

BENJAMIN GILL

Assistant Professor
Virginia Polytechnic Institute
4044 Derring Hall (420)
Blacksburg, VA 24061
E-mail: bcgill@vt.edu

EDUCATION

PhD. Geological Sciences, University of California, Riverside, 2009.

B.S. Geological Sciences, Magna Cum Laude (with Departmental Honors),
University of Missouri, Columbia, Missouri, 2004.

PROFESSIONAL EXPERIENCE

2012 - present	Assistant Professor, Virginia Polytechnic Institute
2011 - 2012	Postdoctoral Fellow, Harvard University
2009 - 2011	Visiting Postdoctoral Fellow, Harvard University
2005 -2009	Teaching Assistant and Research Assistant, University of California-Riverside
2004-2005	Teaching Assistant and Research Assistant, University of Missouri

ACADEMIC HONORS AND AWARDS

- Virginia Tech Scholar of the Week, 2/14/2016
- Kavli Fellow, selected 2015
- Agouron Postdoctoral Fellowship, 2009-2011
- Blanchard Fellowship, UC-Riverside, 2009
- Geochemical Society Travel Grant, 2009
- Geological Society of America Travel Grant, 2007
- Department of Earth Science Fellowship, UC-Riverside, 2006
- Phi Beta Kappa, inducted 2004
- Geological Society of America Travel Grant, 2004
- Clayton H. Johnson Memorial Scholarship, University of Missouri, 2003
- Boyd Scholarship, University of Missouri, 2002-2004
- McNutt Scholarship, University of Missouri-Rolla 2000-2001

PUBLICATIONS (*student publication from research group)

2017

Bykova, N., **Gill, B.C.**, Grazhdankin, D., Rogov, V., Xiao, S., 2017. A geochemical study of the Ediacaran discoidal fossil *Aspidella* preserved in limestones: Implications for its taphonomy and paleoecology. *Geobiology*, 6, 465–16.
<http://doi.org/10.1111/gbi.12240>

Dahl, T.W., Connelly, J.N., Kouchinsky, A., **Gill, B.C.**, Månsson, S.F., Bizzarro, M., 2017. Reorganisation of Earth's biogeochemical cycles briefly oxygenated the oceans 520 Myr ago. *Geochemical Perspective Letters*, 3, 210–220.
<http://doi.org/10.7185/geochemlet.1724>

Dickson, A.J., **Gill, B.C.**, Ruhl, M., Jenkyns, H.C., Porcelli, D., Idiz, E., Lyons, T.W., van den Boorn, S.H.J.M., 2017. Molybdenum-isotope chemostratigraphy and paleoceanography of the Toarcian Oceanic Anoxic Event (Early Jurassic). *Paleoceanography*, 32. <http://doi.org/10.1002/2016PA003048>

Hardisty, D.S., Lu, Z., Bekker, A., Diamond, C.W., **Gill, B.C.**, Jiang, G., Kah, L.C., Knoll, A.H., Loyd, S.J., Osburn, M.R., Planavsky, N.J., Wang, C., Zhou, X., Lyons, T.W., 2017. Perspectives on Proterozoic surface ocean redox from iodine contents in ancient and recent carbonate. *Earth and Planetary Science Letters*, 463, 159–170.
<http://doi.org/10.1016/j.epsl.2017.01.032>

Ma, B., Cao, Y., Eriksson, K. A., Jia, Y., **Gill, B.C.**, 2017. Depositional and diagenetic controls on deeply-buried Eocene sublacustrine fan reservoirs in the Dongying Depression, Bohai Bay Basin, China. *Marine and Petroleum Geology*, 82, 297–317.
<http://doi.org/10.1016/j.marpetgeo.2017.02.014>

Martindale, R.C., Them, T.R., II, **Gill, B.C.**, Marroquín, S.M., Knoll, A.H., 2017. A new Early Jurassic (ca. 183 Ma) fossil Lagerstätte from Ya Ha Tinda, Alberta, Canada. *Geology*, G38808.1–4. <http://doi.org/10.1130/G38808.1>

Them, T.R. II*, **Gill, B.C.**, Selby, D., Gröcke, D.R., Friedman, R.M., Owens, J.D., 2017. Evidence for rapid weathering response to climatic warming during the Toarcian Oceanic Anoxic Event. *Scientific Reports*, 7(1), 9776–10.
<http://doi.org/10.1038/s41598-017-05307-y>

Them, T. R. II*, **Gill, B.C.**, Caruthers, A. H., Gröcke, D. R., Tulskey, E. T., Martindale, R. C., Poulton, T.P., Smith, P.L., 2017. High-resolution carbon isotope records of the Toarcian Oceanic Anoxic Event (Early Jurassic) from North America and implications for the global drivers of the Toarcian carbon cycle. *Earth and Planetary Science Letters*, 459, 118–126. <http://doi.org/10.1016/j.epsl.2016.11.021>

Reinhard, C.T., Planavsky, N.J., **Gill, B.C.**, Ozaki, K., Robbins, L.J., Lyons, T.W., Fischer, W.W., Wang, C., Cole, Konhauser, K.O., 2017. Evolution of the global phosphorus cycle. *Nature*, 541, 386–389. <http://doi.org/10.1038/nature20772>

Wang, Z., Wang, J., Kouketsu, Y., Bodnar, R.J., **Gill, B.C.**, Xiao, S., 2017. Raman geothermometry of carbonaceous material in the basal Ediacaran Doushantuo cap dolostone: the thermal history of extremely negative $\delta^{13}\text{C}$ signatures in the aftermath of the terminal Cryogenian snowball Earth glaciation. *Precambrian Research*, 298, 174-186. <https://doi.org/10.1016/j.precamres.2017.06.013>

2016

Gerhardt, A.M. *, **Gill, B.C.**, 2016. Elucidating the relationship between the later Cambrian end-Marjuman extinctions and SPICE Event. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 461, 362–373. <http://doi.org/10.1016/j.palaeo.2016.08.031>

Ma, B., Eriksson, K.A., Cao, Y., Jia, Y., Wang, Y., **Gill, B.C.**, 2016. Flow and related diagenetic processes in a rift basin: Evidence from the fourth member of the Eocene Shahejie Formation interval, Dongying depression, Bohai Bay Basin, China. *AAPG Bulletin*, 100, 1633–1662. <http://doi.org/10.1306/04211615207>

Robbins, L. J., Lalonde, S. V., Planavsky, N. J., Partin, C. A., Reinhard, C. T., Kendall, B., Scott, C., Hardisty, D.S., **Gill, B.C.**, Alessi, D.S., Dupont, C.L., Saito, M.A., Crowe, S.A., Poulton, S.W. Bekker, A., Lyons, T.W., Konhauser, K.O., 2016. Trace elements at the intersection of marine biological and geochemical evolution. *Earth Science Reviews*, 163, 323–348. <http://doi.org/10.1016/j.earscirev.2016.10.013>

Schwarzenbach, E.M., **Gill, B.C.**, Gazel, E., Madrigal, P., 2016. Sulfur and carbon geochemistry of the Santa Elena peridotites: Comparing oceanic and continental processes during peridotite alteration. *Lithos*, 252-253, 92–108. <http://doi.org/10.1016/j.lithos.2016.02.017>

Wang, X., Planavsky, N. J., Reinhard, C. T., Zou, H., Ague, J. J., Wu, Y., **Gill, B.C.**, Schwarzenbach, E.M., Peucker-Ehrenbrink, B., 2016. Chromium isotope fractionation during subduction-related metamorphism, black shale weathering, and hydrothermal alteration. *Chemical Geology*, 423, 19–33. <http://doi.org/10.1016/j.chemgeo.2016.01.003>

Young, S.A., **Gill, B.C.**, Edwards, C.T., Saltzman, M.R., Leslie, S.A., 2016. Middle–Late Ordovician (Darrivilian–Sandbian) decoupling of global sulfur and carbon cycles: Isotopic evidence from eastern and southern Laurentia. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 458, 118–132. <http://doi.org/10.1016/j.palaeo.2015.09.040>

2015

Rohrssen, M., **Gill, B.C.**, Love, G.D., 2015. Scarcity of the C-30 sterane biomarker, 24-n-propylcholestane, in Lower Paleozoic marine paleoenvironments. *Organic Geochemistry*, 80, 1-7. <http://doi.org/10.1016/j.orggeochem.2014.11.008>

Sperling, E.A., Wolock, C.J., Morgan, A.S., **Gill, B. C.**, Kunzmann, M., Halverson, G.P., Macdonald, F.A., Knoll, A.H., Johnston, D.T., 2015. Statistical analysis of iron geochemical data suggests limited late Proterozoic oxygenation. *Nature*, 523, 451–454. <http://doi.org/10.1038/nature14589>

2014

Chappaz, A., Lyons, T.W., Gregory, D.D., Reinhard, C.T., **Gill, B.C.**, Li, C., Large, R.R., 2014. Does pyrite act as an important host for molybdenum in modern and ancient euxinic sediments? *Geochimica Et Cosmochimica Acta*, 126, 112–122. <http://doi.org/10.1016/j.gca.2013.10.028>

Dahl, T.W., Boyle, R.A., Canfield, D.E., Connelly, J.N., Gill, B.C., Lenton, T.M., Bizzarro, M., (2014). Uranium isotopes distinguish two geochemically distinct stages during the later Cambrian SPICE event. *Earth and Planetary Science Letters*, 401, 313–326. <http://doi.org/10.1016/j.epsl.2014.05.043>

Formolo, M.J., Riedinger, N., **Gill, B.C.**, 2014. Geochemical evidence for euxinia during the Late Devonian extinction events in the Michigan Basin (U.S.A.). *Palaeogeography, Palaeoclimatology, Palaeoecology*, 414, 146–154. <http://doi.org/10.1016/j.palaeo.2014.08.024>

Johnston, D., **Gill, B.C.**, Masterson, A. Beirne, E., Casciotti, K., Berelson, W., (2014) Placing an upper limit on cryptic marine sulphur cycling. *Nature*, 513, 530-533. <http://doi.org/10.1038/nature13698>

McKenzie, N.R., Hughes, N. C., **Gill, B.C.**, Myrow, P.M., 2014. Plate tectonic influences on Neoproterozoic-early Paleozoic climate and animal evolution. *Geology*, 42, 127–130. <http://doi.org/10.1130/G34962.1>

Meyer, M., Xiao, S., **Gill, B.C.**, Schiffbauer, J.D., Chen, Z., Zhou, C., Yuan, X. (2014) Interactions between Ediacaran animals and microbial mats: Insights from *Lamonte trevallisi*, a new trace fossil from the Dengying Formation of South China. *Palaeogeography, Palaeoclimatology, Palaeoecology* v. 396, p. 62-74. <http://doi.org/10.1016/j.palaeo.2013.12.026>

Sánchez-Murillo, R., Gazel, E., Schwarzenbach, E.M., Crespo-Medina, M., Schrenk, M.O., Boll, J., **Gill, B.C.**, 2014. Geochemical evidence for active tropical serpentinization in the Santa Elena Ophiolite, Costa Rica: An analog of a humid early Earth? *Geochemistry Geophysics Geosystems*, 15, 1783–1800. <http://doi.org/10.1002/2013GC005213>

2013

Creveling, J.R. Remolar, D.F., Rodríguez-Martínez, M., Menéndez, S., Bergmann, K.D., **Gill, B.C.**, Abelson, J., Amils, R., Ehlmann, B.L., García-Bellido, D.C., Grotzinger, J.P., Hallmann, C., Stack, K.M., Knoll, A.H. (2013). Geobiology of a lower Cambrian carbonate platform, Pedroche Formation, Ossa Morena Zone, Spain. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 386, 459–478. <http://doi.org/10.1016/j.palaeo.2013.06.015>

Owens, J. D., **Gill, B. C.**, Jenkyns, H. C., Bates, S., Severmann, S., Kuypers, M. M. M., Woodfine, R.G., Lyons, T.W. (2013). Sulfur isotopes track the global extent and dynamics of euxinia during Cretaceous Oceanic Anoxic Event 2. *Proceedings of the National Academy of Sciences*, 110, 18407–18412. <http://doi.org/10.1073/pnas.1305304110>

Reinhard, C.T., Planavsky, N.J., Robbins, L.J., Partin, C.A., **Gill, B.C.**, Lalonde, S.V., Bekker, A., Konhauser, K.O., Lyons, T.W., (2013). Proterozoic ocean redox and biogeochemical stasis. *Proceedings of the National Academy of Sciences*, v. 110, 5357–5362. <http://doi.org/10.1073/pnas.1208622110>

2012

Johnston, D.T., Macdonald, F.A., **Gill, B.C.**, Hoffman, P.F., Schrag, D.P., (2012), Uncovering the Neoproterozoic carbon cycle. *Nature* 483, 320–323. <http://doi.org/10.1038/nature10854>

Mitchell, K., Mason, P.R.D., Van Cappellen, P., Johnson, T.M., **Gill, B.C.**, Owens, J.D., Diaz, J., Ingall, E.D., Reichart, G.-J., Lyons, T.W., (2012), Selenium as paleo-oceanographic proxy: A first assessment. *Geochimica et Cosmochimica Acta* v. 89, p. 302–317. <http://doi.org/10.1016/j.gca.2012.03.038>

Partin, C.A., Bekker, A., Planavsky, N.J., Scott, C.T., **Gill, B.C.**, Li, C., Podkovyrov, V. Maslov, A., Konhauser, K.O., Lalonde, S.V., Love, G.D., Poulton, S.W., Lyons, T.W., (2012). Large-scale fluctuations in Precambrian atmospheric and oceanic oxygen levels from the record of U in shales. *Earth and Planetary Science Letters* v. 369–370, p. 284–293. <http://doi.org/10.1016/j.epsl.2013.03.031>

Scott, C., Planavsky, N.J., Dupont, C.L., Kendall, B., **Gill, B.C.**, Robbins, L.J., Husband, K.F., Arnold, G.L., Wing, B.A., Poulton, S.W., Bekker, A., Anbar, A.D., Konhauser, K.O., Lyons, T.W., (2012), Bioavailability of zinc in marine systems through time. *Nature Geosciences* v. 6, p. 125–128. <http://doi.org/10.1038/ngeo1679>

2011

Gill, B.C., Lyons, T.W., Jenkyns, H.C., (2011). A global perturbation to the sulfur cycle during the Toarcian Oceanic Anoxic Event. *Earth and Planetary Science Letters* v. 312 p. 484–496. <http://doi.org/10.1016/j.epsl.2011.10.030>

Gill, B.C., Lyons, T.W., Young, S.A., Kump, L.R., Knoll, A.H., Saltzman, M.R. (2011). Geochemical evidence for widespread euxinia in the Later Cambrian ocean. *Nature* v. 469 p. 80-83. <http://doi.org/10.1038/nature09700>

Saltzman, M.R., Young, S.A., Kump, L.R., **Gill, B.C.**, Lyons, T.W., Runnegar, B., (2011). Pulse of atmospheric oxygen during the late Cambrian. *Proceedings of the National Academy of Science* v. 108, p. 3876-3881. <http://doi.org/10.1073/pnas.1011836108>

2010

Dahl, T.W., Hammarlund, E.U., Anbar, A.D., Bond, D.P.G., **Gill, B.C.**, Gordon, G.W., Knoll, A.H., Nielsen, A.T., Schovsbo, N.H., Canfield, D.E., (2010). Devonian rise in atmospheric oxygen correlated to the radiations of terrestrial plants and large predatory fish. *Proceedings of the National Academy of Sciences*. v.107 p. 17911-17915. <http://doi.org/10.1073/pnas.1011287107>

Lyons, T.W., **Gill, B.C.**, (2010). Ancient Sulfur Cycling and Oxygenation of the Early Biosphere. *Elements* v. 6 p. 93-99. <http://doi.org/10.2113/gselements.6.2.93>

2009

Lyons, T.W., **Gill, B.C.**, (2009). The worm turned, and the ocean followed. *Proceedings of the National Academy of Sciences* v. 106 p. 8081-8082. <http://doi.org/10.1073/pnas.0903380106>

Lyons, T.W., Anbar, A.D., Severmann, S., Scott, C., **Gill, B.C.**, (2009). Tracking Euxinia in the Ancient Ocean: A Multiproxy Perspective and Proterozoic Case Study. *Annual Review of Earth and Planetary Sciences* v. 37 p. 507-534. <http://doi.org/10.1146/annurev.earth.36.031207.124233>

2008

Gill, B.C., Lyons, T.W., Frank, T., (2008), Behavior of carbonate-associated sulfate during meteoric diagenesis and implications for the sulfur isotope paleoproxy. *Geochimica et Cosmochimica Acta*, 72, 4699–4711. <http://doi.org/10.1016/j.gca.2008.07.001>

2007

Gill, B.C., Lyons, T.W., Saltzman, M.R., (2007), Parallel, high-resolution carbon and sulfur isotope records of the evolving Paleozoic marine sulfur reservoir. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 256, 156-173. <http://doi.org/10.1016/j.palaeo.2007.02.030>

INVITED SEMINARS

Department of Earth, Ocean and Atmospheric Science, Florida State University, 2017
Department of Geology and Geophysics, Yale University, 2016
Department of Geology & Environmental Science, James Madison University, 2015
Department of Geological Sciences, University of Indiana, 2013
Department of Geology, University of Maryland, 2012
Geophysical Laboratory, Carnegie Institution for Science, 2012

INVITED CONFERENCE PRESENTATIONS

Gill, B.C., Them II, T.R. (2015). The Global Record of the Toarcian Ocean Anoxic Event: Perspectives from the Eastern Panthalassic Ocean. 2015 Fall Meeting, AGU, San Francisco, California, 14-18 Dec.

Gill, B.C., Lyons, T.W., Young, S.A., Kaljo, D., Saltzman, M.R., (2014). Sulfur isotope evidence for Late Ordovician ocean oxygenation: Implications for the drivers of the Hirnantian Extinction. GSA Annual Meeting, Vancouver British Columbia, Canada.

Gill, B.C., Owens, J.D., Them, T., Jenkyns, H. C., Lyons, T.W., (2013). A refined investigation into the sulfur and iron cycles during the Toarcian OAE. AGU Annual Meeting, San Francisco.

Gill, B.C., Lyons, T.W., Young, S., Kaljo, D., Saltzman, M.R., (2012). Sulfate sulfur isotope stratigraphy reveals a record of ocean ventilation during the Latest Ordovician AGU Annual Meeting, San Francisco.

Gill, B.C., Lyons, T.W., Johnston, D.T., Saltzman, M.R., Knoll, A.H., (2012). Persistence of widespread marine anoxia after Neoproterozoic oxygenation and its effect on early animal evolution and fossil preservation. GSA Annual Meeting, Denver.

Gill, B.C., Lyons, T.W., Dahl, T., Saltzman, M., Gordon, G., Anbar, A., (2009). Multiple geochemical proxies reveal a Late Cambrian ocean anoxic event. *Geochimica et Cosmochimica Acta* v. 73. p A436.

Gill, B.C., Lyons, T.W., Young, S., Kump, L., Saltzman, M., (2008). Geochemical Evidence for Widespread Reducing Ocean during the Middle to Late Cambrian. GSA, ASA-CSSA-SSSA, GCAGS, Joint Annual Meeting-Houston.

CONFERENCE ABSTRACTS (*Denotes student presenter)

2016

Dahl T.W., Connelly J.N., Kouchinsky A., **Gill B.C.**, Maansson S.F., Bizzarro M., (2016). Reorganization of Earth's Biogeochemical Cycles Briefly Oxygenated the Oceans 520 Myr ago. 28th Annual Goldschmidt Conference in Yokohama, Japan (26th June-1st July) Goldschmidt Abstracts p. 583

Dickson, A., **Gill, B.**, Al-Suwaidi, A, Ruhl, M., Jenkyns, H., Porcelli, D., Lyons, T., van den Boorn, S., (2016). Molybdenum-Isotope Chemostratigraphy of the Toarcian Oceanic Anoxic Event. 28th Annual Goldschmidt Conference in Yokohama, Japan (26th June-1st July) Goldschmidt Abstracts p. 666.

Gill, B.C., Them II, T.R. (2016). Reexamining the carbon cycle during the Toarcian Oceanic Anoxic Event. GSA Annual Meeting in Denver, Colorado, USA (25-28 September 2016) Geological Society of America Abstracts with Programs v. 48 <http://doi.org/10.1130/abs/2016AM-286429>

Hancock, L., Lyons, T., Behl, R., **Gill B.**, Redox Variation and Nutrient Controls on Organic Carbon Deposition of the Miocene Monterey Formation. 28th Annual Goldschmidt Conference in Yokohama, Japan (26th June-1st July) Goldschmidt Abstracts p. 1045.

LeRoy, M.A.* , **Gill, B.C.**, (2016). Evidence for the development of anoxia during the Cambrian SPICE event from the Nolichucky and Eau Claire Formations of Kentucky and Ohio, USA. GSA Annual Meeting in Denver, Colorado, USA (25-28 September 2016) Geological Society of America Abstracts with Programs v. 48 <http://doi.org/10.1130/abs/2016AM-286081>

Martindale, R.C., Aberhan, M., Them II, T.R., **Gill, B.C.**, Caruthers, A., Marroquín, S.M., (2016). Evolutionary and ecological dynamics of marcobenthic communities across the Toarcian Oceanic Anoxic Event in Northeast Panthalassa (Ya Ha Tinda, Alberta, Canada). GSA Annual Meeting in Denver, Colorado, USA (25-28 September 2016) Geological Society of America Abstracts with Programs v. 48 <http://doi.org/10.1130/abs/2016AM-280253>

Owens, J.D., Ostrander, C.M., Nielsen, S.G., Reinhard, C.T., **Gill, B.C.**, Lowery, C.M., Love, G.D., Rohrssen, M., Hardisty, D.S., Lu, Zunli, Jenkyns, H.C., Lyons, T.W., (2016). The stepwise evolution of marine de-oxygenation during a Cretaceous OAE 2. GSA Annual Meeting in Denver, Colorado, USA (25-28 September 2016) Geological Society of America Abstracts with Programs v. 48, <http://doi.org/10.1130/abs/2016AM-286244>

Reinhard, C.T., Planavsky, N.J., **Gill, B.C.**, Robbins, L.J., Lyons, T.W., Fischer, W.W., Wang, C., Cole, D.B., Konhauser, K.O., (2016). Evolution of Earth's Phosphorus Cycle. 28th Annual Goldschmidt Conference in Yokohama, Japan (26th June-1st July) Goldschmidt Abstracts p. 2607.

Tang, T., Love, G., Zumberge, A., Reinhard, C., Dupont, C., Asael, D., Rooney, A., Owens, J., **Gill, B.**, Rainbird, R., McCrow, J., Lyons, T., Planavsky, N., (2016). Tracking the Rise of Eukaryotes to Ecological Dominance with Zinc Isotopes. 28th Annual Goldschmidt Conference in Yokohama, Japan (26th June-1st July) Goldschmidt Abstracts p. 3076.

Them II, T.R.*, **Gill, B.C.**, Grove, H.L., Selby, D., Gröcke, D.R., Owens, J.D., (2016). Geochemical evidence for persistent anoxia in Earth Panthalassa during the Early Jurassic. GSA Annual Meeting in Denver, Colorado, USA (25-28 September 2016) Geological Society of America Abstracts with Programs v. 48, p. 638. <http://doi.org/10.1130/abs/2016AM-285362>

Them, T.*, Selby, D., **Gill, B.**, Gröcke, D., (2016). Re and Os Evidence of Widespread Anoxia and Increased Continental Weathering during the Toarcian Oceanic Anoxic Event. 28th Annual Goldschmidt Conference in Yokohama, Japan (26th June-1st July) Goldschmidt Abstracts p. 3115.

2015

Bykova, N., **Gill, B.C.**, Gradzhdankin, D., Xiao, S., (2015). Using geochemical tools to study Ediacaran macroorganisms from the Khatyspyt Formation, Olenek Uplift, Siberia. GSA Annual Meeting in Baltimore, Maryland, USA (1-4 November 2015) Geological Society of America Abstracts with Programs v. 47, p. 638.

Hancock, L., Lyons, T., Paris, G., Adkins, J., **Gill, B.**, Frank, T., Shapiro, R., (2015). Unraveling Microbial Paleorates and Burial History of Methane-Derived Carbonates Using Novel Approaches. 27th Annual Goldschmidt Conference in Prague, Czech Republic (16-21 August 2015) Goldschmidt Abstracts p. 1167.

Hardisty, D., Lu, Z., Swart, P., Planavsky, N., **Gill, B.**, Loyd, S., Lyons, T., (2015). Assessing potential diagenetic alteration of primary iodine-to-calcium ratios in carbonate rocks. AGU Fall Meeting in San Francisco, California, USA (14-18 December 2015).

Johnston, D., Cowie, B., Turchyn, A., Antler, G., **Gill, B.**, Berelson, W., (2015). Microbial cycling, oxidative weathering, and the triple oxygen isotope consequences for marine sulfate. AGU Fall Meeting in San Francisco, California, USA (14-18 December 2015).

Leroy, M.*, **Gill, B.C.**, (2015). Assessing the role of anoxia in the end-Marjuman Extinction and SPICE Events. GSA Annual Meeting in Baltimore, Maryland, USA (1-4 November 2015) Geological Society of America Abstracts with Programs v. 47, p. 572.

Marroquín, S.M., Martindale, R.C., Fuchs, D., **Gill, B.C.**, Them, T.R., (2015). Exceptionally preserved Octobranchia Coleoids from the first Early Jurassic Lagerstätte in North America. GSA Annual Meeting in Baltimore, Maryland, USA (1-4 November 2015) Geological Society of America Abstracts with Programs. v. 47, p. 637.

Mullins, D.E., **Gill, B.**, Hanigan, M., Gabbert, S.E., (2015). The fate of oral uptake and injected ammonia as the stable isotope $^{15}\text{NH}_4\text{Cl}$ on nitrogen metabolism in the American cockroach, *Periplaneta americana* L. Entomological Society of America Entomology 2015 in Minneapolis, Minnesota, USA (15-18 November 2015) p. 176.

Petroff, M.J.*, Schwarzenbach, E.M., Caddick, M.J., **Gill, B.C.**, (2015). Syros, Greece: A Geochemical window into subduction zone processes. GSA Annual Meeting in Baltimore, Maryland, USA (1-4 November 2015) Geological Society of America Abstracts with Programs v. 47, p. 377.

Ritzer, S.R.*, **Gill, B.C.**, (2015). Geochemical and sedimentological investigation of a lacustrine Triassic Lagerstätte in the Cow Branch Formation of the Danville-Dan River Basin. GSA Annual Meeting in Baltimore, Maryland, USA (1-4 November 2015) Geological Society of America Abstracts with Programs v. 47, p. 572.

Ritzer, S.R.*, **Gill, B.C.**, (2015). Geochemical and sedimentological investigation of a lacustrine Triassic Lagerstätte in the Cow Branch Formation of the Danville-Dan River Basin. GSA Southeastern Section - 64th Annual Meeting in Chattanooga, Tennessee, USA (19–20 March 2015) Geological Society of America Abstracts with Programs v. 47, p. 28.

Schwarzenbach, E., **Gill, B.**, Johnston, D., (2015). Sulfur Cycling in Oceanic and Continental Ultramafic-Hosted Hydrothermal Systems. 27th Annual Goldschmidt Conference in Prague, Czech Republic (16-21 August 2015) Goldschmidt Abstracts p. 2826

Them, T.*, **Gill, B.**, Gröcke, D., Selby D., (2015). Significant Increase in Global Continental Weathering Rates during the Toarcian Oceanic Anoxic Event. 27th Annual Goldschmidt Conference in Prague, Czech Republic (16-21 August 2015) Goldschmidt Abstracts p. 3110

Them, T.*, **Gill, B.**, Gröcke, D., Selby, D., Martindale, R., Caruthers, A., Tulskey, E., (2015). Evidence for Global Biogeochemical Changes During the Toarcian Oceanic Anoxic Event. AGU Fall Meeting in San Francisco, California, USA (14-18 December 2015)

Them, T.*, **Gill, B.**, Tulskey, E., (2015). Carbon and Sulfur Cycle Changes Across the Toarcian Oceanic Anoxic Event in Western North America. AAPG Annual Meeting and Exposition in Denver, Colorado, USA (31 May – 3 June 2015).

Tulskey, E.T.*, **Gill, B.C.**, Caddick, M.J., (2015). Contact metamorphism and the release of carbon and sulfur volatiles: A study of the effects of diabase emplacement. GSA Annual Meeting in Baltimore, Maryland, USA (1-4 November 2015) Geological Society of America Abstracts with Programs v. 47, p. 91.

2014

Gerhardt, A.*, **Gill, B.C.**, Them, T.R. (2014). High-Resolution Investigation of the Relationship Between the Steptoean Positive Carbon Isotope Excursion and the End-Marjuman Trilobite Extinction Within an Intraself Basin in the Southern Appalachians. AAPG Annual Convention and Exhibition. Houston, Texas.

Them, T.R.*, **Gill, B.C.** (2014). Assessment of the Geographic Extent of the Toarcian Oceanic Anoxic Event: Implications for Early Jurassic Hydrocarbon Source Rock Deposition. AAPG Annual Convention and Exhibition. Houston, Texas.

2013

McKenzie, N.R., **Gill, B.C.**, Chen, J., Park, T.-Y., Myrow, P.M., Woo, J., Hughes, N.C., and Choi, D.K., (2013). Chemostratigraphy of the Furongian (upper Cambrian) carbonate deposits of the Sino-Korean Craton: insights on global correlation and trilobite extinctions. Geological Society of America Annual Meeting. Denver, Colorado.

Meyer, M., Xiao, S., Schiffbauer, J.D., **Gill, B.C.**, (2013). Aspidella in repose: Taphonomy of a frondose Ediacaran fossil preserved in carbonate rocks. Geological Society of America Annual Meeting. Denver, Colorado.

Dahl T.W., Connelly J.N., **Gill B.C.**, Canfield D.E., Bizzarro M., (2013). U Isotopes Disentangle Atmosphere-Ocean Oxygenation Dynamics. Mineralogical Magazine, 77(5) 936.

McKenzie R, Hughes N, **Gill B.C.**, Myrow P., (2013). Evaluating the Role of Arc Volcanism on Neoproterozoic to Early Paleozoic Climate. Mineralogical Magazine, 77(5) 1725.

Johnston D.T., **Gill, B.C.**, Masterson, A., Beirne, E., Berelson, W., (2013). The Isotopic Composition and Controls on Modern Seawater Sulfate. Mineralogical Magazine, 77(5) 1401.

Hancock L.G., Lyons T.W., **Gill B.C.**, Shapiro R.S., Bates S.M., (2013). Novel Approaches to Reconstructing Sulfur Cycling in Methane Seeps. Mineralogical Magazine, 77(5) 1252.

Gilhooly W., Johnston D.T., Farquhar J., Severmann S., Böttcher M., **Gill B.C.**, Kamyshny A. Lyons, T.W., (2013). Microbial Sulfur Cycling in the Modern Black Sea. Mineralogical Magazine, 77(5) 1173.

Hancock, L.G., Lyons, T.W., **Gill, B.C.**, Formolo, M., Shapiro, R.S., Tripathi, A., Loyd, S.J., Bates, S.M., (2013). Reconstructing sulfur cycling at Cretaceous methane seeps: Novel perspectives from carbonate-associated sulfate. American Geophysical Union Annual Meeting. San Francisco, California.

Martindale, R.C., Them, T.R., **Gill, B.C.**, Knoll, A.H., (2013). Sea-floor carbonate fans from the Early Jurassic (Pliensbachian-Toarcian): a sedimentological signature of carbon cycle perturbation in deep time. American Geophysical Union Annual Meeting. San Francisco, California.

Gerhardt, A.M.*, **Gill, B.C.**, Them, T. R. (2013). A high-resolution investigation of the relationship between the Steptoean Positive Carbon Isotope Excursion and the end-Marjuman trilobite extinction in the Southern Appalachians. American Geophysical Union Annual Meeting. San Francisco, California.

Them, T.R.*, **Gill, B.C.**, Gerhardt, A.M., Martindale, R.C. (2013). Assessing the reach of the Toarcian Oceanic Anoxic Event: New insights from western North America. American Geophysical Union Annual Meeting. San Francisco, California.

2012

Gill, B.C., Lyons, T.W., Owens, J.D., Bates, S., Brumsack, H.-J., Jenkyns, H.J. (2012). Interpreting the trace metal records of ancient epeiric seaways: Lessons from the Toarcian (Jurassic) black shales of Europe. International V.M. Goldschmidt Geochemistry Conference. Montréal, Quebec.

Hardisty, D.S., Riedinger, N., **Gill, B.C.**, Johnston, D.T., Reinhart, C.T., Planavsky, N., Lyons, T.W., (2012). New Insights from FOAM: Iron and Trace Metal Cycling in Highly Sulfidic Pore Waters Beneath an Oxic Water Column. International V.M. Goldschmidt Geochemistry Conference. Montréal, Quebec.

Owens, J.D., **Gill, B.C.**, Jenkyns, H.C., Kuypers, M.M.M., Lyons, T.W. (2012) Perturbations to the Global Sulfur Cycle during Oceanic Anoxic Event in the mid-Cretaceous. European Geoscience Union General Assembly. Vienna, Austria.

Partin, C.A., Bekker, A., Planavsky, N.J., **Gill, B.C.**, Li, C., Podkovyrov, V., Maslov, A., Konhauser, K.O., Love, G.D., Lyons, T.W., (2012). Fluctuations in Precambrian atmospheric and oceanic oxygen levels: a new Precambrian paradigm emerging? International V.M. Goldschmidt Geochemistry Conference, Montréal, Quebec.

Partin, C.A., Bekker, A., Planavsky, N.J., **Gill, B.C.**, Li, C., Podkovyrov, V., Maslov, A., Konhauser, K.O., Love, G.D., Lyons, T.W., (2012). Fluctuations in Precambrian atmospheric and oceanic oxygen levels: a new Precambrian paradigm emerging? Geological Association of Canada-Mineralogical Association of Canada (GAC MAC) Meeting, St. Johns, Newfoundland.

Young, S.A., Marks, J.A., **Gill, B.C.**, Saltzman, M.R., (2012). Middle-Late Ordovician (Darriwillian-Sandbian) paired sulfur and carbon isotope: Links to pulses of ocean oxygenation, weathering, and biodiversity. Geological Society of America Annual Meeting. Charlotte, North Carolina.

2011

Lyons, T.W., Arnold, G.L., Chappaz, A., **Gill, B.C.**, Planavsky, N.J., Reinhard, C.T., Riedinger, N., Scott, C.T., Anbar, A.D., (2011). Molybdenum as a paleoredox proxy: An update. International V.M. Goldschmidt Conference, Prague.

Gill, B.C., Johnston, D.T., Knoll, A.H., (2011). Investigating geochemistry of the Wheeler Formation of Utah, USA: Insights into the redox environment of Burgess Shale-type fossil preservation. Geological Society of America Annual Meeting, Minneapolis.

Owens J.D., Lyons T.W., Severmann S., **Gill B.C.**, Jenkyns H., Kuypers M.M.M., Gordon G., Anbar A. and Kuhnt W., (2011). Global Perturbation of the Marine Iron Cycle During OAE-2, Cretaceous Symposium, Utrecht, Netherlands.

2010

Gill, B.C., Lyons, T.W., Gilhooly, W., Farquhar, J., (2010). An investigation of the sulfur cycle during the Cambrian SPICE event through the use of multiple sulfur isotope stratigraphy. Geological Society of America Annual Meeting, Denver.

Owens, J.D., **Gill, B. C.**, Lyons, T.W., Jenkyns, H.C., (2010). Perturbations to the global sulfur cycle during ocean anoxic events. Geological Society of America Annual Meeting, Denver.

Planavsky, N.J., Scott, C., **Gill, B.C.**, Bekker, A., Lyons, T.W., (2010). Tracking Zn bioavailability through time: New insights from sulfidic black shales. American Geophysics Union Annual Meeting, San Francisco.

Quan, T.M., Gill, B.C., Lyons, T.W., (2010). Nitrogen isotope profile from the Cambrian SPICE Event: Comparison with Mo and other redox proxies. International V.M. Goldschmidt Conference, Knoxville, Tennessee, USA.

Runnegar, B., Saltzman, M.R., Kouchinsky, A., Young, S.A., Kump, L.R., **Gill, B.C.**, Lyons, T.W., and Young, E.D., (2010). Cambrian SPICE (Steptoean Positive Carbon Isotope Excursion) as a model for comparable Proterozoic high-amplitude isotopic events. Geological Society of America Annual Meeting, Denver.

2009

Gill, B.C., Lyons, T.W., Owen, J.D., Brumsack, H., Jenkyns, H., (2009). A multi geochemical proxy approach to deciphering the Toarcian OAE. American Geophysics Union Annual Meeting, San Francisco.

Gill, B.C., Lyons, T.W., Young, S., Saltzman, M.R., Kaljo, D., (2009). Weathering Extinction: Carbon and sulfur isotope dynamics surrounding the Late Ordovician Mass Extinction. 7th Annual Southern California Geobiology Symposium, UCR.

Partin, C.A., Bekker, A., Scott, C., **Gill, B.C.**, Lyons, T.W., (2009). Changes in the Precambrian ocean U cycle linked to the evolution of surficial redox conditions. American Geophysics Union Annual Meeting, San Francisco.

2008

Gill, B.C., Lyons, T.W., Jenkyns, H., (2008). Extreme organic carbon and pyrite burial during the Toarcian OAE and possible consequences for the marine trace metal inventory. American Geophysics Union Annual Meeting, San Francisco.

Gill, B.C., Lyons, T.W., Frank, T., (2008). Behavior of carbonate-associated sulfate during meteoric diagenesis and implications for the sulfur isotope paleoproxy. GSA, ASA-CSSA-SSSA, GCAGS, Joint Annual Meeting-Houston.

Lyons, T.W., Scott, C., **Gill, B.C.**, Anbar, A.D., (2008). Trace Metals in the Early Ocean, Biological Implications, and Evolving Biospheric Redox. American Geophysics Union Annual Meeting, San Francisco.

2007

Gilhooly W.P., Reinhard C., Lyons T.W., Planavsky N.J., **Gill B.**, and Hurtgen M.T., (2007). Stable isotopic composition of sulfate in meromictic Mahoney Lake and implications for the early ocean. Geological Society of America annual meeting, Denver, Colorado.

Gill, B.C., Lyons, T.W., Kump, L., Young, S., Saltzman, M.R., (2007). The Geochemical Finger Print of an Early Paleozoic OAE. American Geophysics Union Annual Meeting, San Francisco.

Gill, B.C., Lyons, T.W., Kump, L., Young, S., Saltzman, M.R., (2007). A Late Cambrian OAE. Geological Society of America Annual Meeting, Denver.

Gill, B.C., Dean, P., Lyons, T.W., Saltzman, M.R., (2007). A Cambrian OAE. 4th Annual Southern California Geobiology Symposium, Caltech.

Lyons, T.W., Shaprio, R., **Gill, B.C.**, Bates, S., Anderson, J., Gilhooly, W. Parsons-Hubbard, K., (2007). Carbon and sulfur cycling in cretaceous cold seeps record in the paragenesis and geochemistry of diagenetic carbonates. Geological Society of America annual meeting, Denver, Colorado.

Reinhard C., Gilhooly W.P., Lyons T.W., **Gill B.C.**, Planavsky N., Hurtgen M., (2007). Trace metal cycling in meromictic Mahoney Lake, British Columbia: Implications for molybdenum burial in sulfidic environments. Geological Society of America annual meeting, Denver, Colorado.

2006

Gill, B.C., Lyons, T.W., Kump, L., Saltzman, M.R., (2006). Kinderhookian-Osagean carbon isotope excursion (A marine or terrestrial organic matter burial event?) and its relationship to climate and land plant evolution. Geological Society of America Annual Meeting, Philadelphia.

Gill, B.C., Lyons, T.W., Saltzman, M.R., (2006). Paleozoic sulfur and carbon isotope records tracking changes in atmospheric pO₂ and evolution of the biosphere. 3rd Annual Southern California Geobiology Symposium, University of California-Riverside.

Gill, B.C., Lyons, T.W., Saltzman, M.R., (2006). Paleozoic sulfur isotope records tracking changes in atmospheric pO₂ and evolution of the biosphere. Abscon, Washington D.C.

2005

Gill, B.C., Lyons, T.W., Saltzman, M.R., (2005). Parallel, high-resolution carbon and sulfur isotope records of the Late Ordovician and Late Carboniferous— records of two different glacial episodes. American Geophysics Union Annual Meeting, San Francisco.

Gill, B.C., Lyons, T.W., Saltzman, M.R., (2005). Parallel, high-resolution carbon and sulfur isotope records and their use in resolving the mechanisms behind regional and global isotope excursions. Earth System Processes 2 Meeting, Calgary, Canada.

Gill, B.C., Lyons, T.W., Shim, M-J, Hurtgen, M., Kah, L., Frank, T.D., (2005). Carbonate-associated sulfate as a tracer of ancient seawater chemistry. American Chemical Society National Meeting, San Diego.

Lyons T.W., Hurtgen M.T., **Gill B.C.**, (2005). New insight into the utility of carbonate-associated sulfate. International V.M. Goldschmidt Conference, Moscow, Idaho.

2004

Gill, B.C., Lyons, T.W., Saltzman, M.R., (2004). Parallel high-resolution carbon and sulfur isotope records in the Paleozoic and implications for biospheric oxygenation. Geological Society of America Annual Meeting, Denver.

Gill, B.C., Lyons, T.W., and Saltzman, M.R., (2004). High-resolution sulfur isotopic records of early and middle Paleozoic seawater as recorded in limestones and dolostones of midcontinent North America. Geological Society of America North-Central meeting, St. Louis.

2003

Lyons, T.W., Anbar, A.D., **Gill, B.C.**, Meyers, S.R., Sageman, B.B., Cruse, A.M. Wilde, P., (2003). Covarying molybdenum and organic carbon distributions in organic-rich sediments and sedimentary rocks. Geological Society of America Annual Meeting, Seattle.

Shelton, K.L., Johnson, A.W., Stone, R.E., **Gill, B.C.**, Gregg, J.M., (2003). Replacement dolomites as recorders of multiple fluids and fluid sources: halogen-⁸⁷Sr/⁸⁶Sr-oxygen isotope systematics of the Bonneterre Dolomite (Cambrian) of southeast Missouri, USA, 12th Bathurst Meeting on Carbonate Petrology, p. 100.

GRANTS AND FUNDING

2013-2017	National Science Foundation.	<i>Collaborative Research: Deciphering the regional-versus-global aspects of the Toarcian (Jurassic) Oceanic Anoxic Event in North America. PIs Gill and Formolo (U. of Tulsa)</i>
		Amount: \$234,209 to Virginia Tech
2013-2016	National Science Foundation.	<i>In-situ isotopic effects of serpentinization and identifying the controls on biological activity in serpentinites. PIs Schwarzenbach and Gill (both Virginia Tech)</i>
		Amount: \$149,454
2014-2015	National Science Foundation.	<i>RAPID, Collaborative: Using geochemical signatures to evaluate the impact of a recent coal ash spill on trace elements in water and sediments of the Dan River. Schreiber, Gill, Michel (all Virginia Tech) and Derry (Cornell)</i>
		Amount: \$25,499 to Virginia Tech

GRADUATE STUDENTS ADVISED

<i>Student</i>	<i>Degree</i>	<i>Thesis/Dissertation Title</i>	<i>Graduation Date (*anticipated)</i>
Mathew LeRoy	PhD	<i>The accessing the role of redox in Cambrian and Devonian mass extinctions</i>	2019*
Selva Marroquín	PhD	<i>Global biogeochemical cycling during the Early Jurassic</i>	2020*
Emma Tulsy	Masters	<i>A study of the effects of a diabase intrusion of the Central Atlantic Magmatic Province on the carbon and sulfur bearing phases in the host rocks in the Culpeper basin in Centreville, VA</i>	2017
Theodore Them	PhD	<i>Assessing the global reach of the Toarcian Oceanic Anoxic Event</i>	2016
Samantha Ritzer	Masters	<i>Sulfur and iron geochemistry of Triassic lacustrine deposits of the Newark Supergroup in the Eastern US</i>	2016
Angela Gerhardt	Masters	<i>Carbon cycle changes during the end-Marjuman extinction in the Southern Appalachians</i>	2014

UNDERGRADUATE RESEARCHERS ADVISED

Anna Hindrichs	2017
Alex Kovalick	2017
Jason Eng	2017
Hannah Grove	2015 to 2017
Emma Tulsy	2013 to 2015
Ava Menza	2104 to 2015
Russell Wheeler	2013 to 2014

TEACHING EXPERIENCE

COURSES TAUGHT

Virginia Tech

- Aqueous Environmental Geochemistry
- Advanced Aqueous Environmental Geochemistry
- Carbonate Deposystems
- Earth and Life Through Time
- Paleozoic Deposystems of the Appalachians
- Sedimentary Geology and Paleobiology Seminar

Harvard University

- Historical Geobiology (Guest Lecturer)
- Analytical and Field Methods in Geobiology (Teaching Assistant)

University of California-Riverside

- The Earth System Laboratory (Teaching Assistant)
- Natural Hazards (Teaching Assistant)
- Low Temperature Geochemistry Laboratory (Teaching Assistant)

University of Missouri

- Introduction to Geology Laboratory (Teaching Assistant)
- Introduction to Paleontology Laboratory (Teaching Assistant)
- Earth Materials and Processes Laboratory (Teaching Assistant)
- Oceanography Laboratory (Teaching Assistant)

FIELDWORK

- Late Triassic and Early Jurassic of Alaska, July 2017
- Early Jurassic of Nevada, June 2014, May 2015
- Early Jurassic of Alberta, August 2013, July 2014, August 2015
- Late Cambrian Carbonates of Southwest Virginia and Tennessee, March 2013
- Late Cambrian Carbonates of Korea and North China, March 2011
- Long Island Sound, Connecticut, October 2010
- Wheeler Formation (Middle Cambrian), Utah, April 2010
- Early Jurassic Black Shales, Germany and the United Kingdom. July 2008
- Georgina (Late Cambrian) and MacArthur (Mesoproterozoic) Basins, Australia. June 2007
- Mahoney Lake, British Columbia. September 2006
- Paleozoic Carbonates, Great Basin, USA. September-October 2006
- Paleozoic Carbonates, Great Basin, USA. September 2005
- Teepee Buttes Cretaceous Methane seeps, Colorado, USA. June 2005
- Paleozoic Carbonates, Great Basin, USA. June 2004
- Florida Bay, Florida. August 2003

PROFESSIONAL SERVICE

- Theme co-chair at the V.M. Goldschmidt Conference 2018 in Boston, Massachusetts: *Co-Evolving Life and Environments Through Deep Time*
- Session chair, American Geophysical Union Fall Meeting: *Phanerozoic Graveyards: New Advances in the Study of Old Extinction Events*. December 2017
- Co-convenor and co-organizer of the Society for Sedimentary Geology Research Conference: *Oceanic Anoxic Events (OAEs)* October 31 to November 7, 2016
- Session chair, Geological Society of America Annual Meeting: *Excursions, Extinctions, and Environmental Change: New Advances in Geochemical Tools Linked to Critical Intervals of Environmental and Biotic Change in Earth History*. Denver, Colorado, September 27, 2016.
- Theme co-chair at the V.M. Goldschmidt Conference 2015 in Prague Czech Republic: *Evolution of Earth's Environment*
- Session chair Goldschmidt Conference 2015: *Revolutions of the Paleozoic*. Prague Czech Republic
- Adhoc reviewer for the National Science Foundation; American Chemical Society Petroleum Research Fund
- Served as a panelist for NASA Astrobiology and Habitable Worlds Programs
- Co-organizer of the “Advent of Complex Life and the Neoproterozoic-Cambrian Transition” Geobiology Symposium. Harvard, 2010

- Co-organizer of the 3rd Annual Southern California Geobiology Symposium 2006
- Reviewed manuscripts for following journals:
 - Chemical Geology
 - Earth and Planetary Science Letters
 - Geochemistry Geophysics Geosystems
 - Geochimica et Cosmochimica Acta
 - Geology
 - Nature
 - Nature Geoscience
 - Naturwissen
 - Palaeogeography, Palaeoclimatology, Palaeoecology
 - Paleoceanography
 - Precambrian Research
 - Proceedings of the National Academy of Science

PROFESSIONAL AFFILIATIONS

- Geochemical Society
- Geological Society of America
- American Geophysical Union
- Society for Sedimentary Geology