

# Ramon Mendoza Uriarte

🏠 Chicago, IL ✉ ramendoza (at) uchicago.edu 🌐 <https://github.com/rm2258>

## 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<sup>A</sup>T<sub>E</sub>X
- 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