CURRICULUM VITAE

Craig B. Brinkerhoff
(He/Him, Citizenship: American)

Dept. of Civil & Environmental Engineering
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EDUCATION

PhD Civil Engineering, University of Massachusetts, Amherst, MA 2018-Present
Concentration: Environmental & Water Resources Engineering
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 (Dr. Colin Gleason's Fluvial@UMASS lab) 2018-Present
Department of Civil & Environmental Engineering, University of Massachusetts, Amherst

Teaching Assistant (Course: GIS for Engineers) 2019
Department of Civil & Environmental Engineering, University of Massachusetts, Amherst

Undergraduate Research Assistant (Dr. Bernhard Lehner's GlobalHYDRO lab) 2017-2018
Department of Geography, McGill University

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 PROCEEDINGS

(Complete list of conference proceedings on last page)

Brinkerhoff, C.B., Gleason, C.J., Raymond, P.A., Zappa, C.J., Harlan, M.E. (Upcoming, 2021). 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. (Upcoming, 2021). Towards continental-scale transport modeling of drainage network CO2 evasion. In *AGU Fall Meeting 2021*. AGU. eLightning presentation.

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

(2017) McGill University SURA (Science Undergraduate Research Award)- $5,600 CAD

-Undergraduate research project on global river density

(2017) Oklahoma State University NSF REU- $4,770 USD

-Declined (to accept McGill SURA)

HONORS & AWARDS

AGU Fall Meeting 2020 OSPA Award (Outstanding Student Presentation Award)	2021
NSF GRFP Honorable Mention	2020
Undergraduate First Class Honours	2018

TECHNICAL SKILLS

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

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

COMPLETE LIST OF CONFERENCE PRESENTATIONS

2021

Brinkerhoff, C.B., Gleason, C.J., Raymond, P.A., Zappa, C.J., Harlan, M.E. (Upcoming, 2021). 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. (Upcoming, 2021). Towards continental-scale transport modeling of drainage network CO2 evasion. In *AGU Fall Meeting 2021*. AGU. Oral presentation.

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

Ward Jones, M.K., Dai, C., Pollard W., Liljedahl, A., van der Sluijs, J., **Brinkerhoff, C.B.**, Howat, I., Freymueller, J. (Upcoming, 2021). Using ArcticDEM and shallow boreholes to quantify mass wasting sediment loss of retrogressive thaw slumps in the Eureka Sound Lowlands, Canadian high Arctic. In *Regional Conference on Permafrost*.

Maavara, T., Logozzo, L., Stubbins, A., Aho, K.S., **Brinkerhoff, C.B.**, Hosen, J., Raymond, P.A. (Upcoming, 2021). Does photomineralization of dissolved organics matter in temperate inland waters? In *AGU Fall Meeting 2021*.

Lummus, M., Stearns, L.A., van der Keen, C.J., Gleason, C.J., Brown, C., Wi, S., **Brinkerhoff, C.B.** (Upcoming, 2021). Classification of glaciers in Koshi River Basin, Nepal using machine learning algorithms and clustering techniques. In *AGU Fall Meeting 2021*.

2020

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.

Lin, P., Pan, M., Wood, E.F., Feng, D., Gleason, C.J., **Brinkerhoff, C.B.**, Yang, X., Pavelsky, T.M. (2020, May). Scaling up the assessment of the SWOT discharge inversion algorithm to thousands of gauges globally. In *EGU General Assembly 2020*. EGU. Poster presentation.

2019

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.