

DR. DAVID FRANCIS BOUTT

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Summary:

David Boutt is Full Professor in the Department of Geosciences at the University of Massachusetts-Amherst. He received B.S. and M.S. degrees from the Department of Geological Sciences at Michigan State University in 1997 and 1999. He earned his Ph.D. from the New Mexico Institute of Mining and Technology (Socorro, New Mexico, USA) in 2004 and held a postdoctoral position at Sandia National Laboratories before joining the faculty at UMass-Amherst in 2005. His current research program focuses on understanding the role of groundwater in catchment-scale hydrologic processes. This involves delineating the contribution of groundwater storage to stream flow generation, spring discharge, and hydrologic budgets. Much of his current work is focused on the hydrogeology of salar and brine systems in northern Chile and Argentina and in the Great Basin of the western United States.

Education:

B.S. (1997) Env. Geosciences, Lyman Briggs School of Science, Michigan State University, East Lansing, MI, USA

M.S. (1999) Geological Sciences, Michigan State University, East Lansing, MI, USA

Thesis: *Interpreting the impacts of land use on water quality using groundwater flow and transport simulations in the Grand Traverse Bay Watershed*

Thesis advisor: Professor David Hyndman

Ph.D. (2004) Hydrology – Earth and Environmental Sciences, New Mexico Institute of Mining and Technology, Socorro, NM, USA

Dissertation: *The role of fluids in the genesis of opening mode fractures in the crust*

Dissertation advisor: Professor Brian J. O. L. McPherson

Appointments/Honors:

Professor (September 2019 – Present) Department of Geosciences, University of Massachusetts, Amherst, MA, USA

2018 Birdsall-Dreiss Geological Society of America Distinguished Lecture (Calendar Year 2018)

Hydrogeology Division, Geological Society of America

Co-Director of Environmental Science Undergraduate Program (January 2014 – Present)
Department of Geosciences, University of Massachusetts, Amherst, MA, USA

Associate Professor (January 2012 – August 2019) Department of Geosciences, University of Massachusetts, Amherst, MA, USA

Lilly Distinguished Teaching Fellow (August 2011 – May 2012), University of Massachusetts, Amherst, MA, USA

Assistant Professor (January 2005 – December 2011) Department of Geosciences, University of Massachusetts, Amherst, MA, USA

Postdoctoral Appointee (May 2004 – January 2005) Geomechanics Division, Sandia National Laboratories, Albuquerque, NM, USA
Sandia staff sponsor: Dr. Benjamin Cook

Graduate Research Intern (April 2002 – May 2004) Geomechanics Division, Sandia National Laboratories, Albuquerque, NM, USA
Sandia staff sponsor: Dr. Benjamin Cook

Research and Teaching Assistant (September 1999 – August 2003) New Mexico Institute of Mining and Technology, Socorro, NM, USA

Research Assistant September 1997 – August 1999 Michigan State University, East Lansing, MI, USA

Student Trainee – Hydrology (November 1997 – August 1999), USGS Water Resources Division, Lansing, MI, USA

Current Funding:

1. **BMW Group**, 12/1/2020- 10/31/2023 PI Boutt, Co-I Munk, *Lithium Water Sustainability Project*, \$568,000
2. **NSF Hydrologic Sciences**, 7/1/2021-6/30/2024, PI Winnick, Co-PI Boutt, *Stream corridor hydrologic controls on carbon dioxide fluxes*, \$368,508
3. **State of Massachusetts Vulnerability Program**, 7/1/2021-6/30/2023, PI Boutt, *Plymouth saltwater intrusion study*, \$192,000
4. **Albemarle Corporation**, 8/1/2021 -7/30/2024, PI Boutt, Co-I Munk, *Salar de Atacama, Silver Peak Hydrology and Hydrogeology Research*, \$364,000
5. **Albemarle Argentina**, 12/1/2022 -7/30/2024, PI Boutt, *Salar de Antofalla - Phase 2 and 3 exploration and resource development*, \$200,000
6. **Luna Lithium Corporation**, 1/28/2022-12/31/2022 PI Boutt, Co-I Munk, *Hydrogeology and Hydrogeochemistry of the Pilot Peak Project, Nevada*, \$103,000
7. **State of Massachusetts Dept. of Environmental Conservation**, 7/1/2022-6/30/2023, PI Boutt, *Groundwater Flooding across Massachusetts*, \$175,000
8. **Lithium Americas**, 10/1/2022-3/31/2024, PI Boutt, *Salar de Pastos Grandes – Argentina Project*, \$237,500
9. **Zealandez Ltd.**, 10/1/2022-3/31/2024, PI Boutt, *Carachi Pampa Lake Resources Hydrological Assessment*, \$150,000
10. **State of Massachusetts Dept. of Environmental Protection**, 12/1/2022-6/30/2023, PI Boutt Co-PI Mabee, *Hydrogeological Reviews for MassDEP - FY23*, \$84,350

Publications:

* indicates student authors

Peer Reviewed Manuscripts:

1. Russo, A. A., Boutt, D. F., Munk, L. A., & Jenckes, J. (2023). Contribution of fresh submarine groundwater discharge to the Gulf of Alaska. *Water Resources Research*, 59, e2023WR034912. <https://doi.org/10.1029/2023WR034912>
2. Jenckes, J., Munk, L. A., Ibarra, D. E., Boutt, D. F., Fellman, J., & Hood, E. (2023). Hydroclimate drives seasonal riverine export across a gradient of glacierized high-latitude coastal catchments. *Water Resources Research*, 59, e2022WR033305. <https://doi.org/10.1029/2022WR033305>
3. JJ Kim, PC Ryan, T Schroeder, E Romanowicz, D Boutt ..., [Four-dimensional characterization of a PFOA-contaminated fractured rock aquifer \(FRA\) in Bennington, Vermont, USA](#), - *Frontiers in Water*, 2023
4. McKnight, S. V., Boutt, D. F., Munk, L. A., & Moran, B. (2023). Distinct hydrologic pathways regulate perennial surface water dynamics in a hyperarid basin. *Water Resources Research*, 59, e2022WR034046. <https://doi.org/10.1029/2022WR034046>
5. CA Gagnon, KL Butler, E Gaviria, A Terrazas, A Gao... , [Paleoclimate controls on lithium enrichment in Great Basin Pliocene– Pleistocene lacustrine clays](#), *Geological Society of America Bulletin*, 2023
6. *Moran, B. J., Boutt, D. F., *McKnight, S. V., Jenckes, J., Munk, L. A., *Corkran, D., & *Kirshen, A. (2022). Relic groundwater and prolonged drought confound interpretations of water sustainability and lithium extraction in arid lands. *Earth's Future*, 10, e2021EF002555. <https://doi.org/10.1029/2021EF002555>
7. Coffey, D.M., Munk, L. A., Ibarra, D.E., Butler, K.L., **Boutt, D. F.**, & Jenckes, J. (2022). Lithium Storage and Release from Lacustrine Sediments: Implications for Lithium Enrichment and Sustainability in Continental Brines. *Geochemistry, Geophysics, Geosystems*, 10.1029/2021GC009916. <https://doi.org/10.1029/2021GC009916>
8. **Boutt, D.F.** (2021), Insights from Isotopic Tracers on the Sources and Processes by which Water is Transported to Streams and Groundwater in Southern New England, *Journal of the New England Water Works Association*, 135 (4), 44-62.
9. Frau D, *Moran BJ, Arengo F, Marconi P, Battauz Y, Mora C, Manzo R, Mayora G, **Boutt D.F.** Hydroclimatological Patterns and Limnological Characteristics of Unique Wetland Systems on the Argentine High Andean Plateau. *Hydrology*. 2021; 8(4):164. <https://doi.org/10.3390/hydrology8040164>
10. *McKnight, S. V., **Boutt, D. F.**, & Munk, L. A. (2021). Impact of Hydrostratigraphic Continuity in Heterogeneity on Brine-to-Freshwater Interface Dynamics; Implications from a 2-D Parametric Study in an Arid and Endorheic Basin. *Water Resources Research*, [10.1029/2020WR028302](https://doi.org/10.1029/2020WR028302)
11. **Boutt, D. F.**, *Corenthal, L.A., *Moran, B. J., Munk, L. A., & S.A. Hynek. (2021) Imbalance in the modern hydrologic budget of topographic catchments along the western slope of the Andes (21–25°S): implications for groundwater recharge assessment, *Hydrogeology Journal* (), 1-23. [DOI 10.1007/s10040-021-02309-z](https://doi.org/10.1007/s10040-021-02309-z)
12. **Boutt, D. F.**, *Allen, M.A., Settembrino, M., Bonarigo, A., Ingari, J. & R. Demars (2021). Groundwater recharge to a structurally complex aquifer system on the island of Tobago (Republic of Trinidad and Tobago) 29, pages 799–818 <https://doi.org/10.1007/s10040-020-02289-6>
13. Munk, L. A., **Boutt, D. F.**, *Moran, B. J., *McKnight, S. V., & Jenckes, J. (2021). Hydrogeologic and geochemical distinctions in freshwater- brine systems of an Andean

salar. *Geochemistry, Geophysics, Geosystems*, 22, e2020GC009345.

<https://doi.org/10.1029/2020GC009345>

14. *Cole, A. and **D.F. Boutt** (2021), Spatially-resolved Integrated Precipitation-Surface-Groundwater Water Isotope Mapping: Towards Understanding Water Cycling Across a Post-Glacial Landscape, *Frontiers in Water*, [doi: 10.3389/frwa.2021.645634](https://doi.org/10.3389/frwa.2021.645634)
15. *Moran, B. J., **Boutt, D. F.**, & Munk, L. A. (2019). Stable and radioisotope systematics reveal fossil water as fundamental characteristic of arid orogenic-scale groundwater systems. *Water Resources Research*, 55. <https://doi.org/10.1029/2019WR026386>
16. *Earnest, E, **Boutt, D.**, Murdoch, L, Clement, WP. (2019) Static and dynamic conceptual model of a complexly fractured crystalline rock aquifer. *Hydrological Processes*. 2019; 33: 2691– 2710. <https://doi.org/10.1002/hyp.13521>
17. Corcoran, M. C., Thomas, E. K., & **Boutt, D. F.** (2019). Event-based precipitation isotopes in the Laurentian Great Lakes region reveal spatiotemporal patterns in moisture recycling. *Journal of Geophysical Research: Atmospheres*, 124, 5463– 5478. <https://doi.org/10.1029/2018JD029545>
18. **Boutt D.F.**, Mabee, S.B. and Q. Yu (2019), *Multi-year increase in the stable isotopic composition of stream water from groundwater recharge due to extreme precipitation* *Geophys. Res. Lett.*, <https://doi.org/10.1029/2019GL082828>
19. *Antunes, P.A., **Boutt, D.F.**, and F.C. Rodrigues (2018), *Orographic Distillation and spatio-temporal variations of stable isotopes in precipitation in the North Atlantic*, *Hydrological Processes*, <https://onlinelibrary.wiley.com/doi/pdf/10.1002/hyp.13362>
20. Li, J.*, Yu, Q., Tian, Y. Q., & **Boutt, D. F.** (2018). *Effects of landcover, soil property, and temperature on covariations of DOC and CDOM in inland waters*. *Journal of Geophysical Research: Biogeosciences*, 123, 1352–1365. <https://doi.org/10.1002/2017JG004179>
21. Munk, L. A., **D. F. Boutt**, S. A. Hynek, and B. J. Moran* (2018), *Hydrogeochemical fluxes and processes contributing to the formation of lithium-enriched brines in a hyper-arid continental basin*, *Chemical Geology*, 493, 37-57, <https://doi.org/10.1016/j.chemgeo.2018.05.013>
22. Hare, D. K., **Boutt, D. F.**, Clement, W. P., Hatch, C. E., Davenport, G., and Hackman, A.: Hydrogeological controls on spatial patterns of groundwater discharge in peatlands, *Hydrol. Earth Syst. Sci.*, 21, 6031-6048, <https://doi.org/10.5194/hess-21-6031-2017>, 2017
23. **Boutt D.F.** (2017), Iroume A. *Preface for the South American Hydrology Virtual Special Issue*. *Hydrological Processes*. 2017. <https://doi.org/10.1002/hyp.11166>
24. **Boutt D.F.** (2017) *Assessing hydrogeologic controls on dynamic groundwater storage using long-term instrumental records of water table levels*. *Hydrological Processes*. 31:1479–1497. <https://doi.org/10.1002/hyp.11119>
25. **Boutt D. F.**, Hynek S. A., Munk L. A., and Corenthal L. G. (2016) Rapid recharge of fresh water to the halite-hosted brine aquifer of Salar de Atacama, Chile, *Hydrol. Process.*, 30: 4720–4740. *doi: 10.1002/hyp.10994*.
26. Corenthal, L. G.*, **D. F. Boutt**, S. A. Hynek, and L. A. Munk (2016), *Regional groundwater flow and accumulation of a massive evaporite deposit at the margin of the Chilean Altiplano*, *Geophys. Res. Lett.*, 43, *doi:10.1002/2016GL070076*

27. Briggs, M.A., Hare, D.K.*, **Boutt, D.F.**, Davenport, G. and Lane, J.W. (2016), *Thermal infrared video details multiscale groundwater discharge to surface water through macropores and peat pipes*, Hydrol. Process., doi: <http://dx.doi.org/10.1002/hyp.10722>
28. Munk, L. A., S. A. Hynek, D. Bradley, **D. F. Boutt**, K. Labay, and H. Jochens (2016), *Lithium brines: A global perspective*, Reviews in Economic Geology, v. 18, pp. 339–365
29. Hare, D.K.*, Briggs, M.A., Rosenberry, **D.F.**, **Boutt**, D.F., Lane, J.W. (2015), *A comparison of thermal infrared to fiber-optic distributed temperature sensing for evaluation of groundwater discharge to surface water*, *Journal of Hydrology*, doi: <http://dx.doi.org/10.1016/j.jhydrol.2015.09.059>
30. Yellen, B*, and **Boutt, DF** (2015), *Hydropeaking induces losses from a river reach: observations at multiple spatial scales*. Hydrol. Process., 29, 3261–3275. doi: 10.1002/hyp.10438.
31. Cook, J*, and Goodwin, LB., **Boutt, D.F.** and Tobin, H. (2015) *The effect of systematic diagenetic changes on the mechanical behavior of a quartz-cemented sandstone*, Geophysics, Vol. 80, No. 2 (March-April 2015); P. D145–D160, 10.1190/Geo2014-0026.1
32. **Boutt, D.F.** Plourde, K.E.*, Cook, J, and Goodwin, LB. (2014) *Cementation and the hydromechanical behavior of siliciclastic aquifers and reservoirs*, Geofluids 14 (2), 189-199
33. Earnest, E*, and **Boutt, D.F.** (2014) *Investigating the role of hydromechanical coupling on flow and transport in shallow fractured-rock aquifers*, Hydrogeology Journal, Vol. 20, pages 1-19, 2014.
34. Ito, T., A. Funato, W. Lin, M.-L. Doan, **D. F. Boutt**, Y. Kano, H. Ito, D. Saffer, L. C. McNeill, T. Byrne, and K. T. Moe (2013), *Determination of stress state in deep subsea formation by combination of hydraulic fracturing in situ test and core analysis: A case study in the IODP Expedition 319*, J. Geophys. Res. Solid Earth, 118, 1203–1215, doi: [10.1002/jgrb.50086](https://doi.org/10.1002/jgrb.50086).
35. Saffer, D. M., P. B. Flemings, **D. Boutt**, M.-L. Doan, T. Ito, L. McNeill, T. Byrne, M. Conin, W. Lin, Y. Kano, E. Araki, N. Eguchi, and S. Toczko (2013), *In situ stress and pore pressure in the Kumano Forearc Basin, offshore SW Honshu from downhole measurements during riser drilling*, Geochem. Geophys. Geosyst., 14, 1454–1470, doi: [10.1002/ggge.20051](https://doi.org/10.1002/ggge.20051).
36. Manda, A.K., Mabee, S.B., **Boutt, D.F.** and Cooke, M. *A method of estimating bulk potential permeability in fractured-rock aquifers using field-derived fracture data and type curves*, Hydrogeology Journal, Vol. 21, number 2, pages 357-369, 2013.
37. Murdoch, L., Germanovich, L, Wang, H., Onstott, T., Elsworth, D., Stetler, L., and **D.F. Boutt**, *Hydrogeology of the vicinity of DUSEL Homestake*, Hydrogeology Journal, Vol. 20, pages 27-43, 2012.
38. **Boutt, D. F.**, et al. (2012), *Scale dependence of in-situ permeability measurements in the Nankai accretionary prism: The role of fractures*, Geophys. Res. Lett., 39, L07302, doi:10.1029/2012GL051216.
39. French, M. E., **D. F. Boutt**, and L. B. Goodwin (2012), *Sample dilation and fracture in response to high pore fluid pressure and strain rate in quartz-rich sandstone and siltstone*, J. Geophys. Res., 117, B03215, doi:10.1029/2011JB008707.
40. Moe, Kyaw Thu (**D. F. Boutt** 4th author). *Operational review of the First Wireline In Situ Stress Test in Scientific Ocean Drilling*, vol 13, 2012.

41. Doan, M.L., Conin, M., Henry, P., Wiersberg, T., **Boutt, D.F.**, Buchs, D., Saffer, D., McNeill, L., and D. Cukur, *Quantification of Free Gas in the Kumano Forearc Basin detected from Borehole Physical Properties: IODP NanTroSEIZE drilling Site C0009*, *Geochem. Geophys. Geosyst.*, 12, Q0AD06, doi:10.1029/2010GC003284.
42. *Weider, K. and **D.F. Boutt**, *Heterogeneous water table response to climate revealed by 60 years of ground water data*, *Geophys. Res. Lett.*, VOL. 37, L24405, doi:10.1029/2010GL045561, 2010.
43. *Cook, J.B., Goodwin, L.B., and **D.F. Boutt**, *Systematic diagenetic changes in the grain-scale morphology and permeability of a quartz-cemented quartz arenite*, *AAPG Bulletin*, 95(6), 1067-1088, 2011.
44. McNeil, L, Saffer, D.M., Byrne, T., Araki, E., and IODP Expedition 319 Scientists (**D.F. Boutt**), *IODP Expedition 319, NanTroSEIZE Stage 2: First IODP Riser Drilling Operations and Observatory Installation Towards Understanding Subduction Zone Seismogenesis*, *Scientific Drilling*, 10, p 4-13.
45. Lin, W., et al. (2010), *Present-day principal horizontal stress orientations in the Kumano forearc basin of the southwest Japan subduction zone determined from IODP NanTroSEIZE drilling Site C0009*, *Geophys. Res. Lett.*, 37, L13303, doi:10.1029/2010GL043158.
46. **Boutt, D.F.**, Mabee, S.B., and *J.P. Diggins, *A field study of the factors controlling the depth of ground water flow systems in crystalline fractured rock terrain*, *Hydrogeology Journal*, 2010, Published Online September 7th, DOI: 10.1007/s10040-010-0640-y.
47. **Boutt, D.F.**, Cook, B.K., and J.R. Williams, *A coupled fluid-solid model for problems in geomechanics: application to sand production*, *International Journal of Analytical and Numerical Methods in Geomechanics*. published online: 2 AUG 2010 | DOI: 10.1002/nag.938,
48. **Boutt, D.F.**, *Poroelastic response of an unconsolidated aquifer to daily releases of water from an upstream dam*, *Ground Water*, doi:10.1111/j.1745-6584.2009.00,663.x, 2010.
49. **Boutt, D.F.**, Goodwin, L.B, and McPherson, B.J.O.L., *The Role of Permeability and Storage in the Initiation and Propagation of Natural Hydraulic Fractures*, *Water Resources Research*, 45 (W00C13), doi:10.1029/2007WR006557, 2009.
50. **Boutt, D.F** and *B.J. Fleming, *Implications of anthropogenically driven river stage fluctuations on mass transport in a valley fill aquifer*, *Water Resources Research*, doi:10.1029/2007WR006526, 2009.
51. **Boutt D.F.**, Cook, B.K, McPherson, B.J.O.L., and J.R. Williams, 2007, *Direct simulation of fluid-solid mechanics in porous media using the discrete element and lattice-Boltzmann methods*, *Journal of Geophysical Research – Solid Earth*, 112, B10209, doi:10.1029/2004JB003213.
52. McPherson, B.J.O.L., and **D.F. Boutt**, 2007, *Evaluation of Forces Responsible for Fracturing in the Spraberry Trend*, *Midland Basin, Geofluids*, 7(4), p 415-426.
53. **Boutt D.F.**, Grasselli G., Fredrich J.T., Cook B.K., Williams J.R., 2006, *Trapping zones: The effect of fracture roughness on the directional anisotropy of fluid flow and colloid transport in a single fracture*, *Geophysical Research Letters*, V. 33, L21402,10.1029/2006GL027275.
54. Wayland, K.G, D.W. Hyndman, **D.F. Boutt**, B.C. Pijanowski, D.T. Long, *Modeling The Impact Of Historical Land Uses On Surface Water Quality Using Ground Water Flow And Solute Transport Models*, *Lakes and Reservoirs*, 7(3), p 189-199, 2002.

55. **Boutt, D.F.**, and McPherson, B.J.O.L., *Simulation of sedimentary rock deformation: Lab-scale model calibration and parameterization*, Geophysical Research Letters 29(4), 10.1029/2001GL013706, 2002.
56. **Boutt, D.F.**, Hyndman, D.W., Pijanowski, B.C., and David T. Long, *Identifying potential land use-derived solute sources to stream baseflow using ground water models and GIS*, Ground Water 39(1), 24-34, 2001.

Peer Reviewed Book Chapters

57. Frisbee, M.D, Shope, C.L., Briggs, M.A. and **D. F. Boutt**, Field Methods for the Evaluation of Groundwater and Surface Water Interactions, Eds. Cushman and Tartakovsky, The Handbook of Groundwater Engineering, Third Edition, CRC Press, Section 27 p 749, 2017

Peer-reviewed articles and reports:

1. Saffer, D., McNeill, L., Byrne, T., Araki, E., Toczko, S., Eguchi, N., Takahashi, K., and the Expedition 319 Scientists, NanTroSEIZE Stage 2: NanTroSEIZE riser/riserless observatory *Expedition 319 of the riser drilling platform Shingu, Japan, to Yokkaichi, Japan Sites C0009 & C0011 5 May -31 August 2009* Integrated Ocean Drilling Program, Japanese Implementing Organization, Center for Deep Earth Exploration (CDEX) at the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), and U.S. Implementing Organization Science Services, Texas A&M University, 2010.

Non peer-reviewed articles and reports:

1. Munk, L.A., **Boutt, D.F.**, Hynek, S.A., Sources of Calcium and Lithium to the Salar de Atacama, Final Report to Rockwood Lithium, May 2016, 162 p.
2. **Boutt, D.F.**, Water Flow Modeling of Tobago Aquifers, Final Report Volume III, submitted to Lennox Petroleum Services for WASA, Trinidad and Tobago, 108 p.
3. **Boutt, D.F.**, Hydrogeological Reassessment Study – Inception Report, submitted to Lennox Petroleum Services for WASA, Trinidad and Tobago, 217 p.
4. Mabee, S.B., *B.J. Fleming, and **D.F. Boutt**, *Hydrogeologic assessment of the West Charlemont aquifer*, Charlemont, Massachusetts, project completion report, 2007.
5. Grasselli G., **Boutt D.F.**, Fredrich J.T., Cook B.K., Williams J.R., 2005, *Experimental and numerical study of colloid transport in a single fracture*, in Proc. IACMAG 2005 Conference, Turin, Italy, pp 277-284
6. Cook BK, **Boutt DF.** and Strack O.E. DEM-fluid model development for near wellbore mechanics. *Numerical modeling in Micromechanics via Particle Methods*, 2004, Shimizu, Hart & Cundall (eds). Taylor & Francis Group, London, ISBN 90 5809 679 3.
7. **Boutt, D.F.**, *Discrete Analysis of the Role of Pore Fluids in the Genesis of Opening Mode Fractures in the Shallow Crust*, Ph.D. Thesis, New Mexico Institute of Mining and Technology, Socorro, NM, 2004, 239 pp.
8. **Boutt D.F.**, McPherson, B.J.O.L., Cook, B.K., and J.R. Williams, *Application of a directly coupled numerical model of fluid-solid mechanics*, in *Soil and Rock America 2003 Proceedings*, edited by P.J. Culligan, H.H Einstein, and A.J. Whittle, Volume 1, p 977-983

9. **Boutt, D.F.**, and B.J.O.L. McPherson, *The role of particle packing in modeling rock mechanical behavior using discrete elements*, in *Discrete Element Methods: Numerical Modeling of Discontinua*, edited by B.K. Cook, and R.P. Jensen, pp. 86-92, ASCE, Santa Fe, NM, 2002.
10. Villeneuve, P.J. and **D.F. Boutt**, Hydrogeologic Investigation of Leverett, Massachusetts, May 2008, UMass Hydrogeology Group.
11. 2009 Integrated Ocean Drilling Program Expedition 319 Preliminary Report
NanTroSEIZE Stage 2: NanTroSEIZE riser/riserless observatory, Demian Saffer, Lisa McNeill, Eiichiro Araki, Tim Byrne, Nobuhisa Eguchi, Sean Toczko, Kyoma Takahashi, and the Expedition 319 Scientists, doi:10.2204/iodp.pr.319.