

Quinn W. Lewis • qwlewis@iu.edu • +1 (217) 979 3806

<https://sites.google.com/site/qwfluvialgeomorph/> (research website)

<https://scholar.google.com/citations?user=Z4jKELcAAAAJ&hl=en> (Scholar profile)

Department of Earth and Atmospheric Sciences

Indiana University, Bloomington, IN, 47401

Education and Experience

Education

- Ph.D. University of Illinois, Urbana, Illinois, USA, 2017
 - Geography and Geographic Information Science
 - Advisor: Dr. Bruce Rhoads
- M.S. University of Illinois, Urbana, Illinois, USA, 2014
 - Geography
 - Advisor: Dr. Bruce Rhoads
- B.S. University of Wisconsin – La Crosse, La Crosse, Wisconsin, USA 2011
 - Geography

Academic Experience

- January 2018 – Current – Post-doctoral Fellow, Department of Earth and Atmospheric Sciences, Indiana University.
 - Affiliate Researcher – Indiana University Environmental Resilience Institute

Peer-Reviewed Manuscripts, Conference Proceedings and Book Chapters

Submitted and In-Press Manuscripts

13) Park, E., Merino, E., Lindsey, E., and **Lewis, Q.W.** *submitted*. Toward Global Gauging of Reservoirs Solely Using Remote Sensing Data. *Geophysical Research Letters*.

12) Horna Munoz, D., Constantinescu G., Rhoads, B.L., **Lewis, Q.W.**, and Sukhodolov, A. *submitted*. Density Effects at a Concordance Bed Natural River Confluence Part 2: Mixing. *Water Resources Research*.

11) Horna Munoz, D., Constantinescu G., Rhoads, B.L., **Lewis, Q.W.**, and Sukhodolov, A. *submitted*. Density Effects at a Concordance Bed Natural River Confluence Part 1: Coherent Structures. *Water Resources Research*.

Published Manuscripts

10) Park, E., **Lewis, Q.W.**, and Sanwlani, N. 2019. Large Lake Gauging using Fractional Imagery. *Journal of Environmental Management*. 231, 687-693. doi.org/10.1016/j.jenvman.2018.10.044.

9) **Lewis, Q.W.**, and Rhoads, B.L. 2018a. LSPIV Measurements of Two-dimensional Flow Structure in Streams using Small Unmanned Aerial Systems: 1. Accuracy Assessment based on Comparison with Stationary Camera Platforms and In-stream Velocity Measurements. *Water Resources Research*. doi.org/10.1029/2018WR022550.

- 8) **Lewis, Q.W.**, and Rhoads, B.L. 2018b. LSPIV Measurements of Two-dimensional Flow Structure in Streams using Small Unmanned Aerial Systems: 2. Hydrodynamic Mapping at River Confluences. *Water Resources Research*. doi.org/10.1029/2018WR022551.
- 7) Blair, N.E., Leithold, E.L., Papanicolaou, A.N.T., Wilson, C.G., Keefer, L., Kirton, E., Vinson, D., Schnoebelen, D., Rhoads, B.L., Yu, M., and **Lewis, Q.W.** 2018. The C-biogeochemistry of a Midwestern USA agricultural impoundment in context: Lake Decatur in the Intensively Managed Landscape Critical Zone Observatory, *Biogeochemistry*, 138:171. doi.org/10.1007/s10533-018-0439-9.
- 6) **Lewis, Q.W.**, Lindroth, E.M., and Rhoads, B.L. 2018. Integrating Unmanned Aerial Systems and LSPIV for Rapid, Cost-effective Stream Gauging, *Journal of Hydrology*, doi:10.1016/j.jhydrol.2018.03.008.
- 5) Wang, Y., Wang, D., **Lewis, Q.W.**, Wu, J., and Huang, F. 2017. A framework to assess the cumulative impacts of dams on hydrological regime: a case study of the Yangtze River, *Hydrological Processes*, 31: 3045-3055. doi:10.1002/hyp.11239.
- 4) **Lewis, Q.W.**, and Park, E. 2017. Volunteered Geographic Videos in Physical Geography: Data Mining from Youtube, *Annals of the Association of American Geographers*, 5: 1-19. doi:10.1080/24694452.2017.1343658.
- 3) Rhoads, B. L., **Lewis, Q.W.**, and Andresen, W. 2016. Historical Channel Change in an Intensively Managed Landscape: Natural versus Human-induced Effects, *Geomorphology*, 252: 17-31. doi:10.1016/j.geomorph.2015.04.021.
- 2) **Lewis, Q.W.**, and Rhoads, B.L. 2015b. Resolving two-dimensional flow structure in rivers using large-scale particle image velocimetry: An example from a stream confluence, *Water Resources Research*. 51.10: 7977-7994. doi:10.1002/2015WR017783.
- 1) **Lewis, Q.W.**, and Rhoads, B.L. 2015a. Rates and Patterns of Temperature Mixing at a Small Stream Confluence under Variable Incoming Flow Conditions, *Hydrological Processes*, 29:20, p. 4442-4456. doi:10.1002/hyp.10496.

Conference Proceedings and Book Chapters

- 2) Rhoads, B.L. and **Lewis, Q.W.** 2016. The Relation between Mean Flow, Turbulence, and Mixing at a Small Stream Confluence, In *Riverflow 2016*, Constantinescu, G., Garcia, M.H., and Hanes, D. (eds), Taylor & Francis, London. pp. 1633-1639.
- 1) **Lewis, Q.W.**, and Rhoads, B.L. 2016. Flow Evolution near the Apex of two Small Stream Confluences using Large-Scale Particle Image Velocimetry, In *Riverflow 2016*, Constantinescu, G., Garcia, M.H., and Hanes, D. (eds), Taylor & Francis, London. pp.1640-1647.

Research Grants

- 1) Illinois Water Resources Center Annual Small Grants: Student Research Awards, \$9,915. "Evaluating Water Quantity and Water Quality Issues in Illinois Streams using Large-Scale Particle Image Velocimetry (LSPIV)." 2015. (with Bruce L. Rhoads, University of Illinois, and Frank L. Engel, United States Geological Survey).

2) Department of Geography and Geographic Information Science Summer Field Support Grant, \$579. “Spatial and Temporal Evolution of Shear Layers at River Confluences – A Study of Confluence Dynamics.” 2013.

Total \$ received: \$10,494

Honors and Awards

- Illinois Department of Geography and GIS Marion G. Russell Fellowship – Spring 2017.
- Illinois Department of Geography and GIS George Beatty Fellowship – 2017.
- Departmental Unit teaching award, Department of Geography and GIS, University of Illinois, 2014.
- List of Teachers Ranked As Excellent by Their Students, University of Illinois, Spring 2014 – GEOG/ESE 103.
- List of Teachers Ranked As Excellent by Their Students, University of Illinois Fall 2014 – GEOG 101 (outstanding rating).
- List of Teachers Ranked As Excellent by Their Students, University of Illinois, Spring 2013 – GEOG/ESE 103 (outstanding rating).
- Illinois School of Earth, Society, and Environment Research Review, 1st place poster in Geography and GIS – 2017; 3rd place poster in Geography and GIS – 2013, 2016.

Conference Participation

16) **Lewis, Q.W.**, Edmonds, D. A., and Yanites, B.J. Analysis of Morphological Evolution of an Incipient Chute Cutoff using UAS and LIDAR. American Geophysical Union Fall Meeting, 2018, Washington, D.C. December 14, 2018.

15) **Lewis, Q.W.**, Edmonds, D. A., and Yanites, B.J. Characterizing Erosional “Wood Gouges” on Near-channel River Floodplains with UAS and LIDAR. Geological Society of America Annual Meeting, Indianapolis, IN. November 6, 2018.

14) **Lewis, Q.W.**, and Rhoads, B.L. High-resolution Hydrodynamic Mapping at Stream Confluences using LSPIV. American Association of Geographers Annual Meeting, New Orleans, LA. April 12, 2018.

13) **Lewis Q.W.**, and Rhoads, B.L. An Assessment of Stream Confluence Flow Dynamics using Large Scale Particle Image Velocimetry Captured from Unmanned Aerial Systems. American Geophysical Union Fall Meeting, 2017, New Orleans, LA. December 13, 2017.

12) **Lewis Q.W.**, and Rhoads, B.L. Mixing at Stream Confluences: Rates, Patterns, and Controlling Factors. American Association of Geographers Annual Meeting, Boston, MA. April 8, 2017.

11) **Lewis Q.W.**, and Rhoads, B.L. Applying Large-Scale Particle Image Velocimetry (LSPIV) for mean and instantaneous flow measurement– Assessment of water quantity and water quality, Illinois Water 2016, Urbana, IL. October 27, 2016.

- 10) **Lewis Q.W.**, and Rhoads, B.L. Flow Evolution near the Apex of two Small Stream Confluences using Large-Scale Particle Image Velocimetry, 8th International Conference on Fluvial Hydraulics (River Flow), St. Louis, MO. July 13, 2016.
- 9) Rhoads, B.L., and **Lewis Q.W.**, The Relation between Mean Flow, Turbulence, and Mixing at a Small Stream Confluence, 8th International Conference on Fluvial Hydraulics (River Flow), St. Louis, MO. July 13, 2016.
- 8) **Lewis Q.W.**, and Rhoads, B.L. Flow Evolution near the Apex of two Small Stream Confluences using Large-Scale Particle Image Velocimetry, School of Earth, Society, and Environment Research Review, Urbana, IL. February 26, 2016.
- 7) **Lewis, Q.W.**, Rhoads, B.L., and Andresen, W. Historical Channel Change in an Intensively Managed Landscape: Natural versus Human-induced Effects, American Association of Geographers Annual Meeting, Chicago IL. April 24, 2015.
- 6) **Lewis, Q.W.**, and Rhoads, B.L. Field implementation of Particle Image Velocimetry (PIV) for studying flow dynamics at river confluences, American Geophysical Union Fall Meeting, 2014, San Francisco, CA. December 18, 2014.
- 5) **Lewis, Q.W.**, and Rhoads, B.L. Stream Channel Change in an Intensively Managed Agricultural Landscape: Implications for Critical Zone Processes, American Geophysical Union Fall Meeting, 2014, San Francisco, CA. December 18, 2014.
- 4) **Lewis, Q.W.**, Rhoads, B.L., Neal, C., and Andresen, W. Historical Channel Change in an Intensively Managed Landscape: Natural versus Human-induced Effects. Illinois Water 2014, Urbana, IL. October 15, 2014.
- 3) **Lewis, Q.W.**, and Rhoads, B.L. Field Implementation of Particle Image Velocimetry (PIV) for Studying Confluence Dynamics: Potential, Considerations, and Challenges. School of Earth, Society, and Environment Research Review, Urbana, IL. February 21, 2014.
- 2) **Lewis, Q.W.**, and Rhoads, B.L. Temperature Mixing at a Small Stream Confluence under Variable Flow Conditions. School of Earth, Society, and Environment Research Review, Urbana, IL. March 1, 2013.
- 1) **Lewis, Q.W.** Spatial Variation in Residential Infiltration Rates. School of Earth, Society, and Environment Research Review, Urbana, IL. April 17, 2012.

Professional Memberships

- Geological Society of America (2015-present): Divisions: Quaternary Geology and Geomorphology
- American Geophysical Union (2014-present): Specialty Groups: Hydrology, Earth and Planetary Surface Processes
- American Association of Geographers (2011-present): Specialty Groups: Geomorphology, Water Resources

Service and Synergistic Activities

- Manuscript reviewer:

Environmental Fluid Mechanics
Geomorphology
Geophysical Research Letters
Geosciences
Hungarian Geographical Bulletin
International Journal of Remote Sensing
Journal of Ecohydraulics
Journal of Hydraulic Research
Journal of Hydrology
Journal of Visualized Experiments
Remote Sensing
Water Resources Research
Water

- Conference Session Chair:
American Association of Geographers Annual Meeting 2018; 2019
Geological Society of America Annual Meeting 2018
- UIUC Geography Graduate Student Association President, 2013-2014
- UIUC Geography Graduate Student Association Vice President, 2012-2013
- Chair, UIUC School of Earth, Society, and Environment 2012 Research Review Planning Committee

Certifications

- Federal Aviation Administration (FAA) Licensed Remote Pilot
 Remote Pilot Certificate with Small Unmanned Aircraft Rating

References

Dr. Bruce Rhoads, Professor, University of Illinois, Department of Geography and Geographic Information Science.

brhoads@illinois.edu, +1 (217) 333-1322

Dr. Douglas Edmonds, Associate Professor and Malcolm and Sylvia Boyce Chair in Geological Sciences, Indiana University, Department of Earth and Atmospheric Sciences.

edmondsd@indiana.edu, +1 (812) 855-4512

Dr. Taehee Hwang, Assistant Professor, Indiana University, Department of Geography.

taehee@indiana.edu, +1 (812) 855-6303