

Samuel D. Brenner

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🌐 <https://sdbrenner.github.io/>

Research experience

Brown University, Institute at Brown for Environment and Society

Providence, RI, USA

Postdoctoral Research Associate

starting Jul. 2022

- Advisor: Christopher Horvat

University of Washington, Applied Physics Lab

Seattle, WA, USA

Graduate Research Assistant

Sep. 2017–Jun. 2022

- Advisors: Luc Rainville and Jim Thomson
- Dissertation: *The role of sea ice in mediating atmosphere-ice-ocean momentum transfer*

University of British Columbia, Environmental Fluid Mechanics

Vancouver, BC, Canada

Graduate Research Assistant

Sep. 2015–Aug. 2017

- Advisor: Bernard Laval
- Thesis: *The free oscillatory response of fjord-type multi-armed lakes*. [doi:10.14288/1.0353196](https://doi.org/10.14288/1.0353196)

Undergraduate Research Assistant

Jun. 2013–Jun. 2014

Education

University of Washington

Seattle, WA, USA

PhD in Oceanography

Jun. 2022

Masters of Science in Oceanography

May 2019

University of British Columbia

Vancouver, BC, Canada

Masters of Applied Science in Civil Engineering

Aug. 2017

Bachelors of Applied Science in Civil Engineering

Jun. 2015

Publications

Brenner, S., Rainville, L., Thomson, J., Crews, L., and Lee, C., *submitted*. Wind-driven motions of sea ice and the ocean surface mixed layer in the Western Arctic.

Brenner, S., Rainville, L., Thomson, J., Doble, M., Wilkinson, J., and Lee, C., *submitted*. Acoustic sensing of ocean mixed layer depth and temperature from uplooking ADCPs.

Cooper, V. T., Roach, L. A., Thomson, J., **Brenner S. D.**, Smith, M. M., Meylan, M. H., Bitz, C. M., *submitted*. Wind waves in sea ice of the western Arctic and a global coupled wave-ice model.

MacKinnon, J., et. al, [including **Brenner, S.**], 2021. A warm jet in a cold ocean. *Nat. Comm.*, 12(1) p. 12 [doi:10.1038/s41467-021-22505-5](https://doi.org/10.1038/s41467-021-22505-5)

Brenner, S., Rainville, L., Thomson, J., Cole, S. and Lee, C., 2021. Comparing observations and parameterizations of ice-ocean drag through an annual cycle across the Beaufort Sea. *J. Geophys. Res. Oceans*. 126(4), p. 29. [doi:10.1029/2020JC016977](https://doi.org/10.1029/2020JC016977)

Brenner, S., Rainville, L., Thomson, J., and Lee, C., 2020. The evolution of a shallow front in the Arctic marginal ice zone. *Elem. Sci. Anth.*, 8(1), p. 17. [doi:10.1525/elementa.413/](https://doi.org/10.1525/elementa.413/)

Brenner, S., and Laval, B. 2018. Seiche modes in multi-armed lakes. *Limnol. Oceanogr.*, 63: 2717-2726 [doi:10.1002/lno.11001](https://doi.org/10.1002/lno.11001)

Conference presentations

Sanchez-Rios A., A. Savage, **S. Brenner**, L. Crews, A. Ruiz-Angulo, J. Mackinnon, L. Rainville. Understanding T-S Structure Evolution Across Ocean Fronts: Observations of the Norwegian Atlantic Front Current Along the Mohn Ridge. Presented at: Ocean Sciences Meeting; 2022 Feb. 27-Mar. 04; virtual.

Brenner S., L. Rainville, J. Thomson, L. Crews, C. Lee. Seasonal variations of inertial velocities of sea ice and ocean surface layer in the Beaufort Sea. Presented at: Ocean Sciences Meeting; 2022 Feb. 27-Mar. 04; virtual.

Brenner S., L. Rainville, J. Thomson, C. Lee. In-situ observations to validate (and invalidate) model parameterizations of the ice-ocean drag coefficient. Presented at: 10th IICWG-DA Workshop 2021 Oct. 26-28; virtual.

Cooper, V., L. Roach, C. Bitz, **S. Brenner**, J. Thomson. Towards Validating Wave-Ice Interactions in Climate Models Using In Situ Observations. Poster presented at: AGU Fall Meeting 2020 Dec. 01-17; virtual.

Brenner S., L. Rainville, J. Thomson, C. Lee. Distributed and year-long observations of ice-ocean drag across a range of ice morphologies in the Beaufort Sea. Presented at: AGU Fall Meeting 2020 Dec. 01-17; virtual.

MacKinnon, J., et. al, [including **S. Brenner**]. Subduction of Pacific Summer Water into sub-surface eddies; coordinated observations from late summer Presented at: Ocean Sciences Meeting; 2020 Feb. 17-21; San Diego, CA.

Brenner S., L. Rainville, J. Thomson, J. MacKinnon, C. Lee. Momentum fluxes across the air-ice-ocean interface in the Beaufort Sea. Poster presented at: Ocean Sciences Meeting; 2020 Feb. 17-21; San Diego, CA. [doi:10.1002/essoar.10502273.2](https://doi.org/10.1002/essoar.10502273.2)

Brenner S., L. Rainville, J. Thomson, C. Lee. The evolution of an Arctic meltwater front. Poster presented at: Liège Colloquium on Ocean Dynamics; 2019 May. 6-9; Liège, Belgium

Brenner S., L. Rainville, J. Thomson, C. Lee. Small scale upper-ocean variability in the Arctic. Poster presented at: Ocean Sciences Meeting; 2018 Feb. 11-16; Portland, OR

Brenner S., B. Laval, J. Shore, S. Vagle. Surface Seiching in Quesnel Lake, British Columbia. Poster presented at: Canadian Meteorological and Oceanographic Society Congress; 2017 June 4-8; Toronto, ON

Fieldwork

Research cruises

Norwegian Sea: NORSE pilot/process cruise (R/V Neil Armstrong; 35 days at sea)	Sep.–Oct. 2021
Beaufort Sea: SODA recovery cruise (USCGC Healy; 42 days at sea)	Sep.–Oct. 2019
Beaufort Sea: SODA deployment cruise (USCGC Healy; 36 days at sea)	Sep.–Oct. 2018

Other oceanography/limnology fieldwork

San Juan Channel, WA (mooring deployment/recovery and CTD sections)	Aug. 2019
Cultus Lake, BC (CTD sections)	various dates, 2015–2017
Deeks Lake, BC (mooring deployment and CTD sections)	various dates, 2015–2017
Quesnel Lake, BC (mooring recovery/servicing and CTD sections)	Sep. 26–30, 2016
Resolute Bay, NU (water sample collection and CTDs)	Aug. 2014

Field camps

Milne ice shelf, NU (ice shelf GPR, CTDs, mooring service, glacier ablation stakes)	Jul.–Aug. 2014
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Diversity, equity, and inclusion service

- DEI subcommittee: Graduate Applications Mentorship Program development 2020–2022
- Assisted in the development, initial roll-out, and post-program assessment of the School of Oceanography Graduate Applications Mentorship Program, which pairs prospective students with current graduate students to help demystify the graduate application process
 - https://www.ocean.washington.edu/story/Graduate_Application_Mentorship_Program
- Mentor for Graduate Applications Mentorship Program 2021
- Worked with a prospective graduate student to provide advice and help through the graduate school application

Teaching experience

University of Washington

Guest Lecturer

- Field Measurements (CEWA590): “Measuring sea ice” May., 2022
- Hydrodynamics (CEWA570): “Wind-driven flow in a lake” Feb., 2022

Teaching Assistant

- Coastal Engineering (CEE473/CEWA573) Spring 2021
- Foundations of Ocean Sensors (OCEAN351) Winter 2019

University of British Columbia

Teaching Assistant

- Fluid Mechanics I (CIVL215) Spring 2016
- Environmental Hydraulics (CIVL416) Fall 2016
- Fluid Mechanics II (CIVL315) Fall 2015 & Fall 2016

Non-academic work experience

AECOM

Burnaby, BC, Canada

Civil Engineering Student Intern

May – Sep. 2015

Canadian Sewage Solutions Inc.

Langford, BC, Canada

Junior Engineering Technologist

Dec. 2011 – Nov. 2012

Kiewit Construction

Kearl Lake Oilsands, AB, Canada

Purchasing Engineer (co-op student)

Aug. 2010 – Jan. 2011

Field Engineer (co-op student)

Aug. – Dec. 2009

District of North Saanich

North Saanich, BC, Canada

Drafting Assistant (co-op student)

Dec. 2008 – Mar. 2009