

Ramon Mendoza Uriarte

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Education

University of Chicago, Chicago, IL—PhD Chemistry June 2024 (Anticipated)
Project Title—Molecular view of Potassium Channels: Selective Ion Conduction and C-type Inactivation
University of Chicago, Chicago, IL—MS Chemistry December 2020
Northern Arizona University, Flagstaff, AZ—BS Chemistry, Minor in Mathematics & Statistics May 2019
Relevant Courses—Regression Analysis, Introduction to Mathematical Statistics I & II, Computer Science I

Technical Experience

- Developed custom force fields for atomistic simulations to map the relationship between parameters and ion conduction in potassium ion channels
- Identified new protein poses and validated experimental findings on a small peptide relevant to ion selectivity in potassium ion channels using numpy and sci-kit learn tools, such as PCA and k-means clustering
- Developed tools in python and Tcl to compute ion occupancy/conduction from several microsecond trajectories
- Developed NAMD-to-OpenMM, a python toolset for transitioning and comparing MD simulations between NAMD and OpenMM, available on GitHub
- Implemented various restraints and biases in OpenMM for atomistic simulation applications, available on GitHub

Technical Skills

- Scientific computing Python Packages—Numpy, Matplotlib, Pandas, Scipy, Sci-kit learn
- Other scientific computing skills—Excel, MATLAB, VCS (Git, GitHub, and GitLab), Linux terminals, and L^AT_EX
- Other MD simulation engines & software skills—NAMD, VMD, OpenMM, MDTraj, MDAnalysis, CHARMM-GUI, Amber, Charmm, Avogadro, Packmol, HOOMD-blue
- Proficient in high performance computing, HPC, environments using ssh and Slurm workload manager
- Programming languages—Python, Tcl, MATLAB, C++
- Spoken languages—English (native) and Spanish (native)

Communication and Leadership

- **Published** a paper in the *Journal of General Physiology*, demonstrating that the inactivation of a potassium ion channel is force field independent, DOI: 10.1085/jgp.202112875

Department of Chemistry Math Bootcamp September 2022

- Taught a course on probability & statistics to incoming graduate students

Department of Chemistry Peer Mentor September 2020-June 2022

- Mentored 4 first-year physical chemistry graduate students

Comprehensive General Chemistry I, II, and III Teaching Assistant September 2019-June 2020

- Led weekly discussion and lab sessions, and graded assignments and exams

Academic Success Center Tutor August 2017-May 2019

- Tutored over 40 students weekly in chemistry (1st-3rd year) and math (1st year) courses

Presentations

- NAMD Developers Workshop September 2021
- AZ Society for Coatings Technology November 2018
- ACS 253rd National Meeting poster presentation in Analytical Chemistry April 2017
- NAU Department of Chemistry & Biochemistry Undergraduate Research Seminar April 2016

Honors and Awards

- Junia E. McAlister Outstanding Senior Award—Given to top graduating Chemistry student May 2019
- Certificate of Achievement of ACS certified degree May 2019
- ACS Scholar—National compition for funding from the American Chemical Society August 2018-May 2019
- National Science Foundation REU fellow in Materials research May 2018-July 2018
- AZ Society for Coatings Technology Scholarship August 2018
- Hooper Undergraduate Research Award (HURA) August 2016-April 2017
- Cheryl Chamberlain Roscher, Ph.D. Chemistry Student Research Award May 2016-August 2016
- NAU Lumberjack Scholars Award—Full tuition scholarship August 2015-May 2019