YU XIE

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Summary

I am a dedicated student from the extensive biological and ecological background and am driven to tackle the challenges in neuroscience. My favorite quote: 'Learn the rules like a pro, so you can break them like an artist by Pablo Picasso. I am on the way to becoming more versed in it while being engaged in a fun project.

Experience

Bachelor Thesis in Molecular Microbiology **03/2021 to 06/2022**
Molecular Ecology Lab, NAU **Nanjing, China**

- 66 strains of *Bacillus* bacteria were successfully isolated from soil samples and clustered into a dozen of Operational Taxonomic Units based on the phylogenetic tree of 16S rRNA sequences of the isolates.
- This work contributed partially to a national survey of biodiversity in China.

Research Internship in Electrophysiology **04/2022 to 05/2022**
Department of Biology, Lund University **Lund, Sweden**

- Electrical activities in human iPS neural organoids cultured on MEA were recorded under three gradients of environmental carbon dioxide concentrations.
- The recording was analyzed with custom MATLAB scripts for inferring how background CO2 changed the firing activities of the cells in the organoid.

Research Internship in Photoreceptor Modeling **11/2021 to 03/2022**
Department of Biology, Lund University **Lund, Sweden**

- MATLAB App is written for calculating the optic parameter of the photoreceptor with user-defined inputs (deposited in GitHub; account: sherrxyz).
- Photoreceptor distributions on the compound eye of 14 fan worms of the two species were manually reconstructed from the 3D confocal dataset. The results are to be incorporated into a manuscript for publication.

Research Internship in Drosophila Development **03/2021 to 04/2021**
Pesticide and Toxicology Lab, NAU **Nanjing, China**

- Ovaries of dozens of fruit fly females were dissected, and a few of them with asymmetrical morphologies were cased into immunohistochemistry samples ready for detecting the expression of transmembrane-channel-like proteins (TMC).

Research Internship in Plant Physiology **12/2020 to 02/2021**
Plant Physiology and Nutrition Lab, NAU **Nanjing, China**

- DNA sequence homology analysis was made of the 23 paralogs of the flowering-timing gene FLOWERING LOCUS T in the genome of garlic and 3 orthologs from rice and *Arabidopsis thaliana.*
- The result provided a piece of clue for answering why some garlic germinates earlier than others, a scientific question the host lab was interested in.

Research Internship in Molecular Psychiatry **11/2019 to 01/2020**
Institute of Neuroscience, Gothenburg University **Gothenburg, Sweden**

- The role of quaking gene on the pathogenesis of Schizophrenia was examined on zebrafish as the model system.
- Abnormalities in key brain structure of the mutant zebrafish larva were detected on the dataset of confocal imaging.
- Literature on myelination and psychiatry disorders were intensely read.

Teaching Assistant in 'evolutionary biology' **09/2018 to 06/2019**
College of Life Science, NAU **Nanjing, China**

- Assisting attending students with assignments, grading quizzes and exams, making and spreading posters for promoting the course.

Skills

- Written & spoken academic communication
- Comprehending research literature
- Formulating and testing the hypothesis
- Creative problem-solving
- Adopting protocols
- Insect feeding and dissection (*drosophila*)
- Culturing microorganisms on Petri dish
- Immunochemistry sample preparation
- Nuclei extraction
- R language for plotting figures
- Image analysis on Fiji
- Phylogenetic tree building with MEGA
- MATLAB programming
- Data processing with EEGLAB
- Electrophysiological recording with Multi Channel Systems
- Titration
- Flow cytometry

Education

Bachelor of Agriculture: **College of Resources and Environmental Sciences** **2021**
Nanjing Agricultural University Nanjing, China

- Dissertation: *Classification of Bacillus Species Isolated from the Soils of Three Ecosystems in Inner Mongolia Based on 16S rRNA Sequences*.
- Coursework in Plant Physiology, Molecular Biology, Ecology, Biotechnology, Microbiology, Organic and Inorganic Chemistry, Earth Science, Further Mathematics, Physics, and Academic English
- Academic Achievement Awards: National scholarship for merit student (2018), Huang Rui-Cai Fellowship (2019)

Exchange: **Department of Environmental and Biological Sciences** **2019**
Gothenburg University Gothenburg, Sweden

- Coursework in Ecotoxicology, Genetically Engineered Food

Graduate studies: **Department of Biology** **2022**
Lund University Lund, Sweden

- Coursework in Neurobiology, Molecular Biology

Conference

Effective Altruism Global X, Berlin, September 2022

Books influential to me

- Buzsaki G. *Rhythms of the Brain*. (2006)
- Lanza R, Berman B. *Biocentrism: How life and consciousness are the keys to understanding the true nature of the universe*. (2010)
- Pater W. *Studies in the history of the Renaissance*. (1983)