

# CURRICULUM VITAE

## Liviu M. Mirica

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### PROFESSIONAL POSITIONS

- 2019-present William H. and Janet G. Lycan Professor of Chemistry, University of Illinois at Urbana-Champaign
- 2016-2018 Professor, Department of Chemistry, Washington University
- 2013-2016 Associate Professor, Department of Chemistry, Washington University
- 2008-2013 Assistant Professor, Department of Chemistry, Washington University
- 2015-present Member, Hope Center for Neurological Disorders, Washington University School of Medicine
- 2011-present Member, International Center for Advanced Renewable Energy & Sustainability (I-CARES), Washington University
- 2008-present Member, Division of Biological and Biomedical Sciences (DBBS), Washington University
- 2005-2008 NIH Postdoctoral Fellow, University of California, Berkeley  
Postdoctoral Advisor: *Professor Judith P. Klinman*

### EDUCATION

- 1999–2005 Ph.D., Chemistry, Stanford University, Stanford, CA  
Thesis title: “Mechanistic Investigations of Model Complexes Relevant to Copper-Containing Enzymes.” Graduate Advisor: *Professor T. Daniel P. Stack*
- 1996–1999 B.S., Chemistry, California Institute of Technology, Pasadena, CA  
Undergraduate Research Advisor: *Professor Harry B. Gray*

### AWARDS AND HONORS

- *Fellow* of the Royal Society of Chemistry, 2018
- *BK21–KAIST Lectureship Award*, Korea Advanced Institute of Science and Technology, 2017
- *Innovation Award*, St. Louis Academy of Sciences, 2017
- *Saint Louis Award*, ACS St. Louis Section, 2016
- *Organometallics* Young Investigator Fellowship, ACS Division of Organic Chemistry, 2014
- *Saltman Lectureship*, Metals in Biology Gordon Research Conference, 2014

- NSF CAREER Award, 2013-2018
- Undergraduate Research Mentor of the Year Award, Washington University, 2012
- Alfred P. Sloan Foundation Research Fellowship, 2012
- Outstanding Faculty Member Nominee, Freshman Class Council & First Year Center, 2011
- Sony Electronics Scholarship Award for Excellence in Teaching, Washington University, 2011
- Ralph E. Powe Junior Faculty Award, Oak Ridge Associated Universities, 2010-2011
- Doctoral New Investigator, Petroleum Research Fund, American Chemical Society, 2009-2011
- NIH–NRSA Postdoctoral Fellowship, 2007-2008
- Young Investigator Award, Division of Inorganic Chemistry, ACS, 2006
- Franklin Veatch Memorial Fellowship, Stanford University, 2004-2005
- Stanford Graduate Fellowship, Stanford University, 1999-2003
- Taube Prize, Stanford University, 1999
- Merck Index Award for Excellence in Chemistry, California Institute of Technology, 1999
- Carnation Merit Award, California Institute of Technology, 1997-1998
- Silver Medal, International Chemistry Olympiad, Beijing, China, 1995
- Gold Medal, International Chemistry Olympiad, Oslo, Norway, 1994

## RESEARCH INTERESTS

Development of novel transition metal complexes that can mediate redox processes relevant to oxidative organic transformations. Targeted reactions include the aerobic oxidative C-C coupling of hydrocarbons catalyzed by high-valent late transition metal complexes, and novel catalytic oxidative C-H functionalization reactions using green oxidants.

Investigation of the role of transition metal ions in amyloid  $\beta$  ( $A\beta$ ) peptide aggregation in Alzheimer's disease (AD) and development of metal-binding and metal-containing bifunctional compounds as potential therapeutic and diagnostic agents for AD.

## RESEARCH SUPPORT

### Current Support

- **National Institutes of Health**, “Novel Bifunctional Chemical Agents as Theranostic Tools for Amyloid Diseases”, R01GM114588, 08/01/15 – 07/31/20, PI: Mirica, Co-Investigators: Rogers (WUSM Radiation Oncology), Gross (WU Chemistry).
- **Department of Energy**, Office of Basic Sciences, Catalysis Science Program, “Greenhouse Gas Activation at Late Transition Metal Centers”, DE-SC0006862, 07/15/18 – 07/14/19, PI: Mirica.

- **National Science Foundation**, “Stereocontrolled and Aerobic Oxidative Reactions at High-Valent Ni Centers”, CHE-1800470, 09/01/18 – 08/31/21, PI: Mirica.

### **Completed Support**

- **Department of Energy**, Office of Basic Sciences, Catalysis Science Program, “Novel Palladium Catalysts for the Aerobic Oxidative Oligomerization of Methane & Carbon Dioxide Reduction”, DE-FG02-11ER16254, 07/15/15 – 07/14/18, PI: Mirica.
- **National Science Foundation**, “CAREER: Oxidative Reactivity of Pd and Ni Complexes Employing Paramagnetic Oxidation States”, CHE-1255424, 09/01/13 – 08/31/18, PI: Mirica.
- **National Science Foundation**, “MRI: Acquisition of an EPR Spectrometer for Variable Temperature Measurements”, CHE1429711, 09/01/14 – 08/31/17, PI: Mirica. Co-PIs: Blankenship, Buhro, Hayes (Chemistry).
- **McDonnell Center for Cellular and Molecular Neurobiology, WUSM**, Small Grant Program, “Novel Radioimaging Agents for Amyloid Beta Peptide Aggregation in Alzheimer’s Disease”, 07/01/15-12/31/16, PI: Mirica, Co-PI: Rogers (WUSM Radiation Oncology).
- **American Chemical Society**, Petroleum Research Fund, New Directions Research Grant, “Aerobic Oxidative C-C and C-heteroatom Bond Formation Reactions Catalyzed by Novel Pd(III) and Pd(IV) Complexes”, 03/01/13 – 08/31/15, PI: Mirica.
- **Alzheimer’s Association**, New Investigator Research Grant, “Novel Chemical Agents as Theranostic Tools for Soluble A $\beta$  Oligomer Aggregation”, 03/01/13 – 07/31/15, PI: Mirica.
- **Alfred P. Sloan Foundation**, 2012 Alfred P. Sloan Research Fellowship, 09/15/12 – 09/14/14, PI: Mirica.
- **American Chemical Society**, Petroleum Research Fund, “Study of Water Oxidation by Binuclear Metal Complexes”, 10/01/09 – 08/31/11, PI: Mirica
- **Oak Ridge Associated Universities**, Ralph E. Powe Junior Faculty Award, “Novel Imaging Agents for Early Diagnosis of Alzheimer’s Disease”, 06/01/10 – 05/31/11, PI: Mirica
- **Washington University Alzheimer’s Disease Research Center**, Pilot Research Grant, part of NIA-NIH grant P41RR000954, “Novel Bifunctional Metal Chelators as Selective Binders to Soluble A $\beta$  Oligomers”, 05/01/11 – 04/30/12, PI: Mirica.
- **Department of Defense**, Breast Cancer Research Program Concept Award, “Specific Inhibitors of Histone Demethylases: Novel Chemical Agents for Breast Cancer Therapy”, 08/01/10 – 07/31/12, PI: Mirica
- **I-CARES Pilot Program**, Washington University in St. Louis, “Novel Catalysts for the Conversion of Methane and Carbon Dioxide into Liquid Fuels”, 05/01/11 – 04/30/13, PI: Mirica, co-PI’s: Sophia Hayes (WU Chemistry) and Mark Conradi (WU Physics).

**PUBLICATIONS (*h*-index = 29, *i10*-index = 43; \* denotes corresponding author)**

**Publications at Washington University**

56. Luo, J.; Rath, N. P.; Mirica, L. M.;\* “Detection and Characterization of Mononuclear Pd(I) Complexes”, *Chem. Comm.*, submitted.
55. Ruhs, N. P.; Khusnutdinova, J. R.; Rath, N. P.; Mirica, L. M.;\* “Mononuclear Organometallic Pd(II), Pd(III), and Pd(IV) Complexes Stabilized by a Pyridinophane Ligand with a C-Donor Group”, *Organometallics*, submitted.
54. Tang, F.; Park, S.; Rath, N. P.; Mirica, L. M.;\* “Electronic versus Steric Effects of Pyridinophane Ligands in Pd(III) Complexes”, *Dalton Trans.*, **2018**, DOI: 10.1039/c7dt04366j.
53. Rana, M.; Cho, H.-J.; Roy, T. K.; Mirica, L. M.; Sharma, A. K.;\* “Azo-dyes based small bifunctional molecules for metal chelation and controlling amyloid formation”, *Inorg. Chem. Acta*, **2018**, 471, 419-429, DOI: 10.1016/j.ica.2017.11.029.
52. Wessel, A. J.; Schultz, J. W.; Tang, F.; Duan, H.; Mirica, L. M.;\* “Improved Synthesis of Symmetrically & Asymmetrically N-Substituted Pyridinophane Derivatives”, *Org. & Biomol. Chem.*, **2017**, 15, 9923 - 9931, DOI: 10.1039/c7ob02508d.
51. Sharma, A. K.; Schultz, J. W.; Prior, J. T.; Rath, N. P.; Mirica, L. M.;\* “The Coordination Chemistry of Bifunctional Chemical Agents Designed for Applications in <sup>64</sup>Cu PET Imaging for Alzheimer’s Disease”, *Inorg. Chem.*, **2017**, 56, 13801-13814, DOI: 10.1021/acs.inorgchem.7b01883.
50. Bandara, N.;# Sharma, A. K.;# Krieger, S.; Schultz, J. W.; Han, B. H.; Rogers, B. E.;\* Mirica, L. M.;\* “Evaluation of <sup>64</sup>Cu-Based Radiopharmaceuticals that Target Aβ Peptide Aggregates as Diagnostic Tools for Alzheimer’s Disease”, *J. Am. Chem. Soc.*, **2017**, 139, 12550-12558, DOI: 10.1021/jacs.7b05937.
49. Fuchigami, K.; Rath, N. P.; Mirica, L. M.\* “Mononuclear Rhodium(II) and Iridium(II) Complexes Supported by Tetradentate Pyridinophane Ligands”, *Inorg. Chem.*, **2017**, 56, 9404-9408, DOI: 10.1021/acs.inorgchem.7b01619.
48. Cascella, B.; Lee, S. G.; Singh, S.; Jez, J. M.;\* Mirica, L. M.\* "The small molecule JIB-04 disrupts O<sub>2</sub> binding in the Fe-dependent histone demethylase KDM4A/JMJD2A" *Chem. Comm.* **2017**, 53, 2174-2177; DOI: 10.1039/c6cc09882g.
47. Mendez, D. L.; Babbitt, S. E.; King, J. D.; D’Alessandro, J.; Watson, M. B.; Blankenship, R. E.; Mirica, L. M.; Kranz, R. G.\* "Engineered holocytochrome c synthases that biosynthesize new cytochromes c" *Proc. Natl. Acad. Sci. U. S. A.* **2017**, 114, 2235-2240, DOI: 10.1073/pnas.1615929114.
46. Waston, M. B.; Rath, N. P.; Mirica, L. M.\* “Oxidative C-C Bond Formation Reactivity of Organometallic Ni(II), Ni(III), and Ni(IV) Complexes”, *J. Am. Chem. Soc.*, **2017**, 139, 35-38; DOI: 10.1021/jacs.6b10303.
45. Schultz, J. W.; Fuchigami, K.; Zheng, B.; Rath, N. P.; Mirica, L. M.\* “Isolated Organometallic Nickel(III) and Nickel(IV) Complexes Relevant to Carbon-Carbon Bond Formation Reactions”, *J. Am. Chem. Soc.*, **2016**, 138, 12928-12934; DOI: 10.1021/jacs.6b06862.

44. Zhou, W.; Watson, M. B.; Zheng, S.; Rath, N. P.; Mirica, L. M.\* “Ligand effects on the properties of Ni(III) complexes: aerobically-induced aromatic cyanation at room temperature”, *Dalton Trans.*, **2016**, *137*, 15886-15893; DOI: 10.1039/c6dt02185a.
43. Orf, G. S.; Saer, R. G.; Niedzwiedzki, D. M.; Zhang, H.; McIntosh, C. L.; Schultz, J. W.; Mirica, L. M.; Blankenship, R. E.\* "Evidence for a cysteine-mediated mechanism of excitation energy regulation in a photosynthetic antenna complex" *Proc. Natl. Acad. Sci. U. S. A.*, **2016**, *113*, E4486-E4493, DOI: 10.1073/pnas.1603330113.
42. Pedrick, E. A.; Schultz, J. W.; Wu, G.; Mirica, L. M.; Hayton, T. W.\* “Perturbation of the O–U–O Angle in Uranyl by Coordination to a 12-Membered Macrocyclic”, *Inorg. Chem.*, **2016**, *55*, 5693-5701; DOI: 10.1021/acs.inorgchem.6b00799.
41. Zhou, W.; Zheng, S.; Schultz, J. W.; Rath, N. P.; Mirica, L. M.\* “Aromatic Cyanoalkylation through Double C-H Activation Mediated by Ni(III)”, *J. Am. Chem. Soc.*, **2016**, *138*, 5777-5780; DOI: 10.1021/jacs.6b02405.
40. Zhou, W.; Rath, N. P.; Mirica, L. M.\* “Oxidatively-induced aromatic cyanation mediated by Ni(III)”, *Dalton Trans.*, **2016**, *137*, 8693-8695; DOI: 10.1039/c6dt00064a.
39. Zhou, W.; Schultz, J. W.; Rath, N. P.; Mirica, L. M.\* “Aromatic Methoxylation and Hydroxylation by Organometallic High-Valent Nickel Complexes”, *J. Am. Chem. Soc.*, **2015**, *137*, 7604-7607; DOI: 10.1021/jacs.5b04082.
38. Tang, F.; Rath, N. P.; Mirica, L. M.\* “Stable Bis(trifluoromethyl)Nickel(III) Complexes”, *Chem. Comm.*, **2015**, *51*, 3113-3116; DOI: 10.1039/c4cc09594d.
37. Khusnutdinova, J. R.; Rath, N. P.; Mirica, L. M.\* “The Conformational Flexibility of the Tetradentate Ligand <sup>t</sup>BuN4 is Essential for the Stabilization of (<sup>t</sup>BuN4)Pd<sup>III</sup> Complexes”, *Inorg. Chem.*, **2014**, *53*, 13112-13129, DOI: 10.1021/ic5023054.
36. Sharma, A. K.; Kim, J.; Prior, J. T.; Hawco, N. J.; Rath, N. P.; Kim, J.; Mirica, L. M.\* “Small Bifunctional Chelators that Do Not Disaggregate Amyloid  $\beta$  Fibrils Exhibit Reduced Cellular Toxicity”, *Inorg. Chem.*, **2014**, *53*, 11367-11376, DOI: 10.1021/ic500926c.
35. Zheng, B.; Tang, F.; Luo, J.; Schultz, J. W.; Rath, N. P.; Mirica, L. M.\* “Organometallic Nickel(III) Complexes Relevant to Cross-Coupling and Carbon-Heteroatom Bond Formation Reactions”, *J. Am. Chem. Soc.*, **2014**, *136*, 6499-6504; DOI: 10.1021/ja5024749.
34. Qu, F.; Khusnutdinova, J. R.; Rath, N. P.; Mirica, L. M.\* “Dioxygen Activation by an Organometallic Pd(II) Precursor: Formation of a Pd(IV)-OH Complex and Its C-O Bond Formation Reactivity”, *Chem. Comm.*, **2014**, *50*, 3036-3039; DOI: 10.1039/c3cc49387c.
33. Sharma, A. K.; Pavlova, S. T.; Kim, J.; Kim, J.; Mirica, L. M.\* “The Effect of Cu<sup>2+</sup> and Zn<sup>2+</sup> on the A $\beta$ <sub>42</sub> Peptide Aggregation and Cellular Toxicity”, *Metallomics*, **2013**, *5*, 1519-1526; DOI: 10.1039/c3mt00161j.
32. Zhang, Y.; Rempel, D. L.; Zhang, J.; Sharma, A. K.; Mirica, L. M.\* Gross M. L.\* “Pulsed hydrogen-deuterium exchange mass spectrometry probes conformational changes in amyloid beta (A $\beta$ ) peptide

- aggregation”, *Proc. Natl. Acad. Sci. U. S. A.*, **2013**, *110*, 14604-14609; DOI: 10.1073/pnas.1309175110.
31. Khusnutdinova, J. R.; Mirica, L. M.\* “Organometallic Pd(III) Complexes in C-C and C-Heteroatom Bond Formation Reactions”, invited book chapter in *C-H Activation and Functionalization, Transition Metal Mediation*, Royal Society of Chemistry, **2013**.
30. Luo, J.; Rath, N. P.; Mirica, L. M.\* “Oxidative Reactivity of (N<sub>2</sub>S<sub>2</sub>)PdRX Complexes (R = Me, Cl; X = Me, Cl, Br): Involvement of Palladium(III) and Palladium(IV) Intermediate”, *Organometallics*, **2013**, *32*, 3343-3353; DOI: 10.1021/om400286j.
29. Khusnutdinova, J. R.; Luo, J.; Rath, N. P.; Mirica, L. M.\* “Late First Row Transition Metal Complexes of a Tetradentate Pyridinophane Ligand: Electronic Properties and Reactivity Implications”, *Inorg. Chem.*, **2013**, *52*, 3920-3932, DOI: 10.1021/ic400260z.
28. Mirica, L. M.\*; Khusnutdinova, J. R., “Structure and Electronic Properties of Pd(III) Complexes”, *Coord. Chem. Rev.*, **2013**, *257*, 299-314. DOI: 10.1016/j.ccr.2012.04.030.
27. Cascella, B.; Mirica, L. M.\* “Kinetic Analysis of Iron-Dependent Histone Demethylases:  $\alpha$ -Ketoglutarate Substrate Inhibition and Potential Relevance to the Regulation of Histone Demethylation in Cancer Cells”, *Biochemistry*, **2012**, *51*, 8699-8701, DOI: 10.1021/bi3012466.
26. Tang, F.; Qu, F.; Khusnutdinova, J. R.; Rath, N. P.; Mirica, L. M.\* “Structural and Reactivity Comparison of Analogous Organometallic Pd(III) and Pd(IV) Complexes”, *Dalton Trans.*, **2012**, *41*, 14046-14050, DOI:10.1039/C2DT32127K.
25. Tang, F.; Zhang, Y.; Rath, N. P.; Mirica, L. M.\* “Detection of Pd(III) and Pd(IV) Intermediates during the Aerobic Oxidative C-C Bond Formation from a Pd(II) Dimethyl Complex”, *Organometallics*, **2012**, *31*, 6690-6696. DOI: 10.1021/om300752w.
24. Khusnutdinova, J. R.; Qu, F.; Zhang, Y.; Rath, N. P.; Mirica, L. M.\* “Formation of the Pd(IV) Complex [(Me<sub>3</sub>tacn)Pd<sup>IV</sup>Me<sub>3</sub>]<sup>+</sup> through Aerobic Oxidation of (Me<sub>3</sub>tacn)Pd<sup>II</sup>Me<sub>2</sub> (Me<sub>3</sub>tacn = N,N',N''-trimethyl-1,4,7-triazacyclononane)”, *Organometallics*, **2012**, *31*, 4627-4630, DOI: 10.1021/om300426r. Featured on the cover of issue 13.
23. Evangelio, E.; Rath, N. P.; Mirica, L. M.\* “Cycloaddition Reactivity Studies of First Row Transition Metal-Azide Complexes and Alkynes: An Inorganic Click Reaction for Metalloenzyme Inhibitor Synthesis”, *Dalton Trans.*, **2012**, *41*, 8010-8021, DOI: 10.1039/c2dt30145h. Invited contribution for the “New Talent Americas” issue.
22. Sharma, A. K.; Pavlova, S. T.; Kim, J.; Finkelstein, D.; Hawco, N. J.; Rath, N. P.; Kim, J.; Mirica, L. M.\* “Bifunctional Metal-Binding Compounds for Controlling the Metal-Mediated Aggregation of the A $\beta$ 42 Peptide”, *J. Am. Chem. Soc.*, **2012**, *134*, 6625-6636, DOI: 10.1021/ja210588m.
21. Khusnutdinova, J. R.; Rath, N. P.; Mirica, L. M.\* “The Aerobic Oxidation of a Pd(II) Dimethyl Complex Leads to Selective Ethane Elimination from a Pd(III) Intermediate”, *J. Am. Chem. Soc.*, **2012**, *134*, 2414-2422, DOI: 10.1021/ja210841f.
20. Luo, J.; Khusnutdinova, J. R.; Rath, N. P.; Mirica, L. M.\* “Unsupported d<sup>8</sup>-d<sup>8</sup> Interactions in Cationic Pd<sup>II</sup> and Pt<sup>II</sup> Complexes: Evidence for a Significant Metal-Metal Bonding Character”, *Chem. Comm.*,

**2012**, 48, 1532-1534, DOI: 10.1039/c1cc15420f. Invited contribution for the “Emerging Investigators” issue.

19. Luo, J.; Rath, N. P.; Mirica, L. M.\* “Dinuclear Co(II)Co(III) Mixed-Valence and Co(III)Co(III) Complexes with N- and O- Donor Ligands: Characterization and Water Oxidation Studies”, *Inorg. Chem.*, **2011**, 50, 6152-6157, DOI: 10.1021/ic201031s.
18. Khusnutdinova, J. R.; Rath, N. P.; Mirica, L. M.\* “Dinuclear Pd(III) Complexes with a Single Unsupported Bridging Halide Ligand: Reversible Formation from Mononuclear Pd(II) or Pd(IV) Precursors”, *Angew. Chem. Int.Ed.*, **2011**, 50, 5532-5536, DOI: 10.1002/anie.201100928.
17. Khusnutdinova, J. R.; Rath, N. P.; Mirica, L. M.\* “Stable Mononuclear Organometallic Pd(III) Complexes and Their C-C Bond Formation Reactivity”, *J. Am. Chem. Soc.*, **2010**, 132, 7303-7305; DOI: 10.1021/ja103001g. Featured as “News of the Week” in *Chem. & Eng. News*, **2010**, 88, 21, 9.

### Publications from Postdoctoral and Ph.D. Studies

16. Verma, P.; Weir, J.; Mirica, L. M.; Stack, T. D. P.\* “Tale of a Twist: Magnetic and Optical Switching in Copper(II) Semiquinone Complexes”, *Inorg. Chem.*, **2011**, 50, 9816-9825.
15. Op’t Holt, B. T.; Vance, M. A.; Mirica, L. M.; Heppner, D. E.; Stack, T. D. P.,\* Solomon E. I.\* “Reaction Coordinate of a Functional Model of Tyrosinase: Spectroscopic and Computational Characterization”, *J. Am. Chem. Soc.*, **2009**, 131, 6421-6438.
14. Humphreys, K. J.; Mirica, L. M.; Wang Y.; Klinman, J. P.\* “Galactose Oxidase as a Model for Reactivity at a Copper Superoxide Center”, *J. Am. Chem. Soc.*, **2009**, 131, 4657-4663.
13. Mirica, L. M.; McCusker, K. P.; Munos, J. W.; Liu, H. W.; Klinman, J. P.\* “Probing the Nature of Reactive Fe/O<sub>2</sub> Intermediates in Non-Heme Iron Enzymes through <sup>18</sup>O Kinetic Isotope Effects”, *J. Am. Chem. Soc.*, **2008**, 130, 8122-8123.
12. Mirica, L. M.; Klinman, J. P.\* “The Nature of O<sub>2</sub> Activation by the Ethylene-Forming Enzyme ACC Oxidase”, *Proc. Natl. Acad. Sci. U. S. A.*, **2008**, 105, 1814-1819.
11. Welford, R. W. D.; Lam, A.; Mirica, L. M.; Klinman, J. P.\* “Partial Conversion of *Hansenula polymorpha* Amine Oxidase into a ‘Plant’ Amine Oxidase: Implications for Copper Chemistry and Mechanism”, *Biochemistry*, **2007**, 46, 10817-10827.
10. Thrower, J. T.; Mirica, L. M.; McCusker, K. P.; Klinman, J. P.\* “Mechanistic Investigations of 1-Aminocyclopropane 1-Carboxylic Acid Oxidase with Alternate Cyclic and Acyclic Substrates”, *Biochemistry*, **2006**, 45, 13108-13117.
9. Mirica, L. M.; Rudd, D. J.; Vance, M.; Solomon, E. I.;\* Hedman, B.;\* Hodgson, K. O.;\* Stack, T. D. P.\* “A  $\mu$ - $\eta^2$ : $\eta^2$ -Peroxodicopper(II) Complex with a Secondary Diamine Ligand: A Functional Model of Tyrosinase”, *J. Am. Chem. Soc.*, **2006**, 128, 2654-2665.
8. Cole, A. P.; Mahadevan, V.; Mirica, L. M.; Ottenwaelder, X.; Stack, T. D. P.\* “Bis( $\mu$ -oxo)dicopper(III) Complexes of a Homologous Series of Simple Peralkylated 1,2-Diamines: Steric Modulation of Structure, Stability, and Reactivity”, *Inorg. Chem.*, **2005**, 44, 7345-7364.

7. Yoon, J.; Mirica, L. M.; Stack, T. D. P.;\* Solomon, E. I.\* “Variable-Temperature Variable-Field Magnetic Circular Dichroism Studies of Tris-Hydroxy and  $\mu_3$ -Oxo Bridged Trinuclear Cu(II) Complexes: Geometric and Electronic Structures of the Native Intermediate of Multicopper Oxidases”, *J. Am. Chem. Soc.*, **2005**, *127*, 13680-13693.
6. Mirica, L. M.; Vance, M.; Rudd, D. J.; Hedman, B.;\* Hodgson, K. O.;\* Solomon, E. I.;\* Stack, T. D. P.\* “Tyrosinase Reactivity in a Model Complex: An Alternative Hydroxylation Mechanism”, *Science*, **2005**, *308*, 1890-1892; DOI: 10.1126/science.1112081. Featured as a perspective in *Science*, **2005**, *308*, 1876-1877 and a science concentrate in *Chem. & Eng. News*, **2005**, *83*, 26, 38.
5. Mirica, L. M.; Stack, T. D. P. \* “A Tris( $\mu$ -hydroxy)tricopper(II) Complex as a Model of the Native Intermediate in Laccase and Its Relationship to a Binuclear Analogue”, *Inorg. Chem.*, **2005**, *44*, 2131-2133.
4. Pratt, R. C.; Mirica, L. M.; Stack, T. D. P.\* “Snapshots of a Metamorphosing Cu(II) Ground State in a Galactose Oxidase-Inspired Complex”, *Inorg. Chem.*, **2004**, *43*, 8030-8039.
3. Yoon, J.; Mirica, L. M.; Stack, T. D. P.;\* Solomon, E. I.\* “Spectroscopic Demonstration of a Large Antisymmetric Exchange Contribution to the Spin-Frustrated Ground State of a  $D_3$  Symmetric Hydroxy-Bridged Trinuclear Cu(II) Complex: Ground-to-Excited State Superexchange Pathways”, *J. Am. Chem. Soc.*, **2004**, *126*, 12586-12595.
2. Mirica, L. M.; Ottenwaelder, X.; Stack, T. D. P.\* “Structure and Spectroscopy of Copper–Dioxygen Complexes”, *Chem. Rev.*, **2004**, *104*, 1013-1046.
1. Mirica, L. M.; Vance, M.; Rudd, D. J.; Hedman, B.;\* Hodgson, K. O.;\* Solomon, E. I.;\* Stack, T. D. P.\* “A Stabilized  $\mu$ - $\eta^2$ : $\eta^2$ -Peroxicopper(II) Complex with a Secondary Diamine Ligand and Its Tyrosinase-like Reactivity”, *J. Am. Chem. Soc.* **2002**, *124*, 9332-9333.

## INVITED PRESENTATIONS

77. “Organometallic Reactivity of High-Valent Pd and Ni Complexes”, Department of Chemistry, *École Polytechnique Fédérale de Lausanne (EPFL), Switzerland*, November 2017.
76. “Novel Theranostic Agents for Metal-Amyloid  $\beta$  Peptide Interactions in Alzheimer’s Disease”, Department of Chemistry, *University of Girona, Spain*, September 2017.
75. “Organometallic Reactivity of High-Valent Pd and Ni Complexes”, Department of Chemistry, *University of Girona, Spain*, September 2017.
74. “Organometallic Reactivity of High-Valent Pd and Ni Complexes”, Department of Chemistry, *POSTECH, South Korea*, February 2017.
73. “Organometallic Reactivity of High-Valent Pd and Ni Complexes”, Department of Chemistry, *DGIST, South Korea*, February 2017.
72. “Organometallic Reactivity of High-Valent Pd and Ni Complexes”, Department of Chemistry, *Korea Advanced Institute of Science and Technology (KAIST), South Korea*, February 2017.



71. “Organometallic Reactivity of High-Valent Pd and Ni Complexes”, Department of Chemistry, *New Mexico State University*, January 2017.
70. “Controlling and Imaging Amyloid  $\beta$  Peptide Aggregation in Alzheimer’s Disease”, Hope Center for Neurological Disorders, *Washington University School of Medicine*, November 2016.
69. “Organometallic Reactivity of High-Valent Pd and Ni Complexes”, Department of Chemistry, *University of Illinois – Urbana-Champaign*, November 2016.
68. “Organometallic Reactivity of High-Valent Pd and Ni Complexes”, Department of Chemistry, *University of Washington*, October 2016.
67. “Bioinspired oxidative reactivity: From Cu to Pd and Ni”, invited DIC YIA Where Are They Now symposium talk, *American Chemical Society National Meeting*, Philadelphia, August 2016.
66. “Mechanistic Studies of Bioinspired Oxidative Organometallic Reactions”, invited talk, *Department of Energy, Catalysis Science Contractor’s Meeting*, Gaithersburg, MD, June 2016.
65. “C-C and C-Heteroatom Bond Formation Reactivity of Organometallic Ni(III) and Ni(IV) Complexes”, Department of Chemistry, *University of Pennsylvania*, March 2016.
64. “C-C and C-Heteroatom Bond Formation Reactivity of Organometallic Ni(III) and Ni(IV) Complexes”, Department of Chemistry, *Princeton University*, March 2016.
63. “The Organometallic Reactivity of Paramagnetic Pd and Ni Complexes”, Department of Chemistry, *Marquette University*, September 2015.
62. “Controlling and Imaging Metal-Mediated A $\beta$  Peptide Aggregation in Alzheimer’s Disease”, Department of Chemistry, *Simon Fraser University*, Burnaby, Canada, July 2015.
61. “Organometallic Reactivity of Pd and Ni Complexes in Uncommon Oxidation States”, Department of Chemistry, *Quincy University*, March 2015.
60. “Organometallic Reactivity of High-Valent Pd and Ni Complexes Supported by Flexible Multidentate Ligands”, Department of Chemistry, *Lehigh University*, September 2014.
59. “Organometallic Reactivity of High-Valent Pd and Ni Complexes”, the 2014 Organometallics Symposium, *American Chemical Society National Meeting*, San Francisco, August 2014.
58. “Aerobically-Induced Oxidative Reactivity of Pd Complexes Supported by Flexible Multidentate Ligands”, symposium talk, *American Chemical Society National Meeting*, San Francisco, August 2014.
57. “Controlling and Imaging Metal-Mediated A $\beta$  Peptide Aggregation in Alzheimer’s Disease”, Department of Chemistry, *University of British Columbia*, Vancouver, Canada, April 2014.
56. “From Greenhouse Gas to Liquid Fuels: The Magic of Catalysis”, *Science in St. Louis Public Lecture*, *Washington University*, March 2014.
55. “Organometallic Reactivity of High-Valent Group 10 Transition Metal Complexes”, Department of Chemistry, *Tsinghua University*, Beijing, China, February 2014.

54. “Organometallic Reactivity of High-Valent Group 10 Transition Metal Complexes”, Department of Organic Chemistry, *University of Science and Technology of China*, Hefei, China, February 2014.
53. “Organometallic Reactivity of High-Valent Group 10 Transition Metal Complexes”, *Shanghai Institute of Organic Chemistry*, Shanghai, China, February 2014.
52. “Organometallic Reactivity of High-Valent Pd and Ni Complexes Supported by Flexible Multidentate Ligands”, Department of Chemistry, *University of Rochester*, February 2014.
51. “Controlling and Imaging Metal-Mediated A $\beta$  Peptide Aggregation in Alzheimer’s Disease”, *Saltman Lectureship, Metals in Biology Gordon Research Conference*, Ventura, January 2014.
50. “Novel Chemical Agents as Theranostic Tools for Metal-mediated A $\beta$  Peptide Aggregation”, *International Conference on Biological Inorganic Chemistry (ICBIC16)*, Grenoble, France, July 2013.
49. “Organometallic Reactivity of High-Valent Pd and Ni Complexes Supported by Tetradentate and Tridentate Ligands”, invited talk, *Organometallics Gordon Research Conference*, July 2013.
48. “Reactivity of Organometallic High-Valent Pd Complexes Supported by Flexible Multidentate Ligands”, invited talk, *Department of Energy, Catalysis Science Contractor’s Meeting*, Annapolis, June 2013.
47. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of California, Santa Barbara*, May 2013.
46. “Oxidative Reactivity of High-Valent Pd Complexes Supported by Flexible Multidentate Ligands”, symposium talk, *American Chemical Society National Meeting*, New Orleans, April 2013.
45. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *Johns Hopkins University*, April 2013.
44. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *Georgetown University*, April 2013.
43. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of Maryland*, April 2013.
42. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *MIT*, March 2013.
41. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *Harvard University*, March 2013.
40. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of California, San Diego*, March 2013.
39. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of California, Los Angeles*, February 2013.
38. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of Southern California*, February 2013.

37. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *Caltech*, February 2013.
36. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of California, Berkeley*, February 2013.
35. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *Stanford University*, February 2013.
34. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of Florida*, February 2013.
33. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *North Carolina State University*, February 2013.
32. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of North Carolina, Chapel Hill*, January 2013.
31. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *Texas A&M University*, November 2012.
30. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *Yale University*, November 2012.
29. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *Indiana University*, November 2012.
28. “The Importance of Undergraduate Research in My Academic Career”, keynote speaker, Undergraduate Research Symposium, Washington University, October, 2012.
27. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of Wisconsin, Madison*, October 2012.
26. “Aerobic Oxidative C-C and C-Heteroatom Bond Formation Reactions Involving High-Valent Pd Intermediates”, Department of Chemistry, *University of Delaware*, October 2012.
25. “Stable Mononuclear Pd(III) and Pd(IV) Complexes: Reactivity Comparison and Relevance to Aerobic C-C Bond Formation”, *NSF Workshop on Synthesis*, MIT Endicott House, Dedham, MA, May 2012.
24. “Stable Pd(III) and Pd(IV) Complexes Supported by Tetradentate and Tridentate Ligands and Their C-C Bond Formation Reactivity”, *Mesilla Chemistry Workshop*, Las Cruces, New Mexico, February 2012.
23. “Stable Pd(III) and Pd(IV) Complexes Supported by Tetradentate and Tridentate Ligands and Their C-C Bond Formation Reactivity”, Department of Chemistry, *University of California, Irvine*, December 2011.
22. “The Reactivity of Stable Pd(III) and Pd(IV) Complexes Supported by Tetradentate and Tridentate Ligands”, *Zing Coordination Chemistry Conference*, Mexico, December 2011.

21. “Stable Pd(III) and Pd(IV) Complexes Supported by Tetradentate and Tridentate Ligands and Their C-C Bond Formation Reactivity”, Department of Chemistry, *University of Michigan, Ann Arbor*, November 2011.
20. “Late Transition Metal Catalysts for the Activation of Small Molecules: Relevance to Renewable Energy Catalysis”, Department of Chemistry, *University of Louisville*, November 2011.
19. “Stable Pd(III) and Pd(IV) Complexes Supported by Tetradentate and Tridentate Ligands and Their C-C Bond Formation Reactivity”, Department of Chemistry, *University of Missouri, Columbia*, October 2011.
18. “Late Transition Metal Catalysts for the Activation of Small Molecules: Relevance to Renewable Energy Catalysis”, Department of Chemistry, *Missouri State University*, October 2011.
17. “Late Transition Metal Catalysts for the Activation of Small Molecules: Relevance to Renewable Energy Catalysis”, Department of Chemistry, *Macalester College*, September 2011.
16. “Late Transition Metal Catalysts for the Activation of Small Molecules: Relevance to Renewable Energy Catalysis”, Department of Chemistry, *Western Michigan University*, September 2011.
15. “New Chemical Agents for Controlling Amyloid  $\beta$  Peptide Aggregation in Alzheimer’s Disease”, *International Conference on Biological Inorganic Chemistry (ICBIC15)*, Vancouver, August 2011.
14. “Late Transition Metal Catalysts for the Activation of Small Molecules: Relevance to Renewable Energy Catalysis”, *Challenges in Renewable Energy – International Symposia on Advancing the Chemical Sciences (ISACS4)*, MIT, Boston, July 2011.
13. “New Chemical Agents for Controlling Histone Demethylation and Amyloid  $\beta$  Peptide Aggregation”, Department of Biochemistry and Molecular Biophysics, *Washington University School of Medicine*, April 2011.
12. “Late Transition Metal Catalysts for the Activation of Small Molecules: Relevance to Renewable Energy Catalysis”, Department of Chemistry, *Saint Louis University*, February 2011.
11. “Late Transition Metal Catalysts for the Activation of Small Molecules: Relevance to Renewable Energy Catalysis”, Department of Chemistry, *Southern Illinois University - Edwardsville*, January 2011.
10. “New Chemical Agents for Controlling Amyloid  $\beta$  Peptide Aggregation in Alzheimer’s Disease”, Alzheimer’s Disease Research Center, *Washington University School of Medicine*, December 2010.
9. “Late Transition Metal Catalysts for the Activation of Small Molecules: Relevance to Renewable Energy Catalysis”, *Midstates Consortium Undergraduate Research Symposium*, Washington University in St. Louis, November 2010.
8. “Stable Mononuclear Organometallic Pd(III) Complexes and Their C-C Bond Formation Reactivity”, *Missouri Inorganic Day*, Saint Louis University, May 2010.
7. “Renewable Energy Catalysis: Studies of Water Oxidation by Bimetallic Complexes”, Department of Chemistry and Biochemistry, *University of Missouri – St. Louis*, April 2010.

6. “Development of Specific Inhibitors for Histone Demethylases”, *NIH Mentoring Workshop for Junior Faculty*, University of California, Irvine, October 2009.
5. “New Chemical Agents for Imaging and Controlling Amyloid  $\beta$  Peptide Aggregation in Alzheimer’s Disease”, Department of Radiology, *Washington University School of Medicine*, September 2009.
4. “Renewable Energy Catalysis: Studies of Water Oxidation by Bimetallic Complexes”, Department of Chemistry, Departmental seminar and recruiting visit, *Illinois State University*, April 2009.
3. “Mechanistic Studies of the Ethylene-forming Enzyme ACC Oxidase”, *13th International Conference on Biological Inorganic Chemistry*, Vienna, Austria, July 2007.
2. “Tyrosinase Reactivity in a Model Complex: An Alternative Hydroxylation Mechanism”, Young Investigator Symposium, *232<sup>nd</sup> National Meeting of the American Chemical Society*, San Francisco, September 2006.
1. “Phenolate Hydroxylation Reactivity of a  $\mu$ - $\eta^2$ : $\eta^2$ -Peroxodicopper(II) Complex: Peroxide O–O Bond Cleavage Precedes C–O Bond Formation”, *Gordon Graduate Research Seminar: Bioinorganic Chemistry*, Ventura, January 2005.

## COURSES TAUGHT

- Spring 2017, Chemistry 464, *Inorganic Biochemistry*, 3 credit hours, enrollment: 8. Course evaluation: Learning 4.67/5.00; Organization 4.92/5.00; Enthusiasm: 4.92/5.00; Individual rapport: 4.92/5.00.
- Fall 2016, Chemistry 461, *Inorganic Chemistry*, 3 credit hours, enrollment: 74. Course evaluation: Learning 3.97/5.00; Organization 3.84/5.00; Enthusiasm: 4.24/5.00; Individual rapport: 4.26/5.00.
- Spring 2016, Chemistry 464, *Inorganic Biochemistry*, 3 credit hours, enrollment: 13. Overall evaluation 5.35/7.00; Instruction 6.32/7.00; Organization 6.33/7.00; Interaction with students: 6.40/7.00.
- Fall 2015, Chemistry 461, *Inorganic Chemistry*, 3 credit hours, enrollment: 64. Overall evaluation 5.46/7.00; Instruction 5.53/7.00; Organization 5.88/7.00; Interaction with students: 6.16/7.00.
- Spring 2015, Chemistry 464, *Inorganic Biochemistry*, 3 credit hours, enrollment: 6. Overall evaluation 5.25/7.00; Instruction 6.30/7.00; Organization 6.23/7.00; Interaction with students: 6.30/7.00.
- Fall 2014, Chemistry 461, *Inorganic Chemistry*, 3 credit hours, enrollment: 45. Overall evaluation 5.11/7.00; Instruction 5.32/7.00; Organization 5.88/7.00; Interaction with students: 6.02/7.00.
- Spring 2014, Chemistry 464, *Inorganic Biochemistry*, 3 credit hours, enrollment: 7. Overall evaluation 6.93/7.00; Instruction 6.93/7.00; Organization 6.93/7.00; Interaction with students: 6.93/7.00.
- Fall 2013, Chemistry 461, *Inorganic Chemistry*, 3 credit hours, enrollment: 74. Overall evaluation 4.97/7.00; Instruction 4.97/7.00; Organization 5.60/7.00; Interaction with students: 6.02/7.00.
- Fall 2012, Chemistry 464, *Inorganic Biochemistry*, 3 credit hours, enrollment: 13. Overall evaluation 5.60/7.00; Instruction 5.81/7.00; Organization 6.09/7.00; Interaction with students: 6.30/7.00.

- Spring 2012, Chemistry 112, *General Chemistry*, 4 credit hours, enrollment: 621, taught one section of 332 students. Overall evaluation 5.60/7.00; Instruction 5.88/7.00; Organization 6.02/7.00; Interaction with students: 5.95/7.00.
- Fall 2011, Chemistry 464, *Inorganic Biochemistry*, 3 credit hours, enrollment: 13. Overall evaluation 5.74/7.00; Instruction 6.02/7.00; Organization 6.37/7.00; Interaction with students: 6.44/7.00.
- Spring 2011, Chemistry 112, *General Chemistry*, 4 credit hours, enrollment: 664, taught one section of 345 students. Overall evaluation 5.53/7.00; Instruction 5.88/7.00; Organization 5.95/7.00; Interaction with students: 5.95/7.00.
- Fall 2010, Chemistry 464, *Inorganic Biochemistry*, 3 credit hours, enrollment: 5. Overall evaluation 6.65/7.00; Instruction 6.30/7.00; Organization 6.44/7.00; Interaction with students: 6.72/7.00.
- Fall 2009, Chemistry 464, *Inorganic Biochemistry*, 3 credit hours, enrollment: 14. Overall evaluation 6.37/7.00; Instruction 6.30/7.00; Organization 6.58/7.00; Interaction with students: 6.72/7.00.
- Fall 2008, Chemistry 542, *Special Topics in Inorganic Chemistry: Metal-Catalyzed Reactions in Chemistry and Biology*, 3 credit hours, enrollment: 8. Overall evaluation 5.46/7.00; Instruction 5.60/7.00; Organization 5.60/7.00; Interaction with students: 6.51/7.00.

#### **UNIVERSITY OF ILLINOIS COMMITTEES AND SERVICE**

- Staff Committee, Department of Chemistry, 2019 – present

#### **WASHINGTON UNIVERSITY COMMITTEES AND SERVICE**

- Chair, Admissions Committee, Department of Chemistry, 2014 – 2018
- Graduate Work Committee, Department of Chemistry, 2010 – present
- Admissions and Recruiting Committee, Department of Chemistry, 2008 – present
- Chair, Seminar Committee, Department of Chemistry, 2010 – 2016
- Biochemistry Faculty Search Committee, Department of Chemistry, 2016
- NMR and EPR Facility Manager Search Committee, Department of Chemistry, 2014 & 2016
- Bioorganic/biomaterials Faculty Search Committee, Department of Chemistry, 2014
- Goldwater Fellowship Committee, Washington University, 2015- present
- Undergraduate major advisor, Department of Chemistry: 19 students, 15 currently
- Thesis Committees, Department of Chemistry: 33 students, 15 currently
- External Thesis Committees, Division of Biological and Biomedical Sciences (DBBS): 4 students, 1 currently
- HHMI Summer Scholars in Biology and Biomedical Research Program Selection Committee, 2011 – 2014

- HHMI Summer Undergraduate Research Fellowships reviewer, 2009 – present. Reviewed applications for the SURF program.
- DBBS, MSTP Candidate Interview Committee, 2009 – present. Interviewed candidates for the WashU MD/PhD program.
- DBBS, Biochemistry Ph.D. Candidate Interview Committee, 2009 – present. Interviewed candidates for the WashU PhD program in Biochemistry.

## **PROFESSIONAL SERVICE**

- Reviewer for *Science*, *Nature Chemistry*, *Journal of the American Chemical Society*, *Proceedings of the National Academy of Sciences U.S.A.*, *Accounts of Chemical Research*, *Angewandte Chemie*, *Chemical Communications*, *Chemical Science*, *Inorganic Chemistry*, *Chemistry of Materials*, *Dalton Transactions*, *Organometallics*, *Metallomics*, *Inorganica Chimica Acta*, *Journal of Biological Inorganic Chemistry*, and *Journal of Inorganic Biochemistry*.
- Book reviewer for *Oxford University Press*, *John Wiley and Sons*, and *Elsevier*.
- Grant proposal reviewer for *National Institutes of Health*, *National Science Foundation*, *DOE Basic Energy Sciences*, *ACS Petroleum Research Fund*, *The Research Corporation*, *The Alzheimer's Association*, *Israel Science Foundation*, *The Austrian Science Fund*.
- *Ad-hoc member*, *Macromolecular Structure and Function A [MSFA] Study Section*, National Institutes of Health, February and June 2015.
- Evaluated two Tenure Dossiers for PhD-granting Chemistry Departments, 2013 & 2017.
- *External Examiner* for a PhD Dissertation Defense, University of British Columbia, Canada, 2014.
- *External Examiner* for a PhD Dissertation Defense, Simon Fraser University, Canada, 2015.
- Chaired numerous sessions at National American Chemical Society Meetings, 2010-2015.

## **COLLABORATORS**

Prof. Buck Rogers, Washington University School of Medicine, Department of Radiation Oncology – collaborate on the radiochemistry studies of the imaging agents targeting the amyloid beta peptide.

Prof. Nigam Rath, UMSL – single crystal X-ray diffraction characterization of the synthesized metal complexes.

Prof. Michael Gross, Washington University, Department of Chemistry – collaborate on the mass spectrometry of the metal-mediated aggregation of the amyloid beta peptide.

## **RESEARCH ASSOCIATES (current group members in bold)**

### Postdoctoral Fellows

**Bennett Eleazer**, October 2018 – present; Ph.D. University of South Carolina.

**Hong-Jun Cho**, January 2016 – present; Ph.D. Seoul National University, Korea.

Hui Duan, February 2016 – April 2017; Ph.D. Wuhan University, China; current position: postdoctoral fellow, Washington University in St. Louis.

Wen Zhou, September 2013 – August 2016; Ph.D. Brandeis University; current position: postdoctoral fellow, MIT.

Anuj Sharma, October 2009 – March 2014; Ph.D. Indian Institute of Technology, Kanpur; current position: Assistant Professor and DST-INSPIRE Faculty, Central University of Rajasthan, India.

Bo Zheng, March 2012 – July 2013; Ph.D. Nanjing University; postdoctoral scholar, Harvard University; current position: senior scientist, Cerion Advanced Materials.

Wei-Chih Lee, December 2012 – March 2012; Ph.D. University of Nevada, Reno

Julia Khusnutdinova, May 2009 – December 2011; Ph.D. University of Maryland; honor: 2010 HHMI Mentor Travel Award; current position: Assistant Professor, Okinawa Institute of Science and Technology, Japan.

Emi Evangelio, March 2010 – March 2011; Ph.D. University of Barcelona; honors: Fullbright Fellow; current position: postdoctoral fellow, University of Barcelona, Spain.

#### Graduate Students

Dr. Jia Luo (January 2009 – May 2014), B.S. in Chemistry, Xiamen University, China, 2008; departmental dissertation fellowship, 2013; current position: Lecturer, Dept. of Chemistry, Washington Univ.

Dr. Fengrui Qu (January 2009 – June 2014), M.S. in Chemistry, Southern Illinois University - Edwardsville, 2008; current position: Postdoctoral scholar, Dept. of Chemistry, Univ. of Alabama.

Dr. Fengzhi Tang (January 2009 – June 2014), B.S. in Chemistry, Huazhong University, China, 2008; departmental dissertation fellowship, 2014; current position: Scientist, ACD Radiochemicals, St. Louis.

Dr. Barbara (Gordon) Cascella (April 2009 – December 2014), B.S. in Chemistry, Rhodes College, 2008; departmental teaching award, 2010; departmental dissertation fellowship, 2014.

Dr. Ying Zhang (January 2010 – December 2014), B.S. in Chemistry, Nanjing University, China, 2009; co-advised with Prof. Michael Gross.

Stephanie Tucker (January 2010 – December 2011); B.S. in Chemistry, Berry College, 2009; Departmental teaching award, 2011.

Daniel Weisz (January 2010 – September 2011); B.S. in Chemistry, Brandeis University, 2009.

Dr. Jason Schultz (January 2011 – January 2016); B.S. in Chemistry, Gustavus Adolphus College, 2010; Departmental teaching award, 2011; Arthur and Ruth Homeyer Scholarship, 2012; Dissertation fellowship, 2016.

Dr. Michael Watson (January 2012 – May 2017); B.S. in Chemistry, Saint Louis University, 2011; Departmental teaching award, 2015; Dissertation fellowship, 2017.

Dr. Andrew Wessel (January 2012 – May 2017); B.S. in Chemistry, Missouri University of Science and Technology, 2011. Departmental teaching award, 2013; Dissertation fellowship, 2017.



Dr. Nicholas Ruhs (January 2012 – May 2017); B.S. in Chemistry, Quincy University, 2011; Departmental teaching award, 2013.

Shuai Zheng (January 2014 – May 2015); B.S. in Chemistry, Zhejiang University, China, 2013.

Emily Reeves (January 2016 – December 2016); B.S. in Chemistry, St. Olaf College, 2015

Kei Fuchigami (January 2013 – December 2017); B.S. in Chemistry, St. Olaf College, 2012. Departmental teaching award, 2013.

**Liang Sun** (January 2014 – present); B.S. in Chemistry, Jilin University, China, 2013.

**Sofia Smith** (January 2015 – present); B.S. in Chemistry, University of Rotterdam, Netherlands, 2013.

**Leonel Griego** (January 2016 – present); B.S. in Chemistry, University of Texas, El Paso, 2015

**Yiran Huang** (January 2016 – present); B.S. in Chemistry, East China University of Science and Technology, China

**Gina Tran** (January 2016 – present); B.S. in Chemistry, Knox College, 2015

**Yujue Wang** (January 2016 – present); B.S. in Chemistry, Nankai University, 2015

**Yung-Ching Wang** (January 2016 – present); B.S. in Chemistry, National Taiwan University, 2014

**Daniel Hu** (November 2018 – present); B.S. in Chemistry, National Taiwan University, 2018

**Zhengxin Yu** (November 2018 – present); B.S. in Chemistry, Nankai University, 2018

#### Undergraduate Students

Shayna Weiner (September 2008 – May 2009), B.S. in Chemistry, Washington University, 2010

Megan Kelly (June – July 2009); Washington University Summer Scholars in Biology and Biomedical Research Program; B.S. in Chemistry, Washington University, 2013

Nick Hawco (June 2009 – May 2011), B.S. in Chemistry, Washington University, 2011; HHMI Summer Undergraduate Research Fellowship, 2009; HHMI undergraduate travel award, 2010; Helmholtz award, 2011; currently a graduate student in marine biology at MIT/Woods Hole Oceanographic Institution

Darren Finkelstein (June 2009 – May 2011), B.S. in Chemistry, Washington University, 2011; HHMI Summer Undergraduate Research Fellowship, 2009; Barry M. Goldwater Scholarship finalist, 2010; Wahl award, 2011; currently a graduate student in chemistry at Stanford University

Michael Schultz (September 2009 – May 2010); B.S. in Chemistry, Washington University, 2012

Jacob Shaw (January 2010 – May 2011); B.S. in Chemistry, Washington University, 2012

Madeleine Coutre (June 2010 – August 2011); Washington University Summer Scholars in Biology and Biomedical Research Program, 2010; Sophomore Summer Undergraduate Research Fellowship, 2011

Kathleen Hagan (September 2010 – December 2011); B.S. in Chemical Engineering, Washington University, 2012; HHMI Summer Undergraduate Research Fellowship, 2011; currently part of the Teach for America program

Sungho Park (September 2010 – May 2013); Washington University Summer Undergraduate Research Award, 2011; Washington University Summer Undergraduate Research Award, 2012; OUR undergraduate travel award, 2013; B.S. in Chemistry, 2013

Tim Prior (January 2011 – present); HHMI Summer Undergraduate Research Fellowship, 2012; HHMI undergraduate travel award, 2012; B.S. in Chemistry, Washington University, 2013

Philip Azanov (May 2011 – May 2013); Washington University Summer Undergraduate Research Award, B.S. in Chemistry, Washington University, expected 2014

Aakash Gandhi (June 2011 – August 2011); Washington University Summer Scholars in Biology and Biomedical Research Program, 2012.

Aaron Rhee (August 2012 – present); B.S. in Chemistry, Washington University, 2015; Helmholtz award, 2015.

Hyo Jin Sun (August 2013 – present); B.S. in Chemistry, Washington University, 2015; Summer Undergraduate Research Award, 2014; Wahl award, 2015.

Nathaniel Belcher (January 2014 – present); B.S. in Chemistry, Washington University, 2015.

Ryan Sun (January 2014 – present); B.S. in Chemistry, Washington University, expected 2016; HHMI Summer Undergraduate Research Fellowship, 2014; Summer Undergraduate Research Award, 2015.

Maya Sorini (January 2016 – May 2016); B.S. in Chemistry, Washington University, expected 2018.

Aidan Levine (January 2015 – May 2017); B.S. in Chemistry, Washington University, 2017.

Veronica Li (June 2017 – December 2017); B.S. in Chemistry, Washington University, 2017.

Justin Chu (January 2016 – May 2018); B.S. in Chemistry, Washington University, 2018.

Alice Hsu (January 2017 – May 2018); B.S. in Chemistry, Washington University, expected 2019.

Emily Morgan (May 2016 – December 2018); B.S. in Chemistry, Washington University, 2018.