Yue Ying

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EDUCATION

Aug 2021 - Present **Johns Hopkins Whiting School of Engineering**, Baltimore, MD, USA
***PhD**, Chemical & Biochemical Engineering*

Aug 2017 - May 2021 **Franklin & Marshall College**, Lancaster, PA, USA
***BA**, Biochemistry and Molecular Biology & German Language and Culture Major*; *Theoretical Math Minor*, (GPA 3.84 / 4.00)

Sep 2019 - Dec 2019 **Ruprecht-Karls-Universität Heidelberg**, Heidelberg, Germany
Non-degree, American Junior Year (AJY) at Heidelberg Exchange Program
German Studies, (German Grade 1.5)

RESEARCH EXPERIENCE

Sep 2021 - Present *Researcher*
Dr. Margaret Johnson Lab, Jenkins Dpt. of Biophysics, Johns Hopkins University

- Investigated influence of membrane bending energy selects for growth pathway of protein assemblies
- Implemented continuum membrane kinetics in Python applying Brownian dynamics of Helfrich Hamiltonian membrane model
- Collaborated with Dr. Sikao Guo to develop a script that takes in PDB code and automatically builds a Coarse-grained model, creates a corresponding reaction system, solves for ODE solution, and runs Gillespie simulation

May 2020 - Aug 2021 *Researcher*
Dr. Deanne Taylor Lab, Children's Hospital of Philadelphia, University of Pennsylvania
TRIP (Translational Research Internship Program at University of Pennsylvania)
COV-IRT (COVID-19 International Research Team, online)

- Built metabolic models and conducted flux balance analysis of NASA gene lab space mice model using Cobra and CORDA in Python
- Visualized the analysis results using reaction heat map created with Escher, which eases interpretation of data for researchers with a clinical background

Nov 2018 - May 2020 *Researcher*
Dr. Jason W. Labonte Lab, Franklin & Marshall College / Johns Hopkins University
Rosetta Commons (rosettacommons.org, online)

- Conducted research projects on combinatorial expansion of the carbohydrate database of the Rosetta software
- Added molecule parameter files of over 800 different monosaccharide residues to satisfy the need of unusual monosaccharide residues such as in antibody design

INTERNSHIP & TEACHING EXPERIENCE

Sep 2022 - Dec 2023 *Teaching Assistant for the course "Modeling the Living Cells"*
Johns Hopkins University, Baltimore, MD, USA
- Tutored undergraduate students
- Designed and lead computational lab sessions

Jan 2020 - May 2020 *Organic Chemistry Lab Assistant*
Franklin & Marshall College, Lancaster, PA, USA
- Prepared and facilitated teaching labs and tutored peers

Aug 2018 - May 2019 *New College House Mentor Advisor*
Franklin & Marshall College, Lancaster, PA, USA
- Tutored freshmen ('22) of New College House, Franklin & Marshall College
- Organized group gatherings, study sessions, and volunteering activities

Jun 2017 - Aug 2017 *Software Developer (Internship)*
SIPM Information Technology Co. Ltd., Shanghai, China
- Built the English and the Japanese GUI
- Built the environment for a distributed database
- Developed algorithm for two-sided assembly line balancing with Java, which is integrated into the algorithm package provided by the company to its clients

Jul 2016 - Aug 2016 *Software Developer (Internship)*
CIMC (China International Marine Containers) **Co. Ltd.**, Jiangsu, China
- Developed scheduling optimization algorithm with Java, which shows that the scheduling and assembly line arrangement had a great potential of optimization

PUBLICATION

Guo, S., Korolija, N., Milfeld, K., Jhaveri, A., Sang, M., **Ying, Y.**, Johnson, M.E. (2025) Parallelization of particle-based reaction diffusion simulations using MPI. *J. Comput. Chem.*, 46, e70132. https://doi.org/10.1002/jcc.70132

da Silveira, W.A., Fazelinia, H., Rosenthal, S.B., Laiakis, E.C., Kim, M.S., Meydan, C., Kidane, Y., Rathi, K.S., Smith, S.M., Stear, B., **Ying, Y.**, et al. (2020). Comprehensive Multi-omics Analysis Reveals Mitochondrial Stress as a Central Biological Hub for Spaceflight Impact. *Cell* 183, 1185-1201.e20. https://doi.org/10.1016/j.cell.2020.11.002

HONORS & AWARDS

Mar 2020 *Member*
Delta Phi Alpha National German Honor Society, Tau Gamma Chapter

Jan 2015 *Outstanding*
High School Mathematical Contest in Modeling (HiMCM) 2014, COMAP

HOBBIES & INTERESTS

Sep 2017 - May 2021 *Violin I / Violin II*
F&M Orchestra and Philharmonia, Franklin & Marshall College

OTHER SKILLS

IT-Skills	Python | C/C++ | Java | Lua | Linux bash | LaTeX | Github | PyMOL
Languages	Mandarin Chinese (native) | English (fluent, US undergraduate) German (fluent, DSH-2, equivalent to CEFR C1) Japanese (medium)

Baltimore, MD, May. 27, 2025