

JENNIFER L. YOUNG, Ph.D.

Associate Professor and Interim Department Chair
Azusa Pacific University
Department of Biology and Chemistry
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Education:

Texas A&M University, Department of Chemistry, College Station, TX

Inorganic Chemistry Ph.D., December 2011

Dissertation Title: *Bioinspired Synthesis and Reactivity Studies of Nitric Oxide Iron Complexes*

Advisor: Marcetta Y. Darensbourg

Grove City College, Grove City, PA

B.S. in Chemistry, *Magna cum Laude*, May 2006

Teaching Experience

Assistant Professor/Associate Professor

2014 - Present

Azusa Pacific University, Azusa, CA

CHEM 123 General, Organic, and Biochemistry for the Health Sciences

CHEM 151 General Chemistry I

CHEM 152 General Chemistry II

CHEM 261 Organic Chemistry I Laboratory

CHEM 262 Organic Chemistry II Laboratory

CHEM 300 Quantitative Chemical Analysis Theory

CHEM 310 Quantitative Chemical Analysis Laboratory

CHEM 461 Inorganic Chemistry

WRIT 240 Scientific Writing

Part-Time Lecturer

2012 - 2014

California State University, Los Angeles, CA

CHEM 103 General Chemistry Laboratory

CHEM 201 Quantitative Analysis Laboratory

CHEM 291A and 301 Organic Chemistry Lecture

CHEM 292A and 292B Organic Chemistry Laboratory

CHEM 301 Writing for Chemists

CHEM 327 Advanced Synthetic Methods Inorganic Laboratory

Adjunct Faculty

2012 - 2013

Pasadena City College, Pasadena, CA

CHEM 22 Introductory Chemistry

Graduate Teaching Assistant

2006 - 2010

Texas A&M University, College Station, TX

CHEM 111 and 112 General Chemistry Laboratory

CHEM 318 Quantitative Analysis Laboratory

Research Interests and Experience

- Synthesis, characterization, and reactivity of early transition metal N-heterocyclic carbene complexes as potential catalysts and antibacterial agents
- Synthesis, characterization, and reactivity of dinitrosyl iron complexes (DNICs) in solution and attached to polymeric supports as mimics of bio-inspired protein-bound DNICs for utilization in NO transfer, transport, and storage studies
- Skilled at NMR/IR interpretation, x-ray diffraction, electrochemical techniques, standard synthetic lab techniques, and standard anaerobic and Schlenk techniques

Publications

1. "Self-assembly of dinitrosyl iron units into imidazolate-edge-bridged molecular squares: characterization including Mössbauer spectroscopy" **Hess, J. L.**; Hsieh, C.-H.; Brothers, S. M.; Hall, M. B.; Darensbourg, M. Y. *J. Am. Chem. Soc.* **2011**, *133*, 20426-20434.
2. "N-Heterocyclic carbene ligands as mimics of imidazoles/histidine for the stabilization of di- and tri-nitrosyl iron complexes" **Hess, J. L.**; Hsieh, C.-H.; Darensbourg, M. Y. *Inorg. Chem.* **2011**, *50*, 8541-8552.
3. "Resin-bound models of the [FeFe]-hydrogenase enzyme active site and studies of their reactivity" Green, K. N.; **Hess, J. L.**; Thomas, C. M.; Darensbourg, M. Y. *Dalton Trans.* **2009**, *22*, 4344-4350.
4. "A paramagnetic trigonal paddlewheel complex with iron-dithiolato ligand paddles: $\{[(C_9H_{18}N_2S_2)Fe(NO)]_3Ag_2\}(BF_4)_2$ " **Hess, J. L.**; Young, M. D.; Murillo, C. A.; Darensbourg, M. Y. *J. of Molec. Struct.* **2008**, *890*, 70-74.
5. "Electronic Effects of $(N_2S_2)M(NO)$ Complexes (M = Fe, Co) as Metallo-dithiolate Ligands" **Hess, J. L.**; Conder, H. L.; Green, K. N.; Darensbourg, M. Y. *Inorg. Chem.* **2008**, *47*, 2056-2063.

Presentations

1. "Bioinspired Synthesis of Nitric Oxide Iron Complexes" (oral presentation) 2011 Chemistry: Biology Interface Research Conference, Texas A&M University, College Station, TX, August 13, 2011.
2. "Synthesis, Characterization, and Reactivity of Dinitrosyl Iron Complexes Stabilized by N-Heterocyclic Carbenes" (oral presentation) 241st American Chemical Society National Meeting, Anaheim, CA, March 27-31, 2011.
3. "Electrocatalysis of a Bimetallic $\{Fe(NO)\}^7$ - $\{Fe(NO)_2\}^9$ Complex: A Theoretical Mechanism for Dihydrogen Production" (poster) Gordon Research Conference: Inorganic Reaction Mechanisms, Galveston, TX, March 6-11, 2011.
4. "Immobilization of Iron-Containing Biomimetic Complexes" (oral presentation) Grove City College, Grove City, PA, March 19, 2009.

5. "A paramagnetic trigonal paddlewheel complex with iron-dithiolato ligand paddles: $\{[(C_9H_{18}N_2S_2)Fe(NO)]_3Ag_2\}(BF_4)_2$ " (poster) 235th American Chemical Society National Meeting, New Orleans, LA, April 6-10, 2008.
6. "The Synthesis and Molecular Structures of Co(NO) and Fe(NO) in N₂S₂ Coordination and Their S-based Adducts of W(CO)₄" (poster) 13th International Conference on Biological Inorganic Chemistry, Institute of Inorganic Chemistry, University of Vienna; July 15-20, 2007. Vienna, Austria.
7. "Small Molecule Models of N₂S₂ Metal Binding Sites in Metalloenzymes" (poster) 231st American Chemical Society National Meeting, Atlanta, Georgia; March 26-30, 2006.

Student Presentations

1. "Improved Amino Acid Based Imidazolium Salt Synthesis for Use in Inorganic Synthesis" Sydney Burkholder (oral presentation) Azusa Pacific University STEM Research Day, Azusa, CA, September 29, 2019.
2. "Synthesis of Cobalt(II) Pincer Complexes Using Glycine N-Heterocyclic Carbene Ligands" Cassidy Crandell (poster) Azusa Pacific University STEM Research Day, Azusa, CA, September 29, 2019.
3. "Synthesis of Copper(II) Pincer Complexes with an Amino-Acid Based N-Heterocyclic Carbene Ligand" Victoria Carpio (poster) Southern California Undergraduate Research Conference, California Polytechnic Pomona, Pomona, CA, November 18, 2017.
4. "Synthesis of Copper(II) Pincer Complexes with an Amino-Acid Based N-Heterocyclic Carbene Ligand" Victoria Carpio (poster) Azusa Pacific University Fall Research Day, Azusa, CA, September 16, 2017.
5. "Synthesis of Iron(III) and Copper(II) Pincer Complexes Bearing N-Heterocyclic Carbene Ligands Synthesized from Amino Acids" Ariana Abo and Linh Nguyen (poster) Azusa Pacific University Fall Research Day, Azusa, CA, September 24, 2016.
6. "Synthesis of Cobalt-Iron Bimetallic Nitric Oxide Complexes as Potential Water-Soluble Antibacterial Agents" Brian Enzenauer and Timothy Lin (poster) 251st American Chemical Society Meeting and Exposition, San Diego, CA, March 13-17, 2016.
7. "Synthesis and Characterization of Water-Soluble Dinitrosyl Iron Complexes with Amino Acid-Derived N-Heterocyclic Carbene Ligands" Alicia Hughes and Jacqueline Janowicz (poster) 251st American Chemical Society Meeting and Exposition, San Diego, CA, March 13-17, 2016.
8. "Synthesis and Characterization of a N-Heterocyclic Carbene Pincer Type Ligand with Glycine Side Arms and the Corresponding Cobalt Complex" Bridget-K Kawamala (poster) 251st American Chemical Society Meeting and Exposition, San Diego, CA, March 13-17, 2016.
9. "Synthesis of Cobalt-Iron Bimetallic Nitric Oxide Complexes as Potential Water-Soluble Antibacterial Agents" Brian Enzenauer and Timothy Lin (poster) Azusa Pacific University Fall Research Day, Azusa CA, September 25, 2015.
10. "Synthesis and Characterization of Water-Soluble Dinitrosyl Iron Complexes with Amino Acid-Derived N-Heterocyclic Carbene Ligands" Alicia Hughes and Jacqueline Janowicz (poster) Azusa Pacific University Fall Research Day, Azusa CA, September 25, 2015.
11. "Synthesis and Characterization of a N-Heterocyclic Carbene Pincer Type Ligand with Glycine Side Arms and the Corresponding Cobalt Complex" Bridget-K Kawamala (poster) Azusa Pacific University Fall Research Day, Azusa CA, September 25, 2015.

Grants Awarded

1. Faculty Research Council Research Grant, \$5000, Azusa Pacific University, 2015-2016
2. Faculty Research Council Research Grant, \$4300, Azusa Pacific University, 2014-2015

Academic Service

- Interim Department Chair, Azusa Pacific University, Azusa, CA, July 2020 – present
- Assistant Chair of Chemistry, Azusa Pacific University, Azusa, CA, June 2017 – June 2020
- Diversity Ambassador, Azusa Pacific University, Azusa, CA, January 2016 – present
- General Chemistry Lead Lab Instructor, Azusa Pacific University, Azusa, CA, August 2016 – present
- Chemistry Club Advisor, Azusa Pacific University, Azusa, CA, January 2015 – present
- 21st Annual Student Symposium on Research, Scholarship and Creative Activities Poster Judge, California State University, Los Angeles, February 22, 2013
- CSULA Chem Club Terrific and Scientific Volunteer, California State University, Los Angeles, June 2012
- Science Fair Judge for Chemistry Division, Los Angeles County Science Fair, 2012
- Annual Expanding Your Horizons Workshop Presenter, Texas A&M University, Winter 2008 - Winter 2010
- Annual American Chemical Society Chemistry Open House and Science Exploration Gallery at TAMU, Texas A&M University, Fall 2007 - Fall 2010

Professional Affiliations

- American Chemical Society
- Kemikos Honorary Chemical Fraternity
- Phi Lambda Upsilon Chemistry Honor Society
- Omicron Delta Kappa National Leadership Honorary
- Mortar Board National College Senior Honor Society

Honors and Awards

- Alice V. Watkins Imago Dei Ethos Award, Azusa Pacific University, 2018
- Upper-Level Laboratory Teaching Award, Texas A&M University, Department of Chemistry, 2010
- Regents Fellowship, Texas A&M University, Department of Chemistry, 2006
- Pittsburgh Society for Analytical Chemists College Chemistry Award, 2006
- ACS Penn-Ohio Border Section College Award for Excellence in Chemistry, 2005