

**Angélica Vázquez-Ortega, Ph.D.**  
School of Earth, Environment and Society  
Bowling Green State University  
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**I. Academic Degrees**

2013 Ph.D. in Soil, Water and Environmental Sciences  
University of Arizona, Tucson, Az  
2008 M.S. in Soil, Water and Environmental Sciences  
University of Arizona, Tucson, Az  
2002 B.S. in Environmental Sciences  
University of Puerto Rico, San Juan, PR

**II. Academic Positions**

2017-present Assistant Professor - Bowling Green State University, Bowling Green, OH  
2014-2017 Postdoctoral Research Associate - University of Notre Dame, South Bend, IN  
2013-2014 Postdoctoral Research Associate - University of Arizona, Tucson, Az  
2008-2013 Graduate Research Associate - University of Arizona, Tucson, Az

**III. Teaching Experiences**

**A. Classroom Teaching** (number of times taught)

**1. Undergraduate Courses**

**University of Notre Dame**

CEEES 20320: Environmental and Aquatic Chemistry (co-instructor) (1)

**University of Arizona**

ENVS 170A1: Introduction to Environmental Science Laboratory (1)

**Bowling Green State University**

ENVS 1010 - Introduction to Environmental Studies (1)

ENVS 3040 - Water Quality in the Environment (1)

**2. Undergraduate-Graduate Courses**

**Bowling Green State University**

SEES 4800/5800: Introduction to Biogeochemistry (1)

**University of Arizona**

ENVS 431/531: Soil Genesis Laboratory (co-instructor) (1)

**B. Membership on Thesis Committee**

Tharindu Hasantha (MS Geology, 2018, BGSU)

Erica Lynn Forstater (MS Biology, 2018, BGSU)

Josephine Lindsey-Robbins (MS Biology, 2018, BGSU)

**C. Mentoring Undergraduate Students**

Mathew Franks (BS Geology, 2018, BGSU)

Madison Brown (BS Environmental Science, 2018, BGSU)

Samuel Jeffers (BS Environmental Science, 2018, BGSU)

Lydia Archambo (BS Environmental Science, 2018, Ohio Northern University)

#### **IV. Curriculum Development**

- 2018 Designing SEES 4800/5800: Soil  
2018 Modified ENVS 3040 - Water Quality in the Environment  
2017 Designed SEES 4800/5800: Introduction to Biogeochemistry

#### **V. Professional Development**

##### **A. Workshops**

- 2016 Kaneb Center for Teaching and Learning (University of Notre Dame):  
Foundation of Teaching; Gathering Early Semester Student Feedback;  
Writing Effective Multiple Choice Questions; Interactive Lectures for  
Engaged Learning; Creating Visually Effective Course Materials;  
Engaging Students with Active Learning Strategies; Teaching With  
Current Events
- 2017 Water Quality and Sustainability Workshop – BGSU The Collab Lab  
Remote Sensing for Water Quality Monitoring Workshop – BGSU  
Faculty Career Stage Workshop – BGSU College of Arts and Sciences  
Navigating the NSF System Workshop
- 2018 Center for Faculty Excellence (BGSU):  
Connecting Learning Expectations with Assessment; Using Formative  
Assessment to Provide Ongoing Feedback

##### **B. Webinars**

- 2016-2017 National Center for Faculty Development & Diversity: Every semester  
needs a plan; Align your time with your priorities; How to develop a  
daily writing practice; Mastering academic time management; Every  
summer needs a plan; Moving from resistance to writing; Teaching in no  
time; The art of saying “No”; Cultivating your network of mentors,  
sponsors and collaborators; Building a publishing pipeline: Concrete  
strategies for increasing your writing productivity; 5 secrets to a super  
productive semester; How to engage in healthy conflict; Strategies for  
Dealing with Stress and Rejection; The Role of Self-Care in Productivity,  
How To Write Papers That Get Cited And Proposals That Get Funded

##### **C. Certificates**

BGSU Active Learning Classroom Certification

##### **D. Conferences, Panels and Others**

- 2018 Re-imagining teaching at BGSU, University House  
Understanding Algal Blooms: State of the Science Conference
- 2017 American Geophysical Union Fall Meeting, New Orleans, Louisiana  
The Blanchard River Demonstration Farms Network Bus Tour  
Fall 2017 NSF Grants Conference  
Faculty Mentoring Program Welcome Orientation - College of Arts and  
Sciences

#### **VI. Academic Advising**

- 2018 Bidisha Faruque (MS Geology, 2018, BGSU)  
Mathew Franks (MS Geology, 2018, BGSU)

## VII. Research Interests

Current and future research focuses:

- Identify the biogeochemical processes involved on sediment-contaminant transport from different land use and their effects on the water quality of rivers, lakes and ground water
- Investigate how the physico-chemical characteristics of soils influence the transport and fate of contaminants
- Investigate the role of bacteria on pesticide persistence and degradation in low temperature systems
- Examine correlations between inorganic and/or organic contaminants co-transport with dissolved organic matter and particulate organic matter spatially and temporally in river systems .

## VIII. Research Projects and Grants

### A. Funded Grants

2018 A.Vázquez-Ortega (PI, BGSU). *Solving Real-World Environmental Problems in the Classroom with Active Learning Strategies*. BGSU, SEA Change Ventures: Improving Instruction & Enhancing Student Success in STEM Disciplines. (\$9,210)

A.Vázquez-Ortega (PI, BGSU). *Characterization of agricultural soils and tile drainage discharge from farms participating in the implementation of agricultural best management practices in Midwestern Ohio*. BGSU Building Strength, Mid to Major Research Project Grant, Internal Grant. (\$10,000)

### B. Pending Grants

2018 A.Vázquez-Ortega (PI-Contractor, BGSU). *Smart Farms: Catalyzing adoption of new and existing approaches to manage water, nutrients, and pesticides in the Great Lakes Region*. Great Lakes Protection Fund. (BGSU, \$557,240). R. Confesor, (PI Heidelberg University) (Total grant, \$ 1,072,459)

A.Vázquez-Ortega (PI, BGSU). *Opening the Black Box: Enhancing nutrient removal*. Lake Erie Protection Fund. (\$49,630)

A.Vázquez-Ortega (PI, BGSU). *Enhancing nutrient removal from agricultural tile drainage by understanding the role of organic carbon quality*. Ohio Sea Grant's Small Grants Program. (\$9,997)

### C. Decline

A.Vázquez-Ortega (PI, BGSU). *Enhancing nitrate removal from tile drainage employing woodchip bioreactors by understanding the role of organic carbon quality*. Ohio Sea Grant's Small Grants Program. (\$15,000)

## IX. A. Publications and Equivalencies

### A. Publications

#### 1. Journal Articles

##### Refereed Articles

- 2018 Perdrial, J., Brooks, P.D., Swetnam, T., Lohse, K.A., Rasmussen, C., Litvak, M., Harpold, A.A., Zapata-Rios, X., Broxton, P., Mitra, B., Meixner, T., Condon, K., Huckle, D., Stielstra, C., **Vázquez-Ortega, A.**, Lybrand, R., Holleran, M., Orem, C., Pelletier, J., Chorover, J. A net ecosystem carbon budget for snow dominated forested headwater catchments: linking water and carbon fluxes to critical zone carbon storage. *Biogeochemistry* 138 (3), 225-243.
- 2018 Perdrial N., **Vázquez-Ortega A.**, Wang G., Kanematsu M., Reinoso-Maset E., Mueller K.T., Um W., O'Day P.A. and Chorover J. Uranium speciation in acid-weathered sediments: the role of aging and phosphate amendments. *Applied Geochemistry*, 89, 109-120.
- 2017 McIntosh J., Schaumberg C., Perdrial J., Harpold A., **Vázquez-Ortega A.**, Rasmussen C., Vinson D., Zapata-Rios X., Brooks P., Meixner T., Pelletier J., Derry L., and Chorover J. Geochemical evolution of the Critical Zone across variable time scales informs concentration-discharge relationships: Jemez River Basin Critical Zone Observatory. *Water Resources Research*, 53, 4169–4196.
- 2017 **Vázquez-Ortega A.** and Fein J. Thermodynamic modeling of Mn(II) adsorption onto manganese oxidizing bacteria. *Chemical Geology*, 464, 147–154.
- 2016 Huckle D., Ma L., McIntosh J., **Vázquez-Ortega A.**, Rasmussen C., Chorover J. U-series isotopic signatures of soils and headwater streams in a semi-arid complex volcanic terrain. *Chemical Geology*, 445, 68-83.
- 2016 **Vázquez-Ortega A.**, Perdrial J.N., Amistadi M.K., Rasmussen C., McIntosh J. and Chorover J. Solid-phase redistribution of rare earth elements in hillslope pedons subjected to different hydrologic fluxes. *Chemical Geology*, 426, 1-18.
- 2015 **Vázquez-Ortega A.**, Perdrial J.N., Harpold A., Zapata-Rios X., Amistadi M.K., Rasmussen C., McIntosh J., Schaap M., Pelletier J.D., and Chorover J. Rare earth elements as reactive tracers of biogeochemical weathering in forested rhyolitic terrain. *Chemical Geology*, 391, 19-32.
- 2014 **Vázquez-Ortega A.**, Hernandez-Ruiz S., Amistadi M.K., Rasmussen C. and Chorover J. Fractionation of dissolved organic matter by oxy-hydroxide-coated quartz sand: competitive sorbate displacement during reactive transport. *Vadose Zone Journal*, 13, 1-13.

- 2014 Perdrial J.N., Perdrial N., **Vázquez-Ortega A.**, Porter C., Leedy J., and Chorover J. Experimental assessment of fiberglass passive capillary wick sampler (PCap) suitability for sampling inorganic soil solution constituents. *Soil Science Society of America Journal*, 78, 486-495.
- 2013 Heckman K., Welty-Benard A., **Vázquez-Ortega A.**, Schwartz E., Chorover J. and Rasmussen C. The influence of goethite and gibbsite on soluble nutrient dynamics and microbial community composition. *Biogeochemistry*. 112, 179-195.
- 2011 Heckman K., **Vázquez-Ortega A.**, Gao X., Chorover J., and Rasmussen C. Changes in water extractable organic matter during incubation of forest floor material in the presence of quartz, goethite and gibbsite surfaces. *Geochimica et Cosmochimica Acta*, 75, 4295-4309.
- In preparation **Vázquez-Ortega A.**, Perdrial N., Reinoso-Maset E., Wang G., Mueller K.T., Um W., O'Day P.A. and Chorover J. Desorption of uranium from acid-waste weathered Hanford sediments.
- In preparation Perdrial N., **Vázquez-Ortega A.**, Estela Reinoso-Maset, Peggy O'Day and Jon Chorover. Acid weathering and Uranium speciation: Reaction kinetics and phosphate additions.

## 2. Abstracts

### Non-refereed abstracts

- 2016 **Vázquez-Ortega A.** and Fein J. Thermodynamic modeling of Mn(II) adsorption onto manganese oxidizing bacteria. *American Chemical Society*.
- 2015 **Vázquez-Ortega A.** and Fein J. Thermodynamic modeling of Mn(II) adsorption onto manganese oxidizing bacteria. *Midwest Geobiology Symposium*.
- 2014 Chorover J. and **Vázquez-Ortega A.** Soil carbon (de)stabilization under changing climate: Scaling from micropores to catchments. *American Chemical Society*. (Speaker)
- 2014 Perdrial N., **Vázquez-Ortega A.**, Reinoso-Maset E., O'Day P. and Chorover J. Acid-weathering and uranium speciation: reaction kinetics and phosphate additions. *Goldschmidt Conference*.
- 2012 Rasmussen, C., Meding, S.M., **Vázquez-Ortega, A.**, Chorover, J. Domes, Ash, and Dust: Controls on Soil Genesis in a Montane Catchment of the Valles Caldera. *American Geophysical Union*.

- 2011 Perdrial J.N., Perdrial N., Harpold A., Peterson A., **Vázquez-Ortega A.**, and Chorover J. Probing dissolved organic matter in the critical zone: a comparison between in situ sampling and aqueous soil extracts. *American Geophysical Union*.
- 2010 **Vázquez-Ortega A.**, Hernández Ruíz S., Rasmussen C., and Chorover J. Characterization of dissolved organic matter during reactive transport: A column experiment with spectroscopic detection. *American Geophysical Union*.
- 2010 Dolan E., Perdrial J.N., **Vázquez-Ortega A.**, Hernández-Ruiz S., and Chorover J. Testing the application of Teflon/quartz soil solution samplers for DOM sampling in the Critical Zone: Field and laboratory approaches. *American Geophysical Union*.

## **X. Service**

- A. School**
- 2018 SEES Seminar Series coordinator
- 2017 STEM Day
- B. College**
- C. University**
- 2018 Academic Investment in Math and Science (AIMS) Program, Advisory Board member
- 2017-2018 Faculty Research Committee Member, Building Strength Mid to Major Research Project Grant reviewer
- 2017 Honors College - Great Ideas and Desserts Event, moderator in student panel discussion
- D. Professional**
- 2013-2018 Reviewer for Hydrological Processes, *Geochimica et Cosmochimica Acta*, *Chemical Geology*, *Environmental Science & Technology*, *Journal of Plant Nutrition and Soil Science*, *Frontiers in Earth Science*
- 2018 External PhD dissertation reviewer – Fabio Sposito, University of Palermo, Italy
- 2016 Presider for the Adsorption of Metals by Geomedia III session at 251st American Chemical Society National Meeting, San Diego

## **XIII. Research or Professional Consultantships**

- ## **XIV. Membership in Professional Organizations**
- American Geophysical Union  
American Chemical Society

**XV. Honors and Awards**

2017	Faculty Development Fund Award, College of Arts and Sciences (\$500)
2007	Alfred P. Sloan Foundation Scholarship
2007	Ivanhoe Foundation Fellowship

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