

Scarlet Ruoxian Wu

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EDUCATION

Bachelor of Science (Honours) | University of Toronto

Sep 2023 – Jun 2024

Physiology Specialist and Statistic Minor

- **Award** -- Experiential Learning Bursary

2023-2024

TECHNICAL SKILLS

Lab Techniques: Western blots, bacterial culture, immune cell isolations, animal tissue histology, cytotoxicity assay, PCR, qPCR, immunofluorescent staining, organ injury scoring, virology, genetics sequence design, and bioinformatics.

Software: SQL, Python, R Studio, GitHub, Power BI, and Prism Graphpad.

- **Python Specialization Certification** (offered by Coursera) -- Data structures, APIs, and databases.

WORK EXPERIENCE

Research Assistant | Unity Health (Ori Rotstein Lab, University of Toronto)

Sep 2023 – Present

- Investigated liver ischemic injury mechanisms and explored therapeutic interventions.
- Led a project on C3-CRIG interaction and its role in mitochondrial protection and hepatoprotection.
- Contributed to manuscript writing for publication.

Independent Project Contributor | Biomedical Incubator Capstone, University of Toronto

Sep 2023 – Present

- Designed experiments for developing bacteriophage cocktails targeting fire blight.
- Evaluated research gaps and commercial potential; managed project budget.
- Enhanced teamwork, networking, and leadership skills.

Research Assistant | Unity Health (Haibo Zhang Lab, University of Toronto)

May 2023 – Aug 2023

- Researched COVID-19 pulmonary health impacts, focusing on ACE2 inhalation therapies.
- Conducted western blots, tissue histology, cytotoxicity assays, and immunofluorescent staining.
- Managed electronic archives of experimental materials and participated in research meetings.

Project Volunteer | PREVENT Project (Karim Keshavjee Lab)

Jul 2023 – Sep 2023

- Supported development of AI-integrated diabetes prevention software.
- Worked on predictive models and pattern analysis integrating biological data with health records for early disease detection.

Research Assistant | Chinese State Key Lab (Zijie Zhang Lab, Yunnan University)

Jun 2021 – Aug 2021

- Studied molecular responses to COVID-19 vaccines, involving volunteer recruitment and immune cell isolation.
- Developed communication and problem-solving skills through extensive team collaboration.

PUBLICATIONS

Manuscript: CRIG-dependent capture of transplanted mitochondria by Kupffer cells prevents liver ischemia/reperfusion-induced injury and inflammation

- Has been submitted to the Science Immunology in March, 2024.
- **Author:** Avinash Naraiah Mukkala, Bruna Araujo David, Menachem Ailenberg, Jady Liang, Chirag Manoj Vaswani, Danielle Karakas, William Barbour, Rachel Goldfarb, Avishai Gasner, **Ruoxian Wu**, Kushal Joshi, Raluca Petrut, Sabrina Yang, Colin Graham, Mirjana Jerkic, Eno Hysi, Marc Jeschke, Ana Andreazza, Heyu Ni, Claudia dos Santos, Haibo Zhang, Andras Kapus, Paul Kubes, Ori David Rotstein.

EXTRACURRICULAR ACTIVITIES

Vice Minister | UTLSC Club

Sep 2022 – Present

University of Toronto Life Sciences Connection

- Responsible for some publicity work in the club, such as making electronic posters, which enabled me to use related computer software, such as Microsoft Office set.

Cellist | University of Toronto Skule Orchestra Club

Sep 2021 – May 2023

- Rehearse and ensemble symphonic music to improve my teamwork ability, provide opportunities to communicate with other students with similar interests, and enrich my overall college life.

Volunteer | Mama Pack Organization

Jun 2019

- Packed food for children suffering from famine worldwide.