

Education

- 2002-2007 University of California, Berkeley
Ph.D., Chemistry
Thesis Advisors: Professors Jonathan Ellman and Robert Bergman
- 1998-2002 University of Illinois at Urbana/Champaign
B.S., Chemistry, *Cum Laude* and with Highest Distinction in the Curriculum
Research Advisor: Professor Eric Oldfield

Positions and Employment

- 2023-present Indiana University, Bloomington, Department of Chemistry (Professor)
- 2018-2023 Indiana University, Bloomington, Department of Chemistry (Associate Professor)
- 2011-2018 University of Chicago, Department of Chemistry (Assistant Professor)
- 2007-2010 California Institute of Technology, Department of Chemistry and Chemical Engineering
(NIH Postdoctoral Fellow with Prof. Frances Arnold)
- 2002-2007 University of California, Berkeley, Department of Chemistry (Graduate student)
- 2001, 2002 Abbott Laboratories, Metabolic Disease Research (Research Intern, two summers)
- 1999-2002 University of Illinois at Urbana/Champaign, Department of Chemistry (Undergraduate Research Assistant)

Selected Honors and Awards

- 2022 Trustees Teaching Award, Indiana University College of Arts and Sciences
- 2019 Novartis Chemistry Lectureship
- 2016 Dreyfus Teacher-Scholar Award
- 2015 Ed Stiefel Young Investigator Award (given by the Metals in Biology GRC)
- 2014 NSF CAREER Award
- 2013 Thieme Chemistry Journal Award
- 2013 CBC Catalyst Award
- 2011 David and Lucile Packard Foundation Fellowship in Science and Engineering
- 2011 Searle Scholar Award
- 2010 NIH Pathways to Independence Award
- 2007 NIH Ruth L. Kirschstein National Research Service Award
- 2002 Worth Huff Rodebush Award for Undergraduate Research
- 2002 John C. Bailar Award for Superlative Senior Research Thesis
- 1999-2001 Scholarships and Research Grants from Kimberly-Clark, Colgate-Palmolive, Valspar Corporation, National Starch and Chemical Company, and PPG

Publications (*corresponding author; undergraduate co-authors are underlined)

At Indiana University (starting May 2018)

- 1) Jiang, Y.; Kim, A.; Olive, C.; Lewis, J. C.* Selective C-H Halogenation of Alkenes and Alkynes Using Flavin-Dependent Halogenases. *Angew. Chem. Int. Ed.*, **2024**, e202317860

- 2) Li, J.; Kumar, A.; Lewis, J. C.* Non-Native Intramolecular Radical Cyclization Catalyzed by a B₁₂-Dependent Enzyme. *Angew. Chem. Int. Ed.* **2023**, e202312893.
- 3) Mondal, D.; Snodgrass, H. M.; Gomez, C. A.; Lewis, J. C.* Non-Native Site-Selective Enzyme Catalysis. *Chem. Rev.* **2023**, *123*, 10381-10431.
- 4) Liu, B.; Zubi, Y. S.; Lewis, J. C.* Iridium(III) Polypyridine Artificial Metalloenzymes with Tunable Photophysical Properties: a New Platform for Visible Light Photocatalysis in Aqueous Solution. *Dalton*, **2023**, *52*, 5034-5038.
- 5) Jiang, Y.; Lewis, J. C.* Asymmetric Catalysis by Flavin Dependent Halogenases. *Chirality*, **2023**, *35*, 452-460.
- 6) Kumar, A.; Yang, X., Li, J.; Lewis, J. C.* First and Second Sphere Interactions Accelerate Non-Native N-Alkylation Catalysis by the Thermostable, Methanol-Tolerant B₁₂-Dependent Enzyme MtaC. *ChemComm*, **2023**, *59*, 4798-4801.
- 7) Gomez, C.; Mondal, D.; Du, Q.; Chan, N.; Lewis, J. C.* Directed Evolution of a Fe(II)- and α -Ketoglutarate-Dependent Dioxygenase for Site-Selective Azidation of Unactivated Aliphatic C-H Bonds. *Angew. Chem. Int. Ed.* **2023**, e202301370.
- 8) Jiang, Y.; Snodgrass, H. M.; Zubi, Y. S.; Roof, C. V.; Guan, Y.; Mondal, D.; Honeycutt, N. H.; Lee, J.; Lewis, R. D.; Martinez, C. A.; Lewis, J. C.* The Single Component Flavin Reductase/Flavin Dependent Halogenase AetF is a Versatile Catalyst for Selective Bromination and Iodination of Arenes and Olefins. *Angew. Chem. Int. Ed.* **2022**, *61*, e202214610.
- 9) Jiang, Y.; Mondal, D.; Lewis, J. C.* Expanding the Reactivity of Flavin Dependent Halogenases Toward Olefins via Enantioselective Intramolecular Haloetherification and Chemoenzymatic Oxidative Rearrangements. *ACS Catalysis*. **2022**, *12*, 13501-13505.
- 10) Chan, N. H.; Gomez, C.; Vennelakanti, V.; Du, Q.; Kulik, H. J.*; Lewis, J. C.* Non-native Anionic Ligand Binding and Reactivity in Engineered Variants of the Fe(II)- and α -Ketoglutarate-Dependent Oxygenase, SadA. *Inorg. Chem.* **2022**, *61*, 14477-14485.
- 11) Snodgrass, H. M.; Mondal, D.; Lewis, J. C.* Directed Evolution of Flavin-Dependent Halogenases for Atroposelective Halogenation of 3-aryl-4(3H)-quinazolines via Kinetic or Dynamic Kinetic Resolution. *J. Am. Chem. Soc.* **2022**, *144*, 16676-16682.
- 12) Andorfer, M. C.; Evans, D.; Yang, S. He, C. Q.; Girlich, A. M.; Vergara-Coll, J.; Sukumar, N.; Houk, K. N.*; Lewis, J. C.* Analysis of Laboratory-Evolved Flavin-Dependent Halogenases Affords a Computational Model for Predicting Halogenase Site Selectivity. *Chem. Catal.* **2022**, *2*, 2658-2674.
- 13) Gerroll, B. H. R.; Lewis, J. C.; Baker, L. A.* Cobalamin-Mediated Electrocatalytic Reduction of Ethyl Chloroacetate in Dimethylformamide. *J. Electrochem. Soc.* **2022**, *169*, 055501.
- 14) Zubi, Y. S.; Seki, K.; Li, Y.; Hunt, A.; Liu, B.; Roux, B.*; Jewett, M. C.*; Lewis, J. C.* Metal-Responsive Regulation of Enzyme Catalysis Using Genetically Encoded Chemical Switches. *Nat. Commun.* **2022**, *13*, 1864.
- 15) Zubi, Y. S.; Liu, B.; Gu, Y.; Sahoo, D.; Lewis, J. C.* Controlling the Optical and Catalytic Properties of Artificial Metalloenzyme Photocatalysts Using Chemogenetic Engineering. *Chem. Sci.* **2022**, *13*, 1459-1468.
- 16) Yang, X.; Gerroll, B. H. R.; Jiang, Y.; Kumar, A.; Zubi, Y. S.; Baker, L. A.; Lewis, J. C.* Controlling Non-Native B₁₂ Reactivity and Catalysis in the Transcription Factor CarH. *ACS Catal.* **2022**, *12*, 935-942.
- 17) Jones, K. A.; Snodgrass, H. M.; Belsare, K.; Dickinson, B. C.*; Lewis, J. C.* Phage-Assisted Continuous Evolution and Selection of Enzymes for Chemical Synthesis. *ACS Cent. Sci.* **2021**, *7*, 1581-1590.

- 18) Upp, D. M.; Huang, R.; Li, Y.; Bultman, M. J.; Roux, B.*; Lewis, J. C.* Engineering Dirhodium Artificial Metalloenzymes for Diazo Coupling Cascade Reactions. *Angew. Chem. Int. Ed.* **2021**, *60*, 2-7.
- 19) Dibyendu Mondal, Brian F. Fisher, Yuhua Jiang, Jared C. Lewis*. Flavin-Dependent Halogenases Catalyze Enantioselective Olefin Halocyclization. *Nat. Commun.* **2021**, 3268.
- 20) Natalie Chan, Joseph J. Gair, Michael Roy, Yehao Qiu, Duo-Sheng Wang, Landon J. Durak, Liwei Chen, Alexander S. Filatov, Jared C. Lewis*. Insight into the Scope and Mechanism for Transmetalation of Hydrocarbyl Ligands on Complexes Relevant to C-H Activation. *Organometallics*. **2021**, *40*, 6-10.
- 21) Salazar, C. A.; Gair, J. J.; Flesch, K. N.; Guzei, I. A.; Lewis, J. C.; Stahl, S. S.* Catalytic Behavior of Mono-*N*-Protected Amino-Acid Ligands in Ligand-Accelerated C-H Activation by Palladium(II). *Angew. Chem. Int. Ed.* **2020**, *59*, 10873-10877.
- 22) Fisher, B. F.; Snodgrass, H. M.; Jones, K. A.; Andorfer, M. C.; Lewis, J. C.* Site-Selective C-H Halogenation using Flavin-Dependent Halogenases Identified via Family-Wide Activity Profiling. *ACS Cent. Sci.*, **2019**, *5*, 1844-1856.
- 23) Huang, R.*; Chen, H.; Upp, D. M.; Lewis, J. C.; Zhang, Y.-H. P.* A High-Throughput Method for Directed Evolution of NAD(P)⁺-Dependent Dehydrogenases for the Reduction of Nicotinamide Biomimetics. *ACS Cat.* **2019**, *9*, 11709-11719.
- 24) Jones, K. A.; Kentala, K.; Beck, M. W.; An, W.; Lippert, A. R.; Lewis, J. C.; Dickinson, B. C.* Development of a Split Esterase for Protein-Protein Interaction-Dependent Small-Molecule Activation. *ACS Cent. Sci.*, **2019**, *5*, 1768-1776.
- 25) Gair, J. J.; Haines, B. H.; Filatov, A. S.; Musaev, D. G.*; Lewis, J. C.* Di-Palladium Complexes are Active Catalysts for Mono-*N*-Protected Amino Acid Accelerated Enantioselective C-H Functionalization. *ACS Cat.* **2019**, *9*, 11386-11397.
- 26) Lewis, J. C.* Beyond the Second Coordination Sphere: Engineering Dirhodium Artificial Metalloenzymes to enable Protein Control of Transition Metal Catalysis. *Acc. Chem. Res.* **2019**, *52*, 576-584.
- 27) Ellis-Guardiola, K.; Rui, H.; Beckner, R. L.; Park, H.-J.; Srivastava, P.; Roux, B.; Sukumar, N.; Lewis, J. C.* Crystal Structure and Conformational Dynamics of *Pyrococcus furiosus* Prolyl Oligopeptidase. *Biochemistry*, **2019**, *58*, 1616-1626.
- 28) Gair, J. J.; Qiu, Y.; Chan, N.; Filatov, A. S.; Lewis, J. C.* Synthesis, Characterization, and Theoretical Investigation of a Transition State Analogue for Proton Transfer during C-H Activation by a Rhodium-Pincer Complex. *Organometallics*, **2019**, *38*, 1407-1412.
- 29) Andorfer, M. C.; Lewis, J. C.* Understanding and Improving the Activity of Flavin Dependent Halogenases via Random and Targeted Mutagenesis. *Ann. Rev. Biochem.* **2018**, *87*, 159-185.

At the University of Chicago (starting January 2011)

- 30) Yang, H.; Swartz, A. M.; Srivastava, P.; Ellis-Guardiola, K.; Park, H. J.; Upp, D.; Belsare, K.; Lee, G.; Gu, Y.; Zhang, C.; Moellering, R. E.; Lewis, J. C.* Evolving Artificial Metalloenzyme Selectivity via Random Mutagenesis. *Nat. Chem.* **2018**, *10*, 318-324.
- 31) Ellis-Guardiola, K.; Lewis, J. C.* Preparation of Artificial Metalloenzymes. In *Artificial Metalloenzymes and MetalloDNazymes in Catalysis. From Design to Applications*; Diégues, M.; Bäckvall, J.-E.; Pàmies, O., Eds.; Wiley-VCH, **2018**, 1-40.
- 32) Payne, J. T.; Butkovich, P.; Gu, Y.; Kunze, K. N.; Park, H.-J.; Yang, D.-S.; Lewis, J. C.* Enantioselective Desymmetrization of Methylenedianilines via Enzyme-Catalyzed Remote

Halogenation. *J. Am. Chem. Soc.* **2018**, *140*, 546-549.

- 33) Kohler, V.; Schwizer, F.; Okamoto, Y.; Lebrun, V.; Reuter, R.; Pellizzoni, M. M.; Heinisch, T.; Gu, Yifan; Lewis, J. C.*; Ward, T. R.* Artificial Metalloenzymes: Reaction Scope and Optimization Strategies. *Chemical Reviews*, **2018**, *118*, 142-231.
- 34) Andorfer, M. C.; Belsare, K. D.; Girlich, A. M.; Lewis, J. C.* Aromatic Halogenation Using Bifunctional Flavin Reductase-Halogenase Fusion Enzymes. *ChemBioChem*, **2017**, *18*, 2099-2103.
- 35) Gair, J. J.; Qiu, Y.; Chan, N.; Filatov, A. S.; Lewis, J. C.* Rhodium complexes of 2,6-bis-(di-alkylphosphinomethyl)pyridines: Improved C-H Activation, Expanded Reaction Scope, and Catalytic Direct Arylation. *Organometallics*. **2017**, *36*, 4699-4706.
- 36) Gair, J. J.; Haines, B. E.; Filatov, A. S.; Musaev, D. G.*; Lewis, J. C.* Mono-*N*-Protected Amino Acid Ligands Stabilize Dimeric Palladium(II) Complexes of Importance to C-H Functionalization. *Chemical Science*, **2017**, *8*, 5746-5756.
- 37) Andorfer, M. C.; Grob, J. E.; Hajdin, C. E.; Chael, J. R.; Siuti, P.; Lilly, J.; Tan, K. L.*; Lewis, J. C.* Understanding Flavin-Dependent Halogenase Reactivity via Substrate Activity Profiling. *ACS Catalysis*. **2017**, 1897-1904.
- 38) Belsare, K.; Andorfer, M. C.; Cardenas, F.; Chael, J. R.; Park, H. J.; Lewis, J. C.* A Simple Combinatorial Codon Mutagenesis Method for Targeted Protein Engineering. *ACS Synth. Biol.* **2017**, *6*, 416-420.
- 39) Upp, D. M.; Lewis, J. C.* Selective C-H Bond Functionalization Using Repurposed or Artificial Metalloenzymes. *Curr. Opin. Chem. Biol.* **2017**, *37*, 48-55.
- 40) Payne, J. T.; Andorfer, M. C.; Lewis, J. C.* Engineering Flavin-Dependent Halogenases. *Meth. Enz.* **2016**, *575*, 93-126.
- 41) Andorfer, M. C.; Park, H. J.; Vergara-Coll, J.; Lewis, J. C.* Directed Evolution of RebH for Catalyst-Controlled Halogenation of Indole C-H Bonds. *Chem. Sci.* **2016**, *7*, 3720-3729.
- 42) Durak, L. J.; Payne, J. T.; Lewis, J. C.* Late-Stage Diversification of Biologically Active Molecules via Chemoenzymatic C-H Functionalization. *ACS Catal.* **2016**, *6*, 1451-1454.
- 43) Srivastava, P.; Yang, H.; Ellis-Guardiola, K.; Lewis, J. C.* Engineering a Dirhodium Artificial Metalloenzyme for Selective Olefin Cyclopropanation. *Nat. Commun.* **2015**, *6*, 7789.
- 44) Gu, Y.; Ellis-Guardiola, K.; Srivastava, P.; Lewis, J. C.* Preparation, Characterization, and Reactivity of a Photocatalytic Artificial Enzyme. *ChemBioChem*. **2015**, *16*, 1880-1883.
- 45) Payne, J. T.; Poor, C. B.; Lewis, J. C.* Directed Evolution of RebH for Site Selective Halogenation of Large, Biologically Active Molecules. *Angew. Chem. Int. Ed.* **2015**, *54*, 4226-4230.
- 46) Lewis, J. C.* Metallopeptide Catalysts and Artificial Metalloenzymes Containing Unnatural Amino Acids. *Curr. Opin. Chem. Biol.* **2015**, *25*, 27-35.
- 47) Poor, C. B.; Andorfer, M. C.; Lewis, J. C.* Improving the Stability of the FAD-Dependent Halogenase RebH Using Directed Evolution. *ChemBioChem*. **2014**, *15*, 1286-1289.
- 48) Zhang, C.; Srivastava, P.; Ellis-Guardiola, K.; Lewis, J. C.* Manganese Terpyridine Artificial Metalloenzymes for Benzylic Oxygenation and Olefin Epoxidation. *Tetrahedron*. **2014**, *70*, 4245-4249. (invited contribution)
- 49) Payne, J. T.; Lewis, J. C.* Upgrading Nature's Tools: Expression Enhancement and Preparative Utility of the Halogenase RebH. *Synlett*. **2014**, *25*, 1345-1349.
- 50) Durak, L. J. and Lewis, J. C.* Ir-Promoted, Pd-catalyzed Direct Arylation of Unactivated Arenes. *Organometallics*. **2014**, *33*, 620-623.
- 51) Yang, H.; Srivastava, P.; Zhang, C.; Lewis, J. C.* A General Method for Artificial Metalloenzyme Formation via Strain-Promoted Azide-Alkyne Cycloaddition. *ChemBioChem*. **2014**, *15*, 223-227.

- 52) Lewis, J. C.* Artificial Metalloenzymes and Metallopeptide Catalysts for Organic Synthesis. *ACS Catal.* **2013**, *3*, 2954-2975.
- 53) Durak, L. J. and Lewis, J. C.* Transmetalation of Alkyl and Hydride Ligands From Cp*(PMe₃)IrR¹R² to (cod)Pt/PdR³X. *Organometallics*, **2013**, *32*, 3153-3156.
- 54) Payne, J. T.; Andorfer, M. C.; Lewis, J. C.* Regioselective Arene Halogenation Using the FAD-Dependent Halogenase RebH. *Angew. Chem. Int. Ed.* **2013**, *125*, 5379-5382.
- 55) Zhong, Z.; Yang, H.; Zhang, C.; Lewis, J. C.* Synthesis and Catalytic Activity of Amino Acids and Metallopeptides with Catalytically Active Metallocyclic Side Chains. *Organometallics*, **2012**, *31*, 7328-7331.

Mentored Studies (including manuscripts published after mentoring was completed)

- 56) Synthetic Biology Approaches for Organic Synthesis, P. S. Coelho, J. C. Lewis, F. H. Arnold.* in *Comprehensive Organic Synthesis II*. G. Molander and P. Knochel (Eds.) Elsevier. **2014**, 390-420.
- 57) McIntosh, J. A.; Coelho, P. S.; Farwell, C. C.; Wang, Z. J.; Lewis, J. C.; Brown, T. R.; Arnold, F. H.* Enantioselective Intramolecular C-H Amination Catalysed by Engineered Cytochrome P450 Enzymes *in vitro* and *in vivo*. *Angew. Chem. Int. Ed.* **2013**, *52*, 9309-9312.
- 58) Lewis, J. C.; Coelho, P. S.; Arnold, F. H.* Enzymatic Functionalization of Carbon-Hydrogen Bonds. *Chem. Soc. Rev.* **2011**, *40*, 2003-2021.
- 59) Lewis, J. C.; Mantovani, S. M.; Fu, Y.; Snow, C. D.; Komor, R. S.; Wong, C. H.; Arnold, F. H.* Combinatorial Alanine Substitution Enables Rapid Optimization of Cytochrome P450BM3 for Selective Hydroxylation of Large Substrates. *ChemBioChem.* **2010**, *11*, 2502-2505.
- 60) Lewis, J. C.; Bastian, S.; Bennett, C. S.; Fu, Y.; Mitsuda, Y.; Chen, M. M.; Greenberg, W. A.; Wong, C.-H.*; Arnold, F. H. Chemoenzymatic Elaboration of Monosaccharides Using Engineered Cytochrome P450 BM-3 Demethylases. *Proc. Natl. Acad. Sci. U.S.A.* **2009**, *106*, 16550-16555.
- 61) Lewis, J. C.; Arnold, F. H.* Catalysts on Demand: Selective Oxidations by Laboratory-Evolved Cytochrome P450 BM-3. *Chimia*, **2009**, *63*, 309-312.
- 62) Lewis, J. C.; Berman, A. M. Bergman, R. G.*; Ellman, J. A.* Rh(I)-Catalyzed Arylation of Heterocycles via C-H Bond Activation: Expanded Scope Through Mechanistic Insight. *J. Am. Chem. Soc.* **2008**, *130*, 2493-2500.
- 63) Berman, A. M.; Lewis, J. C.; Bergman, R. G.; Ellman, J. A. Rh(I)-Catalyzed Direct Arylation of Pyridines and Quinolines. *J. Am. Chem. Soc.* **2008**, *130*, 14926-14927.
- 64) Lewis, J. C.; Bergman, R. G.*; Ellman, J. A.* Direct Functionalization of Nitrogen Heterocycles via Rh-Catalyzed C-H Bond Activation. *Acc. Chem. Res.* **2008**, *41*, 1013-1025.
- 65) Tanuwidjaja, J.; Peltier, H. M.; Lewis, J. C.; Schenkel, L. B.; Ellman, J. A.* One-Pot Microwave-Promoted Synthesis of Nitriles from Aldehydes via *tert*-Butanesulfinyl Imines. *Synthesis*, **2007**, 3385-3389.
- 66) Lewis, J. C.; Bergman, R. G.*; Ellman, J. A.* Rh(I)-Catalyzed Alkylation of Quinolines and Pyridines via C-H Activation. *J. Am. Chem. Soc.* **2007**, *129*, 5332.
- 67) Lewis, J. C.; Wu, J. Y.; Bergman, R. G.*; Ellman, J. A.* Microwave-Promoted Rhodium-Catalyzed Arylation of Heterocycles via C-H Bond Activation. *Angew. Chem. Int. Ed.* **2006**, *118*, 1619-1621.
- 68) Zhang, Y.; Lewis, J. C.; Bergman, R. G.; Ellman, J. A.; Oldfield, E.* NMR Shifts, Orbitals, and M...H-X Bonding in d⁸ Square Planar Metal Complexes. *Organometallics*, **2006**, *25*, 3515-3519.
- 69) Wiedemann, S. H.; Lewis, J. C.; Bergman, R. G.*; Ellman, J. A.* Experimental and Computational Studies on the Mechanism of N-Heterocycle C-H Activation by Rh(I). *J. Am. Chem. Soc.* **2006**, *128*, 2452-2462.

- 70) Lewis, J. C.; Wu, J. Y.; Ellman, J. A.*; Bergman, R. G.* Preagostic R-H Interactions and C-H Bond Functionalization: A Combined Experimental and Theoretical Investigation of Rh(I) Phosphinite Complexes. *Organometallics*, **2005**, *24*, 5737-5746.
- 71) Lewis, J. C.; Wiedemann, S. H.; Bergman, R. G.*; Ellman, J. A.* Arylation of Heterocycles via Rhodium-catalyzed C-H Bond Functionalization. *Org. Lett.* **2004**, *6*, 35-38.
- 72) Souers, A. J.*; Wodka, D.; Gao, J.; Lewis, J. C.; Vasudevan, A.; Gentles, R.; Brodjian, S.; Dayton, B.; Ogiela, C. A.; Fry, D.; Hernandez, L. E.; Marsh, K. C.; Collins, C. A.; Kym, P. R. Synthesis and evaluation of 2-amino-8-alkoxy quinolines as MCHR1 antagonists. Part 1. *Bioorg. Med. Chem. Lett.* **2004**, *14*, 4873-4877.
- 73) Souers, A. J.*; Wodka, D.; Gao, J.; Lewis, J. C.; Vasudevan, A.; Brodjian, S.; Dayton, B.; Ogiela, C. A.; Fry, D.; Hernandez, L. E.; Marsh, K. C.; Collins, C. A.; Kym, P. R. Synthesis and evaluation of 2-amino-8-alkoxy quinolines as MCHR1 antagonists. Part 3. *Bioorg. Med. Chem. Lett.* **2004**, *14*, 4883-4886.
- 74) Ghosh, S.; Chan, J. M. W.; Lea, C. R.; Meints, G. A.; Lewis, J. C.; Tovian, Z. S.; Flessner, R. M.; Loftus, T. C.; Bruchhaus, I.; Kendrick, H.; Croft, S. L.; Kemp, R. G.; Kobayashi, S.; Nozaki, T.; Oldfield, E.* Effects of Bisphosphonates on the Growth of *Entamoeba histolytica* and *Plasmodium Species in Vitro* and *in Vivo*. *J. Med. Chem.* **2004**, *47*, 175-187.
- 75) Martin, M. B.; Sanders, J. M.; Kendrick, H.; de Luca-Fradley, K.; Yardley, V.; Lewis, J. C.; Grimley, J. S.; van Brussel, E. M.; Olsen, J. R.; Meints, G. A.; Burzyska, A.; Kararski, P.; Croft, S. L.; Oldfield, E.* A 3D-QSAR/CoMFA Study of the Activity of Bisphosphonates Against *Trypanosoma brucei rhodesiense*: Farnesyl Pyrophosphate Synthase as a Drug Target and Analysis of Drug Toxicity. *J. Med. Chem.* **2002**, *45*, 2904-2914.
- 76) Martin, M. B.; Grimley, J. S.; Lewis, J. C.; Heath, H. T. III; Bailey, B. N.; Kendrick, H.; Yardley, V.; Caldera, A.; Lira, R.; Urbina, J. A.; Moreno, S. N. J.; Docampo, R.; Croft, S.; Oldfield, E.* Bisphosphonates Inhibit the Growth of *Trypanosoma brucei*, *Trypanosoma cruzi*, *Leishmania donovani*, *Toxoplasma gondii*, and *Plasmodium falciparum*: A Potential Route to Chemotherapy. *J. Med. Chem.* **2001**, *44*, 909-916.

Patents

- 1) Lewis, J. C.; Poor, C.; Andorfer, M.; Payne, J. "Directed Evolution of a Regioselective Halogenase for Increased Thermostability." US Patent 20,170,002,334, **2017**.
- 2) Coelho, P.S.; Brustad, E. M.; Arnold, F. H.; Wang, Z.; Lewis, J. C. In vivo and in vitro olefin cyclopropanation catalyzed by heme enzymes. US Patent 9,493,799, **2016**.
- 3) Arnold, F. H.; Wong, C.-H.; Mitsuda, Y.; Chen, M. M.; Bennett, C. S.; Greenberg, W. A.; Lewis, J. C.; Bastian, S. Methods and Compositions for Preparation of Selectively Protected Carbohydrates. Patent No. US 8,802,401, **2014**.
- 4) Collins, C. A.; Gao, J.; Kym, P. R.; Lewis, J. C.; Souers, A. J.; Vasudevan, A.; Wodka, D. 2-Aminoquinolones as Melanin Concentrating Hormone Receptor Antagonists. Patent No. WO 2003105850, **2003**.

Research Support

Current

- 1) National Institutes of Health, "Engineering Halogenases for Small Molecule Functionalization and Enantioselective Catalysis" (R35 GM152068, \$1,987,554).

- 2) Army Research Office, “Engineering Natural and Artificial Metalloenzymes for Selective C-C Coupling via Controlled Electron and Energy Transfer” (PI), 1/1/2022-12/31/2024, \$354,260.
- 3) National Science Foundation, “Collaborative Research: MFB: Integrating deep learning and high-throughput experimentation to rapidly navigate protein fitness landscapes for non-native enzyme catalysis” (PI), 11/2022-10/2025, \$564,621.
- 4) National Science Foundation, “Understanding and Controlling the Selectivity of Visible Light Photocatalysis in Metal Polypyridyl Artificial Metalloenzymes” (PI), 5/1/2022-5/31/2025.
- 5) Pfizer, Inc. “Development of Flavin-Dependent Halogenases for Process Chemistry” (PI) 11/2021-11/2022, \$91,770.
- 6) Abbvie Inc., “New Catalysts for Enzymatic Phosphorylation of Pharmaceuticals” (PI) 3/8/2021-3/7/2023, \$116,000.
- 7) Army Research Office, "MURI: Stimuli-Responsive Control of Protein-Based Molecular Structure" (Co-PI; Milan Mrksich, Northwestern University, PI), 7/30/18-7/29/23, \$6,250,000; Lewis portion to date: \$635,317.
- 8) National Science Foundation, “EFRI E3P: Program plastic lifecycle by rationally design enzyme-containing plastics” (subcontract PI) 9/1/2021-8/31/2025, Lewis portion: \$460,000.
- 9) Novartis Institutes for Biomedical Research, Unrestricted Gift, 12/2017, \$11,428.

Completed

- 1) National Institutes of Health, “Directed Evolution of Halogenases for Small Molecule Functionalization” (R01GM115665, PI), 8/15/2015-6/30/2023, \$1,188,922, \$1,268,000.
- 2) National Science Foundation, Center in Stereoselective Catalytic C-H Functionalization, “Enzymatic C-H Bond Functionalization” (CHE-1205646, S880505, subcontract PI), 2012-2022, Lewis Portion: \$973,274.
- 3) National Science Foundation, “Mass-selective colony picking for high throughput protein and strain engineering” (sub-contract co-PI), 7/1/2020-12/30/2021, \$50,000.
- 4) Army Research Office, “DURIP: Improving Automated Protein Engineering Workflows with State-of-the-Art Plate Reading Capability” (W911NF-2210022, PI), 2/1/2022-1/31/2023, \$64,840.
- 5) Camille and Henry Dreyfus Foundation, Dreyfus Teacher Scholar Award, "Engineering Proteins for Selective Catalysis" \$75,000.
- 6) Army Research Office, “Engineering Artificial Metalloenzymes for Selective Catalysis in Complex Media" (GRANT12286657, FOA: W911NF-12-R-0012, PI), \$420,000. (03/2018-02/2021)
- 7) National Science Foundation CAREER Award, “CAREER: Catalyzing Polymerization in the Laboratory and Discussion in the Classroom with Artificial Metalloenzymes” (CHE-1351991/1839154, PI), 02/15/14-01/31/19, \$650,000.
- 8) Army Research Office, “Reprogramming Proteins and Enzymes for Transition Metal Catalysis” (62247-LS, PI), 9/1/14-8/31/17, \$450,000.
- 9) David and Lucile Packard Foundation Fellowship, “Using Artificial Metalloenzymes to Augment the Biosynthetic Capability of Living Systems” (2011-37154, PI), 10/15/11-10/14/16, \$875,000.
- 10) Chicago Biomedical Consortium Catalyst Award, “Engineering Prokaryotic Translation for Artificial Metalloenzyme Production” (C-041, Co-PI), 09/01/13-08/31/16 (NCE), \$100,000.
- 11) Army Research Office, “An Integrated System for Automating Artificial Metalloenzyme Evolution” (66796-LS-RIP, PI), 8/15/15, \$184,480 (Defense University Research Instrumentation Program).
- 12) Searle Scholars Program, “Artificial Metalloenzymes (ArMs) for Adaptive Transition Metal Catalysis” (11-SSP-202, PI), 07/01/11-06/30/14, \$300,000.

- 13) National Institutes of Health, Pathways to Independence Award, “Transition Metal Catalysis and Metabolic Engineering using Artificial Metalloenzymes” (5R00GM087551, PI), 02/01/10-12/31/13, \$747,000.

Graduate Student Support

- 1) NSF GRFP: Mary C. Andorfer (2012), Joe J. Gair (2014), Brian M. Koronkiewicz (2015)
- 2) NIH NRSA (F32): Dr. Brian F. Fisher (2017)
- 3) NIH CBI (T32, UC): James T. Payne (2011), Ken Ellis-Guardiola (2012), David Upp (2016)
- 4) NIH QCB (T32, IU): Yasmine S. Zubi (2019), Caitlin V. Roof (2022)
- 5) ACS Division of Organic Chemistry Graduate Fellowship: James T. Payne (2013)
- 6) IU Chester David Fellowship in Inorganic Chemistry: Yasmine S. Zubi (2022)
- 7) IU Lynne L. Merritt Fellowship: Yasmine S. Zubi (2022)
- 8) IU Marvin Carmack Fellowship: Yuhua Jiang (2023)

Additional Support

- 1) Merck Sharp and Dohme Corp., Research Agreement (collaborative effort to optimize enzymatic halogenation for gram-scale reactions), 3/7/2016, \$20,000.
- 2) Novartis Biomedical Research Institute, Gift (for exploring the application of C-H functionalization to pharmaceutically relevant substrates), 1/27/2016, \$13,333.
- 3) University of Chicago Research Computing Center, “Research II allocation” (proposals 4056, 5574, 6877, and 9623; total of 2,650,000 SU), 9/2014-2017.
- 4) Advanced Photon Source, “Structural Characterization of Artificial Metalloenzymes” (GUP-30542, 41090), 2013-2017.
- 5) Department of Energy Joint Genome Institute Community Science Program, “Biorefining using phylogenetically diverse sets of enzymes and artificial metalloenzymes” (proposal 2852, synthesis of genes totaling 400k base pairs)
- 6) CTSI Pilot Funding for Research Use of Core Facilities, “Characterization of Genome Mined and Evolved Halogenases at the IUB Macromolecular Crystallography Facility”, \$8940.
- 7) IU Open Access Article Publishing Fund, “Halogenase Genome Mining” and “Flavin-Dependent Halogenases Catalyze Enantioselective Olefin Halocyclization”, \$2000 to offset open access publishing. (2020 and 2021)

Teaching

Indiana University

B488, Advanced Biochemistry Laboratory, Spring 2019-2024

C540, Physical Organic Chemistry, Fall 2019-2022

Guest Lectures: C689 (2018: 9/6, 13; 2019: 9/5, 12, 19); C107 (1/15/19, 3/10/20, 2/23/21, 2/15/22);

C681 (1/16/19)

University of Chicago

Chemistry 22200, Organic Chemistry III (Undergraduate), Spring 2011, 2012

Chemistry 23200, Honors Organic Chemistry III (Undergraduate), Spring 2014, 2015, 2017

Chemistry 30400, Organometallic Chemistry (Graduate), Winter 2015, Fall 2016, 2017

Chemistry 32100, Physical Organic Chemistry I (Graduate), Fall 2011-2013

Chemistry 33500, Chemistry of Enzyme Catalysis (Graduate), Winter 2017

University and Departmental Service (excluding candidacy/thesis committees)

Indiana University

- 2018- Diversity Affairs Committee (Chair, spring 2019-)
-reviewed applications for ACS Bridge Program (2021, 2022)
-led effort to administer 2022 Climate Survey
-developed a departmental Code of Conduct and accompanying signage
-represented Chemistry at NOBCCChE (2020, 2021, 2023), SACNAS (2021), and ABRCMS (2021) meetings
-represented Chemistry at the College Diversity Committee Chairs meetings
-worked with a College STEM Recruiting Group to coordinate recruiting efforts
- 2018- Graduate Admissions Committee
- 2018- Honors Curriculum
- 2018-2019 Joint Chemistry/SICE PHI search committee (also attended Faculty Hiring Workshop)
- 2019-2023 Policy Committee
- 2021-2022 Inorganic Chemistry search committee
- 2024- Synthetic Biology search committee (Chair)

Contributions to Multi-PI Grants: NIH QCB Training Grant (2018, contributed trainer documents); NSF MRI (2019, contributed general language and group-specific needs); IU Major Scientific Equipment Fund Program (2019, letter of support for Helium liquefier)

University of Chicago

- 2016-2017 Inorganic and Organic Seminar Series (chair)
- 2015-2017 Physical Sciences Division Graduate Recruitment Committee
-represented Chemistry in division discussions on recruiting strategies
-reported on best practices in recruiting from the perspective of Chemistry
- 2014-2017 Chemistry-Biology Interface Training Grant Steering Committee
-evaluated recommendations for new CBI trainers
-organized 2015 CBI mini-symposium
- 2013-2017 Physical Sciences Division (PSD) Diversity Committee
-represented Chemistry in diversity recruiting efforts (e.g. Discover UChicago)
-reviewed applications for UC PREP and Leadership Alliance Programs
-established grant supplement strategy to fund Leadership Alliance student research
- 2012-2015 Department of Chemistry Graduate Student Recruiting Committee (chair)
-directed departmental recruiting activities
-advocated for year-round recruiting efforts (URM conference attendance, recruiting material update and distribution, etc.)
-initiated use of PSD graduate application fee waiver system in Chemistry
-led effort to update departmental recruiting materials
- 2012-2017 Organometallics Supergroup meeting Faculty coordinator
- 2012-2014 Department of Chemistry Facilities Committee (member)
- 2011-2012 Department of Chemistry Graduate Student Recruiting Committee (member)
- 2011-2012 Seminar Committee (member)

Broader Service and Editorial Efforts (excluding manuscript and grant review)

- 1) External expert for hiring committee. University of Upsala
- 2) Review of research proposal for ERC Starting Grant program
- 3) Symposium Organizer, Directed Protein Evolution, 2021 Pacificchem Meeting (virtual)
- 4) Scientific Advisory Board, 2020 Multistep Enzyme Catalyzed Processes Conference (MECP, Aachen)
- 5) NSF Virtual Review Panel (11/15-16, 2018)
- 6) Guest Co-Editor (with Greg Hughes, Merck): *Chemical Reviews* special issue on Biocatalysis in Industry. Hughes, G.; Lewis, J. C. Introduction: Biocatalysis in Industry. *Chem. Rev.* **2018**, *118*, 1-3.
- 7) Board Member: ACS Catalysis Early Career Advisory Board (2017-2018)
- 8) Director: NSF-funded outreach efforts between the Lewis lab and Hernandez Middle School for the Advancement of Science (14 events from 2014-2017; <https://www.indiana.edu/~lewisgrp/outreach/>)
- 9) Member: ACS (2000-present)

Mentees

Graduate Students

Name (publications¹)	Years	Degree	Last Known Position
Landon Durak (4)	2010-2015	Ph.D.	Scientist, Associate Director, Biohaven Pharm.
James Payne (6)	2010-2015	Ph.D.	Scientist, Antheia
Hao Yang (5)	2010-2016	Ph.D.	Senior Scientist, Merck Protein Engineering
Chen Zhang (4)	2010-2015	Ph.D.	Associate Scientist, Provivi, Inc.
Kat Ellis-Guardiola (6)	2011-2017	Ph.D.	Postdoc, UCLA
Mary Andorfer (10)	2011-2017	Ph.D.	Postdoc, MIT (Asst. Prof. Michigan State University starting 2023)
Yifan Gu (5)	2011-2017	Ph.D.	Lab Head, Sanofi Inst. for Biomed. Res.
Joe Gair (6)	2012-2018	Ph.D.	Postdoc, Harvard (Asst. Prof. Michigan State University starting 2023)
Andrew Jeffries (0)	2013-2014	M.S.	Scientist at MilliporeSigma
Edward Prybolsky (0)	2013-2014	M.S.	Key Account Manager, Sartorius
Brian Koronkiewicz (0)	2014-2015	M.S.	Senior Professional Staff, Johns Hopkins Applied Physics Laboratory
Abraham Ng (0)	2014-2015	M.S.	
Alan Swartz (1)	2014-2017	M.S.	Deceased
Paul Butkovich (1)	2015-2017	M.S.	Adjunct Faculty, College of DuPage
David Upp (4+)	2015-2021	Ph.D.	Postdoc, Department of Biocatalysis, Institute of Catalysis, CSIC, Madrid, Spain
Natalie Chan (5)	2015-2021	Ph.D.	Consultant, Boston Consulting Group
Atreyi Bhattacharya (0)	2016-2019	M.S.	Associate Scientist II, Abbvie
Harrison Snodgrass (5+)	2016-2022	Ph.D.	Senior Scientist, Merck Biocatalysis
Christian Gomez (3+)	2016-2023	Ph.D.	Principal Scientist, Resonance Medicine, Inc.
Yasmine Zubi	2018-2023	Ph.D.	IU
Yuhua Jiang	2019-2024	n/a	IU (current)
Caitlin Roof (1)	2020-2023	M.S.	Singota Solutions
Qian Du (2)	2020-2022	M.S.	
Amardeep Kumar	2020-	n/a	IU (current)

Prabir Saha	2021-	n/a	IU (current)
Payal	2021-	n/a	IU (current)
Ayantika Ghosh	2022-	n/a	IU (current)
Cahmlo Olive	2022-	n/a	IU (current)
Paras Gupta	2023-	n/a	IU (current)
Sandip Mishra	2023-	n/a	IU (current)
Prajwal Prabhu	2023-	n/a	IU (current)
Pratibha Gandhi	2023-	n/a	IU (current)

¹Only shown for students who have graduated; (+) indicates co-authorship on a paper to be submitted.

Postdoctoral Researchers

Name	Years	Previous Position	Last Known Position
Zhihui Zhang	2010-2012	postdoc, Univ. Pennsylvania	Director of Product Management, ILC Dover, Milwaukee, WI
Poonam Srivastava	2011-2014	postdoc, Univ. Minnesota	Research Scientist, Evozyme
Cathy Poor	2012-2013	Ph.D., UC	Senior Scientist, Protein Engineering, Cargill
Lee Solomon	2013-2014	Ph.D., Univ. Pennsylvania	Asst. Prof., George Mason University
Duo-Sheng Wang	2013-2014	postdoc, Univ. Münster	postdoc, Boston College
Hyun June Park	2014-2016	Ph.D., Seoul National Univ.	Asst. Prof., Duksung Women's University (South Korea)
Ketaki Belsare	2015-2017	Ph.D., RWTH Aachen	Senior Scientist, Metagenomi
Brian Fisher (NRSA)	2016-2020	Ph.D., Univ. Wisconsin, Madison	Senior Scientist, Solugen
Krysten Jones	2017-2020	Ph.D., Univ. California, Irvine	Research Scientist, DoD contract lab
Rui Huang	2018-2022	Ph.D., Virginia Tech.	Assoc. Res. Fellow, Shanghai Inst. Biol. Sci., Chinese Acad. Sci.
Dibyendu Mondal	2018-2021	Ph.D., Univ. Iowa	Lead Scientist Biocatal., Kalsec Inc.
Dipankar Sahoo	2018-2019	Ph.D., IIT Kanpur; postdoc KAIST	Senior Research Associate, Virginia Tech
Xinhang Yang	2019-2021	Ph.D., Marquette University	Senior Scientist, Enzymaster, China
Bingqing Liu	2020-2023	Ph.D., North Dakota State University	postdoc, Moore group, UIC
Jianbin Li	2022-2024	McGill University	Asst. Prof., The Chinese University of Hong Kong, Shenzhen
Vikas Thakur	2023-	Ph.D., CSIR-IHBT (India)	IU (current)
Autumn Kim	2023-	Ph.D., University of Florida, Gainesville	IU (current)

Undergraduate and High School (HS) Researchers (co-author, see publications)*

Name	Years	Last Known Position
Liwei Chen*	2011-2013	Lab Officer, Inst. of Bioeng. and Nanotechnol., A*Star
Joe Bartolacci	2011-2014	Resident Physician, Albert Einstein School of Med.
Andy Nian	2011-2012	Resident Physician, University of Illinois, Chicago
Jeff Montgomery	2011-2014	Co-Founder/Senior Scientist, ReAx Biotechnologies
Sarah Iqbal	2011-2012	medical school, USF Morsani College of Medicine
Kavia Khosla (UC Lab HS)	summer 2011	Resident Physician, University of Chicago Medicine
Andrew Ng	2012-2015	Growth Analytics and Strategy, Oak Street Health
Kyle Kunze*	2013-2015	Surgery Resident, Hosp. for Special Surgery, Chicago
Michael Roy*	2013-2016	Postdoc, Georgia Tech.
Jacqueto Zephyr (UC PREP program)	2014-2015	Scientist, Nimbus Therapeutics
Dajashinair Howard (Leadership Alliance)	summer 2014	undergraduate, Michigan State University
Julia Chael* (Munster HS)	summer 2014 and 2016	medical school, University of Chicago Medicine
Marissa Parker	2015-2016	graduate student, University of Washington
Jaylie Vergara-Coll*	2015-2017	undergraduate, University of Chicago
Ryan Beckner	2015-2017	MD-PhD student, UT Southwestern
Yehao Qiu*	2015-2018	graduate student, UC Berkeley
Frida Cardenas*	2016-2017	Recruitment Manager at Renew U.S. (NPO)
Anna Girlich*	2016-2017	Research and Innovation Scientist, Sovos Brands
Cesar Saucedo (Leadership Alliance)	summer 2017	graduate student, UW Madison
Omar Khan	2019-2020	Research Associate, Eozyme
Max Bultman*	2019-2021	graduate student, NDSU
Nicholas Honeycutt*	2019-2022	Univ. of Pikeville-Kentucky Col. of Osteopathic Med.
Harumi Shimano	2020-2022	undergraduate, IU
Aqeel Niyaz	2023-	undergraduate, IU
Haidy Attalla	2023-	undergraduate, IU
Mason Walker	2023	undergraduate, IU
Nathan Blackwell	2023-	undergraduate, IU

Invited Talks

Scheduled

University of Texas, Austin, 5/8/2024

Biocatalysis GRC, 7/7-7/12/2024

21st International Symposium on Flavins and Flavoproteins, 7/15-7/19/2024

2023

Applied Biocatalysis Summit, Philadelphia, PA, 12/5-12/7/2023

Johns Hopkins University, 10/17
Telluride Science Research Conference (Catalysis in Confined Spaces), 6/19-6/24
ETH Zurich, 6/9
Competence Center for Biocatalysis (CCBIO) Symposium, Zurich University of Applied Sciences, 6/8
The Ohio State University, 4/19
Boston College, 4/4
ACS National Meeting (Green Chemistry and Engineering: Designing and Discovering Innovative Solutions to Achieve a Sustainable Future), 3/26
University of Utah, 2/23

2022

University of California, Santa Barbara, 9/26
Watanabe Symposium, Indiana University 9/17
32nd International Symposium on Chirality, Chicago IL, 7/17-7/20

2021 (all virtual)

Pacificchem (session organizer and speaker), 12/16-12/17
Gilead Sciences Process Chemistry Seminar, 10/21
Duquesne University, Department of Chemistry, 10/8
Novartis Chemistry Lectureship, Basel, Switzerland, 6/16
AbbVie Platform Chemistry Technology Seminar, 5/12
University of British Columbia, Okanagan, 3/16

2020

San Diego State University, 10/16 (virtual)
Innovative Screening Strategies for the Directed Evolution of Enzymes, Pittcon, Chicago, IL, 3/4
University of Toledo, Department of Chemistry 2/24
RSC Applied Late-Stage Functionalization Symposium, University of Manchester, UK, 2/18-19
Third International Symposium on Carbene and Nitrene Chemistry, San Antonio, TX, 2/5-7

2019

ArtZymes Conference, Basel, Switzerland, 8/9
Telluride Science Research Conference (The Future of C-H Functionalization), 7/29-8/2
Society for Industrial Microbiology meeting, Washington D.C, 7/24
Novartis Chemistry Lectureship, Cambridge, MA, 7/18
International Symposium for Applied Bioinorganic Chemistry, Nara, Japan, 6/4
Marquette University, Department of Chemistry, 4/26

2018

Bower Award Symposium in honor of Prof. Frances Arnold, Franklin Institute, Philadelphia, PA, 4/11
International Symposium on C-H Activation, Yokohama, Kanagawa, Japan, 8/30-9/2
ACS National Meeting (ACS Catalysis Lectureship for the Advancement of Catalytic Science: Symposium in honor of Nicholas Turner), Boston, MA, 8/19
ACS National Meeting (Green Chemistry Innovations as a Useful Tool in the Pharmaceutical Industry), Boston, MA, 8/19
University of Arizona, 1/25

Purdue University, 1/18
Indiana University, 1/4

2017

University of Iowa, 12/4
Purdue University, 10/31
Temple University, 9/18
Indiana University, 9/8
Colorado St. University, 8/28
21st Annual Green Chemistry and Engineering Conference, 6/13
NC State University, 4/21
Northwestern University (guest lecture for Advances in Biotechnology course), 4/19
Harvard University, 3/9
Bioinorganic Chemistry GRS discussion leader (Metals in Biology GRC), 1/26-29

2016

University of Minnesota, 11/17
Scripps Research Institute, 11/4
Scripps Institute of Oceanography, 11/3
Tufts University, 10/18
University of Wisconsin, 10/11
University of Rochester, 10/7
University of Michigan, 9/20
Aachen-Osaka Catalysis Symposium (Aachen, Germany), 8/5
Organic Reactions and Processes GRC, 7/17-7/21
Biocatalysis GRC, 7/10-7/15
Abbvie, 6/17
Princeton University, 5/3
University of Pennsylvania, 5/2
Stanford University, 4/13
Gilead Sciences, 4/12
Loyola University Chicago, 3/24
UC Berkeley, 2/9
UCSF, 2/8
Emory University, 1/27
UC Irvine, 1/14
Caltech, 1/13

2015

Pacificchem (Biocatalysis and Cooperative Catalysis sessions), Honolulu, HI, 12/18 and 12/19
Yale University, 10/29
University of Illinois, Urbana/Champaign, 10/26
ACS National Meeting (The Role of the Outer Coordination Sphere on the Activity of Enzymes and Molecular Catalysts Symposium), Boston, MA, 8/16
Chicago Organic Symposium, 7/11
Canadian Chemistry Conference (C-H Functionalization Symposium), 6/15

Hope College, 4/17
Calvin College, 4/16
ACS National Meeting (ACS Chemical Biology Lectureship Symposium), Denver, CO, 3/24
Metals in Biology GRC, Stiefel Lecture, 1/28

2014

Novartis Institutes for Biomedical Research, Cambridge, MA, 10/17
Iowa St. University, 10/10
University of Iowa, 10/9
Merck Research Laboratories, Rahway, NJ, 8/21
Telluride Science Research Conference (The Future of Asymmetric Catalysis), 6/24
247th ACS National Meeting (Advances in C-H Functionalization Symposium), 3/7
Knox College, 1/30

2011-2013

University of Maryland, Baltimore County, 2/27, 2013
Macalester College, 11/14, 2012
DOE CNM Users Meeting, Argonne National Laboratory, 5/9, 2012
NIH-NIGMS Mentoring Workshop, 5/15, 2011