WILLIAM NGUYEN

Last updated: September 2022 ⋄ wdnguyen98@gmail.com

EDUCATION

The University of Texas at Austin August 2020 - Present
Ph.D. in Geological Sciences (ongoing)
Supervisor: Dr. M. Bayani Cardenas

University of Maryland, College Park August 2016 - August 2020
B.S. in Geology with Honors
Thesis: *The influence of road salts on the mobilization of bioreactive elements in regenerative stormwater conveyance systems*
Supervisor: Dr. Sujay Kaushal and Jenna Reimer

PROFESSIONAL EXPERIENCE

The University of Texas at Austin August 2022 - Present
Teaching Assistant *Austin, TX*

· Instructed laboratory sections (19 students) for GEO 476K/391C: Groundwater Hydrology/Physical Hydrogeology

The University of Texas at Austin August 2020 - Present
Graduate Student Researcher *Austin, TX*

· Funded by NSF 852653 Collaborative Research: The dynamic iron curtain surrounding fluctuating rivers and its impacts on arsenic fate and transport
· Researching groundwater-surface water interactions and their effect on redox zonation in seasonally and tidally flooded riverbanks: numerical modeling of the Meghna River, Bangladesh

Woods Hole Oceanographic Institution May 2019 - August 2019
Summer Student Fellow *Woods Hole, MA*

· Coastal Groundwater Geochemistry Laboratory of the Department of Marine Chemistry and Geochemistry.
· Funded by NSF-REU "Ocean Sciences & Engineering at Woods Hole Oceanographic Institution".
· Analyzed mechanisms of water movement using $^{224}Ra - ^{228}Th$ disequilibria and endmember mixing analyses; quantified solute transport through underground seepage and at the sediment-water interface.
· Supervisors: Drs. Matthew Charette and Joseph Tamborski

Texas A&M University May 2018 - August 2018
NSF-REU Undergraduate Researcher *College Station, TX*

· Department of Civil Engineering; Geology & Geophysics
· Funded by NSF-REU "Ecohydrology of Tropical Montane Forests - Diversity in Science, Interdisciplinary Breadth, and Global Awareness"
· Partitioned source waters using stable isotope tracers ($\delta^{18}O$ and δD); analyzed fate and transport of nutrients through forested, mountainous watersheds in Costa Rica
· Supervisors: Drs. Gretchen Miller and Peter Knappett

University of Maryland, College Park May 2017 - May 2019
Field & Lab Assistant *College Park, MD*

· Biogeochemistry Laboratory of the Department of Geology

· Focused on biogeochemical cycles and their interactions with urban developments: element cycles (C, N, P), road salt, and urban karst
· Supervisor: Dr. Sujay Kaushal

University of Maryland, College Park October 2015 - August 2016
Research Intern *College Park, MD*

· Geomorphology and Ecohydrology Laboratory of the Department of Geology
· Completed a research capstone on the hydrologic and geomorphic controls of stream temperature
· Examined the role of stormwater runoff and channel geometry on stream warning in the Anacostia watershed
· Supervisor: Dr. Karen Prestegaard

JOURNAL PUBLICATIONS

[4] Varner, T.S., Kulkarni, H.V., **Nguyen, W.**, Kwak, K., Cardenas, M.B., Knappett, P.S.K., Ojeda, A.S., Malina, N., Bhuiyan, M.U., Ahmed, K.M., Datta, S. (2022), Contribution of sedimentary organic matter to arsenic mobilization along a potential natural reactive barrier (NRB) near a river: The Meghna river, Bangladesh. Chemosphere, doi: https://doi.org/10.1016/ j.chemosphere.2022.136289.

[3] Kaushal, S.S., Mayer, P.M., Likens, G.E., Reimer, J.E., Maas, C.M., Rippy, M.A., Grant, S.B., Hart, I., Utz, R.M., Shatkay, R.R., Wessel, B.M., Maietta, C.E., Pace, M.L., Duan, S., Boger, W.L., Yaculak, A.M., Galella, J.G., Wood, K.L., Morel, C.J., **Nguyen, W.**, Querubin, S.E.C., Sukert, R.A., Lowien, A., Houde, A.W., Roussel, A., Houston, A.J., Cacopardo, A., Ho, C., Talbot-Wendlandt, H., Widmer, J.M., Slagle, J., Bader, J.A., Chong, J.H., Wollney, J., Kim, J., Shepherd, L., Wilfong, M.T., Houlihan, M., Sedghi, N., Butcher, R., Chaudhary, S. and Becker, W.D. (2022), Five state factors control progressive stages of freshwater salinization syndrome. Limnol. Oceanogr. Lett. https://doi.org/10.1002/lol2.10248

[2] Kaushal, S. S., Reimer, J. E., Mayer, P. M., Shatkay, R. R., Maas, C. M., **Nguyen, W**, Boger, W. L., Yaculak, A. M., Doody, T. R., Pennino, M. J., Bailey, N. W., Gallela, J. G., Weingrad, A., Collison, D. C., Wood, K. L., Haq, S., Newcomer Johnson, T. A., Duan, S., & Belt, K. T. (2022). Freshwater salinization syndrome alters retention and release of chemical cocktails along flowpaths: From stormwater management to urban streams. Freshwater Science, 41(3), 000-000.

[1] Kaushal, S. S., Wood, K. L., Galella, J. G., Gion, A. M., Haq, S., Goodling, P. J., Haviland, K. A., Reimer, J. E., Morel, C. J., Wessel, B., **Nguyen, W.**, Hollingsworth, J. W., Mei, K., Leal, J., Widmer, J., Sharif, R., Mayar, P. M., Newcomer Johnson, T. A., Newcomb, K. D., Smith, E., & Belt, K. T. (2020). Making 'chemical cocktails'–Evolution of urban geochemical processes across the periodic table of elements. Applied Geochemistry, 119, 104632.

CONFERENCE PRESENTATIONS

[16] Varner, T., H. B. Kulkarni, K. Kwak, **W. Nguyen**, M. B. Cardenas, P. S. Knappett, and S. Datta,"Impact of fluctuating river levels on sedimentary arsenic mobilizatin along the dynamic surface water-groundwater interface of the Meghna River, Bangladesh" *GSA Connects 2022*, Denver, CO (Talk)

[15] Varner, T., H. B. Kulkarni, **W. Nguyen**, K. Kwak, Z. Buskirk, M. B. Cardenas, A. Ojeda, P. S. Knappett, N. Malina, and S. Datta,"Role of sedimentary organic matter on arsenic mobilization in a potential natural reactive barrier (NRB) along the fluctuating Meghna River, Bangladesh" *Goldschmidt 2022*, Honolulu, HI (Talk)

[14] Kwak, K., T. Varner, **W. Nguyen**, H. V. Kulkarni, P. S. Knappett, S. Datta, and M. B. Cardenas,"Freshly deposited overbank sediments create an arsenic release hotspot in riverbanks of a tidally and seasonally fluctuating river" *Goldschmidt 2022*, Honolulu, HI (Poster)

[13] Teel, M., **W. Nguyen**, C. Demir, S. T. McKinney, J. Mehr, and M. B. Cardenas,"Thermal and chemical stratification of Lake Travis" *Jackson School Research Symposium 2022*, Austin, TX (Poster)

[12] **Nguyen, W.**, M. B. Cardenas, S. Datta, K. Kwak, T. Varner, C. Demir, M. N. Pedrazas, and P. Knappett, "Groundwater-surface water interactions in seaonally and tidally flooded riverbanks: numerical modeling of the Meghna River, Bangladesh" *AGU Fall Meeting 2021*, New Orleans, LA (eLightning)

[11] Varner, T., H. V. Kulkarni, **W. Nguyen**, K. Kwak, M. B. Cardenas, P. Knappett, and S. Datta, "Geochemical characteristics of sediments from a potential natural reactive barrier and arsenic contaminated aquifer in Bangladesh" *AGU Fall Meeting 2021*, New Orleans, LA (Poster)

[10] Demir, C., M. B. Cardenas, S. T. McKinney, **W. Nguyen**, E. Bristol, E. Bullock, A. Sanders, I. Schaal, M. Charette, and J. W. McClelland,"Groundwater Flow and Transport in a Coastal Aquifer in the Arctic" *AGU Fall Meeting 2021*, New Orleans, LA (Talk)

[9] Husted, S., R. Buskirk, **W. Nguyen**, A. P. Smith, S. Calabrese, H. V. Kulkarni, S. Datta, P. Knappett, J. K. Brumbelow, and G. W. Moore,"Inorganic and Organic Carbon Fluxes from Tropical Andisols and Andesitic Saprolite in a Pre-Montane Forest" *AGU Fall Meeting 2021*, New Orleans, LA (Poster)

[8] Varner, T., H. B. Kulkarni, **W. Nguyen**, M. B. Cardenas, K. Kwak, P. S. Knappett, M. U. Bhuiyan, K. M. Ahmed, S. Ahkter, and S. Datta,"Geochemical controls on arsenic mobilization in a potential permeable natural reactive barrier (PNRB)" *Goldschmidt 2021*, Virtual (Talk)

[7] Kaushal, S., K. Wood, J. Reimer, S. Haq, A. Gion, K. Haviland, C. Morel, B. Wessel, **W. Nguyen**, J. Hollingsworth, K. Mei, J. Leal, J. Widmer, R. Sharif, W. L. Boger, A. Yaculak, J. Kryger, D. Collison, J. B. Aisin, T. Doody, K. Belt, T. A. Newcomer Johnson, and P. Meyer,"Making 'Chemical Cocktails' in Streams across the Periodic Table of Elements," *AGU Fall Meeting 2020*, Online (Talk)

[6] **Nguyen, W.**, R. Buskirk, D. D. Riddle, L. Gomez, R. Hamid, G. Aguilar, E. Prior, G. Miller, A. P. Smith, J. Aitkenhead-Petersen, K. Brumbelow, G. W. Moore, and P. S. K. Knappett, "Mass Fluxes of Nitrogen and Carbon from Soil Water to a First-Order Mountain Stream in a Pristine Costa Rican Rain Forest in Response to Individual Rain Events," *GSA 2020 Connects Online*, Virtual (Poster/Talk)

[5] **Nguyen, W.**, J. Tamborski, and M. Charette, "Applications of the Radium Quartet to Quantify Water Exchange in Salt Marshes," *AGU Fall Meeting 2019*, San Francisco, CA (Poster)

[4] Riddle, D., P. Knappett, G. Aguilar, R. Hamid, M. Zapata, **W. Nguyen**, L. Gomez, J. Brumbelow, and G. Moore, "Rain or Shine: Changes in Water and Mass Fluxes of a Pristine Watershed in Response to Rainfall Events and Regional Drought," *AGU Fall Meeting 2019*, San Francisco, CA (Poster)

[3] Keebler, A., M. Everett, M. Rivera, **W. Nguyen**, G. Moore, J. Brumbelow, and L. Gomez, "Electromagnetic Geophysical Mapping of a Stream Channel in a Tropical Montane Rainforest in Costa Rica," *AGU Fall Meeting 2018*, Washington DC (Poster)

[2] Gomez, L., **W. Nguyen**, P. Knappett, A. Duffy, E. Prior, A. Keebler, G. Moore, and J. Brumbelow, "Measuring Mass Fluxes of Nutrients to a First-Order Stream within a Pristine Mountain Rainforest in Costa Rica," *AGU Fall Meeting 2018*, Washington, DC (Poster)

[1] **Nguyen, W.**, L. Gomez, A. Duffy, P. Knappett, G. Miller, J. Brumbelow, E. Prior, A. Keebler, and G. Moore, "Streamflow Responses to Runoff and Shallow Groundwater Fluctuations within Two Nested Watersheds in Costa Rica," *AGU Fall Meeting 2018*, Washington, DC (Poster)

MENTORING

Morgan Teel - Undergraduate August 2021 - May 2022

GRANTS & AWARDS

National Science Foundation Graduate Research Fellowship August 2020 - August 2025
$138,000

UT Austin Recruitment Fellowship August 2020 - August 2021
$28,000

Green Scholarship in Environmental Science & Restoration October 2019
$7,143

OTHER EXPERIENCE

Graduate Student Executive Committee - Treasurer August 2022 - Present
Guest Lecturer for Kiker Elementary School, Kindergarten May 2022
Kids Excelling in Math & Science Mentor August 2019 - March 2020
UMD Geology Club - Treasurer August 2019 - May 2020
Maryland Day Volunteer for UMD Department of Geology May 2019
UMD Geology Club - President August 2018 - May 2019
Maryland Day Volunteer for UMD Department of Geology May 2018

TECHNICAL STRENGTHS

Programming Languages	R, MATLAB, Python
Software	COMSOL Multiphysics (beginner)
Databases	MySQL
Tools	Vim, Git
Instrumentation	ICP-OES, Ion Chromatography, UV-1800 Spectrophotometer, FluoroMax-Spectrofluorometer, Radium Delayed Coincidence Counter (RaDeCC), Germanium detector ($\gamma - counting$)