

# REBECCA B NEUMANN

*Curriculum Vitae*

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Civil and Environmental Engineering  
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## EDUCATIONAL HISTORY

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Massachusetts Institute of Technology, Cambridge, MA  
Ph.D., Environmental Engineering  
January 2010  
Dissertation: *The Hydrogeochemistry of Pond and Rice Field Recharge:  
Implications for the Arsenic Contaminated Aquifers in Bangladesh*

Rice University, Houston, TX  
B.S., Civil Engineering  
B.A., Art and Art History  
January 2002, *magna cum laude*

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## EMPLOYMENT HISTORY

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University of Washington, Department of Civil & Environmental Engineering  
Seattle, WA, USA  
Associate Professor, 2018 – present  
Assistant Professor, 2011 – 2018

Harvard University, Department of Organismic & Evolutionary Biology  
Cambridge, MA, USA  
NOAA Climate and Global Change Postdoctoral Fellow, 2009 – 2011

Massachusetts Institute of Technology, Department of Civil & Environmental Engineering  
Cambridge, MA, USA  
Graduate Researcher and Teaching Assistant, 2003 – 2009

EG&G Technical Services  
Volpe National Transportation Systems Center  
Cambridge, MA, USA  
Environmental Engineer, 2002 – 2003

Los Alamos National Laboratory  
Los Alamos, NM, USA  
Engineering Technician, summer 1998, 1999, 2001

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## AWARDS AND HONORS

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- Recipient of American Geophysical Union's Charles S. Falkenberg Award (2018)
- Recipient of Outstanding Faculty Mentor Award, UW CEE (2017)
- Recipient of Department of Energy Early Career Award (2013)
- Recipient of NOAA Climate and Global Change Postdoctoral Fellowship (2009)
- Best Poster Award, Gordon Research Conference, Environmental Sciences: Water (2008)
- Outstanding Student Paper Award, American Geophysical Union Fall Meeting (2007)
- Fellow of the Martin Family Society for Sustainability (2006)
- Recipient of National Science Foundation Graduate Research Fellowship (2004)
- Recipient of MIT Presidential Fellowship (2003)
- Recipient of Parish Fellowship and Leadership Rice Envision Grant (2001)
- Recipient of Max Roy Scholarship for full tuition to Rice University for four years (1997)

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## PUBLICATIONS

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See [Google Scholar](#) for up-to-date list of publications

### Publicly Available Datasets:

1. **Neumann, R. B.**, C. J. Moorberg, J. D. Lundquist, J. C. Turner, M. P. Waldrop, J. W. McFarland, E. S. Euskirchen, C. W. Edgar, M. R. Turetsky (2019) Warming effects of spring rainfall increase methane emissions from thawing permafrost: Site-level data from bog complex I - Water Table Depth 2014-2016, *Bonanza Creek LTER - University of Alaska Fairbanks*. Dataset BNZ:709. doi:10.6073/pasta/77faf778a5c159ec19693595102651bf. (<http://www.lter.uaf.edu/data/data-detail/id/709>)
2. **Neumann, R. B.**, C. J. Moorberg, J. D. Lundquist, J. C. Turner, M. P. Waldrop, J. W. McFarland, E. S. Euskirchen, C. W. Edgar, M. R. Turetsky (2019) Warming effects of spring rainfall increase methane emissions from thawing permafrost: Site-level data from bog complex II - Carex Metrics 2014-2016, *Bonanza Creek LTER - University of Alaska Fairbanks*. Dataset BNZ:710. doi:10.6073/pasta/d5ff13270beaac1ce6c5475e104f627b. (<http://www.lter.uaf.edu/data/data-detail/id/710>)
3. **Neumann, R. B.**, C. J. Moorberg, J. D. Lundquist, J. C. Turner, M. P. Waldrop, J. W. McFarland, E. S. Euskirchen, C. W. Edgar, M. R. Turetsky (2019) Warming effects of spring rainfall increase methane emissions from thawing permafrost: Site-level data from bog complex III - Methane Flux 2014-2016, *Bonanza Creek LTER - University of Alaska Fairbanks*. Dataset BNZ:711. doi:10.6073/pasta/e7eaf643160e15f3fdf6c36f0866aea8. (<http://www.lter.uaf.edu/data/data-detail/id/711>)
4. **Neumann, R. B.**, C. J. Moorberg, J. D. Lundquist, J. C. Turner, M. P. Waldrop, J. W. McFarland, E. S. Euskirchen, C. W. Edgar, M. R. Turetsky (2019) Warming effects of spring rainfall increase methane emissions from thawing permafrost: Site-level data from bog complex IV - Soil Temperatures 2014-2016, *Bonanza Creek LTER - University of Alaska Fairbanks*. Dataset BNZ:712. doi:10.6073/pasta/51521e888f301ae9e0c97455764daa77. (<http://www.lter.uaf.edu/data/data-detail/id/712>)

5. Barrett, P.M.<sup>3</sup>, **R.B. Neumann**, J.E. Gawel (2018) Water-column aqueous arsenic, oxygen, and temperature; arsenic content of sediment, porewater, plankton, and sediment trap samples in two lakes in the Puget Sound lowland (2016-2018). *PANGAEA*, <https://doi.pangaea.de/10.1594/PANGAEA.896037>. (DOI registration in progress)
6. Barrett, P.M.<sup>3</sup>, **R.B. Neumann**, J.E. Gawel (2017) Aqueous arsenic, oxygen, temperature, and plankton arsenic content in urban lakes in the Puget Sound lowland from September 2015 to August 2016. *PANGAEA*, <https://doi.org/10.1594/PANGAEA.884327>.
7. Pracht, L.E.<sup>1</sup>, M.M. Tfaily, R.J. Ardissono<sup>2</sup>, **R.B. Neumann** (2017): FT-ICR-MS characterization of organic matter and further sample details of Bangladeshi aquifer sediment incubated with aquifer recharge waters. *PANGAEA*, <https://doi.org/10.1594/PANGAEA.876660>.
8. **Neumann, R.B.**, J.F. Espeleta<sup>3</sup>, Z.G. Cardon, K.U. Mayer (2017): Modeled profiles of NH<sub>4</sub><sup>+</sup> and K<sup>+</sup> in the rhizosphere resulting from diel plant water use and competitive soil cation exchange, Links to model results. *PANGAEA*, <https://doi.pangaea.de/10.1594/PANGAEA.876349>,
9. **Neumann, R.B.**, S.J. Blazewicz, C.H. Conaway, M.R. Turetsky, M.R. Waldrop (2015) Modeling CH<sub>4</sub> and CO<sub>2</sub> cycling using porewater stable isotopes in a thermokarst bog in Interior Alaska: results from three conceptual reaction networks. *Bonanza Creek LTER - University of Alaska Fairbanks*. Dataset BNZ:610. doi:10.6073/pasta/c246d9ed17292fe6b0654cdd88a56deb. (<http://www.lter.uaf.edu/data/data-detail/id/610>)

#### Media Coverage and Outreach Products:

- Washington State Lake Protection Association Newsletter, "[Seasonal mixing patterns in shallow lake controls vertical distribution of arsenic](#)" by Samantha Fung. December 2019
- UW News, "[Warmer temperatures will increase arsenic level in rice, study show](#)" by Sarah McQuate. December 2019 (lead to coverage by KUOW FM Seattle)
- Informational and artistic video about methylmercury contamination of rice, "[Healthy rice for a growing world](#)" by Rachel Strickman. November 2019
- UW CEE News, "[Lakes with a legacy](#)" by Brooke Fisher. October 2019
- Washington State Lake Protection Association Newsletter, "[Arsenic mobility and bioavailability in South King County lakes](#)," by Jim Gawel et al. August 2019
- UW CEE News, "[Safeguarding a staple food](#)," by Brooke Fisher. June 2019
- UW Tacoma News, "[Diving for data: solving the arsenic riddle](#)," by John Burkhardt. April 2019
- UW News, "[Early spring rain boosts methane from thawing permafrost by 30 percent](#)," by Sarah McQuate. February 2019 (lead to coverage of story by multiple different media outlets)

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## SYNERGISTIC ACTIVITIES

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### **Professional Society Memberships:**

American Geophysical Union, 2003 – present

### **University service**

- University Faculty Senate (2019 – present)
- Co-faculty advisor for UW student chapter of Engineers Without Borders (2016 – present)
- Program on Climate Change advisory committee member (2016 – present)
- Reviewer of Mary Gates Undergraduate Research Scholarship applications (2015)
- Presented at pre-tenure workshop hosted by UW ADVANCE: “Taking the pulse of your graduate students’ experiences.” (2015)
- Mentor for students in Washington STARS in Engineering program (2014)
- Proposal reviewer for Royalty Research Fund (2012; 2017)
- Program on the Environment advisory committee member (2011 – present)

### **Professional society and other service**

- Member of American Geophysical Union’s Sustainability Committee (April 2020 – present)
- Co-organizer of a session at Association for the Sciences for Limnology and Oceanography Winter Meeting: “Anthropogenic impacts and environmental threats in urban freshwater ecosystems.” Honolulu, HI (2016)
- Co-organizer of a session at American Geophysical Union Fall Meeting: “Modeling and observations of coupled biophysical processes in terrestrial and aquatic environments across scales.” San Francisco, CA (2015)
- Organizing committee for “FEW: River FEWs: Workshop to explore the nexus between food, energy and water in a large international river system,” Seattle, WA. Funded by NSF (2015)
- Co-organizer of a session at American Geophysical Union Fall Meeting: “Measurement and Modeling of Root-Zone Processes Influencing Water, Carbon and Nitrogen Cycles at Various Scales.” San Francisco, CA (2012, 2013, 2014)
- Co-organizer of a session at American Geophysical Union Fall Meeting: “Geogenic groundwater contamination and its impact on agriculture and public health.” San Francisco, CA (2014)
- Judge of student presentations at American Geophysical Union Fall Meeting, San Francisco, CA (2012, 2013, 2014)
- Invited panelist for all-day Path of Professorship workshop at MIT for graduate and postdoctoral women considering tenure-track positions in science, engineering, and technology (2010)

### **Community service**

- Development Team Member for EarthHero Climate Action phone app (January 2020 – present)
- Consultant for remediation of arsenic contaminated site owned by Port of Tacoma (2017 – 2020)
- Panelist for Seattle Youth Climate Action Network workshop at University of Washington (2017)
- UW Engineering Discovery Days Exhibit
  - Wetland Chemistry and Greenhouse Gases (2017)
  - Lights, Camera, Chemistry! (2016)

### **International, national or governmental service**

- Panel reviewer for National Science Foundation, Hydrologic Sciences Program (2018)
- External reviewer for California Environmental Protection Agency’s draft scientific document titled, *Proposed Naturally Occurring Concentrations of Inorganic Arsenic in White and Brown Rice* (2017)

- Panel reviewer for Department of Energy, Joint Genome Institute, Community Science Program (2017)
- Panel reviewer for National Science Foundation, Division of Chemical, Bioengineering, Environmental, Environmental Engineering Program (2017)
- Ad hoc reviewer for Department of Energy, Stanford Synchrotron Radiation Lightsource, User Access Proposal (2017)
- Invited contributor to two-day long workshop that identified research priorities for the Department of Energy, Office of Science, Biological and Environmental Research Program: “Research Priorities to Incorporate Terrestrial-Aquatic Interfaces in Earth System Models,” Rockville, MD (2016)
- Panel reviewer for Department of Energy, Office of Science, Lawrence Berkeley National Laboratory, Watershed Function Scientific Focus Area: Biogeochemical Dynamics from Genomes to Watershed Scales (2016)
- Panel reviewer for Department of Energy, Office of Science, Office of Biological and Environmental Research, Environmental System Sciences (2015)
- Ad hoc reviewer for National Science Foundation, Geobiology and Low Temperature Geochemistry Program (2013, 2014, 2015)
- Panel reviewer for National Science Foundation, Division of Chemical, Bioengineering, Environmental, Environmental Engineering Program (2012)
- Ad hoc reviewer for Croatian Science Foundation (2011)