

# Suong Bach Anh Tran

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## Education

### Dickinson College

Jan 2021 - Present

Bachelor degree

Majors: Chemistry (with honors) and Data Analytics

Minor: Mathematics

Thesis (Accepted May 2023): Tuning the Emission Wavelength of Bioluminescence via Peptide-fluorophore conjugates for Multicomponent Imaging

Cumulative GPA: 3.97/4.00

## Research Projects

### Tuning the Emission Wavelength of Bioluminescence via Peptide-fluorophore conjugates

Dickinson College, Carlisle, PA

Undergraduate Researcher for Professor Colin Rathbun at Chemistry Department

Jan 2022 - Present

- Independently proposed and designed experiments to tune emission wavelength of bioluminescence for multicomponent imaging.
- Synthesized peptides and fluorophore-peptides as easy-to-use probes to study cellular interactions *in vivo*.
- Assessed synthesized probes for enhanced tissue-permeability on mimic tissues.

### Synthesis of Piperazic Acid for Novel Derivatives of Himastatin with the ultimate goal of Targeting Antibiotic Resistance

MIT, Cambridge, MA

Summer Research Intern in Professor Mohammad Movassaghi's lab at Chemistry Department

Jun 2023 - Present

- Synthesized piperazic acid as a pivotal precursor for the development of novel derivatives of Himastatin, a potent antitumor agent.
- Analyzed 1D and 2D NMR spectroscopy to ensure high-quality starting material for subsequent derivatization steps.

### Using Machine Learning to Finding Orthogonal Bioluminescent Probes for Multiplexed Imaging

Dickinson College, Carlisle, PA

Collaborative Research with Professor Colin M. Rathbun and Professor Eren Bilen at Chemistry and Data Analytics Department

Sep 2022 - Present

- Processed sequencing data from Deep Mutational Scanning to ensure data quality and integrity.
- Interpreted and evaluated various statistical and machine learning models to determine the most appropriate model for the given data set.
- Designed and conducted experiments to investigate and characterize the effects of predicted mutations on the binding affinity.
- Identified single-mutations of the luciferase enzyme's subunit, leading to different binding preferences with its ligands.

## Selected Presentations

- Tran, S.,** Rathbun, C., McGahan, A., Akrong, R. "Tuning the Emission Wavelength of Bioluminescence via Peptide-fluorophore conjugates for Multicomponent Imaging." *The Middle Atlantic Region of the American Chemical Society*, New York, NY, June 9, 2023 (Oral)
- Tran, S.,** Rathbun, C., McGahan, A., Akrong, R. "Tuning the Emission Wavelength of Bioluminescence via Peptide-fluorophore conjugates for Multicomponent Imaging." *The 86th Annual Intercollegiate Student Chemists Convention*, Annville, PA, April 15th, 2023 (Oral)
- Tran, S.,** Rathbun, C., "Using Machine Learning to Finding Orthogonal Bioluminescent Probes for Multiplexed Imaging." *Dickinson Science Symposium 2023*, Carlisle, PA, April 20th, 2023 (Poster)
- Tran, S.,** Rathbun, C., "Tuning the Emission Wavelength of Bioluminescence via Peptide-fluorophore conjugates." *Gulf Coast Undergraduate Research Symposium*, Houston, TX, Oct 10th, 2023 (Oral)
- Tran, S.,** Rathbun, C., "Tuning the Emission Wavelength of Bioluminescence via Peptide-fluorophore conjugates." *Dickinson Summer Research Seminar*, Carlisle, PA, July 20th, 2022 (Oral)

## Awards and Honors

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|--------------------|--|
| May 2023           | American Chemical Society - 2023 Undergraduate Award in Physical Chemistry                                 |
| Nov 2022           | The 86th Annual Intercollegiate Student Chemists Convention - Second Place Prize in Biosynthetic Chemistry |
| May 2022           | Dickinson College - Outstanding First-year Chemistry Student   |
| May 2022           | Dickinson College - Horace Elton Rogers Scholarship  |
| Jan 2021 - Present | Dickinson College - Benjamin Rush President Scholarship  |

## Technical Skills

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**Programming** R, Python, LaTeX, HTML, SQL

**Developer tools** LaTeX, Git, VSCode

**Languages** Vietnamese, English, French

**Research Skill** Organic Synthesis, High-performance liquid chromatography (HPLC), prep HPLC, Liquid Chromatography - Mass Spectroscopy (LC-MS), 1D and 2D NMR, UV-Vis Spectrophotometer, Microplate reader, Gas Chromatography - Mass Spectroscopy (GC-MS)

## Teaching Experiences

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### Lab Teaching Assistant

*Dickinson College*

Chemistry Department and Math Department

Sep 2021 - Present

- Oversaw lab experiments, ensure safety, and assisted using lab equipment.
- General Chemistry, Multivariable Calculus (I,II) - Fall 2021
- Analytical Chemistry, Organic Chemistry lab - Spring 2022

### Quantitative Reasoning Center

*Dickinson College*

Quantitative Reasoning Tutor

Sep 2021 - Present

- Worked with professor to assist, mentor, and tutor students in Calculus (I,II), Probability and Statistics (I,II), General Chemistry, Organic Chemistry, Analytical Chemistry, Biochemistry, R and Python (Programming).
- Hold weekly tutor sessions at Quantitative Reasoning Center.

## Leadership Experiences

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### Dickinson Resident Life

*Carlisle, PA*

Resident Advisor

Jan 2023 - Present

- Fostered a supportive and inclusive residential community, promoting a positive living environment for fellow residents.
- Mentored residents and provided guidance, resolving conflicts, and organizing engaging activities to enhance the overall resident experience.

### Aromyth

*aromyth.com*

Founder, Podcaster, Web developer

March 2023 - Present

- Hosted and produced a monthly podcast focused on fragrance looking from science perspectives.
- Managed all aspects of podcast production, including research, scripting, recording, editing, and distribution.
- Developed and maintained podcast website.

### Vietnamese Student Association at Dickinson College

*Dickinson College*

Head of Event

Sep 2021 - Sep 2022

- Spearheaded dynamic event promotion, captivating the student body and driving high attendance rates.
- Orchestrated seamless event coordination, liaising with influential guest speakers and coaches, and ensuring flawless technical execution.
- Elevated the event experience by implementing innovative strategies, resulting in increased student engagement and overall satisfaction.