# SONGELA W. CHEN

songela@berkeley.edu

## EDUCATION

**University of California, Berkeley** Starting Fall 2022
Ph.D. Student, Physical Chemistry

**Massachusetts Institute of Technology** 2015–2019
S.B. Chemistry, minor in Chinese

## EXPERIENCE

**D. E. Shaw Research** 2019–2022
*Scientific Associate*
Improve methods to predict protein-ligand binding free energy for computational drug discovery applications.

**Willard Group, MIT** 2017–2019
*Undergraduate Research Assistant*
Model ion mobility in solid-state polymer electrolytes using coarse-grained molecular dynamics simulations.

**D. E. Shaw Research** Summer 2018
*Intern*
Develop enhanced sampling methods to compute binding free energies of protein-protein complexes.

**Drennan Lab, MIT** January–September 2017
*Undergraduate Research Assistant*
Characterize glycyl radical enzymes prominent in the human gut microbiome using X-ray crystallography.

**D. E. Shaw Research** Summer 2016
*Early College Intern*
Optimize Hamiltonian tempering schemes for molecular dynamics simulations of protein-ligand systems.

**Hu Lab, University of Pittsburgh** 2011–2014
*Volunteer*
Investigate effect of omega-3 polyunsaturated fatty acids on microglial responses to myelin pathology in murine cell cultures.

## PUBLICATIONS

3. Development of a Force Field for the Simulation of Single-Chain Proteins and Protein-Protein Complexes.
   Piana S, Robustelli P, Tan D, **Chen S**, Shaw DE.
   *J Chem Theory Comput* 16, 2494–2507 (2020).

2. n-3 PUFA supplementation benefits microglial responses to myelin pathology.
   **Chen S**, Zhang H, Pu H, Wang G, Li W, Leak RK, Chen J, Liou AK, Hu X.
   *Sci Rep* 4, 7458 (2014).

1. Microglia/Macrophage Polarization Dynamics Reveal Novel Mechanism of Injury Expansion After Focal Cerebral Ischemia.
   Hu X, Li P, Guo Y, Wang H, Leak RK, **Chen S**, Gao Y, Chen J.
   *Stroke* 43, 3063 (2012).

## SERVICE

**Northeast Regional Middle School Science Bowl** 2015–2019
*Assistant Director*
Organize a daylong quiz bowl event for middle school teams from five states. Contact potential sponsors, train

volunteers for Science Bowl specific roles, and maintain website. Co-founder of the first Science Bowl competition run entirely by students in the nation.

**MIT ClubChem** 2015–2018

*President*

Manage all aspects of the undergraduate association for chemistry students, including chemistry outreach events at K-8 schools, club presentation at USA Science and Engineering Fair in Washington, DC, and intra-department activities for chemistry majors.

## SKILLS

| | |
|---|---|
| **Computational** | Molecular dynamics simulations, Python, Git, Linux, LaTeX, HTML, CSS, Java |
| **Laboratory** | X-ray crystallography, protein purification, SDS-PAGE, ELISA, cell culture |

## AWARDS

| | |
|---|---|
| NSF Graduate Research Fellowship Program Honorable Mention | 2022 |
| MIT Freshman Chemistry Achievement Award | 2016 |