

# Jonathan Obrist-Farner

## Address

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## Statement

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My research interests include the understanding of sedimentary processes controlling basin fill and evolution and how we can utilize the sedimentological record to interpret climate and tectonic processes at a variety of timescales. I utilize diverse tools, including field, sedimentological, geophysical, and laboratory techniques, that provide unique perspectives to interpret the geological record. I have been involved in projects trying to understand deep-time paleoclimate changes during the Permo-Triassic mass extinction and during the Late Paleozoic Ice Age, Holocene climate and tectonic changes in Guatemala, and in hydrocarbon exploration projects in western Africa and Madagascar.

## Professional Experience

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### Assistant Professor

Missouri University of Science and Technology  
Geoscience and Geological and Petroleum Engineering Department

Rolla, MO  
8/16 – Present

### Classes

Petroleum Geology	Applied Petroleum Geology	Advanced Petroleum Geology
Sedimentology	Stratigraphy	Advanced Physical Geology
Beginner Field Camp	Advanced Field Camp	

### Research Projects

- Evolution of the Lake Izabal Basin, Guatemala, trying to understand and decipher the climatic and tectonic signals in the shallow and deep sediments of the basin.
- Evolution and growth of the Mahajanga Basin, NW Madagascar.
- Sedimentological characterization of the shallow sediments of Lake Petén Itza, northern Guatemala.
- Investigating controlling variables of progradational systems utilizing flume tanks and numerical models.
- Multi-point statistical modeling of deep-water hydrocarbon reservoirs.

### Grants

- PI: "LIBRE- Lake Izabal Basin Research Endeavor." Workshop proposal granted by the International Continental Scientific Drilling Program, \$52,000.
- PI: "The LIBRE [Lake Izabal Basin Research Endeavor] Scientific Drilling Workshop: Drilling and Coring the lake Izabal Basin." Granted by the National Science Foundation, \$49,892.
- Co-PI: "Geostatistical Modeling of Turbidite Reservoirs." Granted by Chevron, \$97,930 (50%).
- Co-PI: "Developing a Minor in Latin American Studies for Technical Applications," P016A160059. Granted by Department of Education, \$93,229 (20%).

### Research Group Students

Edward Duarte, Ph.D., expected May 2021  
Fahad Alkhalidi, M.Sc., graduated May 2018  
Trey Anglim, M.Sc., expected December 2019

Elisandra Hernandez, Ph.D., expected May 2021  
Idrees Mohammed, M.Sc., graduated May 2018

### Co-advisor

Erdoog Mongol, Ph.D., expected May 2022  
Avery Welker, Ph.D., expected May 2022

Qiaoqi Sun, M.Sc., expected December 2019

### **Awards to Ph.D. Students**

- Three Geological Society of America Student Research Grants, \$ 5,500
- One American Association of Petroleum Geologist Grants-In-Aid, \$ 1,750
- National Association of Black Geoscientists – Patricia Hall Scholarship, \$950
- Three LacCore/SSDCO Drilling and Coring Summer Institute Training Scholarships
- One ICDP Training Course on Continental Scientific Drilling Award

### **Extracurricular Activities**

- National Science Foundation panelist – Spring 2019
- Expanding Your Horizons presenter
- Engineers Without Borders Missouri S&T Guatemala Chapter – Student Advisor

### **Geologist**

ConocoPhillips

Senegal Exploration

Houston, TX

06/15 – 7/16

- Team member – Appraisal of the SNE deepwater discovery
- Worked with petrophysicists, reservoir engineers, drilling engineers, geologists, and geophysicist to successfully plan the appraisal program
- Operational geologist for three deep-water appraisal wells. In charge of preparing daily reports, evaluate seismic while drilling information to predict reservoir tops and core points, and helped with selecting side wall core and MDT pressure points
- Developed reservoir models for the SNE deepwater discovery

### **Education**

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Missouri University of Science and Technology

Ph.D. Geology and Geophysics

Dissertation: Origin and Stratigraphic Architecture of the Middle Permian Lower and Upper Quanzijie Low-Order Cycle, Bogda Mountains, NW China

May 2015

GPA: 4.0

Missouri University of Science and Technology

M.Sc. Geology and Geophysics

May 2012

GPA: 4.0

Wichita State University

B.S. Geology/B.A. Psychology

August 2010

GPA: 3.63

### **Publications (students in bold)**

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Obrist-Farner, J., Brenner, M., Curtis, J.H., Kenney, W.F., Salvinelli, C., *accepted*, Recent onset of eutrophication in Lake Izabal, the largest water body in Guatemala: *Journal of Paleolimnology*.

Obrist-Farner, J., and Rice, P.M., 2019, Nixtun-Ch'ich' and its environmental impact: Sedimentological and archaeological correlates in a core from Lake Petén Itza in the southern Maya lowlands, Guatemala: *Journal of Archaeological Science: Reports*, v. 26, 101868.

Bartole, R., Lodolo, E., Obrist-Farner, J., Morelli, D., 2019, Sedimentary Architecture and Late Cenozoic Tectonic Evolution of an Asymmetrical Pull-Apart Basin, Lago de Izabal, Eastern Guatemala: *Tectonophysics*, v. 750, p. 419-433.



- Obrist-Farner, J. and Eckert, A., 2019, The Lake Izabal Basin – A possible ICDP drilling site: Geological Society of America Abstracts with Programs, vol. 51, No. 5, Paper 248-7.
- Ramirez, G.Y.**, Locmelis, M., Obrist-Farner, J., 2019, Platinum-group element concentrations in tropical lake sediments in the exploration for nickel laterite deposits: Geological Society of America Abstracts with Programs, vol. 51, No. 5, Paper 193-8.
- Sun, Q.**, Eckert, A., Obrist-Farner, J., 2019, Strain partitioning across the Polochic-Motagua fault system, Guatemala: insights from kinematic numerical modeling: Geological Society of America Abstracts with Program, Paper 33-3.
- Welker, A.J.**, Eckert, A., Obrist-Farner, J., 2019, Geometric Modeling of a Turbidite System: Roadmap to Pore Pressure Distribution: AAPG Annual Convention and Exhibition.
- Zhang, W.**, Obrist-Farner, J., Yang, W., 2019, Paleoclimatic signals in the Quaternary sediments in Lake Izabal, Guatemala, Central America: Geological Society of America Abstracts with Programs, vol. 51, No. 5, Paper 193-9.
- Zhao, C.**, Hogan, J., Obrist-Farner, J., Chapman, A., 2019, A sequence stratigraphy approach to utilizing detrital zircons to understanding the Ozark Plateau: Geological Society of America Abstracts with Programs, Paper 12-10.

## **2018**

- Anglim, T.**, Obrist-Farner, J., 2018, Evolution of a basin margin: preliminary results from flume tank experiments: Geological Society of America Abstracts with Programs, Vol. 50, No. 6, Paper 121-27.
- Duarte, E.**, Obrist-Farner, J., Wattrus, N., 2018, Deltaic sedimentation in an asymmetric pull-apart basin, Lake Izabal, Guatemala: new constraints from short sediment cores and geophysical data: Geological Society of America Abstracts with Programs, Vol. 50, No. 6, Paper 109-20.
- Duarte, E.**, Obrist-Farner, J., 2018, Facies distribution analysis in a river-dominated delta, Lake Izabal, Guatemala: exploring a unique example with sediment core data: Geological Society of America Abstracts with Programs, Vol. 50, No. 4, Paper 31-5.
- Hernandez, E.**, Obrist-Farner, J., Curtis, J.H., 2018, Inferred environmental changes from geochemical and isotopic analysis: preliminary study of a sediment core from lake Izabal, Guatemala: Geological Society of America Abstracts with Programs, Vol. 50, No. 4, Paper 11-6.
- Hernandez, E.**, Obrist-Farner, J., Kenney, W., 2018, Heavy metal contamination in Lake Izabal, Guatemala: preliminary study of a short sediment core: Geological Society of America Abstract with Programs, Vol. 50, No. 6, Paper 244-18.
- Mongol, E.**, Oboh-Ikuenobe, F., Obrist-Farner, J., 2018, Palynofacies analysis and paleoenvironmental reconstruction of Holocene lacustrine sediments, Lake Izabal, eastern Guatemala: Geological Society of America Abstracts with Programs, Vol. 50, No. 4, Paper 109-1.
- Mongol, E.**, Oboh-Ikuenobe, F., Obrist-Farner, J., 2018, Paleoenvironmental and paleoclimatic reconstruction utilizing palynomorphs from sediment cores: Lake Izabal, eastern Guatemala. NABG Conference, Houston, TX.
- Obrist-Farner, J., Eckert, A., Lodolo, E., Wattrus, N., Curtis, J.H., Bartole, R., 2018, Stratigraphic architecture and structural and sedimentological evolution of an asymmetric pull-apart basin, Lake Izabal, Guatemala: Geological Society of America Abstracts with Programs, Vol. 50, No. 6, Paper 9-4.
- Obrist-Farner, J., Curtis, J.H., Kenney, W., **Hernandez, E.**, 2018, Recent eutrophication and heavy metal contamination in Lake Izabal, Guatemala: Preliminary study of a short sediment core: American Geophysical Union, PP11E-1307.
- Sun, Q.**, Eckert, A., Obrist-Farner, J., 2018, Strain partitioning across the Polochic-Motagua fault system, Guatemala: insights from kinematic modeling: Geological Society of America Abstracts with Program, Vol. 50, No. 6, Paper 174-9.
- Welker, A.J.**, Eckert, A., Obrist-Farner, J., 2018, Geometrical characteristics of a turbidite system: a geostatistical approach: Geological Society of America Abstracts with Programs, Vol. 50, No. 6, Paper 46-15.
- Zhao, C.**, Hogan, J., Obrist-Farner, J., Chapman, A., 2018, A sequence stratigraphy approach to utilizing detrital zircons to understanding the Ozark Plateau: Geological Society of America Abstracts with Programs, Vol. 50, No. 6, Paper 121-24.

## **2015**

Obrist-Farner, J. and Yang, W., 2015, Sedimentological Characteristics of Fluvial Conglomerates and Sandstones as Indicators of Paleogeographic and Paleoclimatic Conditions, Mid-Permian Quanzijie Low-Order Cycles, Bogda Mountains, NW China: Geological Society of America Annual Meeting, Baltimore, MD, USA

Obrist-Farner, J., Yang, W., Martinez, E., 2015, Sedimentary Characteristics of Loessite in NE Pangea and Its Implication on Paleoclimate and Paleogeography – Capitanian Quanzijie Low-Order Cycle, Bogda Mountains, NW China: Geological Society of America Annual Meeting, Baltimore, MD, USA

## **2014**

Obrist-Farner, J. and Yang, W., 2014, Mysterious Loessite: A Case Study from the Mid-Permian Quanzijie Low Order Cycle, Bogda Mountains, NW China: GSA North Central Meeting, Lincoln, NE, USA

## **2013**

Obrist-Farner, J. and Yang, W., 2013, Arid-to-Humid Paleoclimatic Change in Mid-Latitude NE Pangea during Icehouse-Hothouse Transition – Terrestrial Sedimentary Evidence from Mid-Permian Quanzijie Low-Order Cycle, Bogda Mountains, NW China: World Summit on Permian-Triassic Mass Extinction and Extreme Climate Change, Wuhan, China

Obrist-Farner, J. and Yang, W., 2013, Sedimentology and Stratigraphy of Mixed Fluvial-Loess (?) Deposits of Capitanian Quanzijie Low-Order Cycle, Bogda Mountains, NW China: International Palaeogeography Conference, Beijing, China

Obrist-Farner, J., Yang W., Feng, Q., 2013, Mixed Fluvial and Loess (?) Deposits in an Intracontinental Rift Basin, Mid-Permian (Wordian-Capitanian) Quanzijie Low-Order Cycle, Bogda Mountains, NW China: AAPG Annual Meeting, Pittsburgh, USA

Yang, W., Crowley, J., Obrist-Farner, J., Tabor, N., Feng, Q., Liu, Y., 2013, Peeking into Continent-Building Processes through the Bogda Window, Turpan-Junggar Basin, NW China: AAPG Annual Meeting, Pittsburgh, USA

Obrist-Farner, J. and Yang, W., 2013, Sedimentology, Depositional Systems, and Sequence Stratigraphy of Mixed Fluvial-Eolian-Lacustrine Deposits in an Intracontinental Rift Basin, Bogda Mountains, NW China: AAPG Search and Discovery Article # 90183

## **2012**

Obrist-Farner, J. and Yang, W., 2012, Sedimentologic and Cyclo- and Sequence-Stratigraphic Analyses of Fluvial-Lacustrine Fills in Intracontinental Rift Basins, NW China: AAPG Search and Discovery Article # 90157

Yang, W., Tabor, N.J., Crowley, J.L., Miggins, D.P., Obrist-Farner, J., 2012, Cyclostratigraphy of Uppermost Carboniferous-to-Lower Triassic Terrestrial Deposits in Bogda Mountains, NW China – A Potential Astrostratigraphic Proxy Section: AGU Annual Meeting, San Francisco, USA

Obrist-Farner, J. and Yang, W., 2012, Preliminary Cyclostratigraphic Correlation of Mid-Permian Fluvial-Lacustrine QZJ Low-Order Cycle in Turpan-Junggar Rift Basin, NW China – Problems and Perspectives: GSA North Central Meeting, Dayton, OH, USA

## **2011**

Obrist-Farner, J. and Yang, W., 2011, Petrographic Comparison and Contrast of Fluvial and Deltaic Sandstones, Upper Pennsylvanian Oread Cyclothem, NE Oklahoma: AAPG Annual Meeting, Houston, TX, USA