


# Stanford

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## Zach Perzan

Ph.D. Student in Earth System Science, admitted Autumn 2017

 Curriculum Vitae available Online

### Bio

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#### BIO

I'm currently a PhD candidate in Earth System Science at Stanford University. I use modern data science techniques to better understand the environmental processes affecting water quality.

This broad topic includes research projects in several different areas:

1. Building a data-driven water quality model that can make predictions in real time based on in situ sensor observations
2. Understanding seasonal contaminant cycling in a uranium-contaminated floodplain in Wyoming
3. Modeling the impact of managed aquifer recharge on groundwater quality in California's Central Valley
4. Analyzing the financial cost of EPA drinking water quality violations through 10+ years of consumer purchasing data

#### HONORS AND AWARDS

- Outstanding Poster Award, Computational Methods in Water Resources XXIII (2020)
- Outstanding Poster Award, Stanford Deep Learning Symposium (2019)
- Graduate Research Fellow, National Science Foundation (2017-2022)
- National GeoCUR Award for Excellence in Student Research, Council on Undergraduate Research (2015)
- John M. White Award for Excellence in Research, Middlebury College (2015)
- Outstanding Student Research Paper, Vermont Geological Society (2014)

#### EDUCATION AND CERTIFICATIONS

- B.A., Middlebury College, Geology (2015)

#### LINKS

- Personal Website: <https://zperzan.github.io>

### Publications

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#### PUBLICATIONS

- **Simulation of anoxic lenses as exporters of reactivity in alluvial aquifer sediments** *GEOCHIMICA ET COSMOCHIMICA ACTA*  
Babey, T., Boye, K., Tolar, B., Engel, M., Noel, V., Perzan, Z., Kumar, N., Francis, C. A., Bargar, J. R., Maher, K.  
2022; 334: 119-134

- **Global Sensitivity Analysis of a Reactive Transport Model for Mineral Scale Formation During Hydraulic Fracturing** *Environmental Engineering Science*  
Li, Q., Wang, L., Perzan, Z., Caers, J., Brown Jr., G. E., Bargar, J. R., Maher, K.  
2021
- **Sample identifiers and metadata to support data management and reuse in multidisciplinary ecosystem sciences** *Data Science Journal*  
Damerow, J., Varadharajan, C., Boye, K., Brodie, E., Burres, M., Chadwick, K., Crystal-Ornelas, R., Elbashandy, H., Eloy Alves, R., Ely, K., Goldman, A., Haberman, T., Hendrix, et al  
2021; 20 (1)
- **Cave sediments constrain the latest Pleistocene advance of the Laurentide Ice Sheet in the Champlain Valley, Vermont, USA** *JOURNAL OF QUATERNARY SCIENCE*  
Munroe, J. S., Perzan, Z. M., Amidon, W. H.  
2016; 31 (8): 893–904
- **Dynamic Coupling of Iron, Manganese, and Phosphorus Behavior in Water and Sediment of Shallow Ice-Covered Eutrophic Lakes** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*  
Schroth, A. W., Giles, C. D., Isles, P. F., Xu, Y., Perzan, Z., Druschel, G. K.  
2015; 49 (16): 9758–67