

Lingna Yu

Graduate School of Frontier Biosciences, Osaka University

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EDUCATION

Graduate School of Frontier Biosciences, Osaka University

Osaka, Japan

Doctoral Program (Five-Year Track)

Oct. 2024 - Aug 2029 (expected)

- Selected for the “Osaka University Tuition Waiver System for Honor International Students”
- Ranked 2nd in the Scholarship Recommendation List

School of Medicine, Shanghai Jiao Tong University (SJTU)

Shanghai, China

Biomedical Science (Zhiyuan Honors Program)

Sep. 2020 - June 2024

- GPA: 3.65 / 4.00, ranked among the top 5 in the Biomedical Science Department
- Honored with the Outstanding Graduation Thesis Award for exemplary research contributions
- Received Zhiyuan Honorary Bachelor's Degree and recognized as an Outstanding Graduate of SJTU for academic excellence and leadership

King's College London (KCL)

London, England

Human Anatomy & Physiology (Summer School)

June 2021 - July 2021

- GPA: 90 / 100, granted Overseas Study Scholarship for academic excellence

RESEARCH EXPERIENCE

Identifying Genetic Variations of Olfactory Receptors and Non-coding Regulatory Elements That Affect Odor Perception

Supervisor: Prof. Qian Li

Disciplines of Neuroscience, School of medicine, SJTU

Student for Undergraduate Research Project

—Oct. 2021 - June 2023

- Developed a protocol for amplifying and purifying DNA from stored low-quality human saliva samples.
- Adapted the conventional Cochran-Mantel-Haenszel (CMH) statistical method to accommodate small sample sizes for detecting phenotype-associated genetic variations.
- Detected 37 significant genetic variations in trace amine-associated receptors (TAARs) and corresponding gene regulatory elements.
- Constructed site-specific mutants of *E. coli* to evaluate how changes of specific amino acids affect the binding affinity of the protein to its ligands.
- Oral presentations of this research won the first prize in the Sixth Biomedical Science J.A.T. Forum and the Seventh Biomedical Science Innovation Forum.
- The poster presentation of this research won the first prize in the inaugural National Top Student Innovation Forum in Basic Medicine.

Computational Modeling of Neuronal Networks in Parkinson's Disease

Supervisor: Prof. Douglas (Dongzhuo) Zhou | Institute of Natural Sciences & School of Mathematical Sciences, SJTU

Project Leader of Zhiyuan Scholar Program (Funding: \$11,000)

—Feb. 2022 - Jun. 2024

- Incorporated underexplored neural populations and projections into the cortico-basal ganglia-thalamo-cortical (CBGTC) model framework, and successfully reproduced experimental phenomena concerning the firing rates and oscillations in Parkinson's disease (PD).
- Investigated the origin of abnormal β oscillations in PD, validating the cooperative role of cortical input and the GPe-STN network in rhythmogenesis through numerical simulation.
- Designed a closed-loop control system to simulate deep brain stimulation (DBS) conditions, and identified the cortex and thalamic reticular nucleus (TRN) as potential targets for improved efficacy of DBS therapy.

Unveiling the Heterogeneity of Tissue Stem Cells: A Comprehensive Approach for Identifying Intracellular and Surface Markers of Stem Cell Subtypes

Supervisor: Prof. Katsuyuki Shiroguchi

RIKEN Center for Biosystems Dynamic Research, Japan

Summer Intern | Student for Graduation Research | Technical Staff | Graduate Student (selected as RIKEN Student Researcher) —June 2023 - present

- Identified live-cell intracellular markers capable of predicting cell fate in various tissues, including lung and intestine, enabling the enrichment of high-potential stem cells.
- Discovered novel surface markers for lung organoid-forming cells, increasing organoid-forming efficiency tenfold (from ~5% to ~50%) through multiple dye combination.
- Characterized three distinct subpopulations of lung organoid-forming cells, including a Club cell-like cluster, and identified their potential surface markers.
- Discovered potential markers for intestinal organoid-forming cells by isolating high-motility cells and performing RNA sequencing.

EXTRACURRICULAR ACTIVITIES

Zhiyuan College Student Union, Core Member

—Feb. 2021 - Sept. 2022

- Organized 10+ events varying from workshops to festival activities.
- Selected as a student representative for the Youth Summit of Honors Colleges in the Yangtze River Delta Region.

The Walking Football Association, Founder & President

—Jan. 2022 - Sept. 2023

- Founded and serve as President of the Walking Football Association, which is featured in the Youth Magazine NYLON and recognized as one of the annual Brilliant 10 University Clubs.
- Launched a National Program to introduce walking football to elderly citizens, and organized 3+ inaugural walking football events, including tournaments and invitationals in China.
- Produced the first educational video on walking football, which gained 76,000 views.

Multilingual Piazza CELULAS, International Student Leader

—Aug. 2024 - present

- Selected as the international student leader for the CELULAS Youth Summer Camp, guiding youth to learn multi-culture and understand the diversity.
- Actively participate in regular multilingual events, delivering presentations to introduce Chinese culture and inspire children to play an active role in the world.

AWARDS & HONORS

Shanghai Jiao Tong University Outstanding Graduate (Top 4% in College)	2024
Zhiyuan Honorary Bachelor's Degree (Top 5 GPA in Department)	2024
Outstanding Graduation Thesis Award (Top 3 in Department)	2024
Zhiyuan Honors Scholarship (Top 10% GPA in SJTU)	2020 - 2023
Biomedical Science Innovation Forum - First Prize	2023
Biomedical Science J.A.T. Forum - First Prize	2023
Overseas Research Scholarship (RIKEN Summer Internship)- A level	2023
Overseas Study Scholarship (KCL Summer School)	2021
National Mathematics Competition - Third Prize	2021

SKILLS

Programming: Proficient in C++, Python, Matlab, and R; experienced in computational modeling and data analysis for biomedical research.

Languages: Mandarin (Native), English (TOEFL-109), Japanese (Intermediate)

Laboratory Techniques: Gene Cloning, Transgenic Mouse Construction, Virus Tracing, Optogenetics, Immunofluorescence Histochemistry, Fluorescence-Activated Cell Sorting, Organoid Culture, Time-Lapse Imaging, Confocal Microscopy