

Christopher M. Zall
Assistant Professor of Chemistry
Sam Houston State University
P.O. Box 2117
Huntsville, TX 77341

Phone: (301) 642-9255 – Fax (936) 294-4996 – Email: zall@shsu.edu

Education

Ph.D., Chemistry	University of Minnesota Minneapolis, MN Research Advisor: Prof. Connie C. Lu	2013
Dissertation: "Design, Synthesis, and Characterization of Transition Metal Compounds Using Binucleating and Bifunctional Ligands: Strategies for the Multi-Electron Reduction of Small Molecules."		
M.S., Chemistry	University of Minnesota Minneapolis, MN Research Advisor: Prof. Connie C. Lu	2010
B.A., Chemistry	Carleton College Northfield, MN	2008

Professional Appointments

Assistant Professor	Department of Chemistry Sam Houston State University Huntsville, TX	2016-
Postdoctoral Research Associate	Pacific Northwest National Laboratory Catalysis Science Group, Richland, WA Research Advisor: Aaron M. Appel	2013-2016

Publications

- Zall, C. M.; Linehan, J. C.; Appel, A. M. "Triphosphine-Ligated Copper Hydrides for CO₂ Hydrogenation: Structure, Reactivity, and Thermodynamic Studies" *J. Am. Chem. Soc.*, **2016**, 138 (31), 9968-9977. DOI:10.1021/jacs.6b05349
- Robinson, S. J. C., Zall, C. M.; Miller, D. L.; Linehan, J. C.; Appel, A. M. "Solvent Influence on the Thermodynamics for Hydride Transfer from Bis(diphosphine) Complexes of Nickel" *Dalton Trans.*, **2016**, 45 (24), 10017-10023. DOI: 10.1039/C6DT00309E

- Zall, C. M.; Linehan, J. C.; Appel, A. M. "A Molecular Copper Catalyst for Hydrogenation of CO₂ to Formate" *ACS Catal.* **2015**, 5 (9), 5301-5305. DOI: DOI:10.1021/acscatal.5b01646
- Zall, C. M.; Ding, K.; Kim, H. J.; Zhrebetskyy, D; Bill, E.; Gagliardi, L.; Lu, C. C. "Mixed-Valent Dicobalt and Iron-Cobalt Complexes with High-Spin Configurations and Short Metal-Metal Bonds." *Inorg. Chem.* **2013**, 52 (16), 9216-9228. DOI:10.1021/ic400292g
- Zall, C. M.; Zhrebetsky, D.; Dzubak, A. L.; Bill, E.; Gagliardi, L.; Lu, C. C. "A Combined Spectroscopic and Computational Study of a High-spin S = 7/2 Diiron Complex with a Short Iron-Iron Bond." *Inorg. Chem.* **2012**, 51, 728-736. DOI:10.1021/ic202384b

Presentations (underline denotes undergraduate presenters)

- Devi, N.; Zall, C. M. "Development of Bifunctional Catalysts Containing Hydride-Relay Ligands for CO₂ Hydrogenation." Student poster presentation at ACS National Meeting, New Orleans, LA, March 2018
- Zall, C. M.; Fernandez, W.; Devi, N. "Incorporation of NADH-like Hydride Relays Into Metal-Phosphine Catalysts for CO₂ Hydrogenation." Poster presentation at ACS National Meeting, New Orleans, LA, March 2018
- Devi, N.; Zall, C. M. "Hydrogenation of CO₂ Using Bifunctional Transition Metal Catalysts Containing Hydride-Relay Ligands." Student poster presentation at Texas Academy of Sciences Annual Meeting, Austin, TX, March 2018
- Devi, N.; Zall, C. M. "Synthesis of Redox-Active Ligands with Hydride Relays for Bifunctional Hydrogenation Catalysis." Student poster presentation at ACS Southwest Regional Meeting, Lubbock, TX, October 2017
- Zall, C. M.; Devi, N. "Hydrogenation of Carbon Dioxide Using Hydride-Relay Catalysis." Oral presentation at Visiting Faculty Symposium, Pacific Northwest National Laboratory, Richland, WA August 2017
- Zall, C. M.; Linehan, J. C.; Appel, A. M. "Development of Molecular Copper Catalysts for Hydrogenation of Carbon Dioxide." Oral presentation at Post-Graduate Research Symposium, Pacific Northwest National Laboratory, Richland, WA, August 2015
- Zall, C. M.; Linehan, J. C.; Appel, A. M. "Hydrogenation of CO₂ to Formate Using a Copper Complex: Demonstration, Thermodynamic Measurements, and Mechanism." Christopher M. Zall, John C. Linehan, Aaron M. Appel. Poster

presentation at Organometallic Chemistry Gordon Research Conference, Salve Regina University, Newport, RI, July 2015

- Zall, C. M.; Linehan, J. C.; Appel, A. M. "Catalytic CO₂ Hydrogenation Using a Copper Tris-Phosphine Complex." Oral Presentation at Organometallic Chemistry Gordon Research Seminar, Salve Regina University, Newport, RI, July 2015
- Zall, C. M.; Lu, C. C. "Synthesis and Characterization of 'Trigonal-Lantern' Bimetallics With High-Spin Metal-Metal Bonds." Oral presentation at ACS National Meeting, New Orleans, LA, April 2013

Awards/Funding

- Sam Houston State University *Teaching Innovation Grant* \$6,000 2017
 - With Prof. David E. Thompson and Adrian Villalta-Cerdas
- U.S. D.O.E. Office of Science *Visiting Faculty Program* \$13,000 2017
- Sam Houston State University *Faculty Research Grant* \$5,000 2017
- Bunsen and Beaker Award, Univ. of Minnesota Chemistry Dept. 2011
- ConocoPhillips Graduate Student Fellowship 2010-2011
- Biscotti Award, Carleton College Department of Chemistry 2008
- Distinction on the Senior Integrative Exercise, Carleton College 2008

Professional Affiliations and Service

- 2 M.S. and 5 undergraduate researchers supervised
- Member, American Chemical Society, for 5 years
- Participant at two national workshops for faculty and curriculum development:
 - General Chemistry Performance Expectations Workshop, Washington DC, September, 2017
 - Cottrell Scholars Collaborative New Faculty Workshop, Washington DC, August, 2016
- Science Judge, Mid-Columbia Science and Engineering Fair, Kennewick, WA, 2015
- Science Judge at Mid-Columbia Regional Science Bowl, Washington State University-Tri Cities, 2015
- Chemistry Graduate Student Workshop Committee, Written Exam Workshop, University of Minnesota, 2011-2012
- Student Seminar Committee, Chemistry Department, University of Minnesota, 2011