

Melinda C. Higley

Department of Geology, Geography and Environmental Studies
Calvin University
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Education

Doctor of Philosophy (geology). 2018, University of Illinois
Dissertation: *Archives of climate variability on Kiritimati: lacustrine, aeolian and remote sensing perspectives.*
Supervised by Dr Jessica Conroy
Teaching Assistantships: Historical Geology

Master of Science (geology). 2009, University of Toledo
Thesis: *The evolution and chronology of the Lake Warren shoreline in the Oak Openings Region of Ohio, USA.*
Supervised by Dr Timothy G. Fisher
Teaching Assistantships: Introductory Geology

Bachelor of Science (environmental geology major, music minor). 2009, Calvin College (now Calvin University)

Academic and Professional Appointments

2019–Present, Calvin University
Assistant Professor, Department of Geology Geography, and Environmental Studies

2018–2019, Ohio Department of Natural Resources
Geologist, Mapping Group

2009–2014 Prairie Research Institute, Champaign, Illinois
Assistant Wetlands Geologist, Wetlands Section
Wetlands Specialist, Wetlands Section

Peer-reviewed publications

Higley, M. C., Conroy, J. L., Curry, B. Sediment characteristics and chronology of aeolian sediments on a tropical Pacific coral atoll. *[In prep]*.

Schmitt, S., Conroy, J. L., Flynn, T. M., Sanford, R. A., **Higley, M. C.**, Mingfei, C., Fouke, B. W. 2019. Salinity, microbe, and carbonate mineral relationships in brackish and hypersaline lake sediments: a case study from the tropical Pacific coral atoll of Kiritimati. *The Depositional Rec.* 2019; 5: 212–229.

Higley, M. C., Conroy, J. L. 2019. The hydrological response of surface water on Kiritimati Island, Kiribati to recent climate variability. *Hydrological Processes*, 2019; 33: 2227–2239.

Higley, M. C., Conroy, J. L., Schmitt, S. 2018. Last millennium meridional shifts in hydroclimate in the

central tropical Pacific. *Paleoceanography and Paleoclimatology*, 33(4), p. 354–366.

Fisher, T. G., Krantz, D. E., Castenda, M. R., Loope, W. L., Jol, H. M., Goble, R., **Higley, M. C.**, DeWald, S., and Hanson, P. R. 2014. Coastal Geology and Recent origins for Sand Point, Lake Superior, in Fisher, T. G., and Hansen, E. C., eds., *Coastline and Dune Evolution along the Great Lakes*, Special Paper 508: Boulder, Geological Society of America, p. 85–110.

Higley, M. C., Fisher, T. G., Jol, H. M., Lepper, K., and Martin-Hayden, J. M. 2014. Stratigraphic and chronologic analysis of the Warren Beach, northwest Ohio, USA, *Canadian Journal of Earth Sciences*, 51(8), p. 737–749.

Campbell, M.C., Fisher, T.G., Goble, R.J. 2011. Terrestrial sensitivity to abrupt cooling recorded by aeolian activity in northwest Ohio, USA, *Quaternary Research*, 75(3), p. 411–416.

Other Publications

Higley, M. C., and T. A. Norris. 2020. Ohio Radiocarbon Report: Radiocarbon ages from Ohio's surficial material. Open-File Report 2020-01. Ohio Geological Survey, Columbus, Ohio, XX p. (*in sign-off phase*)

Miner, J.J., and **M. C. Higley**. 2013. Hydrogeologic Monitoring in the Illinois-Wisconsin Lake Plain, Northern Lake County: Illinois State Geological Survey Open-File Series 2013. Prairie Research Institute, University of Illinois, Champaign, Illinois, 78 p.

Campbell, M.C., J.J. Miner, and K.W. Carr. 2011. Data and Results of Monitoring at the Unnamed Tributary to the South Branch of Indian Creek (Willowbrook Drain), IL 22, Near Long Grove, Illinois: Illinois State Geological Survey Open-File Series 2011-5, Prairie Research Institute, University of Illinois, Champaign, Illinois, 22 p.

Conference Abstracts

Higley, M.C., Conroy, J.L. 2018. Sediment characteristics and chronology of aeolian sediments on a tropical Pacific coral atoll. Geological Society of America Meeting, Indianapolis, Indiana.

Higley, M.C., Conroy, J.L. 2017. Hydrological response of lakes on Kiritimati Island, Kiribati to recent climate variability. Geological Society of America North-Central Meeting, Pittsburg, Pennsylvania.

Higley, M.C., Conroy, J.L., Schmitt, S. 2017. Last millennium meridional shifts in hydroclimate in the central tropical Pacific. PAGES Open Science Meeting, Zaragoza, Spain. [*Invited*]

Higley, M.C., Conroy, J.L., Schmitt, S. 2017. Medieval aridity in the central tropical Pacific. PAGES Young Scientists Meeting, Morillo de Tou, Spain. [*Invited*]

Higley, M.C., Conroy, J.L., Schmitt, S. 2016. Medieval aridity in the central tropical Pacific. American Geophysical Union Fall Meeting, San Francisco, California.

Higley, M.C., Conroy, J.L. 2015. A geochemical archive of climate variability in Kiritimati Island lake sediment. Geological Society of America National Meeting, Baltimore, Maryland.

Higley, M.C., Conroy, J.L., Schmitt, S. 2016. A geochemical archive of climate variability in Kiritimati Island lake sediment. SESE Research Review, University of Illinois.

- Higley, M.C., Fisher, T.G., Jol, H., Lepper, K., Goble., R.J., Martin-Hayen, J. 2015. A contemporary story of a historical lake Warren Strandline from Northwest Ohio. Geological Society of America North-Central Meeting, Madison, Wisconsin.
- Higley, M.C., Conroy, J.L. 2014. Searching for the Central Equatorial Pacific Climate Record in Christmas Island Lake Sediments, LacCore, University of Minnesota.
- Higley, M.C., Ackerman, J.A., and **C.M. Long**. 2014. Using specific conductivity to calculate mass of TDS in highway runoff to Illinois Tollway bioswales, Joint Aquatic Sciences Meeting, Portland, Oregon.
- Higley, M.C., Miner, J. Carr, K. 2013. Watershed Land Use and Water Quality in a Lake Michigan Coastal Wetland Complex. Society of Wetland Scientists Conference, Duluth, Minnesota.
- Campbell, M.C., Fisher, T.G., Martin-Hayen, J., Goble., R.J. 2009. The Evolution of the Lake Warren Coastline in the Oak Openings Region in Northwest Ohio. USA, International Association for Great Lakes Research, Toledo, Ohio.
- Bourland, D., **Campbell, M.C.**, Steirman, D.J. 2009. Using Ground Penetrating Radar to Locate Unmarked Graves in Toledo, Ohio, USA, International Association for Great Lakes Research, Toledo, Ohio.
- Campbell, M.C., Bourland, D., Steirman, D.J. 2009. History, High Schoolers, and Geophysics: Using Ground Penetrating Radar to Locate Unmarked Graves in Toledo, Ohio, USA, Geological Society of America North-Central Meeting, Rockford, Illinois
- Campbell, M.C., Fisher, T.G., Krantz, D., Martin-Hayen, J. 2008. Using Ground Penetrating Radar in the Oak Openings Region of Ohio. Geological Society of America North-Central Meeting, Evansville, Indiana.
- Campbell, M.C., Fisher, T.G., Krantz, D., Martin-Hayen, J. 2008. Using Ground Penetrating Radar in the Oak Openings Region of Ohio, University of Toledo, Toledo Ohio.
- Campbell, M.C., Van Dijk, D. 2005. Communicating to the General Public the Results of a Study of Contemporary Lake Michigan Coastal Dune Activity. Geological Society of America National Meeting, Salt Lake City, Utah.

Invited Seminars

- “Archives of Climate Variability on Kiritimati: Lacustrine, Aeolian and Remote sensing Perspectives.” Calvin University, Grand Rapids, Michigan, 2019.
- “Adventures in geochronology and paleoclimate, near (Ohio) and far (the Pacific Ocean).” College of Wooster Geology Club, Wooster, Ohio, 2019.
- “A Subsurface Investigation of a Glacial Lake Shoreline in Northwest Ohio.” Indiana Geological Survey Seminar, Bloomington, Indiana, 2013.
- “The Great Black Swamp: The Link to Modern Lake Erie.” Calvin University GEO departmental seminar, Grand Rapids, Michigan, 2010.
- “The Evolution of the Lake Warren Coastline in the Oak Openings Region in Northwest. Ohio, USA.”

Illinois State Geological Survey Seminar Series, Champaign, Illinois, 2010.

“Regional Geology of Northwestern Ohio,” Department of Environmental Sciences Graduate Student seminar, Toledo, Ohio, 2008.

Professional Service and Public Engagement

University

2019–Present Member, Ecosystem Preserve Board, Calvin University
 2017–2018 Acting President, UIUC Geology Graduate Student Council
 2017 Vice president, UIUC Geology Graduate Student Council
 2015–2016 Member, UIUC Geology Graduate Student Council

Regional

2019– Present Member At Large, North Central GSA Management Board
 2017–2019 Representative, North Central GSA Student Advisory Council
 2016 Session Chair, North Central GSA, Champaign, IL
 2011 Mentor, Mann Mentor program, North Central GSA, Pittsburg, PA

Community

2017 Instructor, Science Olympiad “Rock Hound”, Lincoln Trail School, Illinois
 2016–2017 Co-leader, urban water chemistry, English Language Learners, Urbana HS, Illinois
 2012–2013 Guide, Illinois State Geological Survey Kickapoo State Park 5th grade field trips
 2011–2013 Wetlands exhibitor, Naturally Illinois Expo, Champaign, Illinois
 2009 Presentation, “A Day in the Life of a Geologist,” Lapeer West HS, Michigan
 2008 Presentation, “Change is Everywhere,” Sylvan Elementary, Sylvania, Ohio
 2008 Poster, “Deep into the Oak Openings Dunes,” Oak Openings Research Forum
 2008 Presentation to park naturalists, Oak Openings Metropark, Ohio
 2008 Presentation, “Weathering and Erosion: It’s all around us!” Winterfield Elementary Ohio

Field Experience

2020 Leader, ground penetrating radar collection, Lake Michigan coastal areas
 2013–2017 Co-leader, geology field trips to St. Francois Mts., Missouri (UIUC)
 2017 Co-leader, lake coring and surface sediments expedition to Kiritimati Island (UIUC)
 2016 Leader, lake coring expedition to Belize (UIUC)
 2015 Member, lake coring at Riggle Pond, Illinois (UIUC)
 2014 Member, lake coring expedition to Kiritimati Island (UIUC)
 2009 Member, ground penetrating radar collection at Sand Point, Michigan (UT)
 2009 Member, lake coring at Allegan Bog, Michigan (UT)

Awards and Honors

2018 Outstanding Graduate Teaching Assistant in Geology Award
 2015–2018 Ranked as outstanding and excellent TA by University of Illinois geology students
 2017 Harriet Wallace Outstanding Women Graduate Student in Geology Award
 2017 Kirkpatrick Outstanding Graduate Research in Geology Award
 2014 Canadian Journal of Earth Sciences Editor's Choice for 2014
 2014 UIUC Geology Department Funded Research Award
 2014 National Lacustrine Core Facility Visiting Graduate Student Travel Grant
 2007 Calvin University Geology Outstanding Senior Award
 2005 Michigan Basin Geological Society Scholarship

Professional Memberships

Geological Society of America
Past Global Changes
The American Quaternary Association
American Institute of Professional Geologists

Reviewing

Journal of Paleolimnology
Paleoceanography and Paleoclimatology

Professional Development and Certifications

2018 Fundamentals of GIS
2018 Illinois Graduate Teacher Certificate
2018 Illinois Graduate Mentoring Certificate
2016 GeoChronR Workshop, University of Northern Arizona
2013 Kepner-Tregoe Project Planning Seminar
2012 Hach Hydromet Technical Training Seminar
2011 The Complete Groundwater Monitoring Field Course
2010 Army Corps of Engineers Wetland Delineation Training Program
2010 Advanced Problems in Hydric Soils Evaluation