Christopher Kim

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EDUCATION

Yale University *New Haven, CT*

B.S. Chemistry (Intensive); B.S. Applied Mathematics *August 2024 – May 2027*

Relevant Graduate Coursework: Time-Dependent Quantum Mechanics and Spectroscopy I/II, Organic Structure and Energetics, Fundamentals of Transition Metal Chemistry, Bioinorganic Spectroscopy, Bioinorganic Mechanisms

University of Michigan *Ann Arbor, MI*

cand. B.S. Chemistry *August 2023 – May 2024*

EXPERIENCE

Yale University, Department of Chemistry *New Haven, CT*

Undergraduate Researcher, PI: Victor Batista *August 2025 – Present*

- Developing adaptive variational quantum algorithms for simulating non-Markovian open system dynamics
    - QFlux, QuTiP, Hierarchical Equations of Motion, General Quantum Master Equation
- Construction and optimization of parameterized quantum circuit ansatzes for propagator generation

Max Planck Institute for Chemical Energy Conversion *Mülheim an der Ruhr, Germany*

Computational Chemistry Research Fellow, PI: Serena DeBeer *May 2025 – August 2025*

- Achieved theoretical convergence of ligand-to-metal charge transfer radical excited state of ferrioxalate using quantum chemical calculations and corroborated results to experimental Fe K-edge X-ray absorption spectra
    - Time Dependent Density Functional Theory, Self-Consistent Field Method, Functional/Basis Set Screening, Saddlepoint Relaxed Surface Scan Optimization
- Ultrafast pump probe Fe K-edge X-ray absorption spectroscopy at SwissFEL (Paul Scherrer Institute)

Yale University, Department of Chemistry *New Haven, CT*

Undergraduate Researcher, PI: Amymarie Bartholomew *August 2024 – May 2025*

- Synthesized exfoliateable 3D metal-organic frameworks via asymmetric dimerization of anthracene ligand derivatives
    - X-Ray Crystallography, Atomic Force Microscopy, Microcrystal Electron Diffraction

University of Michigan, Department of Chemistry *Ann Arbor, MI*

Undergraduate Researcher, PI: Nicolai Lehnert *August 2023 – August 2024*

- Designed novel ligands with steric-protecting groups in the secondary coordination sphere and performed reactivity studies on Ni/Fe-metalated model complexes
    - NMR, IR, MS, UV-Vis, Suzuki Coupling, Reductive Amination, Air-free Synthesis, Glovebox

POSTERS AND PRESENTATIONS

"Preparation of Sterically Protected Ligands to Model Key Hyponitrite Intermediate(s) in Flavodiiron Nitric Oxide Reductases"

- MPI CEC Department of Inorganic Spectroscopy, MPI KoFo Department of Molecular Theory and Spectroscopy Joint Summer Symposium (5/25)
- URAN|UM [Undergraduate Research and Networking at UMich] (8/24)

AWARDS

- Alan S. Tetelman 1958 Fellowship for International Research in the Sciences – Yale College (2025)
- Margaret & Herman Sokol Research Fellowship – University of Michigan, Department of Chemistry (2024)
- James B. Angell Scholar – University of Michigan (2024)
- William J. Branstrom Prize – University of Michigan [top 5% of first-term freshman class] (2023)
- United States National Chemistry Olympiad 'Honors' [Top 150] – American Chemical Society (2022)

SKILLS

Technical Skills: Python, R, ORCA, Gaussian, UCSF Chimera, Avogadro, MestReNova, ChemDraw, Microsoft Suite
Languages: English, Korean