

Zach Perzan

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EDUCATION

- Ph.D.** **Stanford University**, Stanford, CA
2017-present Earth System Science, Anticipated June 2022
 Advisor: Kate Maher
- B.A.** **Middlebury College**, Middlebury, VT
2011-2015 Geology, Summa Cum Laude
 Honors thesis: A pre-Wisconsinan sedimentary record from Weybridge Cave, VT
 Advisors: Jeff Munroe and Will Amidon

RESEARCH EXPERIENCE

- 2017-present **National Science Foundation Graduate Research Fellow**
Stanford University, Stanford, CA
- Diverse array of research, including field work throughout the Rocky Mountains, geochemical analyses in the lab and modern modeling techniques
- Developed new modeling and data assimilation workflow that can ingest large data streams and update water quality predictions in real time
- Secured over \$200K in grants to fund research, field work and travel
- 2015 **Cave Scientist** – Bureau of Land Management, Shoshone, ID
- Drafted land management policies regarding local lava tube caves
- Mapped several miles of lava tube caves using ground-based LiDAR
- 2014-2015 **Oceanography Technician** – R/V David Folger, Lake Champlain, VT/NY
- Wrote a 15-variable computer model for the internal hydrodynamics of a section of Lake Champlain, using a large dataset (over 9 million observations)
- Operated the research lab on a state-of-the-art, \$1.7 M research vessel
- 2013-2015 **Luminescence Lab Manager** – Middlebury College, Middlebury, VT
- Set appropriate protocols and standards for in-house research using a new luminescence geochronology lab built in August 2013
- Developed software designed to run the lab's main research instrument
- 2013-2014 **Teaching Assistant** – Middlebury College Geology Department, Middlebury, VT
- Taught oceanography labs on Lake Champlain and graded assignments
- 2013 **Oceanography Research Assistant** – Vermont EPSCoR, Middlebury, VT
- Evaluated viable locations for a new telecom project on the floor of Lake Champlain by analyzing raw sonar data collected on the lake

FELLOWSHIPS AND AWARDS

- 2016 – National Science Foundation (NSF) Graduate Research Fellowship (GRFP), \$138,000
- 2015 – National GeoCUR Award for Excellence in Student Research
- 2015 – John M. White Award for Exceptional Research in Geology, \$800
- 2014 – 3rd place, Outstanding Student Research Paper, Vermont Geological Society
- 2013 – Vermont Geological Society Research Grant, \$335
- 2013 – Middlebury Senior Research Supplement, \$1,000

PUBLICATIONS

Peer-Reviewed Journals

- Manley, T., **Perzan, Z.**, Manley, P., and Wei, E., 2016. *Unexpected Vertical Shear in a Shallow Bay of Lake Champlain*. (submitted to [Limnology and Oceanography](#))
- Munroe, J., **Perzan, Z.**, and Amidon, W., 2016. *Cave sediments constrain the latest Pleistocene advance of the Laurentide ice sheet in the Champlain Valley, Vermont, USA*. [Journal of Quaternary Science](#), 31 (8), pp. 893-904.
- Schroth, A., Giles, C., Isles, P., Xu, Y., **Perzan, Z.**, and Druschel, G., 2015. *Dynamic coupling of iron, manganese, and phosphorous behavior in water and sediment of shallow ice-covered eutrophic lakes*. [Environmental Science and Technology](#), 49 (16), pp. 9758-9767.

TEACHING EXPERIENCE

- Summer 2015 **Co-instructor**, *Intro. to Cave Science*, Craters of the Moon National Monument, ID
- Co-designed lecture- and field-based short course on lava tube caves
 - Led field excursions to local caves to explore their geologic significance
- 2013 - 2014 **Teaching Assistant**, *Physical Oceanography*, Middlebury College, Middlebury, VT
- Graded presentations and problem sets, held office hours, mentored students, and led weekly labs aboard the R/V David Folger

CONFERENCE PRESENTATIONS

- 2018 [Geological Society of America – Northeastern Section Meeting](#), Burlington, VT
- Manley, T.O., **Perzan, Z.**, Herdman, L., and Chen, T. *Circulation dynamics of Missisquoi Bay: A new look at the question of water quality and causeways*
- 2016 [Association for the Sciences of Limnology and Oceanography \(ASLO\) Meeting](#), Santa Fe, NM
- Perzan, Z.**, Manley, P.L., Manley, T.O., Manary, T., Kraft, M., Juteau, J-P., and Singer, J., *Sediment transport dynamics of a shallow bay: Missisquoi Bay, Lake Champlain, VT*
- 2016 [International Society of Limnology \(SIL\) Meeting](#), Torino, Italy
- Manley, T., **Perzan, Z.**, Manley, P., and Wei, E., *Unexpected vertical shear in a very shallow bay of Lake Champlain, Vermont: implications for management and modeling*

2015 [U.S. Congress: “Posters on the Hill”](#), Washington, D.C.

*One of 60 students invited to showcase research before members of congress

Perzan, Z., Munroe, J., and Amidon, W., *A potential long-term climate record from Weybridge Cave, Vermont, USA*

2015 [New World Luminescence Dating Workshop](#), Manhattan, KS

Perzan, Z. and Amidon, W.*, *A pre-Wisconsinan sedimentary record from a cave in central Vermont*

2015 [Vermont EPSCoR Research Symposium](#), Burlington, VT

Perzan, Z., Manley, T., and Manley, P., *Hydrodynamics and sediment dynamics of Missisquoi Bay, Lake Champlain*

2014 [Geological Society of America \(GSA\) Annual Meeting](#), Vancouver, Canada

Perzan, Z., Amidon, W., and Munroe, J., *Investigation of last interglacial sediment in Weybridge Cave, Vermont, USA*

2014 [Vermont Geological Society Meeting](#), Middlebury, VT

Perzan, Z., Amidon, W., and Munroe, J., *A potential pre-Wisconsinan paleoenvironmental record from Weybridge Cave, Vermont*

2014 [Geological Society of America – Southeastern Section Meeting](#), Blacksburg, VA

Perzan, Z., Munroe, J., and Amidon, W., *Origin and significance of clastic sediments within Weybridge Cave, Vermont*

FIELD EXPERIENCE

- Structural geology field camp, Valais, Switzerland
- Paleontology field camp studying the K-Pg Boundary, N. Spain and S. France
- Igneous petrology field camp, Sardinia, Italy
- Two summers on an oceanography research vessel on Lake Champlain
- Lava tube cave mapping and research, Snake River Plain, Idaho
- Paleolake Terreton shoreline mapping, Snake River Plain, Idaho

COMPUTATIONAL SKILLS

- Software expertise: MATLAB, ArcGIS, EarthVision, C++, Python, Linux OS
- Vast range of lab experience, from paleomagnetism work on cave sediment with a pass-through cryogenic magnetometer to XRD, SEM and MC-ICPMS work (for U-Th geochronology)