

Ray Lombardi

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EDUCATION

- 2022 **Ph.D. in Geography**, The University of Alabama
Title: Analyses of Extreme Floods in the Holocene to Improve Flood Frequency Estimation
Advisor: Dr. Lisa Davis
- 2017 **M.S. in Geography**, The University of Alabama
Title: A Meta-analysis of Holocene Fluvial Activity in the Southeastern U.S.
Advisor: Dr. Lisa Davis
- 2016 **B.S. in Environmental Science**, Longwood University

EMPLOYMENT

- 2022 - Present **Assistant Professor**, Department of Earth Sciences, The University of Memphis
- 2020 - 2021 **Graduate Instructor**, Department of Geography, The University of Alabama
- 2019 - 2020 **Graduate Research Assistant**, The University of Alabama
- 2018 **Geomorphology Division Intern**, U.S. Bureau of Reclamation Technical Service Center
- 2016 - 2018 **Graduate Research Assistant & Graduate Teaching Assistant** (Fall 2016 & 2018), The University of Alabama
- 2015 - 2016 **Undergraduate Research Assistant**, Longwood University

EXTERNAL FUNDING

- 2021-2024 **Increasing water treatment resiliency by using natural flood record to reduce the uncertainty of water hazard predictions under changing climate.** USGS 104g National Competitive Grant, Lisa Davis (PI), John Swartz (co-PI), **Ray Lombardi (co-PI)**, Tessa Harden (co-PI), Miles Yaw (co-PI), Matthew Gage (co-PI), Total Cost: \$197,925 (funded).

HONORS & AWARDS

- 2022 The David Weaver Award, The University of Alabama
- 2021 Graduate Council Fellowship: The University of Alabama Graduate School
- 2018 Best Student Paper Presentation by a Ph.D. Student: Geomorphology Specialty Group, Annual Meeting of the American Association of Geographers
- 2018 Outstanding Graduate Research Assistant: The University of Alabama Department of Geography
- 2016 Outstanding Senior in Integrated Environmental Science: Longwood University Department of Biological and Environmental Sciences
- 2015 First Place Natural Sciences category for paper submissions: *INCITE: Journal of Undergraduate Scholarship*, Cook-Cole College of Arts and Science, Longwood University

PUBLICATIONS

Peer-reviewed

- 2022 **Lombardi, R.,** Davis, L., (2022) Incorporating alluvial hydrogeomorphic complexities into paleoflood hydrology, magnitude estimation and flood frequency analysis, Tennessee River, Alabama. *The Journal of Hydrology*. <https://doi.org/10.1016/j.jhydrol.2022.128085>
- 2021 **Lombardi, R.,** Davis, L., Therrell, M.D. Temperature and Flood Variability Across Europe and North America in the Common Era. *Physical Geography* <https://doi.org/10.1080/02723646.2021.1890894>
- 2020 **Lombardi, R.,** Davis, L., Stinchcomb, G.E., Munoz, S.E., Stewart, L., Therrell, M.D., Fluvial activity in major river basins of the eastern United States during the Holocene. *The Holocene* 30, 1279–1295. <https://doi.org/10.1177/0959683620919978>

Reports and Other Publications

- 2017 Davis, L., **Lombardi, R.,** Gage, M., Therrell, M., Stinchcomb, G., Stewart, C., Leigh D., Milewski, A., Speakman, R., Tran, L. Cyr, H., Horn, S., and McKay, L., Paleoflood evidence of past flooding events: investigation into the available sources of paleoflood evidence in humid environments. Technical Report to Electric Power Research Institute, Palo Alto, CA: <https://www.epri.com/#/pages/product/3002010667/>.
- 2015 **Lombardi, R.,** Gee, K., Garcia, J., Spatial Analysis of Potential Risk Factors Associated with the Addition of Atlantic Coast Pipeline through Virginia. *INCITE: Journal of Undergraduate Scholarship Volume 7*.

PRESENTATIONS

Conference Abstract

- 2022 **Lombardi, R,** Davis, L, Gage, M (Paper). Abrupt Climate Change and Flood Response in the Tennessee River Valley. Annual Meeting of the American Association of Geographer, Virtual, Feb 25, 2021.
- 2021 **Lombardi, R.,** Davis, L., England, J.F., Harden, T. (Paper) Perception is Everything: Revisiting paleoflood hydrological concepts for alluvial rivers. Fall Meeting of the American Geophysical Union, December 13-17, 2021. New Orleans, LA.
- 2021 **Lombardi, R.,** Davis, L. (Paper) How much data is enough for estimating extreme flood risk? A sensitivity analysis of flood frequency curves and paleoflood data. Annual Meeting of the American Association of Geographer, Virtual, April 8, 2021.
- 2021 **Lombardi, R.,** Davis, L. (Poster) A Tale of Two Cores: Investigating the Impact of Alluvial Flood Deposition on Flood Frequency and Magnitude Reconstruction. 6th Annual Probabilistic Flood Hazard Assessment Research Workshop, Virtual, February 22-25.
- 2020 **Lombardi, R.,** Davis, L. (Poster) A Tale of Two Cores: Investigating the Impact of Alluvial Flood Deposition on Flood Frequency and Magnitude Reconstruction. Fall Meeting of the American Geophysical Union, December 9, 2020.
- 2019 **Lombardi, R.,** Davis, L., Elliot, E.A., Therrell, M.D. (Poster). Trans-Atlantic Paleoflood Frequency and Magnitude in the Common Era: When, where, and why do extreme floods occur? Fall Meeting of the American Geophysical Union. December 9-13, San Francisco, CA.
- 2019 **Lombardi, R.,** Davis, L. (Paper). Extreme floods on the middle Tennessee River. Southeastern Division of the American Association of Geographers Annual Meeting. November 24-25, Wilmington, NC.

- 2019 **Lombardi, R.**, Davis, L., Stinchcomb, G., Stewart, L., Therrell, M.D., Munoz, S. (Poster) A regional synthesis of fluvial activity in major river basins of the eastern U.S. during the Holocene. American Association of Geographers Annual Meeting. April 6-10, Washington, DC.
- 2018 **Lombardi, R.**, Davis, L., Stewart, L., Stinchcomb, G., Forman, S., Leigh, D. (Paper). Sedimentological and Geochemical Differences in Sediment Cores from the Same Relict Terrace Surface: Implication for Paleoflood Reconstruction. Southeastern Division of the American Association of Geographers Annual Meeting, November 18-19, Johnson City, TN.
- 2018 **Lombardi, R.** (Paper). A Meta-analysis of Holocene Fluvial Activity in the Southeastern U.S. American Association of Geographers Annual Meeting. April 10-14, New Orleans, LA.
- 2017 **Lombardi, R.**, Davis, L., Stinchcomb, G., Stewart, C., Leigh, D., Therrell, M., Gage, M., Forman, S., (Poster). Fluvial Activity Database of the Southeastern United States (FADSU). 3rd Annual Probabilistic Flood Hazard Assessment Research Workshop, December 4-5, Washington, DC.
- 2017 **Lombardi, R.** (Paper). Gradient-Based Flood Map: A science-based policy alternative to the 100-year flood zone. Alabama Water Resources Conference. September 6-8, Orange Beach, AL.
- 2017 Davis, L., Stinchcomb, G., **Lombardi, R.**, Stewart, S., Therrell, M.D., (Poster) A regional paleoflood analysis for the eastern U.S., implication for extreme flood frequency. American Association of Geographers Annual Meeting. March 5-9, Boston, MA.
- 2016 Davis, L., Stinchcomb, G., Gage, M., Sherwood, S., **Lombardi, R.** (Poster) Locating Paleoflood Deposits in Eastern Rivers. 5th International Paleoflood Conference. September 12-15, Rapid City, SD.
- 2015 **Lombardi, R.**, Gee, K., Garcia, J. (Poster) Spatial Analysis of Potential Risk Factors Associated with Addition of Atlantic Coast Pipeline through Virginia. Office of Geographic Information System and Remote Sensing Research Symposium. April 10, Blacksburg, VA.

Invited Seminars

- 2021 Old Sediments Given New Insight into Extreme Floods. Dorothy Merritt's Geomorphology Seminar, Franklin & Marshall College.

TEACHING EXPERIENCE

- 2020 - 2021 The University of Alabama Department of Geography, **Instructor of Record:**
- GY 202: The Water Planet (Summer 2020, Spring 2021)
 - GY 102: Earth Surface Processes (Fall 2020)
- 2018 The University of Alabama Department of Geography, **Graduate Teaching Assistant:**
- GY 102: Earth Surface Processes (Fall 2018)
 - GY 207: Field Studies in Water and Climate (Study Abroad course, 2018)
 - GY 407: Physical Geography of Bavaria, Bohemia, and the Tyrolean Alps (Study Abroad course, 2018)
- 2016 The University of Alabama Department of Geography, **Graduate Teaching Assistant:**
- GY 102: Earth Surface Processes (Fall 2016)
- 2015 Longwood University Dept. Biological and Environmental Sciences, **Teaching Assistant:**
- GEOG 275: Introduction to GIS (Fall 2015)

SERVICE

2019 - 2021	Student Representative to Paleoenvironmental Change (PEC) Awards Committee within the American Association of Geographers
2017 - 2019	Department of Geography Graduate Student Representative to the University of Alabama Graduate Student Association
2017 - 2018	Secretary of Association of Women in Science – UA Affiliate Group
2016 - 2018	Secretary of Club Geography at the University of Alabama
2015 - 2016	President of the Environmental Club at Longwood University

REVELANT PROFESSIONAL SKILLS

Computational: **Geographic Information Systems** (ArcGIS Desktop, ArcGIS Pro, QGIS, Google Earth Pro); **Statistical Software** (R, SPSS); **Hydraulic/ Hydrologic Model Software** (HEC-RAS, HEC-SSP, RMC-BestFit, HEC-GeoRAS, PeakfqaSA)

Other Skills: **Surveying Techniques** (Trimble Differential GPS, Leica Total Station); **Scientific Sensors** (Laser Granulometers – Bettersizer and Malvern, handheld X-ray fluorescence, gamma spectrometer, flow velocity meter); **various field sampling methods**

PROFESSIONAL MEMBERSHIPS

American Association of Geographer
Southeastern Division of American Association of Geographers
Paleoenvironmental Change Specialty Group
Geomorphology Specialty Group
Hazards, Risks and Disaster Specialty Group
American Geophysical Union