# **Stephanie Frost**

frosts@usf.edu

### **Education**

## **University of South Florida**

August 2021-Present

Ph.D. Chemistry – Chemistry Education Research

### **University of Wisconsin-Madison**

2017-2021

B.S. Chemistry, French

# **Research Experience**

### **University of South Florida**

August 2021-Present

Advisor: Dr. Jeffrey R. Raker

Research Area: Understanding the relationship between electrophile and nucleophile understanding among introductory organic chemistry students and student affective experiences in organic chemistry

### **University of Wisconsin-Madison**

January 2019-September 2019

Advisor: Dr. James Ntambi

Research Area: Understanding the effect of diet and metabolism through gene expression in mice liver

### **University of Wisconsin-Madison**

January 2018-December 2018

Advisor: Dr. Silvia Cavagnero

Research Area: Exploring the rotational correlation time of apomyoglobin in physiologically relevant

conditions

### **Publications**

<u>Frost, S. J. H.,</u> Pratt, J. M., Cruz-Ramírez de Arellano, D., Bliss-Roche, K., & Raker, J. R. (2024). Feelings of Shame in a First Semester Organic Chemistry Course: Associations between Shame and Examination Performance for Multiple Learner Groups. *Journal of Chemical Education*, 101(10), 4136–4148. https://doi.org/10.1021/acs.jchemed.4c00754

<u>Frost, S. J. H.,</u> Rocabado, G. A., Pratt, J. M., Cruz-Ramírez de Arellano, D., Fields, K. B., & Raker, J. R. (2024). Motivation Differences in First-Semester Organic Chemistry: A Comparison Between First-Time-in-College Students and Transfer Students. *Journal of Chemical Education*, 101(2), 354–363. <a href="https://doi.org/10.1021/acs.jchemed.3c00579">https://doi.org/10.1021/acs.jchemed.3c00579</a>

Crowder, C. J., Yik, B. J., <u>Frost, S. J. H.</u>, Cruz-Ramírez de Arellano, D., & Raker, J. R. (2024). Impact of Prompt Cueing on Level of Explanation Sophistication for Organic Reaction Mechanisms. *Journal of Chemical Education*, 101(2), 398–410. https://doi.org/10.1021/acs.jchemed.3c00710

<u>Frost, S. J. H.</u>, Yik, B. J., Dood, A. J., Cruz-Ramírez de Arellano, D., Fields, K. B., & Raker, J. R. (2023). Evaluating electrophile and nucleophile understanding: A large-scale study of learners' explanations of reaction mechanisms. *Chemistry Education Research and Practice*, 24(2), 706–722. <a href="https://doi.org/10.1039/D2RP00327A">https://doi.org/10.1039/D2RP00327A</a>

Yik, B. J., Dood, A. J., <u>Frost, S. J. H.</u>, Cruz-Ramírez de Arellano, D., Fields, K. B., & Raker, J. R. (2023). Generalized rubric for level of explanation sophistication for nucleophiles in organic chemistry reaction mechanisms. *Chemistry Education Research and Practice*, 24(1), 263–282. https://doi.org/10.1039/D2RP00184E

### **Contributed Conference Presentations**

\*Presenter

# Using Social Network Analysis to Explore Co-authorship of Curricular Materials: Insight into the IONiC Community of Practice

<u>Stephanie J. H. Frost\*</u>, Jeffrey R. Raker, Anne K. Bentley, Justin M. Pratt, Barbara A. Reisner, & Joanne L. Stewart. Presented at the 28<sup>th</sup> Biennial Conference on Chemical Education (University of Kentucky), Lexington, KY, July 31, 2024

# Characterization of shame experiences in introductory organic chemistry courses using the AEQ-OCHEM instrument

<u>Stephanie J. H. Frost\*</u>, Justin M. Pratt, & Jeffrey R. Raker. Presented at the 28<sup>th</sup> Biennial Conference on Chemical Education (University of Kentucky), Lexington, KY, July 30, 2024

# **Development of a machine learning model to understand conceptualizations of electrophiles**<u>Stephanie J. H. Frost\*</u>, Brandon J. Yik, Amber J. Dood, Daniel Cruz-Ramírez de Arellano, Kimberly B. Fields, Frankie Costanza, & Jeffrey R. Raker. Presented at the 27<sup>th</sup> Biennial Conference on Chemical Education (Purdue University), West Lafayette, IN, August 3, 2022

# Applications of computer-based scoring for the teaching and learning of reaction mechanisms in organic chemistry

Brandon J. Yik\*, <u>Stephanie J. H. Frost</u>, Daniel Cruz-Ramírez de Arellano, Kimberly B. Fields, Frankie Costanza, & Jeffrey R. Raker. Presented at the 27<sup>th</sup> Biennial Conference on Chemical Education (Purdue University), West Lafayette, IN, August 3, 2022

# **Teaching Experience**

### Teaching Assistant – Organic Chemistry I & II

August 2021-Present

University of South Florida

Organic Chemistry I – Fall 2022-Fall 2023, Fall 2024

Organic Chemistry II – Fall 2021-Spring 2022

# **Undergraduate Assistant – General Chemistry II** (Teaching Assistant)

January 2021-May 2021

University of Wisconsin – Madison

### **Laboratory Assistant – General Chemistry**

University of Wisconsin – Madison Advanced General Chemistry – Fall 2020 General Chemistry II – Fall 2019-Spring 2020 August 2019-December 2020

### **Private General and Organic Chemistry Tutor**

University of Wisconsin – Madison

June 2019-May 2021

### Service

## **Peer Review Activities**

Reviewer, Journal of Chemical Education

### Awards

University of South Florida Dissertation Completion Fellowship Martin Travel Award

Spring 2024

Spring 2023 & Spring 2024

# **Community Involvement**

Sigma Psi Zeta Sorority, Inc.  Education Director, Assistant Vice President of New Member Education	August 2021-Present
Chemistry Council of Graduate Students at the University of South Florida Secretary	August 2023-Present