

# SONGELA W. CHEN

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## EDUCATION

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**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

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**D. E. Shaw Research**

2019–Present

*Scientific Associate*

Improve methods to predict protein-ligand binding free energy for computational drug discovery applications.

**Willard Group, MIT**

2017–2019

*Undergraduate Researcher*

Model ion mobility in solid-state polymer electrolytes using coarse-grained molecular dynamics simulations.

**D. E. Shaw Research**

Summer 2018

*Chemistry Intern*

Develop enhanced sampling methods to compute binding free energies of protein-protein complexes.

**Drennan Lab, MIT**

January–September 2017

*Undergraduate Researcher*

Characterize glycy 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

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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

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**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

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<b>Computational</b>	Molecular dynamics simulations, Python, Git, Linux, L <sup>A</sup> T <sub>E</sub> X, HTML, CSS, Java
<b>Laboratory</b>	X-ray crystallography, protein purification, SDS-PAGE, ELISA, cell culture

## AWARDS

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