

EDUCATION

Ph.D. Student 2024 – 2029

Cornell University, BMCB Program

B.S. Biological Science (w/ Honors) 2018 – 2023

Nankai University, Advisor: Prof. Xinglu Huang

EXPERIENCE

Research Assistant 2022 – 2023

National Engineering Lab for Neuromodulation, Tsinghua University

Advisor: Prof. Yanan Sui

Visiting Student 2021 – 2022

Institute for Human Genetics, University of California, San Francisco

Advisor: Prof. Yin Shen

Intern 2021

National Engineering Lab for Neuromodulation, Tsinghua University

RESEARCH INTERESTS

Genomics (Functional, Computational), Epigenomics, Bioinformatics, Development and Application of Sequencing Techniques

PUBLICATIONS

- [1] Chung C, Yang J, Yang X, Liu H, Ma Z, Szulzewsky F, Holland E, Shen Y, Shu X. Phase separation of YAP-MAML2 differentially regulates the transcriptome. *PNAS* 121 (7) e2310430121 PMID: 38315854
- [2] Sun W, Wang N, Liu H, Yu B, Jin L, Ren X, Shen Y, Wang L. Genetically Encoded Chemical Cross-linking of RNA in vivo. *Nat Chem* 2023;15(1):21–32. PMID: 36202986
- [3] Yang X, Wen J, Yang H, Jones IR, Zhu X, Liu W, Li B, Clelland CD, Luo W, Wong MY, Ren X, Cui X, Song M, Liu H, Chen C, Eng N, Ravichandran M, Sun Y, Lee D, Van Buren E, Jiang MZ, Chan CSY, Ye CJ, Perera RM, Gan L, Li Y, Shen Y. Functional characterization of Alzheimer's disease genetic variants in microglia. *Nat Genet* 2023;1–10. PMID: 37735198
- [4] Yang J, Chung C, Koach J, Liu H, Navalkar A, Zhao Q, Yang X, He L, Mittag T, Shen Y, Weiss WA, Shu X. Phase separation of Myc differentially modulates the transcriptome. *bioRxiv* 2022.06.28.498043; [Preprint]
- [5] Wei Y, Wu J, Wu Y, Liu H, Meng F, Liu Q, Midgley AC, Zhang X, Qi T, Kang H, Chen R, Kong D, Zhuang J, Yan X, Huang X. Prediction and Design of Nanozymes using Explainable Machine Learning. *Advanced Materials* 2022;34(27):2201736. PMID: 35487518
- [6] Sun Z, Liu Q, Wang X, Wu J, Hu X, Liu M, Zhang X, Wei Y, Liu Z, Liu H, Chen R, Wang F, Midgley AC, Li A, Yan X, Wang Y, Zhuang J, Huang X. Bioorthogonal catalytic nanozyme-mediated lysosomal membrane leakage for targeted drug delivery. *Theranostics* 2022;12(3):1132–47. PMID: 35154478

SELECTED RESEARCH EXPERIENCE

End-to-End Design of GRIP-seq: A Novel Sequencing Technique for Detecting RNA m6A Sites with Single-nucleotide Resolution Using Unnatural Amino Acids

Advisor: Prof. Yin Shen & Prof. Lei Wang

Institute for Human Genetics, UCSF

Dec. 2021 – Jul. 2022

available on GitHub

The Analysis of Multiple Sequencing Libraries: scRNA-seq, ATAC-seq, RNA-seq, ChIP-seq, CLIP-seq, Hi-C, CRISPR, etc.

Advisor: Prof. Yin Shen

Oct. 2021 – Jul. 2022

Institute for Human Genetics, UCSF

Evaluation of AlphaFold2 Algorithms and Improvements for Enhanced Predictions

Advisor: Prof. Yanan Sui

Jul. 2021 – Sept. 2021

National Engineering Lab for Neuromodulation, Tsinghua University

available on GitHub

Website Available: <https://alphafold.lnsgroup.cc:5001>

Analyzing Nanodrug Delivery Efficiency in Tumors Using Machine Learning

Advisor: Prof. Xinglu Huang

Sept. 2020 – Jun. 2021

State Key Laboratory of Medicinal Chemical Biology, Nankai University

Designed Protein Nanocage H2E-FTn for Enhanced Lysosomal Escape In Vitro: Adding Short Repeats of HHE Oligopeptide at the N-terminal of Human H Ferritin

Advisor: Prof. Xinglu Huang

Sept. 2020 – Dec. 2020

State Key Laboratory of Medicinal Chemical Biology, Nankai University

AWARDS

Poling Honors Degree, Nankai University

Distinguished Undergraduate Thesis, Nankai University

Scholarship of Academic Progress, Nankai University

SKILLS

Programming

R, Python, Shell, HTML, CSS, Markdown, \LaTeX

Packages

Flask, Seurat, ggplot2, dplyr, edgeR, AlphaFold2, STAR, fastp, etc.

Software

Ai, VSCode, RStudio, Nginx, IGV, PyMOL, ImageJ, Zotero, Benchling, Conda, Docker, SnapGene, etc.

Wet Lab

Molecular Clone, Cell Culture, ATAC-seq, Smart-seq2, CUT&RUN, mRNA Display, CRISPR Screen, Mutagenesis, etc.

Please visit my homepage for more information: <https://cv.greymsea.cc>