

Daniel E. DeRosh

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EDUCATION

- 8/2013-present **Yale University, Department of Chemistry, New Haven, CT**
PhD, Inorganic Chemistry (Advisor: Patrick L. Holland)
Doctoral Thesis: *Investigations of Diketiminato-supported Iron and Cobalt Chalcogenide Complexes: Small Molecule Activation and Electronic Structure*
- 9/2009-6/2013 **Carleton College, Northfield, MN**
B.A. Chemistry *magna cum laude* (Advisor: Matthew T. Whited, 2011-2013)
Chemistry degree conferred *with distinction*
Senior thesis conferred *with distinction*

PROFESSIONAL AND ACADEMIC EXPERIENCE

Teaching Fellow, Yale University (2013-2018)

- Designed and led weekly discussion sections for general chemistry (CHEM 113; CHEM 165)
- Taught lab sections for organic chemistry and general chemistry (CHEM 113L; CHEM 220)

Co-director, Yale Chemistry Symposium (April 2014 – August 2014)

- Nominated from pool of 40 graduate students to lead annual orientation event for incoming Yale Chemistry graduate students
- Oversaw five subcommittees (35 people in total) in order to plan event with a \$3,000 budget

Undergraduate Research Fellow, Organometallic Chemistry, Carleton College (2011 – 2013)

- Developed syntheses of new PSiP pincer ligands and rhodium complexes for cooperative metal/silicon reactivity toward small molecules
- Presented at the American Chemical Society 245th National Meeting and co-authored publication

Chemistry Course Prefect, Carleton College (2012 – 2013)

- Selected from pool of 60 junior and senior chemistry majors to serve as a primary non-faculty resource
- Designed and led biweekly discussion sections for three trimester-long classes

AWARDS AND HONORS

- Wolfgang Prize (awarded annually to the best PhD theses in the Yale Chemistry Department) May 2019
- Rigaku Symposium Lecture Award, Runner-up October 2018
- Poster presentation at the Inorganic Chemistry Gordon Research Conference June 2018
- Poster presentation at the Inorganic Reaction Mechanisms Gordon Research Conference March 2017
- James Helmholtz Prize for Inorganic Chemistry (awarded to 1 of 36 Carleton chemistry majors) June 2013
- Poster presentation at the 245th American Chemical Society National Meeting March 2013
- William Carleton Scholar (awarded to top 10% of incoming freshmen at Carleton College) March 2009

INVITED LECTURES (PAST AND FUTURE)

- Gordon Research Seminar, Inorganic Reaction Mechanisms – Galveston, TX March 2019
- Frontiers in Metallobiochemistry Symposium – Penn State University, State College, PA April 2018
- Oral presentation at the 255th American Chemical Society National Meeting, New Orleans, LA March 2018
- Oral presentation at the 253rd American Chemical Society National Meeting, San Francisco, CA April 2017

PUBLICATIONS

Graduate work:

10. DeRosha, D. E.; Chilkuri, V. G.; Van Stappen, C.; Bill, E.; Mercado, B.; DeBeer, S.; Neese, F.; Holland, P. L. “**Planar Three-coordinate Iron Sulfide in a Synthetic [4Fe-3S] Cluster with Biomimetic Reactivity**” *Nature Chemistry*, **2019**, *11*, accepted
9. DeRosha, D. E.; Arnet, N. A.; Mercado, B.; Holland, P. L. “**A [2Fe-1S] Complex that Affords Access to Bimetallic and Higher Nuclearity Iron-sulfur Clusters**” *Inorganic Chemistry*, **2019**, *58*, in press
8. Roy, L.;* Al-Afyouni, M. H.;* DeRosha, D. E.* Mondal, B.; DiMucci, I. M.; Lancaster, K. M.; Shearer, J.; Bill, E.; Brennessel, W. W.; Neese, F.; Ye, S.; Holland, P. L. “**Reduction of CO₂ by a Masked Two-Coordinate Cobalt(I) Complex and Characterization of a Proposed Oxodicobalt(II) Intermediate**” *Chem. Sci.* **2019**, *10*, 918-929. (* equal contribution)
7. Bonyhady, S. J.; DeRosha, D. E.; Vela, J. Vinyard, D. J.; Cowley, R. E.; Mercado, B.; Brennessel, W. W.; Holland, P. L. “**Iron and Cobalt Diazoalkane Complexes Supported by β -diketiminato Ligands: a Synthetic, Spectroscopic and Computational Investigation**” *Inorg. Chem.* **2018**, *57*, 5959-5972.
6. DeRosha, D. E.; Holland, P. L. “**Incorporating Light Atoms into Synthetic Analogues of FeMoco**” *Proc. Natl. Acad. Sci. USA* **2018**, *115*, 5054-5056.
5. Arnet, N. A.; McWilliams, S. F.; DeRosha, D. E.; Mercado, B.; Holland, P. L. “**Synthesis and Mechanism of Formation of Hydride-Sulfide Complexes of Iron**” *Inorg. Chem.* **2017**, *56*, 9185-9193.
4. DeRosha, D. E.; Mercado, B.; Lukat-Rodgers, G.; Rodgers, K. R.; Holland P. L. “**Enhancement of C-H Oxidizing Ability in Co-O₂ Complexes through an Isolated Heterobimetallic Oxo Intermediate**” *Angew. Chem. Int. Ed.* **2017**, *56*, 3211-3215.
3. MacLeod, K. C.;* Lewis, R. A.;* DeRosha, D. E.; Mercado, B.; Holland, P. L. “**C-H and C-N Activation at Redox-Active Pyridine Complexes of Iron**” *Angew. Chem. Int. Ed.* **2017**, *56*, 1069-1072. (* equal contribution)
2. Al-Afyouni, M. H.; Suturina, E.; Pathak, S.; Atanasov, M.; Bill, E.; DeRosha, D. E.; Brennessel, W. W.; Neese, F.; Holland, P. L. “**Spin Isomers and Ligand Isomerization in a Three-Coordinate Cobalt(I) Carbonyl Complex**” *J. Am. Chem. Soc.* **2015**, *137*, 10689-10699.

Undergraduate work:

1. Whited, M. T.; Deetz, A. M.; Boerma, J. W.; DeRosha, D. E.; Janzen, D. E. “**Formation of Chlorosilyl Pincer-Type Rhodium Complexes by Multiple Si-H Activations of Bis(phosphine)/Dihydrosilyl Ligands**” *Organometallics* **2014**, *33*, 5070-5073.