Craig B. Brinkerhoff

cbrinkerhoff@umass.edu

EDUCATION

2024 (exp.)	PhD Civil & Environmental Engineering, University of Massachusetts
2018	Ba&Sc Honours Interfaculty Environment (1st class), McGill University

AWARDS

2021-2024	NASA Future Investigators in Earth, Space Science & Technology Award ($135k)
2023	UMass 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
2017	McGill University Science Undergraduate Research Award ($4.8k)
2017	Oklahoma State University REU Award ($3k- declined)

REFEREED PUBLICATIONS

Summary: first/co author: 4/9

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.

    - Top 5 most-read paper in *Water Resources Research* in 2023

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.

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.
    - Press: The world's rivers exhale a massive amount of carbon
    - Press: Calculating terrestrial carbon's role in river and stream emissions

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.

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.

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

1. 2021-2024 A first global analysis of daily riverine gas exchange using the SWOT satellite, Bayesian remote sensing, and carbon transport modeling. *NASA FINESST Fellowship (NNH20ZDA001N-FINESST).* $135k. As sole author and awardee.

INVITED SEMINARS

2023	Northeastern University
2022	SWOT Satellite Discharge Algorithm Working Group
2020	University of Massachusetts

CONFERENCE PRESENTATIONS

Summary: Invited/oral/poster/coauthor: 1/5/3/14

23 presentations at national and international meetings (e.g. AGU/EGU/SWOT). Full bibliography available on request.

TEACHING

UMass

2023	Instructor of record, ENG 191: Engineering rivers and ecosystems
2019	Teaching assistant, ENG 470/570: GIS for Engineers
Training	CIRTL associate in evidence-based teaching and equitable pedagogy

SERVICE

To the discipline

Journal ref.	*Remote Sensing of Environment, Water Resources Research, Biogeosciences, Journal of Hydrology, Journal of Hydraulic Engineering, Scientific Reports* (n=6, record available on ORCID)
Proposal ref.	*NASA Supplements for Open-Source Science* (n=1)
Member	NASA/CNES SWOT Satellite Discharge Algorithm Working Group
Developer	geoBAMr and BIKER community R packages for river remote sensing

To the community

2023-	Mentor, Geosciences Education & Mentorship Support (GEMS) program

To the public

2021	Talk, Wooster Society of Friends: “Rivers’ role in the carbon cycle”

Professional affiliations

2023-	Association for the Sciences of Limnology and Oceanography
2018-	American Geophysical Union