

Zhiwei Li

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Department of Food Science and Agricultural Chemistry, McGill University Macdonald Campus
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Education

McGill University, Canada

Sep. 2018 - present

- Ph.D. candidate (fast-track from M.Sc.) in Food Science and Agricultural Chemistry

Jiangnan University, P. R. China

Sep. 2014 - June 2018

- B.Sc. in Food Quality and Safety, School of Food Science and Technology
- GPA: 3.64 / 4.00 (3 / 63), Honors School student (top 3%), Undergraduate Outstanding Graduates (3%)

Skills and Techniques

- Experimental techniques in next generation sequencing, library preparation, microbiology, molecular biology, mouse manipulation, sensory evaluation, food analysis, etc.
- Next generation sequencing analysis workflow including 16S rRNA amplicon sequencing, metagenomic sequencing, metatranscriptomic sequencing, and whole genome sequencing.
- Computer software including Unix, R, Python, AutoCAD, and Microsoft Office, etc.

Research Experience

Ph.D. candidate

Sep. 2018 - present

Department of Food Science & Agricultural Chemistry, McGill University, Ste-Anne-de-Bellevue, Canada

Supervisors: Dr. Jennifer Ronholm & Dr. Danielle Malo

- Working on the interactions between foodborne pathogens and gut microbiome, specifically how *Salmonella enterica* influence gut microbiome with their type VI secretion systems, and how commensal bacteria respond to the attack, project funded by the Natural Sciences and Engineering Research Council of Canada (NSERC).
- Working on identification and characterization of novel *Salmonella enterica* type VI secretion systems, project funded by Fonds de recherche du Québec – Nature et technologies (FRQNT).
- Familiar with 16S rRNA sequencing, shotgun metagenomic sequencing and metatranscriptomic sequencing library preparation and related data analysis. Perform sequencing for collaboration labs.

Student Intern

April 2023 – Aug. 2023

Bureau of Microbial Hazards, Health Canada, Canada

Supervisor: Dr. Sandeep Tamber

- Conducted RNA extraction and DNA extraction in the *Salmonella* Lab.
- Performed metatranscriptomic sequencing library preparation and data analysis in collaboration with the Genomics Lab and the Bioinformatics Team, respectively.
- Assisted lab work including *Salmonella* diagnosis and detection method development in the *Salmonella* Lab.

Research assistant

Oct. 2015 - June 2018

Laboratory of Gut Microbiota and Health, Jiangnan University, Wuxi, P. R. China

Supervisor: Dr. Zhennan Gu

- Thesis: *Antimicrobial Mechanisms of Clove Alcohol Extract*. Awarded Undergraduate Excellent Thesis (5%).
- In charge of an undergraduate research project (group leader) *Herbal Mouthwash with Anti-periodontitis Properties*, funded by National Training Program of Innovation for Undergraduates of China (¥14,000).
- Extracted effective components from natural herbs, and characterized the antimicrobial activities.
- Identified antibacterial mechanisms of herb extract on molecular level.

R&D specialist intern

June 2016 - Sep. 2016

Department of Food Science and Technology, Kasetsart University, Bangkok, Thailand**Supervisor: Dr. Sasitorn Tongchitpakdee**

- Project: *Development of Fiber-Enriched Snacks from the By-Product of Soy Sauce Processing.*
- Improved the formula of sea weeds and puffed foods using by-product of soy sauce processing.
- Conducted food characterization including hardness, moisture content and protein content.

Research assistant

Mar. 2015 - Jan. 2016

National Yellow Wine Engineering and Technology Research Center, Wuxi, P. R. China

- Trained, selected (10 out of more than 100) and served on the panel of yellow wine sensory evaluation.
- Assisted in the development of yellow wine flavor wheel, and in the GC-MS content analysis.
- Supervised brewing process of a novel rice wine by conducting quality control on reducing sugar content.
- Awarded third prize in 2017 Excellent Paper Award (Group) in Technology Innovation Award issued by Chinese Institute of Food Science and Technology.

Student Intern

Aug. 2017

SDA Cooking Nutriology Research Laboratory, Midea Group Co., Ltd, Foshan, China

- Conducted nutrient analysis and sensory evaluations of meals under different cooking conditions, to assist with the development of novel artificial-intelligent pots. The pots are now popular among different age groups.

Workshops and Certificates

- Theory of Microbiome Analysis Workshop (presenter), McGill University 2022
- CBW-IMPACTT Microbiome Analysis Workshop, Canadian Bioinformatics Workshops 2022
- Microbial Ecology R Workshop, University of Michigan 2021
- Juice HACCP, Kasetsart University, Cornell University & Thailand Ministry of Science Technology 2016
- Public Nutritionist (Senior Skill Level), The Ministry of Human Resources and Social Security, China 2016

Awards and Honors

- Fonds de recherche du Québec - Nature et technologies (FRQNT) doctoral research scholarship (\$21,000/year, \$70,000 in total), Fonds de recherche du Québec 2021-2024
- Faculty Grad Excellence Award (\$65,000 in total), McGill University 2018-2023
- Graduate Mobility Award (\$7,100), McGill University 2023
- GREAT Award, Department of Food Science & Agricultural Chemistry, McGill University 2018, 2022
- Clifford C.F. Wong Fellowship (\$20,000/year), McGill University 2020
- Provincial Merit Student, Jiangsu Provincial Department of Education, P. R. China 2018
- Undergraduate outstanding graduates, Jiangnan University (3%) 2018
- Undergraduate excellent graduation thesis, Jiangnan University (5%) 2018
- Municipal Merit Student, Wuxi Municipal Bureau of Education, P. R. China 2017
- Second prize, Starpro Scholarship (¥8,000), Jiangnan University (5 winners each year) 2017
- First prize, Huiyuan Yao Scholarship (¥6,000), Jiangnan University (6 winners each year) 2016
- First prize, Huayuan Packaging Scholarship (¥5,000), Jiangnan University (2 winners each year) 2015

Teaching Assistantships

- FDSC 442 Food Microbiology, McGill University, Canada Fall 2022, Fall 2023
- LSCI 230 Introductory Microbiology, McGill University, Canada Winter 2022
- IELTS 6.5 class, New Oriental Education & Technology Group, China Winter 2018