



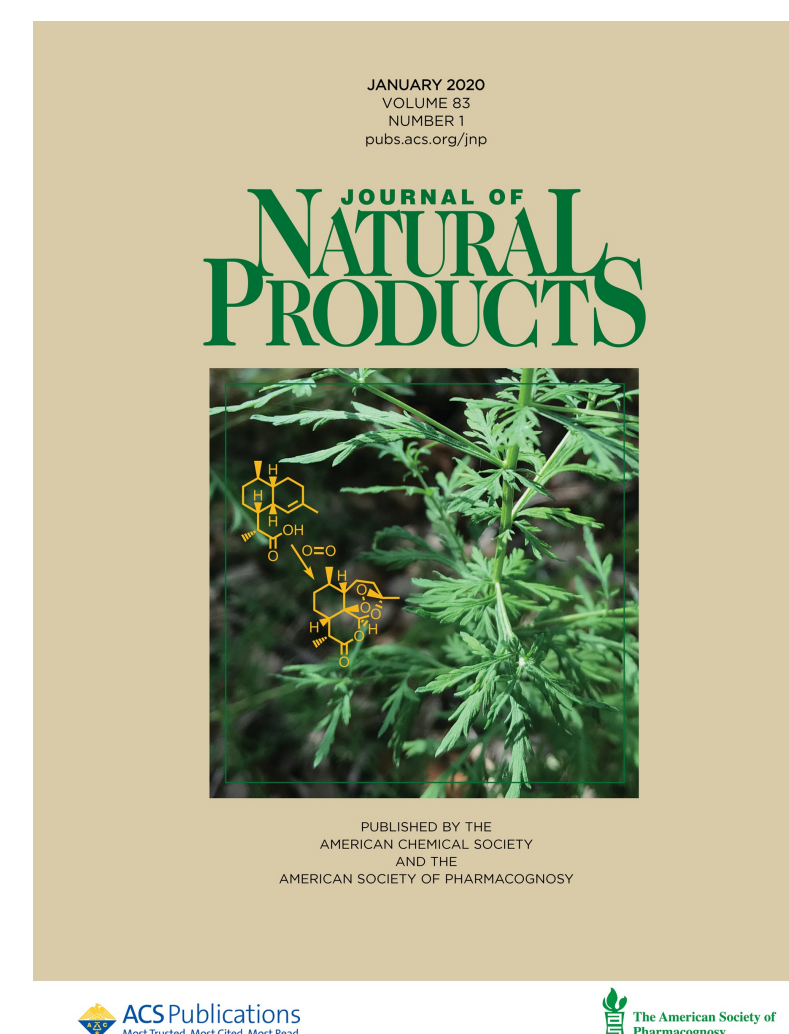
Researching the Anti-malarial, Plant Natural Product, Artemisinin

Kaitlyn Varela, Biochemistry, Spring 2020

Professional Development

SUMMARY

Artemisinin is a plant natural product that has anti-malarial properties. I work in Dr. Francis Yoshimoto's lab investigating the conversion mechanism of its precursor, dihydroartemisinic acid to artemisinin. The purpose of my project was to investigate the spontaneous, non-enzymatic conversion of dihydroartemisinic acid to artemisinin. The data collected reflects how artemisinin is being formed in nature. During the project, I synthesized an analog of dihydroartemisinic acid and analyzed its rate of formation using mass spectrometry. I attended the 2019 Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) conference on a travel scholarship and I published this research in the *Journal of Natural Products* in December 2019, as a first author paper.



SPICES

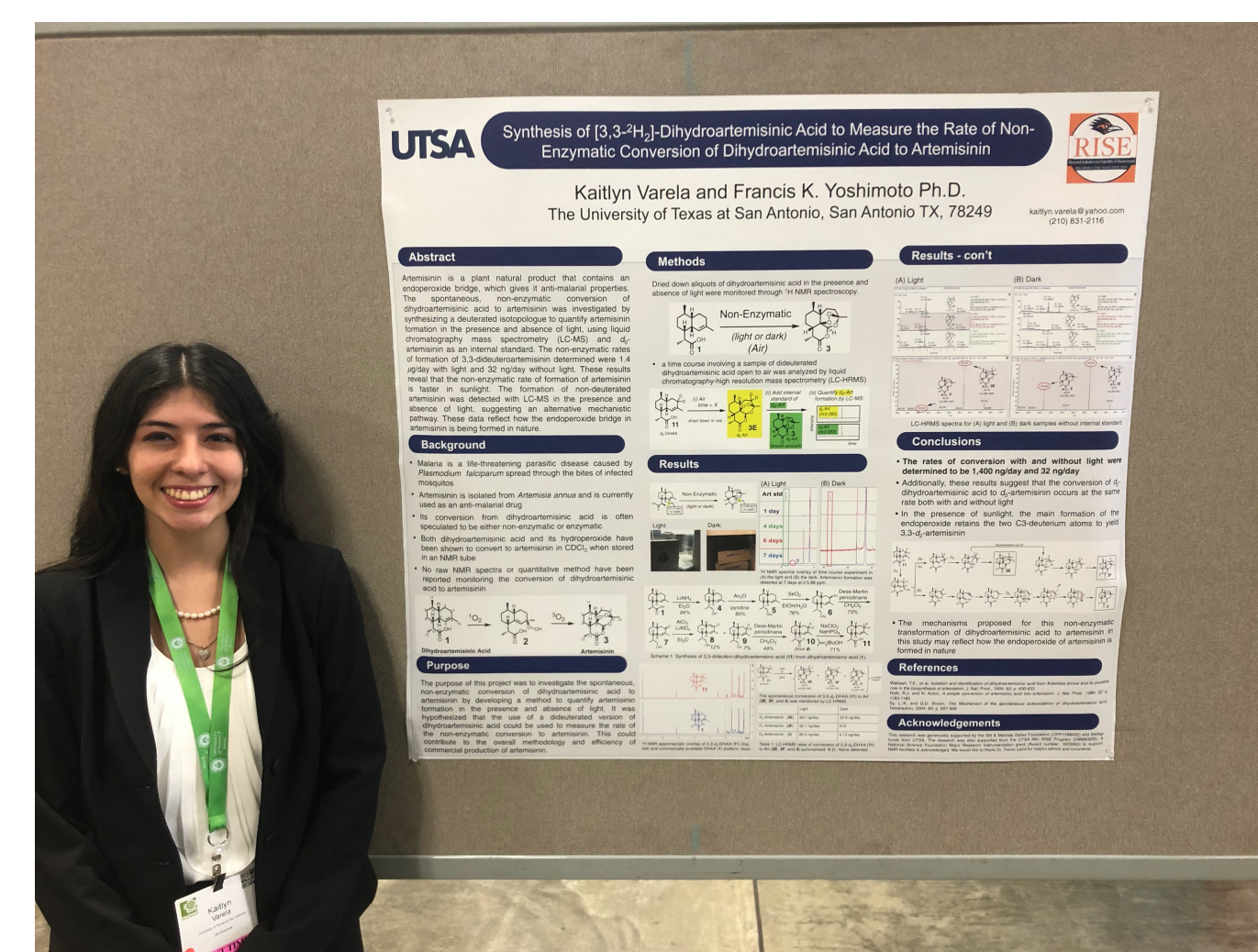
This project embodies professional development because I was able to demonstrate professional growth as a researcher. I went from the mindset of an undergraduate research assistant to a graduate student.

HERBS

This project allowed me to be honorable and resilient toward my research. I feel very lucky to have the experiences I have had and hope to continue to be dedicated in my work.

LEARNING OUTCOMES

Taking part in this project has greatly contributed to my professional development in presenting my research to a larger audience and understanding the scientific publishing process. I learned many skills that I can bring with me as a graduate student and prepare me for what lies ahead.



IMPACT

Artemisinin is an anti-malarial medicine that has saved millions of lives. This study will be useful to understand the mechanism of how the anti-malarial endoperoxide of artemisinin is formed in nature and help with mass production. This project greatly impacted me in strengthening my love for chemistry and determination to attend graduate school.

ADVICE

I would advise anyone interested in research to reach out to a faculty member and see if they have any undergraduate research opportunities. Conferences and publications are a large part of research that you can look forward to when sharing your work!