

Yiyang Chen

• +1 (314)203-9366 • chen.yiyang@wustl.edu • <https://yiyangc1999.github.io/> •

EDUCATION

Washington University in Saint Louis

St. Louis, MO, US

Ph.D. in *Imaging Science*

2021.09 - present

COURSES: Detection and Estimation Theory, Theoretical Imaging Science, Fundamentals and Applications of Modern Optical Imaging, Introduction to Machine Learning, ...

Nankai University

Tianjin, China

B.S. in *Physics*, Poling Class of Physics

2017.08 - 2021.06

Thesis: The Study of Deformability of Human Erythrocyte Based on Microfluidics

COURSES: Introduction to Biophysics, Molecular Biophysics, Biomedical Physics, Thermodynamics and Statistical Physics, Electrodynamics, ...

RESEARCH EXPERIENCES

Fundamental Limits, Advanced Optical Imaging System Design and Biological Applications in Single-molecule Orientation Localization Microscopy (SMOLM)

2022.05 - current

Department of Electrical & Systems Engineering, Washington University in St. Louis, Advisor: Dr. Matthew Lew

- The best-possible performance limits (QCRB) analysis for two incoherent dipole emitters in SMOLM
- Dipole-spread function (DSF) design using optimization algorithms
- Develop HaloTag labeling technique for SMOLM, study the orientation and flexibility of single IgG antibody using SMOLM

Study of Human Red Blood Cells Based on Microfluidics and Super-resolution Microscopy

School of Physics, Nankai University, Advisor: Dr. Leiting Pan

2019.04 - 2021.06

Research supported by *National College Students Innovation and Entrepreneurship Training Program*

- Measured human red blood cell deformability by the speed of cells traveling through narrow channels
- Designed microfluidic ratchet chip for sorting the hRBCs in different life stages, ran COMSOL simulation to prove the availability
- Imaged the structure of actin-spectrin network on hRBC membrane cytoskeleton and hRBC membrane protein CD47 diffusivity using STORM, with related data analysis using MATLAB

Immunofluorescent Biomarker for Zebrafish Somitogenesis and Single Cell Oscillation

Department of Biophysics, University of Michigan, Advisor: Dr. Qiong Yang

2019.07 - 2019.09

- Developed immunofluorescent biomarkers for different signaling pathway, *Ntla* and *Tbx16*, in zebrafish somitogenesis process and segmentation clock
- Distinguished oscillating cells of different phenotypes within both zebrafish embryos and cell dispersal systems

CONFERENCE PRESENTATIONS

Poster Presentation:

Yiyang Chen & Qiong Yang. Immunofluorescent biomarkers for distinguishing cell phenotypes in zebrafish somitogenesis and autonomous cellular oscillators. *APS March Meeting 2020*, 65(1), March 2–6, 2020, <https://meetings.aps.org/Meeting/MAR20/Session/C71.85>

ACADEMIC ACTIVITIES

Medical Physics Summer School, Duke Kunshan University, Kunshan, China

2020.08

The Physics of Life Online Summer School, Princeton University

2020.06.15 - 2020.08.03

ACADEMIC ACTIVITIES

Member, SPECTRA (WashU SPIE and OSA Student Chapters) 2022.7 - present

- Serve as Imaging Science Pathway (ISP) Vice President
- Organized 2022 SPECTRA student-led conference

Member, Nankai Physics OSA student chapter 2018.04 - 2020.03

- Connected with chapters at other institutions; held seminars given by professors and graduate students

HONORS AND PRIZES

First Prize, Nankai Physics Tournament (NKPT) 2018.05

Boling Scholarship, Nankai University 2017.10

TEACHING EXPERIENCES

Basic Physics III and IV, Nankai University

Teaching Assistant of Prof. Jianghong Yao 2019.09 – 2020.01

- Helped to mark homework and exams, explained homework exercises, answered students' questions during tutorials and the review classes

Human Heart Organoid Morphology Characterization by Optical Coherence Tomography

Graduate Research Assistant

St. Louis, MO, 2022.01 - 2022.05

Department of Biomedical Engineering, Washington University in St. Louis, Advisor: Dr. Chao Zhou

- Maintained human induced pluripotent stem cells (hiPSCs) and cultured self-assembled human heart organoids (hHOs)
- Analyzed longitudinal changes of the hHO morphology and structure by imaging with Optical Coherence Tomography (OCT)
- Characterized different cell types in mature hHOs by multi-color immunofluorescent labeling and two-photon imaging