

# WENXI LIAO

832 Bay Street, unit 2605 Toronto, ON Canada M5S 1Z6  
416-876-4905  
wenxi.liao@mail.utoronto.ca

## EDUCATION

---

- |                |  |
|----------------|--|
| 2019 – Present | Doctor of Philosophy (direct entry), University of Toronto<br>Expected graduation: 2024  |
| 2015 – 2019    | Honours Bachelor of Science ( <b>with High Distinction</b> ), University of Toronto<br>Major in Forest Conservation and Physical and Environmental Geography<br>Minor in GIS |

## THESIS/RESEARCH PROJECT

---

- |             |   |
|-------------|---|
| 2018 – 2019 | Household and community exposure to the 2011 flood in the Peruvian Amazon using remote sensing and survey data<br>Supervisor: Dr. Christian Abizaid           |
| 2017 – 2018 | Biochar particle size and post-pyrolysis mechanical processing affect soil pH, water retention capacity, and plant performance<br>Supervisor: Dr. Sean Thomas |

## RESEARCH INTERESTS

---

- Biochar properties and plant responses to biochars on green roofs.
- Remote sensing applications and modelling in urban forestry.
- Forest and ecosystem responses to stress factors and climate change.

## PUBLICATIONS AND CONFERENCES

---

- **Liao, W., & Thomas, S. C.** (2019). Biochar particle size and post-pyrolysis mechanical processing affect soil pH, water retention capacity, and plant performance. *Soil Systems*, 3(1), 16.
- **Liao, W.** (2020). *The influence of biochar granulation and particle size on plant growth and discharge quality from green roofs*. Presented at the Grey-to-Green CitiesAlive Conference, online.
- **Liao, W., Zhu, Y., Sifton M., Drake J., Thomas, S. C.** (2020), Biochar processing methods influence biochar water retention capacity and green roof discharge quantity [Poster session]. TRIECA, Toronto, ON, Canada
- **Liao, W.** (2019). *Effects of biochar particle size and particle shape on soil moisture and plant growth*. Presented at the Haliburton Forest and Wild Life Reserve Ltd. Research Day, Haliburton, ON, Canada.

- **Liao, W.** (2018). *Biochar particle size: effects on soil water retention capacity and plant performance*. Presented at the Centre for Global Change Science Presentation Day, University of Toronto, ON, Canada.

## HONOURS AND AWARDS

---

2020-2021	Buckley Graduate Scholarships (\$8578)
2020-2021	Charles Percival Howard Scholarship Fund (\$8300)
2019-2020	Forest Soils Graduate Scholarship (\$5000)
2019-2020	Charles Percival Howard Scholarship Fund (\$1300)
2019-2020	Buckley Graduate Scholarships (\$8487)
2019-2020	University of Toronto Fellowship/Graduate Student Aid (\$2000)
2018 & 2019	Dean's List Scholar
2019	Edward H. Buckley and Grace B. Buckley Undergraduate Scholarship (\$2000)
2018	University of Toronto Association of Geography Alumni (UTAGA) Outstanding Performance Award in Physical and Environmental Geography
2017	University of Toronto Association of Geography Alumni (UTAGA) Outstanding Performance Award in Methods/GIS
2017	University of Toronto Excellence Award in Natural Science and Engineering (NSERC-UTEA) (\$6,000)
2015	University of Toronto Admission Scholarship as one of the most outstanding new students (\$6,000)

## PROFESSIONAL AND RESEARCH EXPERIENCE

---

January 2020 – April 2021

**Teaching Assistant** (Conservation and Management of Tropical and Subtropical Forests)

- Delivered tutorials and managed discussion sessions online, and provided valuable supports to students
- Graded exams and assignments, with constructive feedback offered

August 2018 – April 2019

**Bachelor's Thesis in the Department of Geography**

Thesis title: Household and community exposure to the 2011 flood in the Peruvian Amazon using remote sensing and survey data. (Supervisor: Dr. Christian Abizaid)

- Managed large spatial and survey data collected in the Peruvian Amazon, and performed statistical tests and built models using ArcMap, python, and R, which facilitated the geospatial and statistical analysis skills
- Created flood extent and community flood risk maps using supervised classification (ASTER, Landsat, and NASADEM satellite images) using ArcMap and ArcPy, which provided solutions for local flood management

May 2018 – August 2018

### **Centre for Global Change Science (CGCS) Intern**

- Continued on the independent research on biochar and published the **1<sup>st</sup>-author** manuscript in a peer-reviewed scientific journal – *Soil Systems*, which contributed to biochar manufacturing and application

September 2017 – May 2018

### **Bachelor's Thesis in the Department of Forestry**

Thesis title: Biochar particle size and post-pyrolysis mechanical processing affect soil pH, water retention capacity, and plant performance. (Supervisor: Dr. Sean Thomas)

- Carried out independent research on biochar, including designed and conducted experiments
- Collected and organized data for biochar property and plant physiology, and analyzed the data using R and Excel, which provided statistical basis for the research arguments

January 2017 – May 2019

### **Research Assistant in Forest Ecology and Silviculture lab**

- Collaborated with PhD students on biochar application on urban forests project and soil greenhouse gas emission project, which improved the experiment design and accelerated the research process
- Entered and managed the data accurately and effectively, which increased the efficiency of the research

May 2017 – August 2017

### **Research Assistant in Remote Sensing and GIS lab**

- Performed geometric correction for satellite images and classified the images using ArcGIS, which increased the data reliability and provided basis for further GIS research
- Created maps, analyzed geospatial data, and wrote technical reports based on the analysis and results

## **SKILLS AND LANGUAGES**

- Programming languages: Python, R, and ArcPy.
- Software: ESRI software (ArcMap and ArcScene) and Microsoft Office software (Word, Excel, and PowerPoint).
- Languages: Proficient in English and Mandarin (oral and written).
- Interests: table tennis (National Athlete of 2<sup>nd</sup> Grade), scuba diving (PADI certificate), guitar, skiing.

## **VOLUNTEER EXPERIENCE**

---

September 2017 – May 2018

### **STEP Forward Program**

- Participated in workshops on graduate school applications.
- Discussed academic success and future career path monthly with my mentor.

September 2016 – April 2017

**First in the Family (FITF) Program**

- Conducted literature search and information organization for meta-analysis on creativity.
- Prepared PowerPoint for a communication strategy for a conference.
- Communicated with team members and mentor weekly to discuss research opportunities; learned to work and communicate with team members.

March 2016

**Environmental Career Day**

- Volunteered as a receptionist to communicate with people and sign them in.

October 2016

**“Heart of Fire” World Vision Charity Concert**

- Called for donation for poor children; communicated with team members.

October 2016

**Scotia Bank Toronto Waterfront Marathon**

- Volunteered as a course marshal and communicated with team members.

September 2015 – April 2016

**IConnect Program**

- Interacted with mentors and people from different cultural backgrounds.

## **EXTRACURRICULAR ACTIVITIES**

---

September 2018 – May 2020

**Vice President, University of Toronto Table Tennis Club (UTTTC)**

- Arranged club events and coaching program in the table tennis club.
- Prepared sponsorship packages; searched for sponsors for the club.

September 2017 – May 2018

**Competitive Team Coordinator/Captain, University of Toronto Table Tennis Competitive Team**

- Represented the University of Toronto in National Collegiate Table Tennis Association (NCTTA) and won the championship in Women’s Team Regional Competition (2017).
- Communicated with team members and organized team events and team practice.

January 2018 – March 2020

**Table Tennis Coach, University of Toronto Table Tennis Club (UTTTC)**

- Coached the University of Toronto alumni in table tennis skills.

## **CERTIFICATES**

---

- Driver’s licence.
- First Aid and CPR certificates.

## REFERENCES

---

- Professor Sean Thomas  
Tel.: 416-978-1044    E-mail: [sc.thomas@utoronto.ca](mailto:sc.thomas@utoronto.ca)  
Relationship: supervisor
- Professor Jennifer Drake  
Tel.: 416-978-8248    E-mail: [jenn.drake@utoronto.ca](mailto:jenn.drake@utoronto.ca)  
Relationship: supervisor