Matthew P. Grindle
He/Him
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Education

PhD, Chemistry **2024**
Miami University | *Oxford, OH* | GPA 3.6/4.0
BS, Chemistry **2016**
Purdue University | *West Lafayette, IN* | GPA 3.0/4.0

Peer-Reviewed Publications

1. Kumarage, N. D.; Marts, A. R.; **Grindle, M. P**.; Kaine, J. C.; Crandall, L. A.; Chen, W.-Y.; Ziegler, C. J.; Tierney, D. L. Field- and Temperature-Dependent Paramagnetic Relaxation Enhancements in Co(II) Trispyrazolylmethanes. *Inorg. Chem.* **2023**, *62* (39), 15952–15962.
2. **Grindle, M. P**.; Carter, B.; Alao, J. P.; Connors, K.; Tehver, R.; Kravats, A. N. Structural Communication between the E. Coli Chaperones DnaK and Hsp90. *IJMS.* **2021**, *22* (4), 2200.

Experience

Graduate Research Assistant **2019-Present**
Miami University | *Oxford, OH*

I worked in two very different research environments during my time at Miami University. Before my candidacy project, I worked with Dr. Andrea Kravats lab, researching the interactions between chaperone proteins using molecular dynamics simulations. After publishing and as I worked through my candidacy proposal, I decided to refocus on magnetic resonance, which led me to Dr. Tierney's lab working in physical inorganic chemistry. By using computation and NMR spectroscopy, we are pushing the limits of spectroscopy for transition metals and lanthanide complexes. My unique experience in graduate school has prepared me for any future research project.

Teaching Assistant: General Chemistry Laboratory I and II **2019-Present**
Miami University | *Oxford, OH*

My position as a teaching assistant has given me the opportunity to have an effect on the lives of more than 500 undergraduate students in the past 5 years. I have enjoyed teaching students to think for themselves and explore the world around them with chemistry. I was the head teaching assistant for Spring 2023 where I was able to build my leadership skills, helping 20 TAs teach the course consistently.

Fermentation Associate **2017-2019**
DuPont Industrial Biosciences | *Wilmington, DE*

In the fermentation research facility, I was a member of a team that provided safe, consistent operation of two dozen 20L fermenters in a 24 hour facility. Each shift

team would divide up projects over the week and provide sampling and other services for their set of fermenters over the week. I specialized in the coding and troubleshooting of our Python-based fermentation tracking system and our contamination tracking worksheets.

Analyst **2016-2017**
Bioanalytical Systems, Inc | *West Lafayette, IN*
In the analyst position, I worked with a PI to provide contract pharmaceutical analysis. I performed analysis using a combination of wet chemistry and HPLC, using and establishing standardized analysis procedures. I was often asked to work in the rat toxicology wing of our facility where I would break down rat organs for further study. I also worked as a scribe for rat necropsies.

Microbiologist **2014-2016**
Tate & Lyle | *West Lafayette, IN*
I worked as the weekend microbiologist for a corn starch and syrup production facility. I tested for E. Coli, salmonella, thermophiles, and other pathogens in food items. During my time at this facility, we also developed environmental testing for listeria in the facility

Student Co-op **2014-2015**
Chemtura Corporation | *West Lafayette, IN*
My co-op at Chemtura was a multifaceted position that I performed in two rotations over the year in the research division of the fire retardant manufacturer. First, I worked in an analytical lab using a combination of wet chemistry and instrumental analysis. The second rotation was in the organic synthesis division where I was running polymer synthesis using a TEMPO radical polymer synthesis technique

Quality Management Intern **2014**
Cargill | *Hammond, IN*
I worked on a team in the Quality Management division to ensure the production of safe and effective corn starch and syrup for food and industrial purposes. My first individual project was to determine the efficacy of a new ion exchange resin in the corn syrup tanks by testing for long chain sugars. My second project was to determine corn syrup storage time in hot tanks by using a model environment.

Awards and Recognition

Head Teaching Assistant | Miami University Department of Chemistry **2023**
Outstanding TA | Miami University Department of Chemistry **2022-2023**
3-Minute Thesis Finalist | Miami University **2022**

Volunteering

International Day of Light | Cincinnati Museum Center **2024**
Talawanda Science Week (1st-5th grade) | Miami University **2022, 2023**
Grandparents College | Miami University Department of Chemistry **2023**
(No) Work Week | American Alpine Club of WV **2018, 2019**

Presentations

Solution NMR Magnetic Axis Direction of 4/5-Coord. Co(II) Complexes **Nov 2023**
Graduate Research Forum | Miami University, Oxford, OH

NMR Relaxation Dynamics of 4/5-Coordinate Co(II) Complexes **Apr 2023**
Experimental NMR Conference (ENC) | Pacific Grove, CA

Solution Dynamics of 4/5-Coordinate Cobalt complexes **Mar 2023**
National Meeting of the American Chemical Society | Indianapolis, IN

Physical Electronic Dynamics in Five-Coordinate Cobalt (II) **Nov 2022**
Ohio Inorganic Weekend | The Ohio State University, Columbus, OH

Solution Dynamics of Co-based Single Ionic Magnets **Nov 2022**
Graduate Research Forum | Miami University, Oxford, OH

Computational Modeling of the Modulation of Hsp70 by Hsp90 **Jan 2021**
Midwest Stress Response and Molecular Chaperones | Virtual

Modeling the Modulation of Hsp90 by Hsp70 **Nov 2020**
Graduate Research Forum | Miami University, Oxford, OH

Professional Affiliation

American Chemical Society **2012-Present**

Alpha Chi Sigma Professional Chemistry Fraternity **2012-Present**

Alpha Phi Omega Service Fraternity **2011-Present**