

Theodore Jefferson, CPhT

CONTACT INFORMATION

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RESEARCH INTERESTS

Synthetic organic chemistry and pharmaceutical chemistry: the synthesis and discovery of pharmaceutical compounds. The design of drugs, and the design of organic syntheses and mechanisms that would yield them. Maximizing synthesis yield and efficiency through physical organic qualities. Broadly interested in the applications of organic chemistry in pharmacy and medicine, as well as certain specialties in pharmacy.

PUBLICATIONS

Cu-Catalyzed Three-Component 1,5- Olefin Carboamination of Vinylcyclopropanes
Popov, A. G.; Viviani, V. R. E., Skumial, P.; Salman, S. G; Jefferson, T. L., Hull, K. L. Manuscript In Preparation.

[Read an unofficial report here.](#)

CURRENT RESEARCH POSITION

Undergraduate Researcher, The Hull Group, UT Austin Sept 2022 to present
Collaborated with Andrei Popov, PhD Candidate under the guidance of Dr. Kami Hull, PhD to mechanistically design and probe novel amine syntheses, and to determine the scope of a 1,5-carboamination reaction of vinylcyclopropanes.

- Mastered different extraction techniques such as column chromatography, total liquid chromatography (TLC), and flash chromatography.
- Prepared various experimental organometallic complexes within an organic laboratory glove box, and learned standard safety procedure.
- Practiced characterization techniques learned previously in a graduate-level Organic Spectroscopy course. (^1H -NMR, ^{13}C -NMR, UV/Vis, GCMS, Mass)
- *Detailed information on laboratory skills can be found in the Skills section.*

EDUCATION AND CERTIFICATIONS

University of Texas at Austin, Austin, TX

B.S. Candidate, **Chemistry: Synthesis and Chemical Biology**, Fall 2023

- Overall GPA of 3.55 (*As of Spring 2023*)
- Graduate Coursework:
Advanced Organic Chemistry and Synthesis, Physical Organic Chemistry, Organic Spectroscopy, Supramolecular Organic Chemistry (*to be completed Fall 2023*),
- Relevant Undergraduate Coursework:
Organic Chemistry I, II (and Labs), Inorganic Chemistry (and Lab), Physical Chemistry (and Lab), Quantum Chemistry and Spectroscopy, Analytical Chemistry (and Lab), Advanced Analytical Chemistry (and Lab) (*to be completed Fall 2023*), Biochemistry, Genetics, Engineering Physics I, II (and Labs), Calculus I - III, Differential Equations.
- Active member of the American Chemical Society and the Longhorn Pre-Pharmacy Association.

Pharmacy Technician Certifications, Austin, TX

Certified and Registered Pharmacy Technician

- Passed the [Pharmacy Technician Certification Exam \(PTCE\)](#) to become a Certified Pharmacy Technician. (CPhT) Certification #30188808
- Certified with the [Texas State Board of Pharmacy](#) to become a Registered Pharmacy Technician. (Ph. T.R.) Registration #336050

Sterile Compounding and Aseptic Technique Certified

- Completed 40 hours of work in an ACPE accredited Sterile Compounding course at Austin Community College to become IV certified. NABP ePID #1666702.
- 4.0 CEUs of coursework was comprised of 20 hours of didactic education, and 20 hours of experiential training in a sterilized setting.
- 100% compliance with [USP Chapter 797](#) was demonstrated in order to earn certification.

CURRENT POSITIONS

Organic Chemistry Lab Teaching Assistant, UT CH 220C Jan 2023 to May 2023

Under the guidance of Dr. Conrad Fjetland, PhD, independently instructed, managed, and graded a group of UT Austin Organic Chemistry Laboratory students.

- Taught and guided students through [fourteen organic laboratory experiments](#) through the Spring 2023 semester. (*To be completed April 2023*).
- Graded laboratory reports and provided feedback on how to perform and report experiments in an improved manner. Office hours were held, as well.

PREVIOUS POSITIONS

Certified Pharmacy Technician, CVS Pharmacy Feb 2022 to May 2023

Received, interpreted, and filled written prescriptions and refill requests, and verified that information is complete and accurate.

- Consulted and comforted patients, and communicated basic pharmaceutical concepts when needed.
- Created and maintained patient profiles, including lists of medications taken by individual patients.
- Maintained proper storage and security conditions for drugs, and manage inventory.

Organic Chemistry II Learning Assistant, UT CH 320N Jan 2023 to May 2023

Worked with Dr. Andrei Straumanis, PhD to instruct a UT Austin Organic Chemistry II course through guided inquiry.

- Taught students Organic Chemistry II on a weekly basis for the Spring 2023 semester, in the same style as Organic Chemistry I was taught during Fall 2022.
- Weekly office hours were held during the Spring semester, as they were during the Fall.
- *Learning Assistants maintain the same responsibilities as Teacher's Assistants, but are unpaid.*

Organic Chemistry I Learning Assistant, UT CH 320M Aug 2022 to Dec 2022

Worked with Dr. Andrei Straumanis, PhD to instruct a UT Austin Organic Chemistry I course through guided inquiry.

- Taught students Organic Chemistry I on a semi-weekly basis for the Fall 2022 semester.
- Held weekly office-hour styled work sessions where students were taught in both one-on-one and group settings.
- Collaborated with other Learning Assistants and Teacher's Assistants in order to improve quality of course material.

Organic Chemistry Tutor, UT Sanger Learning Center Aug 2022 to Dec 2022
Held private, personalized tutoring with UT Austin undergraduate students at a variety of different difficulties.

- Specialized in Organic Chemistry I and II tutoring, but also instructed various other courses.
- General Chemistry I and II, Organic Chemistry I and II, Inorganic Chemistry, Physical Chemistry, College Algebra, and Calculus I - III were offered during the Fall 2022 semester.

Chemistry Content Creator, StudySmarter May 2022 to Oct 2022
Authored and prepared lessons for Organic Chemistry I and II, general chemistry, and AP Chemistry.

- Outlined and SEO optimized chemistry lessons in order to maximize outreach.
- Selected Example Lessons:
 - [Physical Chemistry: Introduction to Entropy](#)
 - [Organic Chemistry: Introduction to Spectroscopy](#)
 - [AP Chemistry: Introduction to Acids and Bases](#)
- A full list of lessons can be found on my website [here](#).

Chemistry and Algebra Tutor, Haley's Helpers Sept 2017 to Oct 2018
Provided personalized one-on-one instruction to a variety of ages, ranging from middle school students to high school seniors.

- Tutored Pre-Algebra, Algebra, Geometry, Pre-Calculus, AP Calculus AB and BC, General Chemistry, AP Chemistry, as well as basic Organic Chemistry concepts.
- Test preparation was also offered to students for the SAT and ACT.

Front-End Web Developer, Self-Employed Dec 2013 to Oct 2018
Independently ran a self-taught web development business.

- Taught myself front-end web development (HTML, CSS, JS, and PHP), and perfected my ability to imagine, design, create, and deploy websites efficiently.
- Performed within a high-pressure, fast-paced environment by meeting multiple client expectations simultaneously while managing schoolwork.
- A curated selection of examples are available upon request.

SKILLS

Strong Analytical Skills: Proficient in interpreting spectroscopic data, analyzing reaction mechanisms, and solving intricate chemical problems. Strong physical organic understanding of fundamental reaction mechanisms, which is applicable to the probing of mechanistic features.

Organic Syntheses: Adept in planning and executing organic synthesis routes using various methodologies such as functional group transformations, protecting group strategies, and multi-step syntheses.

Proper Laboratory Technique: Proficient in handling laboratory equipment, such as glassware and rotary evaporators. Knowledgeable in executing specific techniques such as chromatography (e.g., column chromatography, flash, TLC), spectroscopy (e.g., NMR, IR, LC-MS, Mass), and purification methods (e.g., recrystallization, distillation) while using safe laboratory practices.

Communication and Collaboration: Apt at effectively collaborating with lab colleagues and communicating complex research findings. Able to present technical information to both technical and non-technical audiences, as well as students. Capable of research papers using software such as ChemDraw and LaTeX.

REFERENCES
AVAILABLE TO
CONTACT

Dr. Eric Anslyn, PhD (e-mail: anslyn@austin.utexas.edu)

- Welch Regents Chair in Chemistry, Tenured Professor, Department of Chemistry
University of Texas at Austin
- ◊ College of Natural Sciences, 100 E 24th ST, Austin, TX 78712
- ★ *Dr. Anslyn advises my endeavors in organic chemistry, and taught the graduate-level course that I participated in, Physical Organic Chemistry.*

Dr. Kami Hull, PhD (e-mail: kamihull@utexas.edu)

- Associate Professor, Department of Chemistry, University of Texas at Austin
- ◊ College of Natural Sciences, 100 E 24th ST, Austin, TX 78712
- ★ *Dr. Hull supervises and advises my undergraduate organic chemistry research at her group, the Hull Group, and taught the graduate course I participated in, Advanced Organic Chemistry and Synthesis.*

Andrei Popov, PhD Candidate (e-mail: apopov@utexas.edu)

- Organic Chemistry Graduate Student, University of Texas at Austin
- ★ *Mr. Popov collaborates with me in my undergraduate organic chemistry research, and guides me in proper organic laboratory technique.*