Jiaze Liu Resume

Tel: +1(607)229-9318 Email: jl4389@cornell.edu Website: THATjiaze.github.io

Wuhan University, Wuhan, 430072, China

Education

Wuhan University, Wuhan, China **Sept. 2020-Present**

Hongyi Honor Class, College of Life Science

Major: Biological Science Cumulative GPA: **3.92/4.00 (1/35)** TOEFL: 106 (out of 120)

TA: Teaching assistant for *Biochemistry* and *Microbiology*.

Cornell University, Ithaca, NY **May 2023-Present**

Weill Institute for Cell and Molecular Biology

Intern student co-hosted by **Professor Scott D. Emr** and **Professor Yuxin Mao**

Research Experiences

Undergraduate Researcher, Lab of Prof. Yanxun Yu **July 2021-Present**

Medical Research Institute, Wuhan University, Wuhan, China

Exploring the neuronal circuit for ethanol sensing in *Caenorhabditis elegans*

● Generated several transgenic *C. elegans* strains deficient in specific neurons by the expression of Caspase or miniSOG, and characterized ethanol sensing behavior in those strains, to find out the neurons implicated in ethanal sensing circuit.

● Obtained phenotypic rescued strains that can only sense signal through specific sensory neuron, by rescuing the expression of key ion channels required for sensation in mutant background, to verify the conclusion that 3 key neurons are the sensory neuron for ethanal sensing.

● Constructed strains that express ChR-2, gtACR-2, or HisCl within specific neuron, to use optogenetics or chemical genetics to manipulate neuronal activity, to further characterize the neuronal circuit for ethanal sensing.

● Obtained few worm strain to be used in calcium imaging.

● Preformed two consecutive rounds of chromosomal knockout using CRISPR/Cas9 system, targeting two different genes that has putative function in ethanal sensing, and performed behavior essay on the obtained strains. To find out the molecular basis behind ethanal sensing. And has also worked on the knocking-in of these two genes in wild-type background, but with no success.

● Constructed many transgenic strains that express a key protein in a signaling pathway in different neuron, and characterized their response towards ethanal, for phenotypic rescue that aims to find out the neuron in which this cell signaling pathway takes place and leads to ethanol chemo-sensation.

● Characterized the influence of temperature on IAA and ethanal sensing.

Exploring the genetic basis of ferroptosis **March 2022- Jun 2022**

● Aided in the screening of genes that may participate in the ferroptosis pathway using CRISPR/Cas9

● Constructed some of the plasmids that are used for the expression of shRNA, to knockdown the genes that was obtained using a CRISPR-Cas9 knockout screen that may play a part in ferroptosis, to verify the conclusion

● Prepared lentivirus of shRNA to perform knockdown of genes

● Participated in minor tasks such as cell counting using hemocytometer, to seed cells with shRNA of target genes in the 96-well plate; or to prepare other cell strains to be tested with the same gene (for example, detecting mycoplasma)

iGEM Competition, Lab of Prof. Zhixiong Xie

College of Life Science, Wuhan University, Wuhan, China

Using synthetic biology to provide a cure to acne **April 2021-October 2021**

● Using directed evolution to decrease leaky expression and increase sensitivity of a fatty acid sensitive promoter.

Using synthetic biology to provide a cure to major depressive disorder **April 2022-October 2022**

● Construction of an oscillating system in *B. subtilis.*

Honors & Awards

● Merit student (for top 10% of students) **Sept. 2021**

● Top 10 students of Wuhan University (for 10 out of entire undergraduate students, won this award as a member of iGEM team) **May. 2021**

● First class of Study Scholarship of Hongyi Honor College (for top 5% of students) **Sept. 2021**

● First class of Study Scholarship of Wuhan University (for top 5% of students) **Sept. 2021**

● Gold Award for iGEM 2021 competition **Oct. 2021**

● Best Measurement Nomination for iGEM 2021 competition **Oct. 2021**

● New Youth Pacesetter of Hongyi Honor College **June. 2022**

Skills

● Proficient in Molecular cloning; Experiments concerning *C. elegance* such as transgenic *C. elegance* construction, behavior assay; mammalian cell culture; etc.

● Computer skills: C, HTML, CSS, Graphic Design, etc.