

TONY FARAJ

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EDUCATION

Ph.D., Biochemistry, Wayne State University, Detroit. Degree expected Spring 2028. Dissertation: Synthesis and Potential Argplatin as an Anti-cancer Drug in Combination with Heparanase Inhibitors. Advisor: Dr. Christine Chow and Dr. Hien Nguyen.

Bachelor of Science, Biochemistry, Eastern Michigan University, Ypsilanti, MI, Graduated in December 2022 with Magna Cum Laude. Thesis: Synthesis Toward Nitrogen-Containing Diradicals. Advisor: Dr. Gabriel Rudebusch.

RESEARCH EXPERIENCE

Doctoral Research, Wayne State University, 08/2023 - 05/2028

- Synthesized ArgPt(L-Arginine tetrachloroPlatinate(II)) compounds to inhibit heparanase overexpression activity (failure to inhibit heparanase expression leads to cancer being expressed in patients). Dr. Christine Chow and Dr. Hien Nguyen both in Chemistry Department
- Gained experience in synthesis and characterization (mass spectrometry and NMR spectroscopy) of platinum complexes along with gel electrophoresis skills using plasmid DNA(pUC19 and platinum complex interactions on agarose gels. In addition, presented at the oral exam at WSU (March 2025).

Masters Research, Eastern Michigan University, 01/2023 - 04/2023

- Identified the air quality in multiple locations in Michigan such as Downtown Ann Arbor, and Ypsilanti through determining its PM1, PM2.5, and PM10 value. Dr. Gavin Edwards, Chemistry Department.

Bachelors Research, Eastern Michigan University, 08/2018 - 12/2022

- Collaborated with mentor Dr. Rudebusch to identify a molecule known as Aza-2,1-b. In addition, presented at the 42nd annual undergraduate symposium at EMU (March 2022).
- Senior Thesis: Synthesis Toward Nitrogen-Containing Diradicals, it turns out that the aza-2,1-b compound was not formed, but a fluorescent compound was formed due to the TLC glowing under the UV lamp.

Research Assistant, Wacker Chemical Corporation, Ann Arbor, 05/2022 -08/2023

- Collaborated with Mr. Steven Ross and Dr. Nathan Buchanan as an intern to find the weight % of curcuminoids using reverse HPLC. (05/2022 - 08/2022)
- Collaborated with Mr. Steven Ross and Dr. Nathan Buchanan as a co-op to reduce the DMF amount from 100mL to 25mL for cost and environmental reasons. (09/2022 - 08/2023)

TEACHING EXPERIENCE

Graduate Assistant, Chem 122 General Chemistry I Lab (01/2023 - 05/2023)

Department of Chemistry, Eastern Michigan University

- Worked as a GA(Graduate Assistant) in a Chem 122 General Chemistry I Lab class where I was supervised by my professor Dr. Jeffrey Guthrie.
- My role was to mainly supervise the students in the lab for any questions they had during the class session, along with explaining any questions they had about the experiments during class.

Graduate Teaching Assistant, Chem 1250 Organic Chemistry I lab (08/2023 - 04/2024)

Department of Chemistry, Wayne State University

- Worked as a GTA (Graduate Teaching Assistant) in a Chem 1250 Organic Chemistry I Lab class where I was supervising students as the leading teacher under no supervision.
- My role was to mainly supervise the students in the lab for any questions they had during the class session, along with explaining any questions they had about the experiments during class and when explaining the concepts before the students did the experiments.

Graduate Teaching Assistant, Chem 1250 Organic Chemistry I lab (05/2025 - AAAA)

Department of Chemistry, Wayne State University

- Worked as a GTA (Graduate Teaching Assistant) in a Chem 1250 Organic Chemistry I Lab class where I was supervising students as the leading teacher under no supervision.
- My role was to mainly supervise the students in the lab for any questions they had during the class session, along with explaining any questions they had about the experiments during class and when explaining the concepts before the students did the experiments.

PUBLICATIONS

Rudebusch, G and **Faraj, T.** Synthesis Toward Nitrogen-Containing Diradicals. Eastern Michigan University, 2022.

Buchanan, N, Ross, S and **Faraj, T.** Reduction of DMF used in the analysis of COQ-10. Wacker Chemical Corporation, 2023.

PRESENTATIONS

Rudebusch, G and **Faraj, T.** Synthesis Toward Nitrogen-Containing Diradicals. Presented at the 42nd annual undergraduate symposium at EMU (March 2022).

Buchanan, N, Ross, S and **Faraj, T.** Analysis of Curcuminoids by reverse phase high pressure liquid chromatography (HPLC). Presented at Wacker Chemical Corporation USA (August 2022).

Buchanan, N, Ross, S and **Faraj, T.** Reduction of DMF used in the analysis of COQ-10. Presented at Wacker Chemical Corporation USA (August 2023).

LAB TECHNIQUES

- Biology: Micropipettes, writing laboratory reports, making an agarose gel, running a PCR experiment, running a MTT assay and flow cytometry experiments.
- Chemistry: construct a graph and perform linear regression using Excel or Google Sheets, perform dilution experiments, pH electrode.
- Organic chemistry: weight on a balance, melting points, recrystallization, distillation, gas chromatography, Thin-Layer Chromatography (TLC), column chromatography lab.
- Analytical chemistry: redox reactions, lab preparation during procedures, Flame photometry, acid-base titration, potentiometric titration, and desiccator.
- Biochemistry: SDS page, western blot, column affinity chromatography, dot blotting, gel electrophoresis, running a cell culture experiment from a Vector (plasmid containing DNA segment in host cell).
- Physical chemistry: conductivity probe, surface tension, making solutions (ex: 100mL sodium phosphate solution on a volumetric flask), pH electrode, do spectrophotometer experiments, performing a kinetics and nanoparticle experiment.
- Inorganic chemistry: coordination chemistry, polymers, MW calculations using SEC (Size exclusion chromatography), synthesis of small weight molecules containing metal center complexes. Analysis of 1D ¹H NMR, 1D ¹³C NMR and 2D HSQC plus COSY analysis.

CUSTOMER SERVICE EXPERIENCE

Park Rite

Parking Attendant

Ann Arbor, MI

January 2018–present

- Assess parking needs and organize vehicle placement.
- Engage in professional conversation with customers to determine their parking needs.
- Communicate regularly with team members and others to ensure all staffing needs are met.

COMPUTER SKILLS

- Proficient in Microsoft Word, PowerPoint, and Excel. Along with Chemdraw, MestReNova

AWARDS & CERTIFICATES

- Adult and Pediatric First Aid/ CPR/ AED conducted by American Red Cross (May 2019).
- Bloodborne Pathogens Online Course (June 2019).
- Bio05oc006001ehs defensive driving Biomedical services (June 2019).
- Lifesaver Gold certificate using the lifesaver interactive video application (August 2019)
- Recipient of the Maurice “Pete” Decoster Endowed Chemistry Scholarship (March 2022)
- Recipient of the Undergraduate Honors Fellowship (May 2021)

Academic Experience

Wacker Chemical Corporation training of interns (September 2022), Volunteer.

- While I was a co-op at Wacker, I mentored new interns joining the program by giving them advice, and guidance on their projects.
- 52nd North American Silicon Symposium (May 2023), Attendee.
- I attended a Dow Silicone corporation conference with the Wacker company where I got to explore the different kinds of research that many postdocs and PhD students presented related to Silicone chemistry.
- 24th Annual Chemistry Graduate Research Symposium (October 2023), Attendee
- I attended a research symposium to learn more about the different research groups at Wayne State University. I got to appreciate the new areas of research more than when I first joined Wayne State University.
- CBI (Chemistry Biology Interface) graduate training program symposium (September 2024), Attendee
- I did a PhD Career Planning Workshop that helped me evaluate what I want in my life beyond getting a PhD degree. I also learned about the different kinds of research topics outside of my speciality.
- Rustbelt RNA meeting 2024 (October 2024), Attendee
- I attended an RNA conference in Ohio to learn more about RNA research related to my Dr. Chow's lab. I got to appreciate the new areas of research more than when I first joined Wayne State University. In addition, I appreciated joining Dr. Chow's lab as a result.
- Mentorship of helping an undergrad (October 2024), Attendee
- I helped mentor an undergrad named Omari, Elena, Jorge and Ahmed at Wayne State University as a 2nd year PhD student. I mentored him through guiding new techniques in the lab to helping him understand new techniques and concepts. Along with leadership skills in a future career he does.

VOLUNTEER EXPERIENCE

Food Gatherers

April 2018-April 2019

- Gained experience in helping homeless people who are hungry that don't have a stable income for food or live in the streets. I was taking care of the garbage and assisting the volunteers in cooking the food for the needy.

Red Cross

June 2019-June 2020

- Gained knowledge in helping people with cuts, bruises, headaches, or serious injuries. Participated in leadership training with the FAST team to coordinate emergency responses.

Halloween event at Wayne State

October 2024-October 2024

- Gained experience in helping kids with cool experiments in the chemistry building on halloween. I helped out by doing a conductance test of different types of water and seeing which types of water contain salt despite all the types of waters having a pH of 7.