

Matthew P. Grindle, PhD

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Summary

- Ph.D. chemist with strong academic background and 5 years of industry experience in research and quality assurance roles
- Experienced physical chemistry researcher with expertise in magnetic resonance spectroscopy including NMR and EPR spectroscopy
- Strong communication skills as evidenced by 7 conference presentations, 3 peer-reviewed publications, and 5 years of teaching general chemistry laboratory
- A curious individual that values others' expertise, embraces continuous learning, and fosters team engagement by ensuring input is heard and valued

Education

- **PhD, Chemistry** Miami University, *Oxford, OH* **2025**
Dissertation Title: *Structural Dynamics of Inorganic Complexes and Chaperone Proteins Investigated Through NMR Spectroscopy and Molecular Dynamics*
- **BS, Chemistry** Purdue University, *West Lafayette, IN* **2016**

Work Experience

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

- Synthesized and studied transition metal complexes by spectroscopic techniques: NMR, EPR, UV-vis, ICP, x-ray diffraction
- Mentored 6 undergraduate students and 2 graduate students in physical chemistry laboratory techniques
- Published findings in scientific journals (3 total) and presented data at 7 scientific conferences to promote new ideas

Teaching Assistant: General Chemistry Miami University | *Oxford, OH* **2019-2024**

- Prepared lectures and taught classes of 20-100 students
- Organized meetings and trainings for 20 fellow TAs in order to ensure consistent instruction as head teaching assistant

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

- Provided safe, consistent operation of 24 piloting fermenters for 14L scale-up experiments
- Collaborated with a team of 20 laboratory technicians to provide 24-hour fermentation support for experiments
- Troubleshooting experience with Python-based systems to solve problems with in-house data tracking software
- Cross-functional collaboration with organic polymerization laboratories and separations lab to collect accurate data on end products

Analyst Bioanalytical Systems, Inc | *West Lafayette, IN* **2016-2017**

- Conducted GLP pharmaceutical analysis SOPs for quality control, stability determination
- Provided maintenance and troubleshooting support for 15 Agilent HPLC instruments
- Developed 5 new SOPs for future pharmaceutical analyses

Microbiologist Tate & Lyle | *West Lafayette, IN* **2014-2016**

- Performed microbiological testing for corn starch and syrup manufacturing facility
- Provided environmental testing capability to test for listeria outbreaks

Student Co-op Chemtura Corporation | *West Lafayette, IN* **2014-2015**

- Conducted analytical testing including NMR, HPLC, GPC, Karl Fisher, and titration experiments for novel bromine-based fire retardants
- Developed TEMPO-radical based techniques for producing bisphenol-based fire retardants for further testing

Quality Management Intern Cargill | *Hammond, IN* **2014**

- Conducted chemical quality testing for food-safe corn starch and corn syrup
- Designed and tested experiments for determining the viability of new corn syrup storage facilities and examine the efficiency of ion exchange materials

Publications

- **NMR Observation of Three Interconverting Structures in $Tp^{Ph,Me}$ Cobalt(II) Nitrate** | *European Journal of Chemistry* **Submitted 11/2024**
M.P. Grindle, V. Batra, and D.L. Tierney
- **Field- and Temperature-Dependent Paramagnetic Relaxation Enhancements in Co(II) Trispyrazolylmethanes** | *Inorganic Chemistry* **2023**
N.D. Kumarage, A.R. Marts, M.P. Grindle, J.C. Kaine, L.A. Crandall, W. Chen, C.J. Ziegler, and D.L. Tierney
- **Structural Communication between the E. Coli Chaperones DnaK and Hsp90** | *International Journal of Molecular Sciences* **2021**
M.P. Grindle, B. Carter, J.P. Alao, K. Connors, R. Tehver, and A.N. Kravats

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

Awards and Recognition

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

Affiliations and Hobbies

- **Graduate Student Advocate** | Miami University Department of Chemistry **2023-2024**
 - Planned and executed 6 social events for chemistry department graduate students
 - Represented department in 12 weekly meetings of Graduate Student Association
 - Wrote monthly newsletters to update graduate students on upcoming events

- **International Day of Light** | Cincinnati Museum Center **2024**
 - Explained paper chromatography experiments to 80 students and parents exploring the Cincinnati Science Museum
- **Talawanda Science Week (1st-5th grade)** | Miami University **2022, 2023**
 - Demonstrated laboratory experiments for 15-20 elementary school students in 15 sessions over 3 days
- **Grandparents College** | Miami University Department of Chemistry **2023**
 - Taught simple forensics experiments to 5th-8th grade students and grandparents
- **Graduate Student Learning Community** | Miami University **2020-2022**
 - Peer-support group for graduate student professional development
 - Developed presentation skills and networking for future employment
- **(No) Work Week** | American Alpine Club of WV **2018, 2019**
 - Chopped wood for the winter season for use at camping locations
 - Cleared footpaths and hiking trails using crowbars, saws, and small explosives
- **Crochet expert**