Hao SHEN

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EDUCATION

University of Washington, Seattle 2014 - 2019

- Ph.D. in Molecular Engineering and Sciences
- Supervisor: David Baker, Professor of Biochemistry, Institute for Protein Design, HHMI Investigator

Tsinghua University, Beijing 2010 - 2014

- B.S. Biological Science
- GPA: 91/100, Rank: 3/84 (top 5%)
- Honors: Honors Program of Life Sciences; First Prize Scholarship for Comprehensive Performance 2011, 2012; National Undergraduate Innovative Experiment Program

University of Washington, Seattle Fall 2012

- International Exchange Program with full scholarship issued by the China Scholarship Council

EXPERIENCE

Prof. David Baker's group, University of Washington, Seattle 2014 - Present

- Developed computational method and designed *de novo* self-assembling helical protein filaments
- Expressed, purified and carried out negative stain EM screening for designed filaments
- Prepared CryoEM sample, collected data with TF20 electron microscope and participated in helical reconstruction for structure determination
- Performed light scattering and participated in fluorescence measurement to assess filament kinetics
- Successfully designed *de novo* single component, multi-component and pH-responsive filaments

Prof. Haipeng Gong's group, Tsinghua University, Beijing 2013 - 2014

- Observed structural transition of LacY transporter using molecular dynamics simulation
- Developed an differentiable statistical hydrogen bonding energy based on PDB structures

Prof. Nir Ben-Tal's group, Tel Aviv University, Israel Summer 2013

- Improved performance of a quality assessment method for protein model-structure with evolution conservation generated by ConSurf

Prof. Haiteng Deng's group, Tsinghua University, Beijing 2011 - 2012

- Studied the regulatory function of a growth factor that can induce bone regeneration
- Molecular construct, express, purify and use HPLC-MS to identify protein from cell culture

Beijing ACCB Biotech Ltd., Intern, R&D, Beijing Summer 2012

- Performed real-time fluorescent PCR for cancer gene expression to develop personalized diagnosis

PUBLICATIONS

- De novo design of self-assembling helical protein filaments. Shen *et al.*, *Science* **362**, 705–709 (2018)
- Development of a dual-functional conjugate of antigenic peptide and Fc-III mimetics (DCAF) for targeted antibody blocking. L. Zhang, H. Shen *et al.*, *Chem. Sci* **10**, 3271-3280 (2019)

SKILLS AND QUALITIES

- Protein structure modeling and design, molecular cloning, protein biochemistry, CryoEM, light scattering, fluorescence microscopy
- Programming experience: Rosetta, Python, Perl, C++, Bash, Pascal
- Languages: Mandarin, Cantonese (fluent), English (proficient: Simultaneous Interpretation program certification by Transmax)