

Tanja Kovačević (She/Her/Hers)

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PhD Student

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EDUCATION

University of California Berkeley

Ph.D Student Earth and Planetary Science Department

Berkeley, CA

Fall 2020 – Current

University of Colorado Denver

*B.S in Chemistry, ACS Certified
Minor in Mathematics*

Denver, CO

Fall 2017 – Spring 2020

Las Positas Community College

*A.A. in Mathematics and Science
A.A. in Social Science*

Livermore, CA

Fall 2013 – Spring 2016

RESEARCH

Graduate Science Researcher

*Theoretical Condensed Matter Physics | Earth and Planetary Science Department
Advisor: Burkhard Militzer*

Fall 2020 - Current

UC Berkeley

- Second year PhD student performing Density Functional Molecular Dynamics (DFT-MD) in the high energy, density (HED) regime, conditions relevant to planetary interiors, on multi-component systems in order to calculate equations of state (EOS).

Undergraduate Research Assistant

*Theoretical Chemistry/Biophysics | Chemistry Department
Advisor: Hai Lin*

Fall 2017 – Spring 2020

CU Denver

- Used umbrella sampling to explore the Van Der Waals interaction forces (hyper-surface of the energy profile) between F47, F51, & F58 residues to determine the Gibbs free energy for ring flipping. MD performed with NAMD and post processed using WHAM
- Wrote an in-house lab [tutorial](#) for Umbrella Sampling/WHAM.

Undergraduate Research Assistant

*Computational Fluid Dynamics | Nuclear Science and Engineering Department
Advisor: Emilio Baglietto*

Summer 2019

MIT

- Implemented an uncertainty quantification (UQ) method on an international benchmark, GEMIX. Our initial studies determine UQ of a numerical benchmark, GEMIX, on three experimental profiles: mean concentration, turbulent kinetic energy (TKE), and velocity.

PUBLICATIONS

- [3] **T. Kovacevic**, F. Cataldo-Gonzalez, S.T. Stewart, B. Militzer, "An Ab Initio Analysis on Miscibility of Rock and Ice in Water-rich Exoplanets", (*In Progress*)
- [2] **T. Kovacevic**, Miller D., Oviedo J., Vugmeyster L., Lin H. , The Gibbs Free Energy for Ring Flipping of F47,F49, & F58 within the Core of HP-36", (*In Progress*)
- [1] **T. Kovacevic**, A. Skinner, J. Fisk, V. Fishback, S. Reed, "A Semester-Long, Organic Chemistry Laboratory Structured around Unknown Analysis and Resynthesis as a Bridge to Guided-Inquiry", *J. Chem. Educ.* 2020, 97, 6, 1633–1636, DOI: <https://pubs.acs.org/doi/10.1021/acs.jchemed.9b01037>

SELECTED PRESENTATIONS

- [6] **Tanja Kovacevic**, Felipe Felipe Gonzalez Cataldo, Sarah T. Stewart, Burkhard Militzer, Miscibility of Rock and Ice in Exoplanet Interiors Studied Ab Initio Simulations, American Geophysical Union, New Orleans, December 2021.
- [5] Michael Manga, Sarina Patel, Sarah M Arveson, Kristina L Faul, Tyler Cadena, William Davis, **Tanja Kovacevic**, Dan Frost, Sky Poindexter, Mercedes Vasquez, Daniel Enrique Ibarra, Diogo José Louro Lourenço, Kanani K M Lee, Edward Mischel Molter, and Julia DeMarines, Integrating URGE deliverables into a department-level strategic plan for enhancing diversity, American Geophysical Union, Online (Due to COVID) December 2021. POSTER
- [4] **Tanja Kovacevic**, Danielle Miller, Liliya Vugmeyster, Michael Crowley, Hai Lin, A Computational Study of The Villin Headpiece Subdomain HP36: The Effect of Hydration on Side Chain Dynamics in the Hydrophobic Core American Physical Society, Online (Due to COVID) March 2020. POSTER
- [3] **Tanja Kovacevic**, Michael Acton, Emilio Baglietto, Assessment of a Physics Based UQ Method for the Application of CFD, MIT Summer Research Program Poster Session, Cambridge, MA, August 2019. POSTER
- [2] **Tanja Kovacevic**, Jillian Oviedo, Danielle Miller, Liliya Vugmeyster, Michael Crowley, Hai Lin, Investigating the Dynamics of F58 within HP36 via Umbrella Sampling: A Computational Analysis, Rocky Mountain Advanced Computing Consortium, Boulder, CO, May 2019. POSTER
- [1] **Tanja Kovacevic**, Danielle Miller, Liliya Vugmeyster, Michael Crowley, Hai Lin, Villin Headpiece Subdomain HP-36: A Computational Analysis. Society for the Advancement of Chicanos and Native Americans in Science Diversity in STEM Conference, San Antonio, TX, October 2018. POSTER

TEACHING EXPERIENCE

Tutor - Mount Tamalpais College (San Quentin Prison) Fall 2021
EST 204 - Environmental Science Mount Tamalpais, CA

Teaching Assistant Spring 2019 – Spring 2020
Honors Organic Chemistry II [CHEM 3498] Denver, CO

- Published to the ACS Chemical Education Journal | [Paper](#)

WORKSHOPS

Center for Material at Atomic Pressures - Undergraduate Summer School Summer 2021
Guest Lecturer for 'Build that Planet!' Online

- Lead a 3-hour workshop teaching students how to use a smoothed particle hydrodynamics (SPH) code

FUNDING

MARC U-STAR Scholar June 2018 - May 2020
Maximizing Access to Research Careers Undergraduate Student Training for Academic Research

AWARDS

NSF Graduate Research Fellowship Program 2020
Honorable Mention

CU Denver Chemistry Outstanding Graduating Major May 2020

Mike Milash Teaching Assistant of the Year May 2020

OUTREACH

Bay Area Scientists Inspiring Students

2021-Current

Atmosphere Kindergarten Team

Undoing Racism in the GEosciences

2021 - Current

Berkeley Pod

Power

2020 - Current

Mentor