

# SHIWEI XU

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## EDUCATION

### **PhD student Quantitative Biomedical Science | Dartmouth College**

2018-?

Thesis Mentor: Margaret E Ackerman, PhD

Speciality: Immunoinformatics and Data Science.

### **BSc (Hons) Genetics | The University of Manchester (England)**

2016-2018

Average: 71.2/100

Graduate as First Class Honor Degree.

GRE: 160(verbal) + 169 (quantitative) (86%) / 170 (verbal) + 170 (quantitative) (97%)

TOEFL: 110/120 (R: 29/30 L:30/30 S:23/30 W:28/30)

### **BSc Molecular Biology | Jilin University of China**

2014-2016

Average: 85.68/100 (GPA 3.35, top 15% in the Major (4/30))

### **Senior High | Dalian No.24 High School**

2011-2014

College Entrance Exam of China: 617/750 (top 5% of the area)



## LAB EXPERIENCE

### **Ackerman Lab (Current) | Dartmouth College**

SINCE 2019 JUN.

### **In Dr. Hui Lu's Lab | The University of Manchester**

2017 SUMMER PLACEMENT.

Erv1 is an oxidase essential for import and assembly pathway in mitochondria. Several highly conserved Histidine residues, sitting at the region where Erv1 binds to its cofactor FAD, has drawn our interests. Therefore, we predicted that these specific conservations shall play a role in

structure and functions of Erv1, especially in cofactor binding and oxidase capacity. Combinations of several single Histidine-to-phenylalanine mutations were generated to examine our prediction; meanwhile, the specific amino acid switch could not add extra experimental variants as the aromatic structure is still well-preserved. By purifying the proteins after being cultured in *E. coli*, we performed different in vitro assays, such as FPLC and UV spectroscopy, aiming at testing their oxidase ability, cofactor binding and oligomerization pattern of the mutants. The results showed that the mutant H99F is related to the oligomerization distribution pattern of Erv1; mutant H162F significantly reduce the oxidase capacity of Erv1, as a low level of FAD binding is also shown.

During the placement, I was instructed by a PhD student of Dr. Lu, in University of Manchester. Other than the techniques above, I was also trained for yeast cell culture, sonication, centrifuge and data analysis with Origin and Excel. A lab report was composed after the placement. Dr. Lu offered a decent evaluation at my capacity in identifying the problems during the practical and analysis, as well as the enthusiasm and critical thinking on finding the answers for the issues being brought up.

### **In Prof. Wan-Nan Li's Lab | Jilin University**

2016 SPRING

I was participating in an Innovation Contest for university students majoring in Biological Science. It was a research *testing Berberine's capacity of anti-inflammation on Chronic Astropic Gastritis*. We worked in team, studying the methods of designing the practical and analyzing the plan being made. The plan included the procedures, schedules and budget. A presentation of the plan was made and questions brought up by other participants of the contest were answered properly. During the experience of the innovation Contest, I improved my ability in designing plans and teamwork.

The research was officially assessed and won the "National Level Prize".

### **In Dr. Chun-Gang Liu's Lab | Jilin University**

2014 AUTUMN-2015 SPRING

I volunteered to Dr. Liu's lab for cleaning the working condition of the lab and learning basic anatomical skills, such as injection, intragastric administration and dissection of rats. During the experience in lab, I learnt about the Dr. Liu's research on *the impact of Paecilomyces Tenuipes extractions on reducing the blood sugar*. I also learnt the technique of Western Blot and ELISA during the time spent in Dr. Liu's lab. Dr. Liu gives a decent evaluation on my responsibility and efficiency on the work assigned.

This is the very first experience I have to work in a lab. The atmosphere of the research in lab left a novel impression on me. It was a valuable opportunity for me to have conversations with researchers in the lab and learn techniques for the experiments meanwhile.



## **SKILLS**

- Proficient in R & Python programming for Biostatistics and machine learning algorithm.
- Good at using online resources and packages for bioinformatics studies.
- Excellent in using Microsoft Office and other software for analysis. (E.g. Origin, Prism)
- Fluent in both English and Chinese, both written and spoken.
- Experimental skills, including animal anatomy, biochemistry and genetics assay.



## ACTIVITIES

I am an amateur piano player, certificated by Central Conservatory Music of China as Level 10/10.

I was participating in multiple volunteer activities, including organizing the hospital visits and joining campaign in energy conservation.

I was nominated as the Best Debater of Year in Biological School of Jilin University, served as alternate leader of the team for debate competitions with other departments of the University.