Hongjiang Liu

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EDUCATION

Ph.D. Student *2024 – Present*
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

Functional & Computational Genomics, Neurological Disorders

PUBLICATIONS

[1] Yang J, Chung CI, Koach J, **Liu H**, Navalkar A, He H, Ma Z, Zhao Q, Yang X, He L, Mittag T, Shen Y, Weiss WA, Shu X. MYC phase separation selectively modulates the transcriptome. ***Nat Struct Mol Biol*** 2024 May 29. PMID: 38811792

[2] Chung CI, 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

[3] 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

[4] 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

[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 *Dec. 2021 – Jul. 2022*
Institute for Human Genetics, UCSF *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*

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

Ray Wu Graduate Award, MBG, Cornell University	2024
Poling Honors Degree, Nankai University	2023
Scholarship of Academic Progress, Nankai University	2021

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.

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