

Olivia Johnson

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Education

Northwestern University, Evanston, IL

Ph.D., Chemistry

(anticipated) September 2025

- NIH Predoctoral Training Program (T32) Fellowship

University of California, Los Angeles, CA

B.S. Chemistry, minor in Biology

June 2019

- Graduated with Highest Honors in Chemistry

Relevant Experience

Northwestern University, Evanston, IL

Doctoral Researcher, Kirk Lab

2019 – present

- Developed new probe compounds through computational-based rational design and evaluated them using high-throughput *in vitro* assays to investigate the role of MKK4 in liver cancer.
- Lead and maintained partnerships with NU Feinberg School of Medicine, Baylor College of Medicine, and University of Toronto; research lead to 2 peer-reviewed publications.
- Collaborated with 3 group researchers on patent filing; published December 2023.
- Mentored 2 undergraduates, with one contributing to peer-reviewed publication.
- Contributed to grant writing for proposals, including \$600K NIH T-32 application.

Safety Officer, Kirk Lab

2021 – present

- Created and reviewed Standard Operating Procedures for various hazardous chemicals.
- Planned and led chemical inventory cleanup and reorganization, managed laboratory consumables for 20 researchers.
- Advised and onboarded new undergraduates, graduate students and postdoctoral scholars.
- Developed lab safety protocols for conducting research during the COVID-19 pandemic.

Tempus Labs, Chicago, IL

Intern, Data analytics

2024

- Designed, executed, and analyzed experiments to optimize product efficiency before launch.
- Led members of other departments within R&D through data analysis in R and Excel.

Skills

Technical

- *Chemical Synthesis*: organic synthesis at a broad range of scales, glove-box use, microwave synthesis, and safe use of pyrophoric, air-sensitive, corrosive, explosive, and toxic chemicals
- *Biology*: laminar flow hood use, sterile techniques, cell culture and maintenance, *in vitro* kinase assays, protein crystallography, and high throughput experimentation
- *Visualization Software*: ChemDraw, Chem3D, PyMol, GOLD, and Maestro with small molecule docking
- *Data Processing and Organizational Software*: MestReNova, Collaborative Drug Discovery interface, Endnote, and MS Office
- *Programming Languages*: R, Python, C++

Analytical

- 1D and 2D NMR
- Mass spectrometry instrumentation, including UPLC ESI-MS, GCMS, and LC-qTOF HRMS

Select Leadership and Teaching

Northwestern University

Board Member and Treasurer, Graduate Liaison Committee

2022 – present

- Analyzed data from annual survey on quality of life and developed recommendations for community building initiatives impacting 200+ doctoral students.
- Organized aggregated budget request from eight Chemistry department-affiliated student organizations for review by the department.

Ambassador, Research and Safety Student Initiative

2023 – 2024

- Authored a published safety highlight for the American Chemical Society with the Executive Director of Research Safety.

Service Chair, Phi Lambda Upsilon, Alpha Gamma Chapter

2023

- Organized and executed three fully virtual science lessons and an asynchronous final show to 7 classrooms of third and fourth graders at Lincolnwood Elementary School.
- Managed the annual food and clothing drive, collecting and delivering over 200 food and clothing items to local YWCA.

Teaching Assistant, Department of Chemistry

2021 – 2024

- Lectured, led weekly problem-solving sessions, and created exams and problem sets for graduate course in organic reactions.
- Led laboratory sections of 10-20 undergraduate students for regular and advanced organic chemistry.

Ewha Womans University/Henry Luce Foundation

Selected Participant, Ewha-Luce International Seminar

2022

- Admitted to a cohort of 20 women from around the world at various phases in their STEM graduate studies to participate in program focused on gaining presentation skills, and engaging in cross-cultural communication.
- Worked closely with non-native English speakers to refine presentation delivery.

Publications (2 of 6)

- **Johnson, O.**; Encarnacion, T. N.; Woodruff, H. E.; Kirk, H. G.; Design, Optimization and Chemical Evaluation of MKK4 Inhibitors against Metastatic Liver Carcinoma. *Nat. Chem.* **2024**, 16 (10), 150-156.
- Steele, F.; Blarney, M. B.; Schook, M.; Martin, G. R.; Zinn, S. R.; Kirk, H. G.; **Johnson O.**; Highlights: Safety Culture Conversations. *ACS Chem. Health Saf.* **2023**, 28, 137–142.

Patents

Kirk, H.G.; Woodruff, H. E.; Encarnacion, T. N.; **Johnson, O.**; Selective MKK4 inhibitors. U.S. Patent US949612847, published December 23, **2023**.

Selected Honors and Awards

Northwestern University

Ver Steeg Award Nominee

2025

Presidential Fellow, Department of Chemistry

2024

University of California, Los Angeles

Mayer Undergraduate Award – Faculty Nominated

2018

Charles L Perrin Summer Research Award

2017

Professional Affiliations

Phi Lambda Upsilon, Alpha Gamma Chapter

American Chemical Society

University Honors Program, UCLA