

# ZHENGQING ZHOU

Department of Biomedical Engineering, Duke University, NC, USA  
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## EDUCATION

<b>Duke University</b> Doctor of Philosophy, Biomedical Engineering (ongoing)	NC, USA Aug 2022 – Present
<b>Peking University</b> Bachelor of Science, Physics	Beijing, China Sep 2017 – Jul 2021
<b>University of California, Los Angeles</b> Exchange student at the Physics and Astronomy Department	CA, USA Sep 2019 – Dec 2019

## PROFESSIONAL EXPERIENCE

<b>Duke University</b> Visiting Scholar, Department of Biomedical Engineering	NC, USA Sep 2021 – Mar 2022
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## 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 & lightning 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

<b>Graduate Student Researcher</b> , Department of Biomedical Engineering, Duke University Projects: <ol style="list-style-type: none"><li>1. Plasmid temporal dynamics upon antibiotic misuse.</li><li>2. Machine learning of complex microbiome dynamics.</li></ol> Advisor: Lingchong You	Aug 2022 – Present
<b>Visiting Scholar</b> , Department of Biomedical Engineering, Duke University Projects: <ol style="list-style-type: none"><li>1. Impact of spatial partitioning on horizontal gene transfer in microbial communities.</li><li>2. Construction of a plasmid trait database.</li></ol> Advisor: Lingchong You	Sep 2021 – Feb 2022
<b>Research Assistant</b> , School of Physics, Peking University Projects: <ol style="list-style-type: none"><li>1. Nonlinear dynamics of robust yeast cell cycle regulation.</li><li>2. Mathematical modelling of SARS-CoV-2 infection and host immune response.</li></ol> Advisor: Fangting Li	Oct 2018 – Sep 2021, Mar 2022 – June 2022

## MENTORING AND OUTREACHING EXPERIENCES

- Research mentor. You Lab, Duke University  
**Mentees:**
  3. Margaret Wilson, NCSU microbiology undergraduate. Summer Internship. Achievements: Python coding for bioinformatic pipelines; biophysical modeling. June 2023 – Present
  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

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- 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