

# Craig B. Brinkerhoff

(He/Him, Citizenship: American)

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## EDUCATION

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Present	<b>PhD Civil Engineering, University of Massachusetts, Amherst, MA</b> -Concentration: Environmental & Water Resources Engineering -Dissertation: <i>A holistic approach to coupling fluvial geomorphology and biogeochemistry at scale</i> (advised by Dr. Colin Gleason)
2018	<b>Ba&amp;Sc Honours Environment, McGill University, Montreal, QC</b> -Concentration: Hydrology & Water Resources, Minor: GIS & Remote Sensing -Thesis: <i>An Exploratory Analysis of Watershed Characteristics and Flow Class Variation in Unregulated Eastern Canadian Rivers</i> (advised by Dr. Michel Lapointe)

## PEER-REVIEWED PUBLICATIONS

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| 8. | Liu, S., Maavara, T., <b>Brinkerhoff, C.B.</b> , Raymond, P.A. (2022). Global controls on DOC reaction versus export in watersheds: A Damköhler number analysis. <i>Global Biogeochemical Cycles</i> , 36, e2021GB007278. <a href="https://doi.org/10.1029/2021GB007278">https://doi.org/10.1029/2021GB007278</a> .  |
| 7. | Liu, S, Kuhn, C., Amatulli, G., Aho, K.S., Butman, D., Allen G.H., Lin, P., Pan, M., Yamazaki, D., <b>Brinkerhoff, C.B.</b> , Gleason, C.J., Xia, X., Raymond, P.A. (2022). The importance of hydrology in routing terrestrial carbon to the atmosphere via global streams and rivers. <i>Proceedings of the National Academy of Sciences</i> , 119(11), e2106322119. <a href="https://doi.org/10.1073/pnas.2106322119">https://doi.org/10.1073/pnas.2106322119</a> .  |
| 6. | Maavara, T., Logozzo, L., Stubbins, A., Aho, K.A., <b>Brinkerhoff, C.B.</b> , Hosen, J., Raymond, P.A. (2021) Does photomineralization of dissolved organics matter in temperate rivers? <i>Journal of Geophysical Research- Biogeosciences</i> , 126(7), e2021JG006402. <a href="https://doi.org/10.1029/2021JG006402">https://doi.org/10.1029/2021JG006402</a> .   |
| 5. | 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., <b>Brinkerhoff, C.B.</b> , David, C.H. (2021). Exploring the factors controlling the error characteristics of the Surface Water and Ocean Topography mission discharge estimates. <i>Water Resources Research</i> , 57(6), e2020WR028519. <a href="https://doi.org/10.1029/2020WR028519">https://doi.org/10.1029/2020WR028519</a> |
| 4. | <b>Brinkerhoff, C.B.</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 <sub>2</sub> . <i>Geophysical Research Letters</i> , 48(1), e2020GL090068. <a href="https://doi.org/10.1029/2020GL090068">https://doi.org/10.1029/2020GL090068</a>   |
| 3. | <b>Brinkerhoff, C. B.</b> , Gleason, C.J., Feng, D., Lin, P. (2020). Constraining Remote River Discharge Estimation Using Reach-Scale Geomorphology. <i>Water Resources Research</i> , 56(11), e2020WR027949. <a href="https://doi.org/10.1029/2020WR027949">https://doi.org/10.1029/2020WR027949</a>  |
| 2. | Andreadis, K. M., <b>Brinkerhoff, C. B.</b> , & Gleason, C. J. (2020). Constraining the Assimilation of SWOT Observations With Hydraulic Geometry Relations. <i>Water Resources Research</i> , 56(5), e2019WR026611. <a href="https://doi.org/10.1029/2019WR026611">https://doi.org/10.1029/2019WR026611</a> .   |

1. **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>.

## FUNDING

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2021-2024	<b>"A First Global Analysis of Daily Riverine Gas Exchange Using the SWOT Satellite, Bayesian Remote Sensing, and Carbon Transport Modeling"</b> -NASA FINESST Award (Future Investigators in Earth & Space Science) -\$135,000 USD
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## FIRST-AUTHOR CONFERENCE PRESENTATIONS *\*Oral Presentation \*\*Invited*

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2021	<b>*Brinkerhoff, C.B.</b> , Gleason, C.J., Raymond, P.A., Zappa, C.J., Harlan, M.E. Gas Exchange in Large Rivers Controlled by Largest Turbulent Eddies: Implications for Remotely Sensing Gas Exchange via SWOT. In <i>AGU Fall Meeting 2021</i> . -Won AGU Fall Meeting 2021 Hydrology Remote Sensing Technical Committee Student Award
2021	<b>**Brinkerhoff, C.B.</b> , Saccardi, B., Winnick, M., Gleason, C.J. Towards continental-scale transport modeling of drainage network CO <sub>2</sub> evasion. In <i>AGU Fall Meeting 2021</i> .
2020	<b>*Brinkerhoff, C.B.</b> , Raymond, P.A., Maavara, T., Ishitsuka, I., Aho, K.S., Shaoda, L., Gleason, C.J. Lake/reservoir controls on evasion of inland water CO <sub>2</sub> and implications for remote sensing of network-scale CO <sub>2</sub> emissions. In <i>AGU Fall Meeting 2020</i> . -Won AGU Fall Meeting 2020 OSPA Award (Outstanding Student Presentation Award)
2019	<b>*Brinkerhoff, C. B.</b> , Gleason, C. J., Lin, P., & Andreadis, K. Constraining Remotely-Sensed River Discharge Estimation Using Reach-Scale Geomorphology. In <i>AGU Fall Meeting 2019</i> .

## RESEARCH & TEACHING EXPERIENCE

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2018-Present	<b>Graduate Research Assistant</b> -Department of Civil & Environmental Engineering, University of Massachusetts, Amherst -Dr. Colin Gleason's Fluvial@UMASS lab
2019	<b>Teaching Assistant</b> -Department of Civil & Environmental Engineering, University of Massachusetts, Amherst -Course: GIS for Engineers (cross-listed undergraduate/graduate)
2017-2018	<b>Undergraduate Research Assistant</b> -Department of Geography, McGill University -Dr. Bernhard Lehner's GlobalHYDRO lab: funded project on modeling global river density

## HONORS & AWARDS

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2021	AGU Fall Meeting 2021 Hydrology Remote Sensing Technical Committee Student Award
2020	AGU Fall Meeting 2020 Outstanding Student Presentation Award
2020	NSF GRFP (Graduate Research Fellowship Program) Honorable Mention
2018	McGill University Undergraduate First-Class Honours
2017	McGill University Science Undergraduate Research Award

## TECHNICAL SKILLS & PROFESSIONAL SERVICES

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*Member:* American Geophysical Union (AGU) 2018-Present

*Reviewer:* Biogeosciences, Journal of Hydraulic Engineering

*Programming:* R, Shell, Stan, Python, Javascript, Fortran

*Publishing:* (R)Markdown, Microsoft Office, Adobe Illustrator

*Software:* QGIS, GRASS GIS, Google Earth Engine

## REFERENCES

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Dr. Colin Gleason, Associate Professor ([cjgleason@umass.edu](mailto:cjgleason@umass.edu))  
 Department of Civil & Environmental Engineering, University of Massachusetts, Amherst, MA

Dr. Peter Raymond, Professor ([peter.raymond@yale.edu](mailto:peter.raymond@yale.edu))  
 School of the Environment, Yale University, New Haven, CT

Dr. Konstantinos Andreadis, Assistant Professor ([kandread@umass.edu](mailto:kandread@umass.edu))  
 Department of Civil & Environmental Engineering, University of Massachusetts, Amherst, MA

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