

# Clyde A. Daly Jr.

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## Education and Professional Appointments

<b>Assistant Professor</b> , Haverford College, Haverford PA	2020-Present
<b>Postdoctoral Fellow</b> , Johns Hopkins University, Baltimore MD Joint with Center for Sustainable Nanotechnology Advisor: Rigoberto Hernandez	2018-2020
<b>Ph.D. in Chemistry</b> , University of Notre Dame, South Bend IN Advisor: Steven A. Corcelli Thesis Title: <i>Modeling Carbon Dioxide Vibrational Frequencies in Ionic Liquids</i>	2013-2018
<b>B.S. in Chemistry with Honors</b> , Gordon College, Wenham MA Advisor: Joel E. Boyd Thesis Title: <i>Porous Polymeric Support Materials for TiO<sub>2</sub> Photocatalytic Water Purification</i>	2009-2013

## Awards, Fellowships, and Scholarships

2018	Kaneb Center Advanced Teaching Scholar Certificate
2017	Sister Jean Lenz, O.S.F. Leadership Award
2016	Ethical Leaders in STEM Fellowship
2016	Kaneb Center Outstanding Graduate Student Teacher Award
2014	Kaneb Center Striving for Excellence in Teaching Certificate
2014-2016	GAANN Fellowship to Promote Academic Careers
2012	NSF Research Experience for Undergraduates at Georgia Institute of Technology
2009-2013	Clarendon Scholarship, Gordon College

## Peer-Reviewed Journal Articles

### Undergraduate Co-authors Underlined

11. **C. A. Daly Jr.**, R. Hernandez, "Optimizing Bags of Artificial Neural Networks for the Prediction of Viability from Sparse Data" *Journal of Chemical Physics* (Accepted, 2020).
10. **C. A. Daly Jr.**, and R. Hernandez, "Learning from the Machine: Discovering Sustainable Nanoparticle Design Rules Using an Artificial Neural Network" *Journal of Physical Chemistry C* **124**, 13409 (2020).
9. **C. A. Daly Jr.**, C. Allen, N. Rozanov, G. Chong, E. S. Melby, T. R. Kuech, X. Zhang, C. J. Murphy, J. A. Pedersen, and R. Hernandez, "Effects of Nanoparticle Ligand Coating on Interaction with a Protein: EG<sub>6</sub> with Cytochrome *c* Varying Nanoparticle Curvature" *Langmuir* **36**, 5030 (2020).
8. C. I. Drexler, T. Miller, B. Rogers, Y. Li, **C. A. Daly Jr.**, T. Yang, S. A. Corcelli, P. S. Cremer, "Counter Cations Affect Transport in Aqueous Hydroxide Solutions with Ion Specificity," *Journal of the American Chemical Society* **141**, 6930 (2019).
7. **C. A. Daly Jr.**, C. Allison, and S. A. Corcelli, "Modeling Carbon Dioxide Vibrational Frequencies in Ionic Liquids: IV. Temperature Dependence," (Pacific Conference on Spectroscopy and Dynamics Virtual Special Issue) *Journal of Physical Chemistry B* **123**, 3797 (2019).
6. T. Brinzer\*, **C. A. Daly Jr.**\*, C. Allison, S. Garrett-Roe, and S. A. Corcelli, "Modeling Carbon Dioxide Vibrational Frequencies in Ionic Liquids: III. Dynamics and Spectroscopy," *Journal of Physical Chemistry B* **122**, 8931 (2018). [\*these authors contributed equally to this work]
5. **C. A. Daly Jr.**, T. Brinzer, C. Allison, S. Garrett-Roe, and S. A. Corcelli, "Enthalpic Driving Force for the Selective Absorption of CO<sub>2</sub> by an Ionic Liquid," *Journal of Physical Chemistry Letters* **9**, 1393 (2018).
4. **C. A. Daly Jr.**\*, L. M. Streacker\*, Y. Sun, S. R. Pattenau, A. Hassanali, P. B. Petersen, S. A. Corcelli, and D. Ben-Amotz, "Decomposition of the Experimental Raman and Infrared Spectra of Acidic Water into Proton, Special Pair, and Counterion Contributions," *Journal of Physical Chemistry Letters* **8**, 5246 (2017). [\*these authors contributed equally to this work]
3. E. J. Berquist, **C. A. Daly Jr.**, T. Brinzer, K. K. Bullard, Z. M. Campbell, S. A. Corcelli, S. Garrett-Roe, and D. S. Lambrecht, "Modeling Carbon Dioxide Vibrational Frequencies in Ionic Liquids: I. *Ab Initio* Calculations," *Journal of Physical Chemistry B* **121**, 208 (2017).

2. **C. A. Daly Jr.**, E. J. Berquist, T. Brinzer, S. Garrett-Roe, D. S. Lambrecht, and S. A. Corcelli, "Modeling Carbon Dioxide Vibrational Frequencies in Ionic Liquids: II. Spectroscopic Map," *Journal of Physical Chemistry B* **120**, 12633 (2016).
1. B. D. Stewart, L. G. Andrews, B. S. Pelletier, **C. A. Daly Jr.**, J. E. Boyd, "Porous PMMA-titania Composites: A Step Towards More Sustainable Photocatalysis," *Journal of Water Process Engineering* **8**, 179 (2015).

## Teaching Experience

### Physical Chemistry

Private Tutor, Physical Chemistry I Fall 2016  
 GAANN Fellow, Physical Chemistry for the Life Sciences (CHEM 30337) – University of Notre Dame Fall 2014  
 Teaching Assistant, Physical Chemistry II Lab (CHEM 31322) – University of Notre Dame Spring 2014

### General Chemistry

Private Tutor, Introduction to Chemical Principles Fall 2016  
 Teaching Assistant, Introduction to Chemical Principles (Majors) (CHEM 10181) – University of Notre Dame Fall 2015

- Named a Kaneb Center Outstanding Graduate Student Teacher

Teaching Assistant, Introduction to Chemical Principles Lab (Majors) (CHEM 10181) – University of Notre Dame Fall 2013  
 Teaching Assistant, Principles of Chemistry I & II (CHE 111 & 112) – Gordon College Summer 2013  
 Teaching Assistant, Principles of Chemistry II Honors Lab (CHE 112) – Gordon College Spring 2013  
 Teaching Assistant, Principles of Chemistry I (CHE 111) – Gordon College Fall 2012  
 Teaching Assistant, Principles of Chemistry I (CHE 111) – Gordon College Fall 2011  
 Private Tutor, General Chemistry Summer 2011  
 Teaching Assistant, Principles of Chemistry II Lab (CHE 112) – Gordon College Spring 2011  
 Teaching Assistant, Principles of Chemistry I (CHE 111) – Gordon College Fall 2010

### Organic Chemistry

Teaching Assistant, Organic Chemistry I & II (CHE 211 & 212) – Gordon College Summer 2013

## Presentations

**Oral:** Clyde A. Daly Jr. "Modeling Complex Phenomena with Machine Learning and Molecular Dynamics" Penn Chemistry Quarantine Symposium in Physical Chemistry. Philadelphia, PA. July 2020

**Oral:** Clyde A. Daly Jr. "Modeling Complex Phenomena with Machine Learning and Molecular Dynamics" Invited Presentation at Haverford College. Haverford, PA. November 2019

**Oral:** Clyde A. Daly Jr. "Modeling Complex Phenomena with Machine Learning and Molecular Dynamics" Invited Presentation at Santa Clara University. Santa Clara, CA. November 2019

**Oral:** Clyde A. Daly Jr. "Modeling Complex Phenomena with Machine Learning and Molecular Dynamics" Invited Presentation at Union College. Schenectady, NY. October 2019

**Oral:** Clyde A. Daly Jr., Robert J. Hamers, Christy L. Haynes, Vivian Feng, Rigoberto Hernandez, "Uncovering Design Rules for Environmentally Friendly Nanoparticle Enabled Energy Storage via Machine Learning" American Chemical Society National Meeting and Exposition. San Diego, CA. August 2019

**Poster:** Clyde A. Daly Jr., Caley R. Allen, Nikita Rozanov, Gene Chong, Joel A. Pedersen, Christy L. Haynes, Erin E. Carlson, Rigoberto Hernandez, "Modeling the Interaction between EG<sub>6</sub> Coated Gold Nanoparticles and Cytochrome c" American Chemical Society National Meeting and Exposition. San Diego, CA. August 2019

**Oral:** Clyde A. Daly Jr. Z. Vivian Feng, and Rigoberto Hernandez, "Using Artificial Intelligence to Learn About Nanoparticle Toxicity" "Environmental Nanotechnology" Gordon Research Conference. Newry, ME. June 2019 [Short talk selected from posters]

**Poster:** Clyde A. Daly Jr. Z. Vivian Feng, and Rigoberto Hernandez, "Using Artificial Intelligence to Learn About Nanoparticle Toxicity" "Environmental Nanotechnology" Gordon Research Conference. Newry, ME. June 2019

**Poster:** Clyde A. Daly Jr. and Steven A. Corcelli, "Temperature Studies of the Solvation Environment of CO<sub>2</sub> in Ionic Liquids" "Chemistry and Physics of Liquids" Gordon Research Conference. Holderness, NH. August 2017

**Poster:** Clyde A. Daly Jr. and Steven A. Corcelli, "Temperature Studies of the Solvation Environment of CO<sub>2</sub> in Ionic Liquids" American Conference on Theoretical Chemistry. Boston, MA. July 2017

**Oral:** Clyde A. Daly Jr. and Steven A. Corcelli, "Temperature Studies of the Solvation Environment of CO<sub>2</sub> in Ionic Liquids" Midwest Thermodynamics and Statistical Mechanics Conference. South Bend, IN. June 2017

**Poster:** Clyde A. Daly Jr. and Steven A. Corcelli, "Spectroscopic Maps for the IR Spectroscopy of CO<sub>2</sub> in Ionic Liquids" American Chemical Society National Meeting and Exposition. Boston, MA. August 2015

**Poster:** Clyde A. Daly Jr. and Steven A. Corcelli, "Anharmonic Vibrational Frequencies of CO<sub>2</sub> Complexed with Ionic Liquids" American Conference on Theoretical Chemistry. Telluride, CO. July 2014

**Poster:** Clyde A. Daly Jr. and Steven A. Corcelli, "Anharmonic Vibrational Frequencies of CO<sub>2</sub> Complexed with Ionic Liquids" 46th Midwest Theoretical Chemistry Conference. Evanston, IL. June 2014

**Poster:** Clyde A. Daly Jr., Bria S. Pelletier, Benjamin D. Stewart, Lee G. Andrews, Joel E. Boyd, "Investigation of Porous Polymeric Support Materials for TiO<sub>2</sub> Photocatalytic Water Purification" American Chemical Society National Meeting and Exposition. New Orleans, LA. April 2013

**Oral:** Clyde A. Daly Jr., "Plasmonic Enhancement of Solar Energy Conversion" NSF-Research Experience for Undergraduates. Atlanta, GA. July 2012

**Poster:** Clyde A. Daly Jr., Steven C. Hayden, Brian Snyder, Mostafa A. El-Sayed, "Plasmonic Enhancement of Solar Energy Conversion" NSF-Research Experience for Undergraduates. Atlanta, GA. July 2012

**Poster:** Clyde A. Daly Jr., Bria S. Pelletier, Benjamin D. Stewart, Joel E. Boyd, "Graphite Furnace Atomic Absorption Spectroscopy for the Detection of TiO<sub>2</sub>-Ti Removed from the Surfaces of Acrylic-Titania Composite Photocatalytic Materials" American Chemical Society National Meeting and Exposition. San Diego, CA. March 2012

## Undergraduate Students Mentored

Sunny Truslow, Haverford College (Summer 2020-Present)

Scott Kaiser, Haverford College (Summer 2020-Present)

Sara Hunsberger, Haverford College (Summer 2020-Present)

Julian Najera, Johns Hopkins University (2019)

Jiayun Zhong, SURE Student from Mount Holyoke College at Johns Hopkins University (Summer 2019)

Shiyun Lin, SURE Student from Mount Holyoke College at Johns Hopkins University (Summer 2019)

Nikita Rozanov, SURE Student from Oregon State University at Johns Hopkins University (Summer 2018)

- Coauthor on one published paper

Cecilia Allison, University of Notre Dame (2015-2018)

- Coauthor on three published papers

## Professional Activities

Summer 2020

ACS Virtual New Faculty Workshop

2019-Present

Reviewer for *Journal of Physical Chemistry*, *Scientific Reports*, and *Journal of Visualized Experiments*

2019

ACS Postdoc to Faculty Workshop

2019

MMBioS Hands-on Workshop on Computational Biophysics

2018

NSF CHE/DMS Innovation Lab: Learning the Power of Data in Chemistry

2016

Ethical Leaders in STEM Fellowship

2011-Present

American Chemical Society Member

## Service, Leadership, and Outreach Activities

August 2019

Judge for COMP Undergraduate Sci-Mix Posters at Fall National ACS Meeting

March 2019

Judge at Mount Royal Middle School Science Fair in Baltimore, MD

2018-Present

Hernandez Group CSN S.P.R.I.N.G. Board Representative

2018-Present

Member of CSN Nanodatabase Committee

2016-2017

Co-President and Founding Officer of Notre Dame Black Graduate Student Association, Awarded Sister Jean Lenz, O.S.F. Leadership Award

January 2014

Judge at St. Thomas Grade School Science Fair in Elkhart, IN

Fall 2014-2015

Volunteer Tutor, South Bend Boys and Girls Club

Fall 2013-2014

Volunteer for Notre Dame "Chem Demo Team"

2012-2013

Editor-in-Chief for *If I Told You* Student Publication

Spring 2011-2013

Volunteer STEM Tutor, ACS Student Chapter Lynn Student Tutoring Program – Gordon College

2010-2012

Editor for *If I Told You* Student Publication

Spring 2011

"Green Chemistry: E-Factor Activity" Green Organic Literacy forUM (GOLUM) Presentation at Boston Latin Academy in Boston, MA.

2010-2011

Blogger for Gordon College Student ACS Chapter

## Other Work Experience

2009-2013

Gordon College Center for Technology Services