

Matthew P. Grindle

Inorganic Chemist | He/Him

magnet-matt.com

Education

2024 **Doctor of Philosophy, Inorganic Chemistry**

Miami University | *Oxford, OH*

Advisor: Dr. David L. Tierney, Ph.D.

2016 **Bachelor of Science, Chemistry**

Purdue University | *West Lafayette, IN*

Publications

2023 ***Field- and Temperature-Dependent Paramagnetic Relaxation Enhancements in Co(II) Trispyrazolylmethanes***

Kumarage, N. D.; Marts, A. R.; Grindle, M. P.; Kaine, J. C.; Crandall, L. A.; Chen, W.-Y.; Ziegler, C. J.; Tierney, D. L. *Inorganic Chemistry*

2021 ***Structural Communication between the E. coli Chaperones DnaK and Hsp90***

Grindle, M. P.; Carter, B.; Alao, J. P.; Connors, K.; Tehver, R.; Kravats, *International Journal of Molecular Sciences*

Research Experience

2021-Present **Doctoral Research Assistant**

Dr. David L. Tierney | Miami University | Department of Chemistry

- Conduct NMR and EPR on transition and rare earth metal complex
- Produce and analyze data using Matlab, bash, and ORCA
- Co-author and publish in ACS journal, *Inorganic Chemistry*
- Research lead for 5 undergraduate students

2019-2021 **Graduate Research Assistant**

Dr. Andrea Kravats | Miami University | Department of Chemistry

- Examined allostery of chaperone proteins using CHARMM software
- Generated model analysis with bash and python programming
- Published in journal *International Journal of Molecular Science*
- Research lead for 2 undergraduate students

2015-2016 **Undergraduate Research Assistant**

Dr. Jeffrey Youngblood | Purdue University | Material Science Engineering

- Produced modified cellulose nanocrystal fibers

Awards and Recognition

2022 **3-Minute Thesis Finalist** | Miami University

2021-2022 **Outstanding Teaching Assistant** | Miami University

Teaching Experience

- 2019-Present **General Chemistry Laboratory I and II (CHM 144/CHM 145)**
Miami University | Department of Chemistry and Biochemistry
- Teaching Assistant for Professor Yasmin Jessa
 - Instructed 70 students per semester
 - Head teaching assistant 2022-2023

Presentations

- Nov 2023 **Solution NMR Magnetic Axis Direction of 4/5-Coord. Co(II)**
Graduate Research Forum | Miami University, Oxford, OH
- Apr 2023 **NMR Relaxation Dynamics of 4/5-Coordinate Co(II) Complexes**
Experimental NMR Conference (ENC) | Pacific Grove, CA
- Mar 2023 **Solution Dynamics of 4/5-Coordinate Cobalt complexes**
National Meeting of the American Chemical Society | Indianapolis, IN
- Nov 2022 **Physical Electronic Dynamics in Five-Coordinate Cobalt (II)**
Ohio Inorganic Weekend | The Ohio State University, Columbus, OH
- Nov 2022 **Solution Dynamics of Co-based Single Ionic Magnets**
Graduate Research Forum | Miami University, Oxford, OH
- Jan 2021 **Computational Modeling of the Modulation of Hsp70 by Hsp90**
Midwest Stress Response and Molecular Chaperones | Virtual
- Nov 2020 **Modeling the Modulation of Hsp90 by Hsp70**
Graduate Research Forum | Miami University, Oxford, OH

Industry Experience

- 2017-2019 **Fermentation Associate**
DuPont Industrial Biosciences | *Wilmington, DE*
- Collaborated with 10 technicians to research using 20L fermenters
 - Developed SOPs for contamination tracking and lab hygiene
 - Conducted on-call upkeep and troubleshooting SCADA systems
- 2016-2017 **Analyst**
Bioanalytical Systems, Inc | *West Lafayette, IN*
- Completed GLP laboratory testing of pharmaceuticals
 - Maintained 12 Agilent chromatography systems
 - cGMP scribe for rat toxicology
- 2014-2016 **Microbiologist**
Tate & Lyle | *West Lafayette, IN*
- Conducted quality analysis of starch, syrup, and dried sugar
 - Developed accurate sampling locations for environmental testing

2014-2015 **Student Co-Op Chemist**

Chemtura | *West Lafayette, IN*

- Analyzed bromine fire retardants with HPLC, GC, NMR, ICP-OES
- Developed novel conjugated bromine polymer additives

2014 **Quality Management Intern**

Cargill | *Hammond, IN*

- Measured chemical quality of food and industrial starch, sugar
- Researched filtration resin quality and syrup storage techniques

Skills

NMR | EPR | Crystallography | Inorganic Synthesis | X-ray Diffraction
Matlab | Python | DFT | Linux | Bash | Molecular Dynamics | Slurm

Professional Affiliation

2012-Present **American Chemical Society**

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

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