37.

Other publications from the group:

1. "Vibrational Analysis of the Model Complex (μ-edt)[Fe(CO)₃]₂ and Comparison to Iron-Only Hydrogenase: The Activation Scale of Hydrogenase Model Systems" Galinato, M. G. I.; Whaley, C. M.; Lehnert, N. *Inorg. Chem.* **2010**, *49*, 3201–3215.
2. "Favorable Protonation of the (μ-edt)[Fe₂(PMe₃)₄(CO)₂(H-terminal)]⁺ Hydrogenase Model Complex Over Its Bridging μ-H Counterpart: A Spectroscopic and DFT Study" Galinato, M. G. I.; Whaley, C. M.; Roberts, D.; Wang, P.; Lehnert, N. *Eur. J. Inorg. Chem.* **2011**, 1147-1154.
3. "Nuclear Resonance Vibrational Spectroscopy and Electron Paramagnetic Resonance Spectroscopy of ⁵⁷Fe-Enriched [FeFe] Hydrogenase Indicate Stepwise Assembly of the H-Cluster", Kuchenreuther, J. M., Boyke, C. A.; Cramer, S. P.; et al., *Biochemistry* **2012**, *52*, 818.
4. "Nickel-Molybdenum and Nickel-Tungsten Dithiolates: Hybrid Models for Hydrogenases and Hydrodesulfurization" Schilter, D.; Fuller, A. L.; Gray, D. L., *Eur. J. Inorg. Chem.* **2015**, 4638-4642.

Books:

1. "Synthesis and Technique in Inorganic Chemistry, A Laboratory Manual", (3rd Ed) Girolami, G. S.; Rauchfuss, T. B.; Angelici, R. J.; University Science Books: Mill Valley (CA), **1999**.
2. *Inorganic Syntheses*, volume XXXV. Rauchfuss, T. B. (editor), John Wiley, **2010**.

Patents:

1. "Rubber Compositions Containing Zinc Hexasulfido Complexes", U. S. Patent No. 6,114,469 Rauchfuss, T. B.; Mander, E. O.; Ignatz-Hoover, F. Assigned to Flexsys America, L. P. 2000 (international patent 99939085.9-2102).
2. "Desulfurization of Petroleum Streams Utilizing Multi-Ring Aromatic Alkali Metal Complex", Siskin, M.; Myers, R. D.; Beardon, R.; Rauchfuss, T. B. U. S. Patent PCT/US2008/013040, 2008, assigned to ExxonMobil.
3. "Efficient Method for Conversion of fructose into 2,5-Dimethylfuran" Thananathanchon, T.; Rauchfuss, T. B.; Denmark, S. E. U. S. Patent filed April, 2010, assigned to British Petroleum.
4. "Ligand Components, Associated Reaction Products, Activated Reaction Products, Hydrosilylation Catalysts and Hydrosilylation Curable Compositions Including Ligand Components, and Associated Methods for Preparing Same" PCT/US15/60593 with Chu, W.-Y.; Gilbert-Wilson, R.; Rauchfuss, T. B.

Undergraduate Research Students (last known position)

1. Ciro Cirincione (medical doctor, Chicago)
2. Cathy (Jones) Murphy (PhD, Wisconsin; Professor, UIUC)
3. Robert Desenfants (PhD, Wisconsin; Instructor, New Mexico State)
4. Jeffery Zebrowski (PhD, Wisconsin; Argonne National Labs)
5. Steven Schmidt (PhD, NWU; location unknown)
6. Nancy Nichols (lawyer)
7. Wade Jarrell (MS, NWU; Science Instructor, Oakton Community College)
8. Elise Benjamin (home-maker)
9. Connie Bauer (PhD, UIUC; Bayer Healthcare, Berlin)
10. Thomas Vaid (PhD, Cornell, Assoc. Prof, U. Alabama)
11. Ulricke Krautscheid (deceased)
12. David Aubry (Ph.D, LSU; VP, ecoProducts Ltd)
13. Kyle L. Jensen (PhD, MIT ChemE; Harvard-MIT, Health Sci. & Tech.)
14. Nathan Szymczak (PhD, Oregon; Asst Prof Michigan)
15. Michael Salata (PhD, NWU; reseach scientist B.P.)
16. Borislava Bekker (PhD UC-Davis; asst prof Oregon Inst. Tech.)
17. Bryan Barton (BS Millikin; PhD, UIUC; Dow)
18. Staci Abron (BS UIUC; home-maker in Peoria)
19. Tabassum Chowdhury (BS; Conoco)
20. Nicolas George (location unknown)
21. Beth Papanek (BS UIUC; PhD Food Science)
22. Ross Putman (BS UIUC; location unknown)
23. Benjamin Garrett, (BS UIUC; graduate student, OSU)
24. Josh Day, (B.S. UIUC; graduate student, UCSD)
25. Jeremy Yang, 2010-2011 (changed groups)
26. Anthony Rohrer, (B.S. UIUC, Sun Chemicals)
27. Mark Tokarski, 2011-2013 (B.S. UIUC, location unknown).
28. Lydia Wolfe (St. Olaf), summer REU 2012
29. Tyler Cochrane, 2011-2014 (Eli Lilly Corp)
30. Hsin-Lung Tsai, 2014 (UIUC)
31. Elizabeth Kahle, 2014-2015, (B.S. UIUC, tech. staff APL, now applying to grad school).
32. Rhiannon Jones, 2015-2016, (student, U. Man.).
33. Frances Collins, 2015-2016, (student, U. Man.).
34. Raymond Cao, 2015-2016, unknown
35. Samulio Cvetkovic, 2015-2017, applying to dental school
36. Can Liao, 2016-2017, changed research groups
37. Claudio Cappelletti, 2016, (grad student at Friborg)
38. Rebecca Haight, 2017-

Postdoctoral Associates Advised (PhD institution; current position):

1. Mark E. Draganjac (Univ. Iowa; Professor, Arkansas State Univ.)
2. Damien P. A. Rodgers (Oxford; location unknown, UK)
3. Lenore M. Koczon (Nebraska: Prof., South Dakota State Univ.)
4. James Darkwa (New Brunswick; Prof., University of Johannesburg, RSA)
5. Edmund A. Ganja (UChicago; Research Scientist, Shell)
6. John R. Lockemeyer (Delaware; Research Scientist, Shell)
7. Harald Krautscheid (Karlsruhe; Prof., Univ. of Leipzig)

8. Partha Paul (Johns Hopkins; Research Scientist, AtheroGenics, Atlanta)
9. Somaneth Dev (Tokyo; Research Scientist, unknown location)
10. Daniel D. Doxsee (Calgary; Research Scientist, GELcore, Cleveland)
11. Gavin K. W. Freeman (Calgary; Research Scientist, Sherritt Corp.)
12. Paul F. Brandt (Colorado; Professor and Chair, North Central College)
13. Saleem Al Ahmad (Michigan; Research Scientist, Lubrizol)
14. Yifang Zheng (Exeter; Staff Crystallographer, Exeter Univ.)
15. Qian Feng (Oxford; Rsch Scientist, Dow Corning)
16. Lisa M. Szczepura (SUNY-Buffalo; Prof., Illinois State Univ.)
17. Susan Beatty (1998, SUNY-SB; Senior Consultant, Fidelity Investments)
18. Richard J.-H. Chou (1998, Michigan State; Rsch Scientist, Merck)
19. Michael Schmidt (2000, Munich; Rsch Scientist, PCI Tokyo)
20. Kevin K. Klausmeyer (2000, Texas A&M; Assoc. Prof., Baylor U.)
21. Joel D. Dopke (2001, Wisconsin; Assoc. Prof., Alma Col.)
22. Michael A. Reynolds (2002, Iowa State; Research Scientist, Shell)
23. Sodio H. C. Hsu (2002, National Taiwan; Assoc. Prof., Kaohsiung Medical Univ.)
24. Hongxiang Li (2002, Nankai; Organic Solids Laboratory, Chin. Acad. Sci, Beijing)
25. M. Ramesh (2003, Bombay; homemaker)
26. Ajay Kayal (2003, Princeton; Patent Advisor, Budd-Larner, P.C.)
27. Haijun Yao (2003-5, Virginia; Academic Professional UIUC)
28. Jarl Ivar van der Vlugt (2004-5, Amsterdam; faculty)
29. Swarnalatha Kokatam (2007-8, MPI Muelheim; U. Basel postdoc)
30. Jinzhu Chen (2007-8, Dalian Inst. Chem. Physics, Guangzhou Inst. of Energy Conversion)
31. Didier Morvan (2008-9, Univ. Brest, Rodia)
32. Todsapon Thananattanachon (2008-10, Washington Univ.; Asst. Prof. Evansville Coll.)
33. David Schilter (2009-, University of Sydney; Instructor, USON, Korea)
34. James M. Camara (2009-11, Columbia University; Asst. Prof., Yeshiva University)
35. Bryan Chan (2010-11, University of Alberta, self-employed)
36. Raja Angamuthu (2010-12, Leiden University, Asst. Prof. IIT-Kanpur)
37. Wenguang Wang (2010-12, Beijing, Asst Prof., Shandong Univ.)
38. Tai Lin (2010-11, Edinburgh)
39. Xiaoyuan Zhou (2011-, Chicago, Dow Corning)
40. Hao Lei (2011- , UC-Davis, Asst. Prof., Jinan Univ.)
41. Joyee Mitra (IIT Kanpur2012-; DST-INSPIRE Faculty Fellow, Gujarat)
42. Ryan Gilbert-Wilson (UNSW, 2013-5; SABIC)
43. Casseday P. Richers (UIUC, 2013-7, Sandia)
44. Andrey Tregubov (UNSW, 2014-5; relocated to Russia)
45. Noemie Lalaoui (Univ. Alpes, 2016-7, Univ. Brest)
46. Brandon Tate (GaTech, 2016-7, visiting asst. Prof. Ohio Wesleyan Univ.)
47. T. Spencer Bailey (Oregon, 2016-7, Intel)
48. Hussain Kagalwala (CMU, 2017-2019, instructor, Baylor U.)
49. Debashis Basu (Wayne State, 2017-2021, instructor, UIC)
50. Yu Zhang (West Va. 2019-)
51. Kundan Sagar (JHU, 2020-1, unknown)

Visiting Scientists (current position):

1. Shinji Inomata (Prof., Fukushima Univ.)
2. Frederic Gloaguen (Director, CNRS, Brest)

3. Riccardo Zaffaroni (Univ. Amsterdam, PhD student)
4. Yu-Long Li (Sichuan University of Science & Engineering, faculty)
5. Pei-Hua Zhao (North University of China, faculty)
6. Qianli Li (Liaocheng University, faculty)
7. Fanjun Zhang (Qufu Normal University)

M.S. Theses Supervised (current position):

1. Stella Bucknor (MD, location unknown)
2. Mark Massa (BS, Illinois Wesleyan, 1988, Rsch Scientist, Monsanto, St. Louis)
3. Steve Smith (B.S., Grand Valley State, 2005, spectroscopist, Dow Chemical)
4. Bradford Gorecki (BS, Toledo; 2006, research assistant, Lubrizol)
5. Jane L. Stanley (B.S., Hollins; 2007, patent examiner, U.S. Patent Office)
6. Cameron Spahn (BS, Wisconsin; 2007, unknown)
7. Amanda Mack (BS, Rochester, 2010, Teacher, Andover Academy)

Ph.D. Theses Supervised (last known position):

1. Deborah A. Wroblewski (BS, Indiana –SB; 1983, Rsch Scientist, LANL, retired)
2. David A. Lesch (BS, Iowa St; 1983, Rsch Scientist, United Oil Products)
3. C. Mark Bolinger (BS, Wabash; 1984, Rsch Scientist, Shell, retired)
4. Edith F. Landvatter (BS, Carleton; 1984, unknown location)
5. John E. Hoots (BS, Millikin; 1984, Rsch Scientist, Nalco-Ondeo, retired)
6. Charles R. Ruffing (BS, St. Josephs (PA); 1985, Rsch Scientist, RIT)
7. Timothy D. Weatherill (BS, Augustana (SD); 1985, Tech Mgr, Klöckner Pentaplast)
8. Gregg A. Zank (BS, Wisconsin - Superior; 1985, CTO, Dow Corning, retired)
9. Leonard E. Bogan, Jr. (BS, Case-Western; 1986, Rsch Scientist, Dow)
10. Dean M. Giolando (BS, Rochester IT; 1987, Professor, U. of Toledo, deceased)
11. Kevin E. Howard (BS, West Va.; 1988, Rsch Scientist, Dow, retired)
12. Jay Amarasekera (BS, Bowling Green; 1988, Rsch Scientist, GE)
13. David B. Morse (BS, Ohio St.; 1989, Rsch Scientist, Dow)
14. Anne E. Ogilvy (BS, Purdue; 1989, homemaker, formerly Molec. Probes and Dow Corning)
15. Xiaoguang Yang (MS, Fouzhou; 1990, Rsch Scientist, LANL)
16. Steven E. Gammon (BS, Bowdoin; 1990, Dean, Eastern Oregon Univ.)
17. Emmanuel Ramli (BS, Wooster; 1991, Assoc. Prof., Atma Jaya)
18. Anton E. Skaugset (BS, Reed; 1992, Rsch Scientist, Patent Atty, Portland, OR)
19. Shifang Luo (BS, Nankai; 1993, Rsch Scientist, Exxon-Mobil)
20. Colin P. Galloway (BS, Illinois St.; 1994, Rsch Scientist, Cabot)
21. Eric J. Houser (BS, Rockford Coll.; 1994, Director, Explosives Div., Homeland Security)
22. Ann E. Venturelli (BS, SUNY-B; 1996, homemaker)
23. David L. Compton (BS, W. Illinois; 1996, Rsch Scientist, USDA)
24. Philip R. Stafford (BS, TAMU; 1996, Rsch Scientist, retired)
25. Atul K. Verma (MS, IIT-Kanpur; 1996, Rsch Scientist, Paratek)
26. Karen K. Dailey (BS, Notre Dame; 1997, homemaker, formerly American Colloid)
27. Mark D. Westmeyer (BS, Truman St.; 1998, Rsch Scientist, General Electric)
28. Jonathan T. Goodman (BS, Delaware; 1999, CEO Synthesis Intel.)
29. Robert F. Pafford (MS, VPI; 2000, Rsch Scientist, Goodyear)
30. Andrew C. Moreland (BS, Abilene Christian; 2000, Rsch Scientist, Albemarle)
31. Jonathan G. Breitzer (BS, Grinnell; 2000, Prof, Fayetteville College)

32. Steven M. Contakes (BS, Lehigh; 2001; Asst. Prof, Westmont College)
33. Geoffrey A. Holloway (BS, Ball St.; 2001, Assoc. Prof., Cedarville Univ.)
34. Amanda L. Eckermann (BS, CalTech; 2002, Asst. Prof., Hope College)
35. Daniel E. Schwarz (BS, St. Louis U.; 2003, Rsch Scientist, Nalco)
36. Markus Wunder (Diplom, Karlsruhe; jt PhD with Fenske; 2003, Lab Manager, Hope College)
37. Joshua D. Lawrence (BS, Rhodes Coll.; 2003, Assoc. Prof., Centenary College)
38. Rachel C. Linck (BS, Duquesne; 2004; Chem. Dept Admin., Wash. Univ.)
39. Matthew L. Kuhlman (BS; Toledo; 2004, Rsch Scientist, Freudenberg Corp.)
40. Christine Boyke (ne Dickerson) (BS, Lake Forest; 2006, Rsch Chemist, Colgate-Palmolive)
41. Phillip I. Volkers (BS, St. Olaf; 2007; Editor, Sapling Systems)
42. Julie L. Boyer (BS, SUNY-B; 2008, Research Scientist, Momentive)
43. Aaron K. Justice (BS, TAMU; 2008, Research Scientist, BP)
44. Zachariah H. Heiden (BS, Wisconsin; 2008 Asst Prof. Wash. State)
45. C. Matthew Whaley (BS, UNC-W; 2010, Rsch Chemist, Dow)
46. Aaron Royer (BS, Indiana; 2010, Rsch Chemist, SABIC)
47. Bryan E. Barton (BS, Millikin Univ.; 2010, Rsch Chemist, Dow)
48. Mark R. Ringenberg (BS, Pittsburg; 2011, Humboldt Fellow, Stuttgart)
49. Matthew T. Olsen (BS, UVa; 2012, Rsch Chemist, Dow)
50. Christopher S. Letko (BS, UC-Riverside; Rsch Chemist, Dow)
51. Maria Carroll (BS, Drew University, 2013; Asst. Prof. Providence Coll.)
52. James Lansing (BS, Delaware, 2014; Rsch Chemist, BASF)
53. Brian Manor (BS, Kent State, 2014, Rsch Chemist, Boston Scientific)
54. Obelina Ulloa-Cabrera (BS, U. Conn, 2015, Instructor, UT-Galveston)
55. Geoffrey Chambers (BS, U. Idaho, 2016, Blue Path Labs)
56. Wan-Yi "Amy" Chu (BS, National Taiwan U., 2016, asst. Prof. Mills College)
57. Michaela Carlson (BS, Grinnell, 2018, Assistant Prof., Northland College)