Craig B. Brinkerhoff

(He/Him, Citizenship: American)

Dept. of Civil & Environmental Engineering
University of Massachusetts, Amherst
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EDUCATION

PhD Civil Engineering, University of Massachusetts, Amherst, MA Expected 2022
- -Concentration: Environmental & Water Resources Engineering
- -Dissertation: *Integrating remote sensing, hydraulic geometry, and hydrography into ungauged basins and drainage network gas evasion*
- -Advisor: Dr. Colin Gleason

Ba&Sc Honours Environment, McGill University, Montreal, QC 2018
- -Concentration: Hydrology & Water Resources, Minor: GIS & Remote Sensing
- -Thesis: *An Exploratory Analysis of Watershed Characteristics and Flow Class Variation in Unregulated Eastern Canadian Rivers*
- -Advisor: Dr. Michel Lapointe

RESEARCH & TEACHING EXPEREINCE

Graduate Research Assistant 2018-Present
Department of Civil & Environmental Engineering, University of Massachusetts, Amherst
- -Dr. Colin Gleason's Fluvial@UMASS lab

Teaching Assistant 2019
Department of Civil & Environmental Engineering, University of Massachusetts, Amherst
- -Course: GIS for Engineers (cross-listed undergraduate/graduate)

Undergraduate Research Assistant 2017-2018
Department of Geography, McGill University
- -Funded project on modeling global river density
- -Dr. Bernhard Lehner's GlobalHYDRO lab

PEER-REVIEWED PUBLICATIONS

Maavara, T., Logozzo, L., Stubbins, A., Aho, K.A., **Brinkerhoff, C.B.**, Hosen, J., Raymond, P.A. (2021) Does photomineralization of dissolved organics matter in temperate rivers?. *Journal of Geophysical Research-Biogeosciences*. https://doi.org/10.1029/2021JG006402.

Frasson, R.P.M., Durand, M.T., Larnier, K., Gleason, C.J., Andreadis, K.M., Hagemann, M.H., Dudley, R.W., Bjerklie, D.M., Oubanas, H., Garambois, P.A., Malaterre, P.O., Lin, P., Pavelsky, T.M., Monnier, J., **Brinkerhoff, C.B.,** David, C.H. (2021). Exploring the factors controlling the error characteristics of the Surface Water and Ocean Topography mission discharge estimates. *Water Resources Research.* https://doi.org/10.1029/2020WR028519

Brinkerhoff, C.B., Raymond, P.A., Maavara, T., Ishitsuka, I., Aho, K.S., Gleason, C.J. (2021). Lake Morphometry and River Network Controls on Evasion of Terrestrially Sourced Headwater CO_2. *Geophysical Research Letters,* https://doi.org/10.1029/2020GL090068

Brinkerhoff, C. B., Gleason, C.J., Feng, D., Lin, P. (2020). Constraining Remote River Discharge Estimation Using Reach-Scale Geomorphology. *Water Resources Research, 56, e2020WR027949.* https://doi.org/10.1029/2020WR027949

Andreadis, K. M., **Brinkerhoff, C. B.**, & Gleason, C. J. (2020). Constraining the Assimilation of SWOT Observations With Hydraulic Geometry Relations. *Water Resources Research, 56(5)*, e2019WR026611. https://doi.org/10.1029/2019WR026611.

Brinkerhoff, C. B., Gleason, C. J., & Ostendorf, D. W. (2019). Reconciling At-a-Station and At Many-Stations Hydraulic Geometry through River-Wide Geomorphology. *Geophysical Research Letters 46*(16) 9637-9647. https://doi.org/10.1029/2019GL084529.

FIRST-AUTHOR CONFERENCE PRESENTATIONS

Brinkerhoff, C.B., Gleason, C.J., Raymond, P.A., Zappa, C.J., Harlan, M.E. (2021, December). Gas Exchange in Large Rivers Controlled by Largest Turbulent Eddies: Implications for Remotely Sensing Gas Exchange via SWOT. In *AGU Fall Meeting 2021*. AGU. Oral Presentation

(Invited) **Brinkerhoff, C.B.,** Saccardi, B., Winnick, M., Gleason, C.J. (2021, December). Towards continental-scale transport modeling of drainage network CO2 evasion. In *AGU Fall Meeting 2021*. AGU. eLightning presentation.

-Invited for AGU's "Student Engagement to Enhance Development: Outstanding Student Presentation Award Winners from Fall Meeting 2020" Union session

Brinkerhoff, C.B., Raymond, P.A., Maavara, T., Ishitsuka, I., Aho, K.S., Shaoda, L. Gleason, C.J. (2020, December). Lake/reservoir controls on evasion of inland water CO_2 and implications for remote sensing of network-scale CO2 emissions. In *AGU Fall Meeting 2020.* AGU. Oral presentation.

-Won AGU Fall Meeting 2020 OSPA Award (Outstanding Student Presentation Award)

Brinkerhoff, C. B., Gleason, C. J., Lin, P., & Andreadis, K. (2019, December). Constraining Remotely-Sensed River Discharge Estimation Using Reach-Scale Geomorphology. In *AGU Fall Meeting 2019*. AGU. Oral presentation.

GRANTS & FELLOWSHIPS

(2021-2023) "A First Global Analysis of Daily Riverine Gas Exchange Using the SWOT Satellite, Bayesian Remote Sensing, and Carbon Transport Modeling"

-NASA FINESST Award (Future Investigators in Earth & Space Science)

-$135,000 USD

HONORS & AWARDS

AGU Fall Meeting 2020 OSPA Award (Outstanding Student Presentation Award)	2021
NSF GRFP Honorable Mention	2020
McGill University Undergraduate First-Class Honours	2018
McGill University Science Undergraduate Research Award	2017

TECHNICAL SKILLS

Programming languages: R, Stan, Shell, Python, JavaScript
Publishing: (R)Markdown, Microsoft Office, LaTeX
Software: QGIS, GRASS, Google Earth Engine, ArcGIS
Operating systems: Windows, Linux, MacOS

PROFESSIONAL SERVICES

Member: American Geophysical Union (AGU) 2018-Present
Reviewer: Biogeosciences, Journal of Hydraulic Engineering

REFERENCES

Dr. Colin Gleason, Associate Professor (cjgleason@umass.edu) (PhD committee chair)
Department of Civil & Environmental Engineering, University of Massachusetts, Amherst, MA

Dr. Peter Raymond, Professor (peter.raymond@yale.edu) (PhD committee member)
School of the Environment, Yale University, New Haven, CT

Dr. Konstantinos Andreadis, Assistant Professor (kandread@umass.edu) (PhD committee member)
Department of Civil & Environmental Engineering, University of Massachusetts, Amherst, MA

Dr. Bernhard Lehner, Associate Professor (bernhard.lehner@mcgill.ca)
Department of Geography, McGill University, Montreal, QC