

# Shumin Li

## PhD Candidate in Oceanography, UBC, Canada

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PhD candidate with 5 years of grad-level research experience in physical oceanography. Experienced with processing and analyzing observational data (including satellite remote sensing products, high-frequency radar data, Lagrangian drifter tracks, drone footage, CTD, ADCP, Echo-sounder, wave buoy) and evaluating numerical model outputs. Proficient in utilizing MATLAB for data analysis, visualization, and algorithm development.

### 1. Education

#### University of British Columbia, Vancouver, Canada

- PhD in Oceanography 01/2022 - present
  - Project: Mixing and Transport of the Fraser River Plume
  - Advancement to Candidacy: 04/2023
  - Supervisor: Professor Rich Pawlowicz
- MSc in Oceanography 09/2019 – 04/2022
  - Thesis: [Tidal Influence on the Fraser River Plume](#)
  - Supervisor: Professor Rich Pawlowicz

#### University of Maine, Orono, USA

- Marine Science (visiting students, non-degree program) 09/2017 – 12/2017

#### Xiamen University, Xiamen, China

- BSc in Marine Science 09/2015 – 06/2019

### 2. Employment

#### Data Analyst, Fisheries and Oceans Canada (DFO)

- Statistical analysis on extreme wave events, model/observation comparison. 01/2024 – 03/2024

#### Graduate Teaching Assistant, UBC, Canada

- EOSC 584 (PRODIGY - Ocean Data: Observations, Analysis, Synthesis and Communication) 01/2024 – 04/2024
- EOSC 471 (Waves, Currents, and Mixing in the Ocean) 09/2023 – 12/2023
- EOSC 471 (Waves, Currents, and Mixing in the Ocean) 09/2022 – 12/2022
- EOSC 471 (Waves, Currents, and Mixing in the Ocean) 09/2021 – 12/2021
- ATSC 113 (Applied Meteorology) 05/2020 – 06/2020
- EOSC 114 (The Catastrophic Earth: Natural Disasters) 01/2020 – 04/2020

### 3. Awards and Grants

University of British Columbia Four Year Doctoral Fellowship	2022-2026	C\$18,200.00 (per year)
BPOC Graduate Excellence Award, UBC	2024	C\$1640.00
UBC Earth, Ocean and Atmospheric Sciences Graduate Scholarship	2023	C\$1,150.00
Pacific Rim Ocean Data Mobilization and Technology (PRODIGY) program funding	2022-2023	C\$9,000.00
RQM/MEOPAR Tracer Release Experiment (TRex) Graduate Student Awards	2021	C\$6,000.00
Outstanding Graduate of Xiamen University	2019	

Second-class academic scholarship, Xiamen University	2019	CNY 500.00
First-class Academic Scholarship, Xiamen University	2016 & 2018	CNY 2,000.00
International Student Scholarship, University of Maine	2017	US\$5,000.00
Dean's List, University of Maine	2017	
Excellent Student Leader, Xiamen University	2017	
Fujiannongxin Scholarship, Xiamen University	2017	CNY 5,000.00
Third prize, National College Students Ocean Knowledge Contest	2016	
DBN Encouragement Scholarship, Xiamen University	2016	CNY 2,000.00

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#### 4. Peer-reviewed Publications

1. Li, S., & Pawlowicz, R. (2024). *Tidal Modulation of the Fraser River Plume*. **Journal of Geophysical Research: Oceans**. [In Revision]
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#### 5. Non-Peer Reviewed Publications

##### Data Reports

1. Li, S. (2024). Data Report - Evaluation and Analysis of Extreme Wave and Sea Levels of the BC Coast. *Data report, prepared for the Department of Fisheries and Oceans, Canada.*
2. Li, S., Torres, M., Valentí, J., Castro, A., & Garcia, Y. (2023). **Investigation of the Surface Circulation in the Comau Fjord using DIY Drifters and Drifting ADCP**. *Data report, prepared for PRODIGY field school at San Ignacio del Huinay Foundation, Chile.*
3. Li, S., Pawlowicz, R. & Chavanne, C. (2021). **Preliminary Analysis of HF Radar Coverage in the St. Lawrence Estuary during the TReX21 Field Program: Surface Currents, Data Coverage, and Tidal Analysis**. *Data report, prepared for the Tracer Release Experiment (TReX) project.*
4. Li, S., & Pawlowicz, R. (2021). **Comparison, Examination and Analysis for CODAR Calibrated Data**. *Data report prepared for Ocean Networks Canada (ONC).*

##### Technical Reports

1. Li, S., & Pawlowicz, R. (2023). **Chapter 4.1 Properties and Dynamics of Fraser River Plume Fronts**. In Pawlowicz, R., R. Francois, M. Maldonado, R. Ziels, R. Scholes, & S. Allen (2023). **Contaminant dispersion and removal in the Strait of Georgia (2023)**. Technical report, prepared for Metro Vancouver.
  2. Li, S., & Pawlowicz, R. (2021). **Chapter 4.3 Tidal Influence on the Fraser River Plume**. In Pawlowicz, R., R. Francois, M. Maldonado, R. Ziels, & S. Allen (2021). **Contaminant dispersion and removal in the Strait of Georgia (2021)**. Technical report, prepared for Metro Vancouver.
  3. Li, S., & Pawlowicz, R. (2020). **Chapter 4.3 Surface Currents and the Fraser Plume**. In Pawlowicz, R., R. Francois, & M. Maldonado (2020). **Contaminant dispersion and removal in the Strait of Georgia (2020)**. Technical report, prepared for Metro Vancouver.
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#### 6. Conference Presentations

##### Oral

1. \*Li, S., & Pawlowicz, R. (2022). **Tidal Influence on the Fraser River Plume in the Strait of Georgia**. *CMOS-CGU-ESC Joint Congress*.

## Poster

1. \*Li, S., & Pawlowicz, R. (2022). **Tidal Influence on the Fraser River Plume.** *Salish Sea Ecosystem Conference (SSEC 2022).*
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## 7. Non-conference Presentations (selected)

1. \*Li, S., & Pawlowicz, R. (2023). **Fraser River Plume – Particles, Dispersion and Transport.** *Prepared for annual Metro-Vancouver/UBC Workshop.*
  2. Li, S. (2023). **Ocean Turbulence Mini Lecture 2: Turbulence in the Boundary Layers and River Plumes.** *UBC PO seminar series.*
  3. Li, S. (2023). **Ocean Turbulence Mini Lecture 1: Introduction, Theory, and Measurement.** *UBC PO seminar series.*
  4. Li, S, Torres, M., Valentí, J., Castro, A., & Garcia, Y. (2023). **Comau Fjord Circulation using Drifters, ADCP, and More.** *Summary presentation for 2023 PRODIGY field school at San Ignacio del Huinay Foundation, Chile.*
  5. Cicon, L., Holmes-Smith C., Li, S., & Mundaca, V. (2022). **DIY Ocean Wave Buoy using Surface Drifter and Arduino Modules.** *Summary presentation for 2022 PRODIGY field school at Quadra Island, BC, Canada.*
  6. Li, S. (2022). **Tales of River on the Sea: The Fraser River Plume and its Dynamics.** *UBC EOAS department colloquium, prepared for the Graduate Student and Postdoc Research Carnival.*
  7. Li, S. (2022). **Tidal Influence on the Fraser River Plume.** *UBC PO seminar series.*
  8. Li, S. (2021). **TReX 2021 Field Experiment – Mixing, Dispersion and Transport.** *Presented in a lecture of EOSC 471.*
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## 8. Fieldwork Experiences

August 2024: Strait of Georgia & Juan de Fuca Strait, BC, Canada

- Participated a 9-day research cruise onboard Canadian Coast Guard (CCGS) hydrographic survey vessel Vector. Designed and directed the field experiments in the vicinity of the Fraser River plume front during the leg 2 (Aug 19-21) of the cruise.

July 2023: Strait of Georgia, BC, Canada

- Designed and participated 4 full-day field experiments onboard the Canadian Coast Guard (CCGS) hovercraft Moytel to investigate the frontal dynamics of the Fraser River plume. This field program was part of the PhD project of Li, S.

May-June 2023: Strait of Georgia, BC, Canada

- Participated in 3 field deployments of neutrally buoyant float, a PhD project of Stevens, S. Performed drone flight missions to acquire oblique footage of the Fraser River plume.

January 2023: Comau Fjord, Chile

- Conducted 6 field deployments of DIY surface drifters at Comau Fjord, Chile, to investigate the local surface circulation and test the applicability of the expendable drifters. Made drone flight both from land and on the boat. This field project is part of an 8-day field school by the Pacific Rim Ocean Data Mobilization and Technology (PRODIGY) training program.

September 2022, Burrard Inlet, BC, Canada

- Participated the Lions Gate Wastewater Treatment Plant 2022 Rhodamine Dye Study. Conducted surface drifter deployments and performed data processing.

May 2022, Quadra Island, Canada

- Designed, built, and deployed a DIY wave buoy. This project was part of an 8-day field school of the PRODIGY training program.

September 2021, St. Lawrence River Estuary, QC, Canada

- Participated a week-long cruise on the Coriolis II Research Vessel. Accessed and processed real-time data from the water buoys and coastal HF radars as a reference for the scientists onboard.

February 2020, Bamfield, BC, Canada

- Designed and carried out a 3-day field experiment at the floating deck of the Bamfield Marine Sciences Centre, using zooplankton net tows and an echo sounder to investigate the diurnal migration of zooplanktons. This project is part of course EOSC-573, Methods in Oceanography.
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## 9. Licenses, Certificates, and Training

- Mitacs Professional Development Session - Reconciliation, equity, diversity, and inclusion

Jun 2023

▪ Pilot Certificate – Basic Operations, Transport Canada	Issued Sep 2022
▪ New & Yong Worker Safety Orientation	Sep 2019
▪ Privacy & Information Security Fundamentals, UBC	Sep 2019
▪ Workplace Violence prevention Training, UBC	Sep 2019
▪ Open Water Diver, PADI	Issued Jan 2019

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## 10. Outreach and Communication

▪ Workshop Facilitator, Pacific Museum of Earth, UBC	05/2022
▪ Counselor, Aquatic Sciences Eco-Learning Program and XMU-HAECO Mangrove Exploration Summer Camp, Xiamen, China	07/2017
▪ Museum docent, Museum of Marine Science and Technology, Xiamen University, China	01/2017 - 04/2017
▪ Volunteer teacher, Hengcuo Elementary School, Xiamen, China	07/2016
- Designed and taught a 7-lecture series on earth and ocean sciences.	

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## 11. Others

- Organizer, department board game social events for graduate students, UBC (May 2022 – April 2023)
- Organizer, department physical oceanography (PO) seminar series, UBC (May 2022 – April 2023)
- Museum representative, on behalf of the EOAS grad council, UBC (September 2021 – August 2022)
- Social organizer, graduate council, department of EOAS, UBC (September 2019 – April 2020)
- Director of the Technology, Entrepreneurship, and Employment Service Centre, College of Ocean and Earth Sciences, Xiamen University (September 2016 – August 2017)