ZHENGQING ZHOU

Department of Biomedical Engineering, Duke University, NC, USA
+1 984-281-9529 | email: zhengqing.zhou@duke.edu

EDUCATION

Duke University — NC, USA
Doctor of Philosophy, Biomedical Engineering (ongoing) — Aug 2022 – Present

Peking University — Beijing, China
Bachelor of Science, Physics — Sep 2017 – Jul 2021

University of California, Los Angeles — CA, USA
Exchange student at the Physics and Astronomy Department — Sep 2019 – Dec 2019

PROFESSIONAL EXPERIENCE

Duke University — NC, USA
Visiting Scholar, Department of Biomedical Engineering — Sep 2021 – Mar 2022

PUBLICATIONS

Z. Zhou, D. Li, Z. Zhao, S. Shi, J. Wu, J. Li, J. Zhang, K. Gui, Y. Zhang, Q. Ouyang, H. Mei, Y. Hu, and F. Li. *Dynamical modelling of viral infection and cooperative immune protection in COVID-19 patients.* PLOS Computational Biology 19(9): e1011383. https://doi.org/10.1371/journal.pcbi.1011383

TALKS & PRESENTATIONS

5. Z. Zhou, A. Weiss, and L. You, *Population Ghost Effect Explains Long-term Plasmid Persistence Following Antibiotic Misuse*, lightning talk, **NC-ASM**, Durham, NC. November, 2023.

4. Z. Zhou, A. Weiss, and L. You, *Population Ghost Effect Explains Long-term Plasmid Persistence Following Antibiotic Misuse*, contributed talk, **BMES Annual Meeting**, Seattle, WA. October, 2023.

3. Z. Zhou, G. Hamrick, Z. Holmes, D. Chaulagain, D. Karig, and L. You, *Reconstructing Subpopulation Dynamics within Complex Microbiome*, poster, **BMES Annual Meeting**, Seattle, WA. October, 2023.

2. Z. Zhou, A. Weiss, and L. You, *Population Ghost Effect Explains Long-term Plasmid Persistence Following Antibiotic Misuse*, poster & lightening talk, **BME Retreat, Duke University**, Wilmington, NC. May, 2023.

1. Z. Zhou, and L. You, *Microbiome Spatial Partitioning Promotes Plasmid Maintenance*, poster, **Quantitative Biodesign Symposium,** Durham, NC. September, 2022.

RESEARCH EXPERIENCE

Graduate Student Researcher, Department of Biomedical Engineering, Duke University — Aug 2022 – Present
Projects:
1. Plasmid temporal dynamics upon antibiotic misuse.
2. Machine learning of complex microbiome dynamics.

Advisor: Lingchong You

Visiting Scholar, Department of Biomedical Engineering, Duke University — Sep 2021 – Feb 2022
Projects:
1. Impact of spatial partitioning on horizontal gene transfer in microbial communities.
2. Construction of a plasmid trait database.

Advisor: Lingchong You

Research Assistant, School of Physics, Peking University — Oct 2018 – Sep 2021, Mar 2022 – June 2022
Projects:
1. Nonlinear dynamics of robust yeast cell cycle regulation.
2. Mathematical modelling of SARS-CoV-2 infection and host immune response.

Advisor: Fangting Li

MENTORING AND OUTREACHING EXPERIENCES

- Research mentor. You Lab, Duke University — Nov 2022 - Present

Mentees:

3. Margaret Wilson, NCSU microbiology undergraduate. Summer Internship. — June 2023 – Present
Achievements: Python coding for bioinformatic pipelines; biophysical modeling.

2. Anokh Ambadipudi, Duke biophysics undergraduate. — Dec 2022 – Present

Achievements: microbiology wet lab skills; Python & Matlab coding; a co-authored paper in preparation.

1. Zhixiang (Carl) Yao, Duke biomedical engineering master. Nov 2022 – Mar 2023

Achievements: microbiology wet lab skills.

- Biophysics modeling of cell cycle. Biophysics Seminar, Peking University Aug 2020
- Organizer. Immunology of COVID-19 workshop. Peking University, Peking University Health Science Center, Wuhan Union Hospital. Apr - Aug 2020
- Reverse engineer the dynamics in biology. Physics Frontiers Seminar Series, Peking University May 2019

SELECTED AWARDS AND HONORS

- Honorable Mention Award in ICM Contest in Modeling 2021
- Outstanding Award, Challenge Cup academic contest, Peking University 2020
- Beijing Innovation Research Training Fellowship 2020
- Wanglaoji Overseas Exchange Scholarship 2019
- Outstanding Research Award, Peking University 2018