**CURRICULUM VITAE – 10/11/2022**

**Susan L. Brantley**
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## Degrees

| | | |
|---|---|---|
| 1980 | A.B. | Chemistry, Princeton University, *magna cum laude* |
| 1983 | M.A. | Geological and Geophysical Sciences, Princeton University |
| 1987 | Ph.D. | Geological and Geophysical Sciences, Princeton University |

## Professional Experience

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| 8/80-8/81 | Fulbright Scholar in Peru |
| 9/81-8/86 | Teaching and Research Assistant in Dept. of Geological and Geophysical Sciences, Princeton University |
| 8/86-6/91 | Assistant Professor of Geosciences, Penn State |
| 7/91-6/97 | Associate Professor of Geosciences, Penn State |
| 1/95-7/95 | Visiting Scientist, U.S. Geological Survey Menlo Center |
| 1/95-7/95 | Visiting Scientist, Stanford University |
| 7/97-present | Full Professor of Geosciences, Penn State |
| 7/98-04/03 | Director, PSU Center for Environmental Chemistry and Geochemistry |
| 8/99-1/03 | Director, PSU Biogeochemical Research Initiative for Education |
| 1/03-7/03 | Visiting Scientist, U.S. Geological Survey Menlo Center |
| 4/03-present | Director, PSU Earth & Environmental Systems Institute |
| 1/04-1/06 | Vice-President, Geochemical Society |
| 9/04-9/11 | Director, PSU Center for Environmental Kinetics Analysis |
| 1/06-01/08 | President, Geochemical Society |
| 1/08-1/10 | Past-president, Geochemical Society |
| 10/10-present | Director, Shale Network |
| 2013-2015 | Chair, Earth Science Council, Dept. of Energy, Basic Energy Sciences |
| 1/08-08/2021 | Distinguished Professor, Penn State |
| 2012-2021 | Presidentially-appointed Member, Nuclear Waste Techn. Review Board |
| 08/2021-present | Dr. Hubert Barnes and Dr. Mary Barnes Professor in Geosciences |
| 07/2022-present | Evan Pugh University Professor |

## Honors and Awards

| | |
|---|---|
| 1981-1982 | IBM Fellowship, Princeton University |
| 1982-1985 | NSF Graduate Student Fellowship |
| 1987-1992 | NSF Presidential Young Investigator Award |
| 1988-1993 | David and Lucile Packard Fellowship |
| 1996 | Wilson Research Award, College of Earth and Mineral Sciences, Penn State |
| 2001 | Pardee Lecturer, Geological Society of America National Meeting |

## Honors and Awards (continued)

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| 2002 | Ingerson Lecturer of the Geochemical Society, Geol. Society of America |
| 2003 | Wilson Faculty Mentoring Award, College of Earth and Mineral Sciences, Penn State |
| 2006 | Pardee Lecturer, Geological Society of America National Meeting |
| 2007 | Elected Fellow, American Geophysical Union |
| 2007 | Wilson Award for Outstanding Service, College of Earth and Mineral Sciences, Penn State |
| 2008 | Pardee Lecturer, Geological Society of America National Meeting |
| 2008 | Water Network, Award of Excellence for Outstanding Community Serivce |
| 2011 | Honorary Doctorate, University of Toulouse III – Paul Sabatier University, France |
| 2011 | Arthur L. Day Medal, The Geological Society of America |
| 2012 | Elected Member, National Academy of Sciences |
| 2012 | Elected Fellow, Geological Society of America |
| 2012 | Elected Fellow, Geochemical Society |
| 2012 | Elected Fellow, European Association of Geochemistry |
| 2012 | Elected Fellow, International Association of GeoChemistry |
| 2012 | Soil Science Society of America (SSSA) Presidential Award |
| 2013 | Penn State Faculty Scholar Medal |
| 2013 | Honorary Doctorate, University of Lausanne, Switzerland |
| 2015 | U.S. Distinguished Service Award for Service to the Office of Basic Energy Sciences |
| 2016 | Wollaston Medal, The Geological Society of London |
| 2017 | Geochemistry Division Medal, American Chemical Society |
| 2018 | Urey Award, European Association of Geochemistry |
| 2018 | ACS Committee on the Petroleum Research Fund, Certificate of Recognition for Excellence in Peer Reviewing |
| 2019 | Robert Garrels Award, The Geobiology Society |
| 2021 | Elected Member, American Academy of Arts and Sciences |
| 01/22 – present | Foreign Associate, French Academy of Sciences |
| 2022 | IAGC Vernadsky Medal, International Association of GeoChemistry |

**Publications**


1. Maest, A., S. L. Brantley, P. Bauman, M. Borcsik, D. Crerar. 1984. Geochemistry of metal transport in the Raritan River and estuary. *New Jersey Bulletin, New Jersey Academy Science* 29, 69-78.

2. Wood, S., D. A. Crerar, S. L. Brantley, M. Borcsik. 1984. Mean molal stoichiometric activity coefficients of alkali halides and related electrolytes in hydrothermal solutions. *American Journal Science* 284, 668-705. doi: 10.2475/ajs.284.6.668.

3. Brantley, S. L., D. A. Crerar, N. Moller, J. Weare. 1984. Geochemistry of a modern marine evaporite: Bocana de Virrila, Peru. *Journal Sedimentary Petrology* 54, 447-462. doi: 10.1306/212F843B-2B24-11D7-8648000102C1865D.

4. Giddings, J. C., S. L. Brantley. 1984. Shear field-flow fractionation: Theoretical basis of a new, highly selective technique. *Separ. Science and Technology* 19(10), 631-651. doi: 10.1080/01496398408060666.

5. Crerar, D. A., S. Wood, S. L. Brantley, A. Bocarsly. 1985. Chemical controls on solubility of ore-forming minerals in hydrothermal solutions. *Canadian Mineral* 23, 333-352.

6. Brantley, S. L., S. R. Crane, D.A. Crerar, R. Hellmann, R. Stallard. 1986. Dissolution at dislocation etch pits in quartz. *Geochimica et Cosmochimica Acta* 50, 2349-2361. doi: 10.1016/0016-7037(86)90087-6.

7. Brantley, S. L., A. Borgia, G. Rowe, J. F. Fernandez, J. R. Reynolds. 1987. Poas volcano crater lake acts as a condenser for acid metal-rich brine. *Nature* 330, 470-472. doi: 10.1038/330470a0.

8. Schott, J., S. L. Brantley, D. Crerar, C. Guy, M. Borcsik, C. Willaime.1989. Dissolution kinetics of strained calcite. *Geochimica et Cosmochimica Acta* 53(2), 373-382. doi: 10.1016/0016-7037(89)90389-X.

9. Rowe, G., S. L., Brantley, A. Borgia, J. Fernandez, J. Barquero. 1989. La sistema hidrotermal del Volcan Poas. *Boletin de Volcanologia* 20, 23-31.

10. Brantley, S. L., B. Evans, S. H. Hickman, D.A. Crerar. 1990. Healing of microcracks in quartz: Implications for fluid flow *Geology* 18,136-139. doi: 10.1130/0091-7613(1990)018<0136:HOMIQI>2.3.CO;2.

11. Brantley, S. L., J. Donovan. 1990. Marine evaporites, bittern seepage, and the genesis of subsurface brines. Chemical Geology 84, 187-189. doi: 10.1016/0009-2541(90)90207-N.

12. Lee, V. W., S. J. Mackwell, S. L. Brantley. 1990. The effect of fluid chemistry on wetting textures in novaculite. Journal Geophysical Research 96, 10,023-10,037. doi: 10.1029/91JB00604.

13. Voigt, D. E., S. L. Brantley. 1990. Inclusions in synthetic quartz. *Journal Crystal Growth* 113, 527-539. doi: 10.1016/0022-0248(91)90088-M.

14. Rowe, G.L., S. L. Brantley, M. Fernandez, J.F. Fernandez, J.A. Barquero, 1992. A. Borgia. Fluid-volcano interactions at an active stratovolcano: The crater lake system of Poas Volcano, Costa Rica. *Journal Volcanol. and Geothermal Research* 49, 23-51. doi: 10.1016/0377-0273(92)90003-V.

15. MacInnis, I., S. L. Brantley. 1992. The role of dislocations and surface morphology in calcite dissolution. *Geochimica et Cosmochimica Acta* 56, 1113-1126. doi: 10.1016/0016-7037(92)90049-O.

16. Weedman, S., S. L. Brantley, W. Albrecht. 1992. Secondary compaction after secondary porosity: Can it form a pressure seal? *Geology* 20, 303-306. doi: 10.1130/0091-7613(1992)020<0303:SCASPC>2.3.CO;2.

17. Rowe, G., S. Ohsawa, B. Takano, S. L. Brantley, J. F. Fernandez, J. Barquero. 1992. Using crater lake chemistry to predict volcanic activity at Poas Volcano, Costa Rica. *Bulletin of Volcanology* 54, 494-503. doi: 10.1007/BF00301395.

18. Brantley, S. L., G. L. Rowe, L. Konikow, W. Sanford. 1992. Toxic waters of Poas Volcano. National Geographic Research and Exploration 8(3), 328-337.

19. Brantley, S. L. 1992. The effect of fluid chemistry on quartz microcrack lifetimes. *Earth and Planetary Science Letters* 113, 145-156. doi: 10.1016/0012-821X(92)90216-I.

20. Fisher, D., S. L. Brantley. 1992. Models of quartz overgrowth and vein formation: Deformation and episodic fluid flow in an ancient subduction zone. *Journal Geophysical Research* 97, 20,043-20,061. doi: 10.1029/92JB01582.

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22. Rowe, G. L., S. L. Brantley. 1993. Estimation of the dissolution rates of andesitic glass, plagioclase, and pyroxene in a flank aquifer of Poas Volcano, Costa Rica. *Chemical Geology* 105, 71-88. doi: 10.1016/0009-2541(93)90119-4.

23. Brantley, S. L., A. Blai, I. MacInnis, D. Cremeens, D. Darmody. 1993. Natural etching rates of feldspar and hornblende. *Aquatic Science* 55, 262-272. doi: 10.1007/BF00877271.

24. Brantley, S. L., A. Agustsdottir, G. L. Rowe. 1993. Crater lakes reveal heat and volatile fluxes of volcanoes. GSA Today 3,175-178.

25. Agustsdottir, A. M., S. L. Brantley. 1994. Volatile fluxes integrated over four decades at Grimsvotn volcano, Iceland. *Journal of Geophysical Research* 99, 9505-9522. doi: 10.1029/93JB03597.

26. Stillings, L. L., S. L. Brantley. 1995. Feldspar dissolution at 25$^{o}$C and pH 3: Reaction stoichiometry and the effect of cations. *Geochimica et Cosmochimica Acta* 59, 1483-1496. doi: 10.1016/0016-7037(95)00057-7.

27. Stillings, L. L., S. L. Brantley, M. Machesky. 1995. Proton adsorption at an adularia feldspar surface. *Geochimica et Cosmochimica Acta* 59, 1473-1482. doi: 10.1016/0016-7037(95)00056-6.

28. Shiraki, R., S. L. Brantley. 1995 Kinetics of near-equilibrium calcite precipitation at 100$^{o}$C: An evaluation of elementary reaction-based and affinity-based rate laws Geochimica et Cosmochimica Acta 59, 1457-1471. doi: 10.1016/0016-7037(95)00055-5.

29. Rowe, G. L., S. L. Brantley, J.F. Fernandez, A. Borgia. 1995. The chemical and hydrologic structure of Poas Volcano, Costa Rica. *Journal Volcanology Geothermal Research* 64, 233-267. doi: 10.1016/0377-0273(94)00079-V.

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35. Voigt, D. E., S. L. Brantley, R. Hennet. 1996. Chemical fixation of arsenic in contaminated soils. *Applied Geochemistry* 11, 633-643. doi: 10.1016/S0883-2927(96)00009-1.

36. Stillings, L. L., J. I. Drever, S. L. Brantley, Y. Sun, R. Oxburgh. 1996.Rates of feldspar dissolution at pH 3-7 with 0-8 mM oxalic acid. *Chemical Geology* 132, 79-90. doi: 10.1016/s0009-2541(96)00043-5.

37. Weedman, S. D., S. L. Brantley, R. Shiraki, S. R. Poulson. 1996. Diagenesis, compaction, and fluid chemistry modeling of a sandstone near a pressure seal: lower Tuscaloosa Formation, Gulf Coast. *AAPG Bulletin* 80, 1045-1064.

38. Koepenick, K. W., S. L. Brantley, J. M. Thompson, G. L. Rowe, A. A. Nyblade, C. Moshy. 1996. Volatile emissions from the crater and flank of Oldoinyo Lengai volcano, Tanzania. *Journal Geophysical Research* 101,13819-13830. doi: 10.1029/96JB00173.

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41. Brantley, S. L., L. L. Stillings. 1997. Reply to comment: Feldspar dissolution at 25ºC and low pH. *American Journal of Science* 297, 1021-1032.

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45. Murphy, S. F., S. L. Brantley, A. E. Blum, A. F. White, H. Dong. 1998. Chemical weathering in a tropical watershed, Luquillo Mountains, Puerto Rico: II. Rate and mechanism of biotite weathering *Geochimica* et Cosmochimica Acta 62, 227-243. doi: 10.1016/S0016-7037(97)00336-0.

46. Murphy, S. F., S. L. Brantley, A.E. Blum, A. F. White, H. Dong. 1998. Chemical weathering in a tropical watershed, Luquillo Mountains, Puerto Rico: II Rate and mechanism of biotite weatering. *Geochimica et Cosmochimica Acta* 62(13), 2404, Erratum.

47. Chen, Y., S. L. Brantley. 1998. Diopside and anthophyllite dissolution at 25ºC and 90ºC and acid pH. *Chemical Geology* 147, 233-248. doi: 10.1016/S0009-2541(98)00016-3.

48. Brantley, S. L., J. T. Chesley, L.L. Stillings. 1998. Isotopic ratios and release rates of Sr measured from weathering feldspars. *Geochimica et Cosmochimica Acta* 62, 1492-1500. doi: 10.1016/S0016-7037(98)00082-9.

49. Nugent, M. A., S. L. Brantley, C. G. Pantano, P. A. Maurice. 1998. The influence of natural mineral coatings on feldspar weathering. *Nature* 395, 588-591. doi: 10.1038/26951.

50. Chen, Y., S. L. Brantley, E. Ilton. 2000. X-ray photoelectron spectroscopic measurement of the temperature dependence of leaching of cations from the albite surface. *Chemical Geology* 163, 115-128. doi: 10.1016/S0009-2541(99)00096-0.

51. Liermann, L., B. Kalinowski, S. L. Brantley, J.G. Ferry. 2000. Role of bacterial siderophores in dissolution of hornblende. *Geochimica et Cosmochimica Acta* 64, 587-602. doi: 10.1016/S0016-7037(99)00288-4.

52. Lewicki, J., S. L. Brantley. 2000. $CO_2$ degassing along the San Andreas fault, Parkfield, California. *Geophysical Research Letters* 2, 5-8. doi: 10.1029/1999JB900331.

53. Chen, Y., S. L. Brantley. 2000. Dissolution of forsteritic olivine at 65C and 2<pH<5. *Chemical Geology* 165, 267-282. doi: 10.1016/S0009-2541(99)00177-1.

54. Kalinowski, B., L. Liermann, S. L. Brantley, A. Barnes, C. G. Pantano. 2000. X ray photoelectron evidence for bacteria-enhanced dissolution of hornblende. *Geochimica et Cosmochimica Acta* 64, 1331-1343. doi: 10.1016/S0016-7037(99)00371-3.

55. Boomer K., C. Werner, S. L. Brantley. 2000. $CO_2$ emissions related to the Yellowstone volcanic system 1. Developing a stratified adaptive cluster sampling plan. *Journal Geophysical Research* 105, 10817-10830. doi: 10.1029/1999JB900330.

56. Werner C., S. L. Brantley, K. Boomer. 2000. $CO_2$ emissions related to the Yellowstone volcanic system 2. Statistical sampling, total degassing, and transport mechanisms. *Journal Geophysical Research* 105, 10831-10846. doi: 10.1029/1999JB900331.

57. Kump, L., S. L. Brantley, M.A. Arthur. 2000. Chemical weathering, atmospheric $CO_2$ and climate. *Earth and Planetary Science Reviews* 28, 611-667. doi: 10.1146/annurev.earth.28.1.611.

58. Hamilton, J., C. G. Pantano, S. L. Brantley. 2000. Dissolution of albite glass and crystal. Geochimica et Cosmochimica Acta 64, 2603-2615. doi: 10.1016/S0016-7037(00)00388-4.

59. Liermann, L., A. S. Barnes, B. E. Kalinowski, X. Zhou, S. L. Brantley. 2000. Microenvironments of pH in biofilms grown on dissolving silicate surfaces. *Chemical Geology* 171, 1-16. doi: 10.1016/S0009-2541(00)00202-3.

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**Non-refereed Publications, Published Reports and Opinion Pieces**

1992 "America's Academic Future: Presidential Young Investigator Workshop on U.S. Engineering, Mathematics, and Science Education for the Year 2010 and Beyond," National Science Foundation.

1995 Review of U.S. Dept. of Energy Technical Basis Report for Surface Characteristics, Preclosure Hydrology, and Erosion, Committee for Yucca Mountain Peer Review: Surface Characteristics, Preclosure Hydrology, and Erosion, National Academy Press, Washington D.C.

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2015 Brantley, S. L. Drinking water while fracking: now and in the future. 2015. *Groundwater News and Views* 53(1), 21-23.

2015 Brantley, S. L., W. E. Dietrich, S. Banwart. December CZ Science International Workshop; San Francisco, California, 13-14 December 2014. An International Initiative for Science in the Critical Zone. *EOS - Earth and Space Science News* 96, doi:10.1029/2015EO031111.

2017 Williams, J. Z., S. Dykhoff, J. Pollak, and S. L. Brantley. 2017. ONLINE EXTRA: Bringing the Outdoors In: Application of Hydrogeology Education Tools, *In The Trenches*, 7(4): online.

2017 National Academies of Sciences, Engineering, and Medicine. 2017. *Investigative Strategies for Lead-Source Attribution at Superfund Sites Associated with Mining Activities*. Washington, DC: The National Academies Press. doi: 10.17226/24898 (contributors: Committee on Sources of Lead Contamination at or near Superfund Sites; Board on Environmental Studies and Toxicology; Division on Earth and Life Studies; National Academies of Sciences, Engineering, and Medicine)

2018 Niu, Xianzeng, T. Wen, Z. Li, and S. L. Brantley. 2018. One Step toward Developing Knowledge from Numbers in Regional Analysis of Water Quality. *Environmental Science and Technology* 52(6), 3342-3343. doi: 10.1021/acs.est.8b01035.

2019 Shaughnessy, A. R., T. Wen, X. Niu, and S. L. Brantley. 2019. Three Principles to Use in Streamlining Water Quality Research through Data Uniformity. *Environmental Science and Technology* 53 (23), 13549-13550. doi: 10.1021/acs.est.9b06406.

2020. Brantley, S. L. 2020. The Critical Zone Paradigm – A Personal View, in: Latour, B., Weibel, P. (Eds.), *Critical Zones: The Science and Politics of Landing on Earth*, MIT Press, pp. 138-139.

**Published Datasets**

1. Brantley, Susan L., B. Ketchum, T. White, P. Sullivan. 2013. Susquehanna Shale Hills Critical Zone Observatory Porewater Chemistry (2006). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100233.
2. Brantley, Susan L., R. Ravela, L. Jin, J. Nuester, P. L. Sullivan. 2013. Susquehanna Shale Hills Critical Zone Observatory Porewater Chemistry (2007). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100234.
3. Brantley, Susan L., L. Jin, D. Andrews, G. Holmes, M. Holleran, J. Z. Williams, E. Herndon, P.L. Sullivan. 2013. Susquehanna Shale Hills Critical Zone Observatory Porewater Chemistry (2008). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100235.
4. Brantley, Susan L., L. Jin, D. Andrews, G. Holmes, M. Bhatt, M. Holleran, N. Kaiser, J. Z. Williams, E. Herndon, P.L. Sullivan. 2013. Susquehanna Shale Hills Critical Zone Observatory Porewater Chemistry (2009). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100236.

5. Brantley, Susan L., E. Bazilevskaya, D. Andrews, J. Z. Williams, E. Herndon, G. Holmes, M. Bhatt, M. Holleran, T. Yesavage, E. Thomas, P.L. Sullivan. 2013. Susquehanna Shale Hills Critical Zone Observatory Porewater Chemistry (2010). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100237.

6. Brantley, Susan L., B. Ketchum, T. White, P.L. Sullivan. 2013. Susquehanna Shale Hills Critical Zone Observatory Stream Water Chemistry (2006). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100239.

7. Brantley, Susan L., R. Ravela, L. Jin, J. Nuester, P.L. Sullivan. 2013. Susquehanna Shale Hills Critical Zone Observatory Stream Water Chemistry (2007). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100240.

8. Brantley, Susan L., L. Jin, D. Andrews, G. Holmes, M. Holleran, J. Z. Williams, E. Herndon, C.J. Duffy, P.L. Sullivan. 2013. Susquehanna Shale Hills Critical Zone Observatory Stream Water Chemistry (2008). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100241.

9. Brantley, Susan L., L. Jin, D. Andrews, G. Holmes, M. Bhatt, M. Holleran, N. Kaiser, J. Z. Williams, E. Herndon, C.J. Duffy, P.L. Sullivan. 2013. Susquehanna Shale Hills Critical Zone Observatory Stream Water Chemistry (2009). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100242.

10. Brantley, Susan L., E. Bazilevskaya, D. Andrews, J. Z. Williams, E. Herndon, G. Holmes, M. Bhatt, M. Holleran, T. Yesavage, E. Thomas, C.J. Duffy, P.L. Sullivan. 2010. Susquehanna Shale Hills Critical Zone Observatory Stream Water Chemistry. Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100243.

11. Brantley, Susan L., et al. 2014. Susquehanna Shale Hills Critical Zone Observatory Porewater Chemistry (2011). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100458.

12. Brantley, Susan L., A. L. Dere, T. S. White, R. April, D. Keller, C. Duffy. 2014. New York Weather Station Data (2010). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100459.

13. Brantley, Susan L., A. Dere, T. S. White, R. April, D. Keller, C. Duffy. 2014. New York Weather Station Data (2011). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100460.

14. Brantley, Susan L., A. Dere, T. S. White, R. April, D. Keller, C. Duffy. 2014. New York Weather Station Data (2012). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100461.

15. Brantley, Susan L., A. Dere, T. S. White, R. April, D. Keller, C. Duffy. 2014. New York Weather Station Data (2013). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100462.

16 Brantley, Susan L., A. Dere, T. S. White, M. Wagaw, C. Duffy. 2014. Alabama Weather Station Data (2010). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100463.

17. Brantley, Susan L., A. Dere, T. S. White, M. Wagaw, C. Duffy. 2014. Alabama Weather Station Data (2011). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100464.

18. Brantley, Susan L., A. Dere, T. S. White, M. Wagaw, C. Duffy. 2014. Alabama Weather Station Data (2012). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100465.

19. Brantley, Susan L., A. Dere, T. S. White, M. Wagaw, C. Duffy. 2014. Alabama Weather Station Data (2013). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100466.

20. Brantley, Susan LA., A. Dere, T. S. White, T. Miller, C. Duffy. 2014. Puerto Rico Weather Station Data (2011). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100467.

21. Brantley, Susan L., A. Dere, T. S. White, T. Miller, C. Duffy. 2014. Puerto Rico Weather Station Data (2012). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100468.

22. Brantley, Susan L., A. Dere, T. S. White, T. Miller, C. Duffy. 2014. Puerto Rico Weather Station Data (2013). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100469.

23. Brantley, Susan L., A. Dere, T. S. White, L. McKay, C. Duffy. 2014. Tennessee Weather Station Data (2010). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100470.

24. Brantley, Susan L., A. Dere, T. S. White, L. McKay, C. Duffy. 2014. Tennessee Weather Station Data (2011). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100471.

25. Brantley, Susan L., A. Dere, T. S. White, L. McKay, C. Duffy. 2014. Tennessee Weather Station Data (2012). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100472.

26. Brantley, Susan L., A. Dere, T. S. White, L. McKay, C. Duffy. 2014. Tennessee Weather Station Data (2013). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100473.

27. Brantley, Susan L., A. Dere, T. S. White, E. Knapp, C. Duffy. 2014. Virginia Weather Station Data (2010). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100474.

28. Brantley, Susan L., A. Dere, T. S. White, E. Knapp, C. Duffy. 2014. Virginia Weather Station Data (2011). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100475.

29. Brantley, Susan L., A. Dere, T. S. White, E. Knapp, C. Duffy. 2014. Virginia Weather Station Data (2012). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100476.

30. Brantley, Susan L., A. Dere, T. S. White, E. Knapp, C. Duffy. 2014. Virginia Weather Station Data (2013). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100477.

31. Salehikhoo, Fatemeh, L. Li, S. Brantley. 2014. Effects of Mineral Spatial Patterns on Magnesite Dissolution Rates. Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100494.

32. Brantley, Susan L.,B. Hoagland, P. L. Sullivan, M. Cain, A. Neal, J. Fisher, T. Russo. 2016. Susquehanna Shale Hills Critical Zone Observatory - Shaver's Creek Watershed

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33. Brantley, Susan L., B. Hoagland, B. Forsythe, D. Pederson, T. Russo. 2016. Susquehanna Shale Hills Critical Zone Observatory - Shaver's Creek Watershed Stream Chemistry (2015). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100612.
34. Hoagland, Beth, C. Wayman, B. Forsythe, T. Russo, S. L. Brantley. 2017. Susquehanna Shale Hills Critical Zone Observatory - Shaver's Creek Watershed Stream Chemistry (2016). Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100677.
35. Kim, Hyojin, S. L. Brantley. 2017. Susquehanna Shale Hills Critical Zone Observatory - Sequential filtration of stream and groundwater of the Shale Hills catchment. Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100714.
36. Kim, Hyojin, S. L. Brantley. 2017. Susquehanna Shale Hills Critical Zone Observatory - 2015 high-frequency water chemistry of the Shale Hills catchment. Interdisciplinary Earth Data Alliance (IEDA). doi: 10.1594/IEDA/100715.
37. Kim, Hyojin, S. L. Brantley. 2017. Susquehanna Shale Hills Critical Zone Observatory - 2016 high-frequency water chemistry of the Shale Hills catchment. Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100716.
38. Kim, Hyojin, S. L. Brantley. 2017. Susquehanna Shale Hills Critical Zone Observatory - 2017 high-frequency water chemistry of the Shale Hills catchment. Interdisciplinary Earth Data Alliance (IEDA). doi:10.1594/IEDA/100717.
39. Weitzman, Julie N; Kaye, Jason P; Brantley, Susan L. 2018. Susquehanna Shale Hills Critical Zone Observatory (CZO) - Soil Surface N2O & CO2 Gas Flux Data for 2013, 2014, June 2016. Interdisciplinary Earth Data Alliance (IEDA). doi.org/10.1594/IEDA/100742.

**Educational Modules posted online for the use of undergraduate and graduate teachers through Carleton College**

2016 Brazil, L., S. L. Brantley, J. Z. Williams, S. Pelepko, S. Beattie, K. Homan, and A. Nyblade. Using Methane Concentrations in Streams to Investigate for Potential Leakage of Oil and Gas Wells in Pennsylvania. Data and Model Driven Hydrology Education. http://serc.carleton.edu/hydromodules/units/143615.html.

2016 Brazil, L., S. L. Brantley, J. Z. Williams, S. Pelepko, and S. Beattie. Investigating Chartiers Creek, PA, for Potential Methane Sources, https://serc.carleton.edu/pageset/83/1.

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2016 Brazil, L., S. L. Brantley, J. Z. Williams, S. Pelepko, and S. Beattie. Investigating Sugar Run, Lycoming County for Potential Methane Sources, http://serc.carleton.edu/hydromodules/steps/143751.html.

2017 Dykhoff, S., S. L. Brantley, L. Brazil. The Case of the Muddy Water: Using Authentic Data to Investigate Impacts of Hydrofracturing. Data and Model Driven Hydrology Education. http://serc.carleton.edu/hydromodules/units/caseofthemuddywater.html.

**Published poetry**

2002 Brantley, S. L., **"**Ode to a Geochemist", *Water-Rock Interactions, Ore Deposits, and Environmental Geochemistry, A Tribute to David A Crerar,* Hellmann R. and Wood S. (ed.), The Geochemical Society, Spec. Pub. No. 7, xv-xvii.

**Published Conference Proceedings – Extended Abstracts**

1986 Brantley, S. L., D. A. Crerar, B. Evans. Rates and mechanisms of porosity reduction in quartz: Implications for fluid flow in rocks. *Proceedings Fifth International Conference on Water-Rock Interaction*, Reykjavik, Iceland. 79-82.

1989 Brantley, S. L., D. Voigt. Fluids in metamorphic rocks: Effects of fluid chemistry on quartz microcrack healing. *Proceedings Sixth International Conference on Water-Rock Interaction*, Malvern, England. 113-116.

1992 Brantley, S. L. Kinetics of dissolution and precipitation—experimental and field results, *Proceedings Seventh International Conference on Water-Rock Interaction*, Park City, Utah. 3-6.

1992 Stillings, L. L., S. L. Brantley, M. L. Machesky. Multisite proton adsorption at the feldspar-water interface, *Proceedings Seventh International Conference on Water-Rock Interaction*, Park City, Utah. 69-72.

1992 Agustsdottir, A. M., S. L., Brantley, M. T. Godmundsson, H. Bjornsson. Volatile release rates from the Grimsvotn Volcano, Iceland, *Proceedings Seventh International Conference on Water-Rock Interaction*, Park City, Utah. 465-468.

1992 Shiraki, R., S. L. Brantley. Precipitation kinetics of calcite at elevated temperatures, *Proceedings Seventh International Conference on Water-Rock Interaction*, Park City, Utah. 111-114.

1997 Foster, A.L., G. E. Brown, Jr., G. A. Parks, T. N. Tingle, D. E. Voigt, S. L. Brantley. XAFS determination of As(V) associated with Fe(III) hydroxides in weathered mine tailings and contaminated soil from California, U.S.A., *Proceedings au Journal de Physique III d'avril*, Colloque, Journal Physics of France. Cd-815-816.

1998 Nugent, M., P. Maurice, S. L. Brantley. The field dissolution rate of feldspar in a Pennsylvania (USA) spodsol as measured by atomic force microscopy, *Proceedings Ninth International Conference on Water-Rock Interaction*, New Zealand, 225-229.

1999 Brantley, S. L., L. Liermann, B. Kalinowski, S. Givens, C. G. Pantano, A. Barnes. Abiotic vs. biotic dissolution of hornblende, *Geochemistry of the Earth's Surface*, Armannsson, H. (ed.), Balkema, Rotterdam. 357-359.

2001 Brantley, S. L., M. Bau, S. Yau, B. Alexander. Interpreting kinetics of groundwater-mineral interaction using major element, trace element, and isotopic tracers, *Proceedings Tenth International Conference on Water-Rock Interaction*, Villasimius, Italy, Cidu, R. (ed.), Balkema, Rotterdam. 13-18.

2002 Ruiz, J., R. Mathur, S. Brantley, J. L. Uhrie. Experimental constraints on Cu fractionation in natural environments, *Proceedings Sixth International Symposium on Geochemistry of the Earth's Surface*, Honolulu, Hawaii. 283-285.

2004 Buss, H. L., P. B. Sak, A. F. White, S. L. Brantley. Mineral dissolution at the granite-saprolite interface. *Proceedings Eleventh International Symposium on Water-Rock Interaction*, R. Wanty & R. Seal (eds.), A.A. Balkema Publishers, London 1, 819-823.

2004 Moore J., A. F. White, S. L. Brantley. Effects of giant sequoia on soil chemistry *Proceedings Eleventh International Symposium on Water-Rock Interaction*, R. Wanty & R. Seal (eds.), A.A. Balkema Publishers, London 1, 1341-1345.

2004 Hausrath, E. M., L. J. Liermann, S. L. Brantley. Enhanced dissolution in the presence of methanogens. *Proceedings Eleventh International Symposium on Water-Rock Interactions*, R. Wanty & R. Seal (eds.), A.A. Balkema Publishers, London 1, 1123-1125.

2004 Navarre, A., P. Sak, S. L. Brantley. Processes controlling weathering rind advancement on Costa Rican basalt clasts, *Proceedings Eleventh International Symposium on Water-Rock Interaction*, R. Wanty & R. Seal (eds.), A.A. Balkema Publishers, London 1, 853-857.

2004 Cameron, V., A. Zhang, C. H. House, S. L. Brantley. A search for hydrothermal tungsten ligands, *Proceedings Eleventh International Symposium on Water-Rock Interaction*, R. Wanty & R. Seal (eds.), A.A. Balkema Publishers, London 1, 1269-1273.

2004 Mathur, R., J. Ruiz, L. J . Liermann, S. L. Brantley. Cu isotopic fractionation associated with oxidation of Cu sulfide with and without *T. ferrooxidans. Proceedings Eleventh International Symposium on Water-Rock Interaction*, R. Wanty & R. Seal (eds.), A.A. Balkema Publishers, London 1, 1327-1330.

2004 Neaman, A., J. Chorover, J., S. L. Brantley. The effect of organic ligands on basalt and granite weathering. *Proceedings Eleventh International Symposium on Water-Rock Interaction*, R.Wanty and R. Seal (eds.), A.A. Balkema Publishers, London. 1347-1350.

2004 Zimmerman, A. R., S. L. Brantley, K. G. Goyne, J. Chorover. Investigations of the effects of mineral mesopores on the adsorption and preservation of organic matter. *Proceedings Eleventh International Symposium on Water- Rock Interaction*, R.Wanty and R. Seal (eds.), A.A. Balkema Publishers, London. 1059.

2004 Washton, N. M., R. Fry, K. T. Mueller, S. L. Brantley. Toward a quantitative understanding of reactive surface hydroxyl density in feldspar minerals. *Proceedings Eleventh International Symposium on Water-Rock Interaction* (WRI-11), R. Wanty & R. Seal (eds.), Saratoga Springs NY, 1665-1669.

2010 Dere, A., T. White, L. Jin, D. Harbor, M. Townsend, S. L. Brantley. Shale weathering rates across a continental-scale climosequence. *Nineteenth World Congress of Soil Science, Soil Solutions for a Changing World*, Brisbane Australia. August 1-6, 2010, 27-30.

2011 Niu, X., K. A. Lehnert, J. Williams, S. L. Brantley. CZChemDB and EarthChem: Advancing management and access of Critical Zone geochemical data. *9th International Symposium on Geochemistry of the Earth's Surface (GES-9)*, Boulder Colorado. June 3-7, 2011. *Applied Geochemistry* 26, 5108-5111.

2011 Jin, L., S. L. Brantley. Soil chemistry and shale weathering on a hillslope influenced by convergent hydrologic flow regime at the Susquehanna/Shale Hills Critical Zone Observatory. *Applied Geochemistry* 26, S51-S56.

2011 Chabaux, F., L. Ma, P. Stille, E. Pelt, M. Granet, D. Lemarchand, R. di Chiara Roupert, S. L. Brantley. Determination of chemical weathering rates from U series nuclides in soils and weathering profiles: Principles, applications and limitations. *Applied Geochemistry* 26(1), S20-S23.

2011 Brantley, S. L., H. Buss, M. Lebedeva, R. C. Fletcher, L. Ma. Investigating the complex interface where bedrock transforms to regolith. *Applied Geochemistry* 26, S12-S15.

2011 Ma, L., L. Jin, S. L. Brantley. Geochemical behaviors of different element groups during shale weathering at the Susquehanna/Shale Hills Critical Zone Observatory. *Applied Geochemistry* 26(1), S89-S93.

2011 Herndon, E. M., S. L. Brantley. Movement of manganese contamination through the Critical Zone. *Applied Geochemistry* 26, S40-S43.

2017 Hynek, S., X. Comas, and S. L. Brantley. The effect of fractures on weathering of igneous and volcaniclastic sedimentary rocks in the Puerto Rican tropical rain forest. *Procedia Earth and Planetary Science* 17: 972-975. DOI: 10.1016/j.proeps.2017.01.001

2017 Zheng, G., S. L. Brantley, Z. Li. Contextual Spatial Outlier Detection with Metric Learning, in Proceedings of the 2017 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'17), Halifax, Nova Scotia, Aug. 2017.

**Theses Supervised**

1990 Lee, Vivian: "Fluid Wetting Characteristics of Quartzites" (M.S. co-advised by S.J. Mackwell)

1991 Rowe, Gary: "The Acid Crater Lake System of Poas Volcano, Costa Rica: Geochemistry, Hydrology, and Physical Characteristics" (Ph.D.)

1991 MacInnis, Ian: "Dissolution Kinetics of Calcite and Quartz under Surface Reaction Control" (Ph.D.)

1993 Agustsdottir, Anna: "Volatile Release Rates of Grimsvotn, Volcano, Iceland" (M.S.)

1993 Stillings, Lisa: “Feldspar Surface Chemistry and Dissolution Kinetics” (Ph.D.)

1995 Koepenick, K. W.: “Volatile Emissions from Oldoinyo Lengai Volcano, Tanzania” (M.S.)

1995 Murphy, Sheila F.: “The Weathering of Biotite in a Tropical Forest Soil, Luquillo Mountains, Puerto Rico” (M.S.)

1997 Everett, Mark, “Distribution of Veins in the Kodiak Accretionary Complex” (M.S.)

1997 Nugent, Melissa, “Temporal Evolution of Feldspar Surfaces during the Initial Stages of In-situ Weathering” (M.S.)

1999 Yau, Simmy, “Dissolution Kinetics of Feldspar in the Cape Cod Aquifer, Massachusetts: Calculation of Ground Water Residence Time” (M.S.)

1999 Werner, Cindy, “$CO_2$ Emissions Related to the Yellowstone Volcanic System: Statistical Sampling, Total Degassing, and Transport Mechanisms” (M.S.)

2000 Mellott, Nathan P., “Evolution of Surface Roughness with Aqueous Corrosion of Alkali and Alkaline-Earth Aluminosilicate Minerals and Glasses” (M.S.)

2001 Turner, Benjamin, “Effects of Temperature and Climate on Chemical Weathering in Two Contrasting High-Rainfall Mountainous Catchments” (Ph.D.)

2002 Lewicki, Jennifer, “Soil $CO_2$ Flow along the San Andreas and Calaveras Faults, California” (Ph.D.)

2002 Werner, Cynthia, “$CO_2$ Emissions in Yellowstone, USA, and Solfatara Volcano, Italy: Use of Eddy Coveriance and Mass Flux Modeling” (Ph.D.)

2006 Buss, Heather, **“**Biogeochemical Weathering of Iron-Silicate Minerals” (Ph.D.)

2007 Hausrath, Elizabeth, “Basalt Weathering on Mars” (Ph.D.)

2007 Moore, Joel, “Biogeochemistry of Granitic Weathering” (Ph.D.)

2007 Navarre-Sitchler, Alexis "Weathering advance rates in basalt: prediction and comparison across scales" (Ph.D.)

2008 Williams, Jennifer, “The Effect of Temperature and Precipitation on Sodium Depletion Fronts in Soils Developed on Peoria Loess” (M.S.)

2009 Alexander, Brian W. “Controls on Groundwater Chemistry in the Cape Cod Aquifer, Massachusetts: The Impact of Accessory Mineral Phases on Solute Concentrations, $^{87}Sr/^{86}Sr$, and Rare Earth Element Distributions” (M.S.)

2009 Kimball, Bryn, “Biogeochemical Cycling of Copper in Acid Mine Drainage” (Ph.D.)

2010 Regberg, Aaron B., “The Effect of Dissimilatory Iron Reduction, Nitrate Reduction and Microbial Growth on Electrical Conductivity” (Ph.D.)

2012 Herndon, Elizabeth, “Biogeochemistry of manganese contamination at the Shale Hills CZO” (Ph.D.)

2013 Carter, Megan, “Exploring a 60-year record of manganese deposition in Marietta Ohio using soil chemistry and atmospheric dispersion modeling” (M.S.)

2014 Yesavage, Tiffany, “Chemical and physical weathering in regolith: An investigation of three different Fe-rich sites of varying climate and lithology” (Ph.D)

2014 Dere, Ashlee, “Rates and mechanisms of shale weathering across a latitudinal climosequence” (Ph.D.)

2014 Grieve, Paul L., “Measuring concentrations of dissolved natural gas in three streams in Pennsylvania to estimate methane fluxes from the subsurface” (M.S.)

2014 Orlando, Joseph O., “The anatomy of weathering profiles on different lithologies in the tropical forest of northeastern Puerto Rico: from bedrock to clouds” (M.S.)

2017 Gu, Xin, “Characterizing Structure and Geochemistry of Shale Pores by Neutron Scattering” (Ph.D.)

2018 Hoagland, Nell E. (Beth), “Surface water-sediment interactions: Examples from pristine and contaminated catchments” (Ph.D.)

2018 Wayman, Callum R., “Understanding the effects of hydrologic connectivity, land use, and lithology on water quality across scales: From a zeroth order catchment to a HUC 10 watershed in Susquehanna River Basin” (M.S.)

2019 Woda, Joshua, “Working with citizen scientists and homeowners in Pennsylvania to understand hydrocarbon-related contamination of water resources” (M.S.)

2019 Marcon, Virginia, “The Effect of Lithology on (Bio)geochemical Weathering: Sandstone to Serpentinite” (Ph.D.)

2020 Reinthal, Mary, “Utilizing 234U/238U and 87Sr/86Sr to Understand the Provenance and fate of Uranium in Shaver’s Creek, Pennsylvania “ (M.S.)

2021 Forgeng, Michael, “Investigating Nitrate Transport and Denitrification in Hilly Terrain from the Scale of a Single Farm Field to a HUC-10 Watershed” (M.S.)

2021 Hodges, C., “Interactions between Minerals, Oxygen, and Carbon Dioxide in the Critical Zone” (Ph.D., Soil Science and Biogeochemistry)

**Scientific Workshops or Symposia Organized**

1991 Brantley, S. L., A. White (organizers). Geochemical kinetics: Field vs. laboratory rates, special Geochemical Society-sponsored session at the Geol. Society of America Annual Meeting, (27 papers presented). Fall ‘91.

1992 Brantley, S. L., C. M. Eggleston (organizers). Structure, bonding, and kinetics at mineral surfaces, sponsored by Geochemistry Division for the National Meeting of the American Chemical Society, special session (35 papers presented). Spring ‘92.

1993 Brantley, S. L., P. Heaney (organizers). Interactions between the Geosphere and Biosphere. A Symposium Honoring the Life and Career of David A. Crerar. Princeton University, (6 invited speakers). May ’93.

1993 Brantley, S. L., B. Dutrow, J. Selverstone (organizers). Fluids and Fluid Flow in the Crust. Symposium at the Geological Society of America Annual meeting. Fall ’93.

1995 Brantley, S. L., A.F. White (organizers). Chemical Weathering Rates of Silicate Minerals, Mineralogical Society of America Short Course, Fall ‘95.

2002 Brantley, S. L. Geomicrobiology, Geochemistry of the Earth’s Surface, Hawaii, May ’02.

2004 Brantley, S. L. (Secretary General WRI 11). Proceedings Eleventh International Symposium on Water-Rock Interaction, Working Group of the International Association of Geochemistry and Cosmochemistry, June ’04.

2005 Brantley, S. L. WSSC Workshop, The Critical Zone Exploration Network: A Tool for Understanding Earth’s Weathering Engine, Arlington, Va. January 24-26 2005.

2005 Brantley, S. L. The Earth’s Weathering Engine: Coupling Chemical Weathering with Physical Erosion, Biology, Hydrology and Climate, Goldschmidt Conference, May 19-23, 2005.

2005 Brantley, S. L., T.S. White. The Critical Zone Exploration Network: A Tool for Understanding Earth’s Weathering Engine, AGU Fall Meeting, October 24-26, 2005.

2007 Hausrath, E., S. L. Brantley, J. Michalski. Chemical and physical weathering of basalt on the Earth, Moon, and Mars, Goldschmidt Conference.

2009 Brantley, S. L., P. Megonigal, F. Scatena. Frontiers in Exploration of the Critical Zone II: The Geobiology of Weathering and Erosion, an NSF-Sponsored Workshop, Washington, DC, October 5-7, 2009.

2012 Brantley, S. L., Vidic, R., Gonzales, M., Williams, J., Yoxtheimer, D. 2012 Shale Network Workshp, The Pennsylvania State University, April 23-24, 2012, 41 participants.

2013 Brantley, S. L., Vidic, R., Gonzales, M., Williams, J., Yoxtheimer, D. Shale Network Workshop, The Pennsylvania State University, May 19-20, 2013, 65 participants.

2013 Member of National Research Council Steering Committee on the "Development of Unconventional Hydrocarbon Resources in the Appalachian Basin: A Workshop." West Virginia University, September 9-10, 2013.

2014 Brantley, S. L., Vidic, R., Gonzales, M., Williams, J., Yoxtheimer, D. Shale Network Workshop, The Pennsylvania State University, May 12-13, 2014, 80 particapants.

2015 Brantley, S. L., Vidic, R., Gonzales, M., Williams, J., Yoxtheimer, D. Shale Network Workshop: Lessons Learned about Water Issues in the Northeastern Region of Shale Gas Development, The Pennsylvania State University, May 7-8, 2015, 80 particapants.

2016 Brantley, S. L., Vidic, R., Gonzales, M., Williams, J., Yoxtheimer, D. Shale Network Workshop: Science and cooperation around water quality data and legacy wells in shale gas basins, The Pennsylvania State University, May 19-20, 2016, 97 participants.

2017 Brantley, S. L., Vidic, R., Gonzales, M., Williams, J., Yoxtheimer, D. Shale Network Workshop: Sharing data about shale gas development from drilling to disposal, The Pennsylvania State University, May 18-19, 2017, 107 participants.

2018 Brantley, S. L., Vidic, R., Gonzales, M., Williams, J., Yoxtheimer, D. Shale Network Workshop: Integrating data about shale gas development: Toward a more collaborative future, The Pennsylvania State University, May 17-18, 2018.

2019 Brantley, S. L., Vidic, R., Baka, J., Yoxtheimer, D. Shale Network Workshop: Monitoring Communities and their Environment, The Pennsylvania State University, May 16-17, 2019.

**National Committees**

| | |
|---|---|
| 1995 | Member, National Research Council Committee for Yucca Mountain Peer Review: Surface Characteristics, Preclosure Hydrology, and Erosion |
| 2001-03 | Member, National Research Council Committee on Long-Term Institutional Management of DOE Legacy Waste Sites: Phase 2 |
| 2003-06 | Member, Advisory Committee for Directorate of Geosciences, National Sciences Foundation |
| 2004 | Member, NSF Committee of Visitors to review EAR Instrumentation and Facilities program |
| 2005 | Chair, NSF Committee of Visitors to review EAR Surface Earth Processes |
| 2005-07 | Vice-chair of the Earth Sciences Policy and Research in Space Solid-Earth Panel established to write the Solid-Earth Contribution to the "Earth Science Applications from Space: A Community Assessment and Strategy for the Future" (Decadal Study) |
| 2005-07 | Member, NRC Space Studies Board Panel, Astrobiology Strategy for the Exploration of Mars |
| 2007-10 | Member of the National Research Council Committee on Challenges and Opportunities in Earth Surface Science |
| 2008-15 | Member, Department of Energy, Council on Earth Sciences (Chair, 2013- 2015) |
| 2012-pres | Member, U.S. Nuclear Waste Technical Review Board |
| 2013-16 | Member, U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Hydraulic Fracturing Advisory Panel, March 2013- 2016 |

2013-18 Member, National Academy of Sciences, Engineering, and Medicine Roundtable on Unconventional Hydrocarbon Development

2016-17 National Research Council's (NRC) Committee on Sources of Lead Contamination at or near Superfund Sites

2017 Member, Drilling, Observation, and Sampling of the Earth's Continental Crust (DOSECC)

2018-20 National Research Council's Committee, Review of the USGS Laboratories: Processes, Procedures, and Best Practices to Meet National Needs, May 2018 – November 2020

**Professional Societies and Service to Scientific Community**

The Geochemical Society: Nominations Committee, member, 1990-1992; Chair of Nominations Committee, 1992-1993; Member of Board of Councilors (Directors) of the Society, 1995-1998; Publications Committee, 1999-2002; Vice President, 2004-2005, and President, 2006-2007; Past-President 2008-2009; Publications Advisory Committee, 2012-2013.

Participated in National Academies of Science Frontiers of Science, 1997.

Organized the National Academies of Science Frontiers of Science, 1998.

Served as outside reviewer for "Research Needs in Subsurface Science," publication by the National Research Council reviewing the U.S. Dept. of Energy's Environmental Management Science Program, 1999.

Project Partner, SoilTrEC (Soil Transformations in European Catchements), coordinated through the University of Sheffield (UK), 2009-present.

Associated Partner, EU Isotopes and Weathering Network, 2010-2017.

Member, Scientific Advisory Committee, Swedish Strong Research Environment *Quantifying Rates for Sustainable Forestry* (QWARTS), 2012-2016

Member, Steering Committee, IGERT National Recruitment Program Advisory Committee (committee to enhance diversity within IGERT programs nationally)

Secretary General for WRI 11 (Water-Rock Interaction Working Group of the International Association of Geochemistry and Cosmochemistry), 2004-2007.

Manuscript reviewer for: *Geochimica Cosmochimica Acta, Geology, Chemical Geology*, *Science*, *Water Resources Research*, as well as other journals

Reviewer of grant proposals for National Science Foundation, Petroleum Research Fund, Department of Energy, NASA, and other agencies here and in Europe

DOE Science Review Panel Member, Natural and Accelerated Bioremediation Interdisciplinary Research Program, 2003

DOE Science Review Panel Chair, Environmental Molecular Science Program, July 2005

NSF Earth Sciences Postdoctoral program reviewer

NSF Environmental Geochemistry and Biogeochemistry Program (EGB), served as panelist

DOE Biological and Environmental Research Advisory/COV Panel, 2007

Penrose Medal Award Selection Committee, Geological Society of America, 2011-14

Arthur L. Day Medal Award Committee, Geological Society of America, 2017-2020.

Recipient, "Certificate of Recognition" from the American Chemical Society Petroleum Research Fund for outstanding contribution to the grant review process, 2019

Non-voting Advisor, Oil and Gas Technical Advisory Board (TAB), Pennsylvania Department of Environmental Protection, 2019 – present

EAG Urey Award Committee, July 2021 – June 2024

Fellow, American Geophysical Union

Fellow, Geological Society of America
Fellow, Geochemical Society
Fellow, European Association of Geochemistry
Fellow, International Association of GeoChemistry
Member, American Chemical Society
Member, American Women in Science
Member, Association for Women Geoscientists,
Member, Crop and Soil Science Society of America

**Editorial Activities**

Assistant Editor for *Chemical Geology*, 1/89 - 1/91
Editor for *Chemical Geology*, 10/91-7/00
Editorial board for *Geofluids*, 10/1999-5/2016
Editorial board for *Chemical Geology*, 7/00-3/16
Editorial Board for $G^3$, 10/00 to 9/15
International Advisory Board, *Earth Surface Processes and Landforms*, 4/2014- 3/2019
Editorial Advisory Board for *Earth Surface Processes and Landforms*, 1/14 to present
Editorial Advisory Board for *Geobiology*, 6/02-present

**Summary of Research Interests**

Water-rock interaction; critical zone science; soil geochemistry and weathering; geomicrobiology; water quality issues related to shale gas development; measurement of the kinetics of dissolution and precipitation of minerals in the laboratory and in the field; surface chemistry of minerals; environmental water problems and biogeochemical cycles; fluid-volcano interactions; volcanic release of volatiles.

**Undergraduate and Graduate Courses Taught**
Earth 100 (Environment Earth), Geosciences 4 (Rocks and Minerals), Geosciences 201 (Earth Materials), Geosciences 303 (Environmental Geology), Geosciences 413W (Techniques in Environmental Geochemistry), Geosciences 522 (Geochemistry of Aqueous Systems), Geosciences 523 (Sedimentary Geochemistry), Geosciences 560 (Kinetics of Geochemical Systems), Geosciences 589 (Aqueous Geochemistry Seminar), Geosciences 589 (Geochem Seminar), Geosciences 597 (Fluids in the Earth), Geosciences 597 (Biogeochemical Analysis), Geosciences 597 (Trees in the Critical Zone).