# Jiaze Liu Resume

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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.**

## 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.

● Constructed strains that express ChR-2 or gtACR-2 within specific neuron, to use optogenetics to manipulate neuronal activity, and verify the conclusion that certain neuron does plays a role in ethanal sensing.

● Constructed strains that express HisCl in different neuron, and performed behavior essay with these strains, and used chemical genetics to verify the role that certain neuron plays in ethanal sensing.

● Generated two chromosomal knockout strain using CRISPR/Cas9 system that is deficient in two genes that has putative function in ethanal sensing, and performed behavior essay on these strains. To find out the molecular basis behind ethanal sensing. Now working on knocking in these two genes in wild-type background.

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

● Constructed many transgenic strains that express a key protein in a signaling pathway in certain neuron and characterized their response towards ethanal and IAA, for phenotypic rescue that aims to find out the neuron in which this cell signaling pathway 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**                      **April 2021-October 2021**

College of Life Science, Wuhan University, Wuhan, China

**Using synthetic biology to provide a cure to acne**

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

**iGEM Competition, Lab of Prof. Zhixiong Xie**                      **April 2022-October 2022**

College of Life Science, Wuhan University, Wuhan, China

**Using synthetic biology to provide a cure to major depressive disorder**

● 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, crossing, calcium imaging with microfluidic chips; *in vitro* biochemical assays, cell culturing; etc.

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