Craig B. Brinkerhoff

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EDUCATION

2024 (expected) PhD Civil Engineering, University of Massachusetts, Amherst, MA
2018 Ba&Sc Honours Interfaculty Environment, McGill University, Montreal, QC

HONORS & AWARDS

Year	Award	Amount
2021-2024	NASA Future Investigators in Earth, Space Science & Technology Award	$135k
2023	University of Massachusetts College of Engineering Teaching Fellow Award	$2.5k
2021	AGU Hydrology Remote Sensing Technical Committee Presentation Award	$100
2020	AGU Outstanding Student Presentation Award	$150
2020	NSF Graduate Research Fellowship Honorable Mention	[-]
2018	McGill University Undergraduate First-Class Honours	[-]
2017	McGill University Science Undergraduate Research Award	$4.8k
2017	Oklahoma State University REU Award (declined)	$3k

SCHOLARSHIP

2023

13. Riggs RM, Allen GH, **Brinkerhoff CB,** Sikder MD, Wang J (2023). Turning lakes into river gauges using the LakeFlow algorithm. *Geophysical Research Letters*. doi.org/10.1029/2023GL103924.
12. Durand M, Gleason CJ, Pavelsky TM, Frasson RPM., Turmon M, David CH, Altenau EH, Tebaldi N, Larnier K, Monnier J, Malaterre PO, Oubanas H, Allen GH, Astifan B, **Brinkerhoff CB**, Bates PD, Bjerklie, D, Coss S, Dudley R, Fenoglio L, Garambois PA, Getirana A, Lin P, Margulis SA, Matte P, Minear JT, Muhebwa A, Pan M, Peters D, Riggs R, Safat Sikder MD, Simmons T, Stuurman C, Taneja J, Tarpanelli A, Schulze K, Tourian MJ, Wang J (2023). A framework for estimating global river discharge from the Surface Water and Ocean Topography satellite mission. *Water Resources Research.* doi.org/10.1029/2021WR031614.
11. Lin P, Feng D, Gleason CJ, Pan M, **Brinkerhoff CB**, Yang X, Beck HE, Frasson RPM (2023). Inversion of river discharge from remotely sensed river widths: a critical assessment at three-thousand global river gauges. *Remote Sensing of Environment.* doi.org/10.1016/j.rse.2023.113489.
10. Maavara T, **Brinkerhoff CB**, Hosen J, Aho KS, Logozzo L, Saiers J, Stubbins A, Raymond PA (2023). Watershed DOC uptake occurs mostly in lakes in the summer and in rivers in the winter. *Limnology & Oceanography*. doi.org/10.1002/lno.12306.

2022

9. **Brinkerhoff, CB**, Gleason CJ, Zappa CJ, Raymond PA, Harlan ME (2022). Remotely sensing river greenhouse gas exchange velocity using the SWOT satellite. *Global Biogeochemical Cycles*. doi.org/10.1029/2022GB007419.

8. Liu S, Maavara T, **Brinkerhoff CB**, Raymond PA (2022). Global controls on DOC reaction versus export in watersheds: A Damköhler number analysis. *Global Biogeochemical Cycles*. doi.org/10.1029/2021GB007278.
7. Liu S, Kuhn C, Amatulli G, Aho KS, Butman D, Allen GH, Lin P, Pan M, Yamazaki D, **Brinkerhoff CB**, Gleason CJ, Xia X, Raymond PA (2022). The importance of hydrology in routing terrestrial carbon to the atmosphere via global streams and rivers. *Proceedings of the National Academy of Sciences.* doi.org/10.1073/pnas.2106322119.
    - Nature Press Release: The world's rivers exhale a massive amount of carbon
    - Yale University Press Release: New Study Aims at Calculating Terrestrial Carbon's Role in River and Stream Emissions

2021

6. Maavara T, Logozzo L, Stubbins A, Aho KA, **Brinkerhoff CB**, Hosen J, Raymond PA (2021) Does photomineralization of dissolved organics matter in temperate rivers? *Journal of Geophysical Research- Biogeosciences.* doi.org/10.1029/2021JG006402.
5. Frasson RPM, Durand MT, Larnier K, Gleason CJ, Andreadis KM, Hagemann MH, Dudley RW, Bjerklie DM, Oubanas H, Garambois PA, Malaterre PO, Lin P, Pavelsky TM, Monnier J, **Brinkerhoff CB,** David CH (2021). Exploring the factors controlling the error characteristics of the Surface Water and Ocean Topography mission discharge estimates. *Water Resources Research.* doi.org/10.1029/2020WR028519.
4. **Brinkerhoff CB**, Raymond PA, Maavara T, Ishitsuka I, Aho KS, Gleason CJ (2021). Lake morphometry and river network controls on evasion of terrestrially sourced headwater CO_2. *Geophysical Research Letters.* doi.org/10.1029/2020GL090068.

2020

3. **Brinkerhoff CB**, Gleason CJ, Feng D, Lin P (2020). Constraining remote river discharge estimation using reach-scale geomorphology. *Water Resources Research.* doi.org/10.1029/2020WR027949.
2. Andreadis KM, **Brinkerhoff CB**, & Gleason CJ (2020). Constraining the assimilation of SWOT observations with hydraulic geometry relations. *Water Resources Research.* doi.org/10.1029/2019WR026611.

2019

1. **Brinkerhoff CB**, Gleason CJ, & Ostendorf DW (2019). Reconciling at-a-station and at many stations hydraulic geometry through river-wide geomorphology. *Geophysical Research Letters.* doi.org/10.1029/2019GL084529.

GRANTS & FELLOWSHIPS

Years Funded	Project	Amount
2021-2024	A first global analysis of daily riverine gas exchange using the SWOT satellite, Bayesian remote sensing, and carbon transport modeling - NASA Future Investigators in Earth & Space Science & Technology - Future Investigator	$135k

SELECT PRESENTATIONS (*Oral **Invited ¥Accepted but withdrawn due to illness)

2022 **Brinkerhoff CB**, Gleason CJ, Ishitsuka I, Sosa J, Bates PD, Liu S. Anticipated continental-scale river gas exchange dynamics: how will SWOT inform river CO_2 modeling? *AGU Fall Meeting, Chicago, Illinois*

2022* **Brinkerhoff CB,** Gleason CJ, Zappa CJ, Saccardi B, Raymond PA, Winnick M, Harlan ME. Informing global river CO_2 models with SWOT. *SWOT Science Team Meeting, Chapel Hill, North Carolina*

2022*¥ **Brinkerhoff CB,** Gleason CJ, Zappa CJ, Raymond PA, Harlan ME. Towards global scale remote sensing of river gas exchange velocity via the SWOT satellite and hydraulic geometry. *Frontiers in Hydrology, San Juan, Puerto Rico*

2021* **Brinkerhoff, CB,** Gleason CJ, Raymond PA, Zappa CJ, Harlan ME. Gas exchange in large rivers controlled by largest turbulent eddies: implications for remotely sensing gas exchange via SWOT. *AGU Fall Meeting, New Orleans, Louisiana*

- Won AGU Hydrology Remote Sensing Technical Committee Student Award

2021** **Brinkerhoff CB,** Saccardi B, Winnick M, Gleason CJ. Towards continental-scale transport modeling of drainage network CO2 evasion. *AGU Fall Meeting, New Orleans, Louisiana*

2020* **Brinkerhoff CB**, Raymond PA, Maavara T, Ishitsuka I, Aho KS, Shaoda L Gleason CJ. Lake/reservoir controls on evasion of inland water CO_2 and implications for remote sensing of network scale CO2 emissions. *AGU Fall Meeting (virtual)*

- Won AGU Outstanding Student Presentation Award

2019* **Brinkerhoff CB**, Gleason CJ, Lin P, & Andreadis K. Constraining remotely-sensed **r**iver discharge estimation using reach-scale geomorphology. *AGU Fall Meeting, San Francisco, California*

INVITED TALKS

Date	Location	Title
Apr 2023	Northeastern University	A holistic approach to global river science
Apr 2022	SWOT DAWG meeting	BAM flow laws and inversion styles across thousands of rivers
May 2021	Wooster Society of Friends	Rivers' role in the carbon cycle
Feb 2020	University of Massachusetts	Constraining remotely-sensed river discharge estimation using reach-scale geomorphology

TEACHING

Year	Role	Course	Institution
2019	Teaching Assistant	CEE-ENG 470/570: GIS for engineers	University of Massachusetts, Amherst

MENTORING

Year	Student	Project	Institution
2022-Present	Wenwen Tang (PhD student)	Remotely sensing proglacial stream networks in High Mountain Asia	University of Massachusetts, Amherst

PROFESSIONAL SERVICE

Reviewer: Journal of Hydrology (1)
Nature Scientific Reports (1)
Biogeosciences (1)
Journal of Hydraulic Engineering (1)

Member: NASA/CNES SWOT Mission Discharge Algorithm Working Group (DAWG)

Outreach: "Rivers' role in the carbon cycle" at Wooster Society of Friends

Organizations: American Geophysical Union
Association for the Sciences of Limnology and Oceanography