Selina Yi-Jie Zhu

selinazhu2027@u.northwestern.edu (+1) 310-256-0048

EDUCATION

Northwestern University Evanston, IL
University of Southern California (Transferred) Los Angeles, CA (August 2023 - May 2024)
Bachelor of Science in Neuroscience and Data Science Expected May 2027
GPA: 4.00

HONORS & AWARDS

- Dean's List, USC Dornsife College of Letters, Arts, and Sciences (December, 2023)
- IBDP Bilingual Diploma in English and Chinese First Language (July, 2023)

WORK EXPERIENCE

Northwestern Univ, Woolley Lab Evanston, Illinois
Undergraduate Research Fellow September 2024-Present

- Conducted research on steroid regulation of synaptic structure and function in the hippocampus.
- Utilized a combination of dry and wet lab methods to identify alpha estrogen receptor colocalization in the mouse hippocampus.
- Investigated the role of alpha estrogen receptors in modulating drug delivery across the blood-brain barrier.
- Applied molecular biochemistry methods to explore estrogen receptor activity in the brain as neurosteroids,
- Conducted experiments using light and electron microscopy and electrophysiology.

Tsinghua Univ. IDG/McGovern Institute for Brain Research, Mi Da Lab Beijing, China
Undergraduate Research Fellow July-September 2024

- Synthesized insights focusing on the role of retrotransposons in early-stage neural progenitor cell differentiation and proliferation.
- Conducted wet lab experiments including single cell RNA-seq, qPCR, rodent in-utero injection, and frozen sectioning.
- Collaborated with lab members to analyze data and interpret experimental results.
- Contributed to ongoing research projects aimed at understanding early-stage neural development.

Duke Univ. Photo-acoustic Imaging Lab Durham, North Carolina
Research Assistant December 2023

- Contributed to the Soft Array Project, focusing on the development and optimization of an Ultrasound Imaging soft array device.
- Measured the thickness of sculpt materials using MATLAB for data analysis, enhancing the accuracy and efficiency of the device.
- Used 3D Slicer for analysis of imaging data, aiding in the improvement of the device's imaging capabilities.
- Participated in the iterative design process, using MATLAB and 3D Slicer to suggest modifications based on experimental data.
- Assisted in preparing project documentation, ensuring accurate and detailed recording of research findings and methodologies.

National Institute of Biological Sciences, Peng Cao Lab Beijing, China
Parkinson's Research Mentee Feb 2022-March 2023

- Engaged in a targeted mission to replicate and validate crucial research findings at Professor Peng Cao's laboratory in Beijing.
- Gained hands-on experiential learning, conducting experiments centered around Parkinson's Disease, immersing myself in cutting-edge research methodologies, including direct involvement in experiments with rats.
- Completed a 15-page research paper (validating the findings) on Lewy Body and the Pathogenesis of Parkinson's Disease

Tsinghua Univ. Positive Psychology Kaiping Peng Lab Beijing, China
Research Assistant April 2022-May 2022

- Synthesized insights from 31 peer-reviewed articles for deeper understanding.
- Coauthored a 35-page research paper published in the International Journal of Youth and Adolescence (October 2023).
- Translated findings from cross-national questionnaires collected from 96,616 Chinese elementary and middle schoolers

RELEVANT SKILLS

- Wet Lab (scRNA-seq, qPCR, rtPCR, Confocal, QuPath)
- Programming (MATLAB, SQL, Python, R)

REFERENCES

Catherine Woolley, PhD
Professor of Biological Sciences
Northwestern University
Pancoe 2-407, Northwestern University, Evanston, IL 60201
Office Phone: (847) 491-302
cwoolley@northwestern.edu

Da Mi, PhD
Associate Professor of Neurobiology
Tsinghua University
B202 Biomedical Sciences Building, Tsinghua University, Beijing, China
Office Phone: (010) 62793866
mida@mail.tsinghua.edu.cn

Junjie Yao, PhD
Associate Professor of Biomedical Engineering
Duke University
Office Location: Hudson Hall Annex 261, Durham, NC 27708
Office Phone: (919) 681-0694
junjie.yao@duke.edu

Kaiping Peng, PhD
Dean of the School of Social Sciences,
Chair of the Psychology Department
Tsinghua University
Room 113, Mingzhai Building, Tsinghua University, Haidian District, Beijing
Mobile phone: +8613552292094
+86-10-62780677
pengkp@tsinghua.edu.cn

Peng Cao, PhD
Associate Investigator, NIBS, Beijing
Phone: 86-10-80726688-8535
Fax: 86-10-80726689
caopeng@nibs.ac.cn