

# Nathaniel Burmas

2625 Chateau Lane | Davis, CA 95618 | (530) 771-7144 | [nateburmas@gmail.com](mailto:nateburmas@gmail.com)

## Education

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- **University of California - Davis**  
Bachelors in Chemical Engineering 2022
- **Davis Senior High School - Davis, CA**  
Graduated 2017

## Research Experience

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**Undergraduate Researcher, Shah Lab,**  
**University of California Davis** 04/2021-08/2022

- Cloning of plasmids through use of restriction digest, polymerase chain reaction, Gibson assembly, and bacteria transformation
- Mini-Prep and Midi-prep of STBL3 E. coli to produce more of a desired plasmid
- Transfection of A549 cells with optogenetic plasmids
- Western Blot analysis of optically active proteins
- Trained on various techniques such as ELISA and Immunostaining
- Cell culture in BSC Level 2

**Undergraduate Researcher, McDonald-Nandi Lab**  
**University of California, Davis** 09/2021-03/2022

- Techno Economic Analysis on the chemical synthesis of Resveratrol using Aspen Plus
- Heavy literary analysis upon patents involved with the chemical synthesis of Resveratrol

**Research Assistant, School of Veterinary Medicine,**  
**University of California, Davis** 06/2017-06/2021

- Analysis of Fenbendazole and Oxfendazole in various goat tissues through N-Evap, SPE and High-Performance Liquid Chromatography

**Summer Intern – School of Veterinary Medicine,**  
**University of California, Davis** 06/2016-08/2016

- Analysis of amphotericin-B in duck lung tissue through Mass Spectroscopy
- Analysis of Meloxicam in chicken eggs through High Performance Liquid Chromatography

## Teaching Experience

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**Water Polo Physical Education Teaching Assistant** 9/2018-12/2019

- Assisted with teaching water polo to students interested in the sport twice a week

**Learn to Swim Teaching Assistant** 3/2018-6/2018

- Assisted with teaching students with no prior experience how to swim

## Other Experience

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**College of Engineering Ambassador, University of California, Davis** 06/2019-06/2022

- Promoted and participated in outreach and spoke to incoming engineering student about what to look forward to within their programs at UC Davis

**Sophomore Representative of the American Institute of Chemical Engineers** 12/2018-6/2019

- One of two sophomore representatives for the Davis Chapter of the American Institute of Chemical Engineers (AIChE)
- Set up and ran social and professional events for AIChE members

**Captain of Davis Senior High School's Junior Varsity Water Polo Team** 8/2014-12/2014

- Head Captain of the JV team and responsible for getting the team ready for games by managing practices and training

## Publications

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1. Ashley Phillips, Christine V. Fiorello, Rachel M. Baden, Jack H. Liu, **Nathaniel C. Burmas**, Carlos A. Ruvalcaba, Roger Monroy, F. Charles Mohr, Ronette Gehring, Jean-Pierre Delplanque, Karl V. Clemons, David A. Stevens, Lisa A. Tell “*Amphotericin B concentrations in healthy mallard ducks (*Anas platyrhynchos*) following a single intratracheal dose of liposomal amphotericin B using an atomizer*”; published
2. Long Yuan, Zhoumeng Lin, Rachel S. Dutch, Emily D. Richards, Maaiké O. Clapham, **Nathaniel Burmas**, Scott E. Wetzlich, Lisa A. Tell “*Residue depletion profiles and withdrawal interval estimations of meloxicam in eggs and ovarian follicles following intravenous (Meloxicam solution for injection) and oral (Meloxidyl®) administration in domestic chickens (*Gallus domesticus*)*”; published

## Other Associations and Honors

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- Community Service Chair for Kappa Sigma Fraternity, Beta Phi Colony at University of California Davis, September 2021
- Membership to the National Society of Leadership and Success, December 2020
- 1<sup>st</sup> Degree Adult Black Belt at Inspire Martial Arts (formerly Baciardini's Martial Arts), December 2016