

CURRICULUM VITA

Donald S. Ross, Research Professor

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ACADEMIC HISTORY

- 1990 Ph.D. UVM, Soil chemistry
 thesis: Some aspects of the soil and water chemistry
 of two small watersheds in Vermont's Green Mountains
- 1980 M.S. UVM, Dept. of Plant and Soil Science
 thesis: Toxicity of chromium to soil microorganisms
 and oxidation of manganese in soil.
- 1977 B.S. UVM, Dept. of Plant and Soil Science
- 1968-1971 Middlebury College
 English major

EMPLOYMENT HISTORY

- 2013 to Research Professor, UVM Dept. of
Present Plant & Soil Science
- 2005 to Research Associate Professor, UVM Dept. of
2013 Plant & Soil Science
- 1996 to Research Assistant Professor, UVM Dept. of
2005 Plant & Soil Science
- 1996 to Faculty and CALS Director,
present Environmental Sciences Program
- Oct. 2003 to Research Program Coordinator (Interim)
Aug. 2004 UVM Dept. of Plant & Soil Science
- 1991 to Lecturer, UVM Dept. of Plant & Soil Science
present
- 1988 to 2005 Director, UVM Agricultural and Environmental
2007 to present Testing Laboratory

Awards

UVM College of Agriculture and Life Sciences H. W. Vogelmann Award for Excellence in Research and Scholarship, 2004.

Christine Negra (advisee) was the 2004 recipient of the Doctoral Student Scholar Award at the University of Vermont in biomedical, life, physical and applied sciences.

Honors

Recognition by the Class of 2010 for having had a positive influence, 2010

Nominated as Outstanding Service-Learning Faculty, 2010

Selected as Faculty Fellow in Sustainability, 2009

Nominated for Kroepsch-Maurice Excellence in Teaching Award, 2007

Selected as Faculty Fellow in Service Learning, 2007

Membership

Soil Science Society of America, American Geophysical Union, Geochemical Society, Northeast Ecosystem Research Cooperative, Northeastern Soil Monitoring Cooperative (steering committee), Northeast Coordinating Committee on Soil Testing (USDA NECC-1312)

Publications (peer reviewed)

Young, E.O., D.S. Ross and J. Sherman. 2019. Measuring phosphorus release in laboratory microcosms for water quality assessment. *J Vis Exp*. doi: 10.3791/60072.

Bailey, S.W., K.J. McGuire, D.S. Ross, M.B. Green and O.L. Fraser. 2019. Mineral weathering and podzolization control acid neutralization and streamwater chemistry gradients in upland glaciated catchments, northeastern United States. *Front. Earth Sci.* 7. doi:10.3389/feart.2019.00063.

Young, E.O., D.S. Ross and D.B. Jaynes. 2019. Editorial: Riparian buffer nutrient dynamics and water quality. *Front. Environ. Sci.* 7. doi:10.3389/fenvs.2019.00076.

Sebestyen, S.D., D.S. Ross, J.B. Shanley, E.M. Elliott, C. Kendall, J.L. Campbell, et al. 2019. Unprocessed atmospheric nitrate in waters of the northern forest region in the U.S. and Canada. *Environ Sci Technol* 53: 3620-3633. doi: 10.1021/acs.est.9b01276.

Bailey, S.W., D.S. Ross, N. Perdrial, M. Jercinovic, J. Webber and R. Bourgault. 2019. Determination of primary mineral content and calcium sources in forest soils using electron probe microanalysis mapping and cluster analysis. *Soil Sci. Soc. Am. J.* 83:1830-1841. doi: 10.2136/sssaj2019.07.0231.

Ross, D.S., B.C. Wemple, L.J. Willson, C. Balling, K.L. Underwood, and S.D. Hamshaw. 2019. Impact of an extreme storm event on river corridor bank erosion and phosphorus mobilization in a mountainous watershed in the northeastern USA. *J. Geophys. Res., Biogeosciences* 124. doi: 10.1029/2018JG004497

Armfield, J, J. Perdrial, A. Gagnon, J. Ehrenkranz, N. Perdrial, M. Cincotta, D. Ross, J. Shanley, K. Underwood and P. Ryan. 2019. Does stream water composition at Sleepers River in Vermont reflect dynamic changes in soils during recovery from acidification? *Front. Earth Sci.* 7. doi: 10.3389/feart.2018.00246

- Perillo, V.L., D.S. Ross, B.C. Wemple, C. Balling, E.E. Lemieux. 2019. Stream corridor soil phosphorus availability in a forested/agricultural mixed land-use watershed. *J. Environ. Qual.* 48:185-192. doi: 10.2134/jeq2018.05.0186
- Young, E.O. and D.S. Ross. 2018. Phosphorus mobilization in flooded riparian soils from the Lake Champlain Basin, VT, USA. *Frontiers*: doi: 10.3389/fenvs.2018.00120
- Vidon, P, D.L. Karwan, A.S. Andres, S. Inamdar, S. Kaushal, J. Morrison, J. Mullaney, D.S. Ross, A.W. Schroth, J. B. Shanley and B. Yoon. 2018. In the path of the Hurricane: impact of Hurricane Irene and Tropical Storm Lee on watershed hydrology and biogeochemistry from North Carolina to Maine, USA. *Biogeochemistry* 137:351-364. doi: 10.1007/s10533-018-0423-4
- Bourgault, R.R., D.S. Ross, S.W. Bailey, T.D. Bullen, K.J. McGuire and J.P. Gannon. 2017. Redistribution of soil metals and organic carbon via lateral flowpaths at the catchment scale in a glaciated upland setting. *Geoderma* 217:238-252. doi: 10.1016/j.geoderma.2017.05.039
- Gannon, J.P., K. J. McGuire, S.W. Bailey, R.R. Bourgault, D.S. Ross. 2017. Lateral water flux in the unsaturated zone: a mechanism for the formation of spatial soil heterogeneity in a headwater catchment. *Hydrol. Process.* doi: 10.1002/hyp.11279
- Gerson, J.R., C.T. Driscoll, J.D. Demers, A.K. Sauer, B.D. Blackwell, M.R. Montesdeoca, J.B. Shanley and D.S. Ross. 2017. Deposition of mercury in forests across a montane elevation gradient: elevational and seasonal patterns in methylmercury inputs and production. *J. Geophys. Res. Biogeosci.* 122:1922–1939. doi:10.1002/2016JG00372
- Wemple, B.C., G.E. Clark, D.S. Ross and D.M. Rizzo. 2017. Identifying the spatial pattern and importance of hydro-geomorphic drainage impairments on unpaved roads in the northeastern USA. *Earth Surf. Process. Landf.* doi: 10.1002/esp.4113
- Young, E.O., J.R. Giebel and D.S. Ross. 2017. Influence of controlled drainage and liquid dairy manure application on phosphorus leaching from intact soil cores. *J. Environ. Qual.* 46:80-87. doi:10.2134/jeq2016.04.0158
- Lawrence, G.B., I.J. Fernandez, P.W. Hazlett, S.W. Bailey, D.S. Ross, T.R. Villars, A. Quintana, R. Ouimet, M.R. McHale, C.E. Johnson, R.D. Briggs, R.A. Colter, J. Siemion, O.L. Bartlett, O. Vargas, M.R. Antidormi, M.M. Koppers. 2016. Methods of soil resampling to monitor changes in the chemical concentrations of forest soils. *J. Vis. Exp.* 117: e54815, doi:10.3791/54815
- Knowles, M.E., D.S. Ross and J.H. Görres. 2016. Effect of the endogeic earthworm *Aporrectodea tuberculata* on aggregation and carbon redistribution in uninhabited forest soil columns. *Soil Biology and Biochemistry* 100: 192-200. doi:10.1016/j.soilbio.2016.06.016
- Kaur, A.J., D.S. Ross, J.B. Shanley and A.R. Yatzor. 2016. Enriched groundwater seeps in two Vermont headwater catchments are hotspots of nitrate turnover. *Wetlands* 36(2):237-249. doi: 10.1007/s13157-016-0733-z
- Young, Eric O., D.S. Ross, B.R. Hoskins. 2017. Phosphorus in Morgan soil test extracts measured by molybdate colorimetric and inductively coupled plasma spectroscopy methods. *Commun. Soil Sci. Plant Anal.* 48:2434-2446 doi: 10.1080/00103624.2017.1411936

- Young, E.O. and D.S. Ross. 2016. Total and labile phosphorus concentrations as influenced by riparian buffer soil properties. *J. Environ. Qual.* 45:294-304 doi: 10.2134/jeq2015.07.0345
- Villars, T.D., S.B. Bailey and D.S. Ross. 2015. Four soil orders on a Vermont mountaintop— one-third of the world's soil orders in a 2500-square-meter research plot. *Soil Horizons* 56(6): doi: 10.2136/sh15-06-0013
- Ishee, E.R., D.S. Ross, K.M. Garvey, R.R. Bourgault, C.R. Ford. 2015. Phosphorus contribution from eroding streambank soils of Vermont's Lake Champlain Basin. *J. Environ. Qual.* 44(6):1745-1753. doi:10.2134/jeq2015.02.0108
- Ross, D.S., S.W. Bailey, R.D. Briggs, J. Curry, I.J. Fernandez, G. Fredriksen, C.L. Goodale, P.W. Hazlett, P.R. Heine, C.E. Johnson, J.T. Larson, G.B. Lawrence, R.K. Kolka, R. Ouimet, D. Paré, D.D. Richter, C.D. Shirmer, R.A. Warby. 2015. Inter-laboratory variation in the chemical analysis of acidic forest soil reference samples from eastern North America. *Ecosphere* 6(5):73. <http://dx.doi.org/10.1890/ES14-00209.1>.
- Bourgault, R., D.S. Ross and S.W. Bailey. 2015. Chemical and morphological distinctions between vertically and laterally developed spodic horizons at Hubbard Brook, NH. *Soil Sci. Soc. Am. J.* 79(2):428-439. doi:10.2136/sssaj2014.05.0190.
- Bailey, S.W., P.A. Brousseau, K.J. McGuire and D.S. Ross. 2014. Influence of landscape position and transient water table on soil development and carbon distribution in a steep, headwater catchment. *Geoderma* 226–227:279–289. doi:10.1016/j.geoderma.2014.02.017.
- Ross, D.S., H.C. Hales and A. Lanzirotti. 2013. Oxidation of added Mn(II) in soils observed by XANES spectroscopy and Cr(III) oxidation. *Soil Sci. Soc. Am. J.* 77: 1996-2003. doi:10.2136/sssaj2013.04.0151
- Young, E.O., D.S. Ross, B.J. Cade-Menun and C.W. Liu. 2013. Phosphorus speciation in riparian soils: a phosphorus-31 nuclear magnetic resonance spectroscopy and enzyme hydrolysis study. *Soil Sci. Soc. Am. J.* 77(5): 1636-1647. doi:10.2136/sssaj2012.0313.
- Lawrence, G.B., I.J. Fernandez, D. deB. Richter, D.S. Ross, P.W. Hazlett, S.W. Bailey, R. Ouimet, R. Warby, A.E. Johnson, H. Lin, A.G. Lapenis, T. Sullivan, J. Kaste. 2013. Measuring environmental change by repeated soil sampling: a North American perspective. *J. Environ. Qual.* 42(3):623-639. doi:10.2134/jeq2012.0378.
- Juillerat, J.I., D.S. Ross and M.S. Banks. 2012. Mercury in litterfall and upper soil horizons in forested ecosystems in Vermont, USA. *Environ. Toxicol. Chem.* 31(8): 1720-1729. DOI: 10.1002/etc.1896.
- Ross, D.S., J.B. Shanley, J.L. Campbell, G.B. Lawrence, S.W. Bailey, G.E. Likens, B. Wemple, G. Fredriksen, and A.E. Jamison. 2012. Spatial patterns of soil nitrification and nitrate export from forested headwaters in the northeastern USA. *J. Geophys. Res.* 117, G01009, 14 pp. DOI: 10.1029/2011JG001740.
- Young, E.O., D.S. Ross, C. Alves, and T. Villars. 2012. Influence of soil series on phosphorus forms and availability at two riparian sites in the Lake Champlain Basin (Vermont). *J. Soil Water Conserv.* 67(1):1-7. DOI: 10.2489/jswc.67.1.1.

- Ross, D.S., S.W. Bailey, G.B. Lawrence, J.B. Shanley, G. Fredriksen, A.E. Jamison and P.A. Brousseau. 2011. Near-surface soil carbon, C/N ratio and tree species are tightly linked across northeastern USA watersheds. *For. Sci.* 57(6):460-469.
- Ross, D.S. and B.C. Wemple. 2011. Soil nitrification in a large forested watershed, Ranch Brook (Vermont), mirrors patterns in smaller northeastern USA catchments. *For. Ecol. Manage.* 262:1084-1093. DOI: 10.1016/j.foreco.2011.06.002.
- Kaur, A.J., D.S. Ross and G. Fredriksen. 2010. Effect of soil mixing on nitrification rates in soils of two deciduous forests of Vermont, USA. *Plant & Soil* 331:289–298. DOI: 10.1007/s11104-009-0253-1.
- Jokela, W.E, D.S. Ross and J. P. Tilley. 2010. Manure nutrient content on Vermont dairy farms: long-term trends and relationships. *Commun. Soil Sci. Plant Anal.* 41(5): 623-637. DOI: 10.1080/00103620903531193.
- Ross, D.S., B.C. Wemple, A.E. Jamison, G. Fredriksen, J.B. Shanley, G.B. Lawrence, S.W. Bailey and John L. Campbell. 2009. A cross-site comparison of factors influencing soil nitrification rates in northeastern USA forested watersheds. *Ecosystems* 12:158-178. DOI:10.1007/s10021-008-9214-4.
- Ross, D.S., G. Matshonat and U. Skyllberg. 2008. Cation exchange in forest soils: the need for a new perspective. *Eur. J. Soil Sci.* 59(6):1141-1159. DOI: 10.1111/j.1365-2389.2008.01069.x.
- Gotelli, N.J., P.J. Mouser, S.P. Hudman, S.E. Morales, D.S. Ross, and A.M. Ellison. 2008. Geographic variation in nutrient availability, stoichiometry, and metal concentrations of plants and pore-water in ombrotrophic bogs in New England, USA. *Wetlands* 28(3):827-840. DOI: 10.1672/07-165.1.
- Hales, H.C. and D.S. Ross. 2008. Drastic short-term changes in the isotopic composition of soil nitrate in forest soil samples. *Soil Sci. Soc. Am. J.* 72(6):1645-1652. DOI: 10.2136/sssaj2006.0293.
- Ross, D.S. 2007. A carbon-based method for estimating the wetness of forest surface soil horizons. *Can. J. For. Res.* 37:846-852.
- Wemple, B., J. Shanley, J. Denner, D. Ross and K. Mills. 2007. Hydrology and water quality in two mountain basins of the northeastern US: assessing baseline conditions and effects of ski area development. *Hydrol. Process.* 21:1639-1650. DOI: 10.1002/hyp.6700.
- Weber, D., Drizo, A., Twohig, E., Bird, S. and Ross, D. 2007. Upgrading constructed wetlands phosphorus reduction from a dairy effluent using EAF steel slag filters. *Water Sci. Technol.* 56:135-144.
- Hales, H.C., D.S. Ross and A. Lini. 2007. Isotopic signature of nitrate in two contrasting watersheds of Brush Brook, VT. *Biogeochemistry* 84:51-66. DOI 10.1007/s10533-007-9074-6.
- Ross, D.S., G. Fredriksen, A.E. Jamison, B.C. Wemple, S.W. Bailey, J.B. Shanley, and G.B. Lawrence. 2006. One-day rate measurements for estimating net nitrification potential in humid forest soils. *Forest Ecol. Manage.* 230:91-95.

- Pardo, L.H., P. H. Templer, C. L. Goodale, S. Duke, P. M. Groffman, M. B. Adams, P. Boeckx, J. Boggs, J. Campbell, B. Colman, J. Compton, B. Emmett, P. Gundersen, Kjønaas, G. Lovett, M. Mack, A. Magill, M. Mbila, M. J. Mitchell, G. McGee, S. McNulty, K. Nadelhoffer, S. Ollinger, D. Ross, H. Rueth, L. Rustad, P. Schaberg, S. Schiff, P. Schleppi, J. Spoelstra and W. Wessel. 2006. Regional assessment of N saturation using foliar and root $\delta^{15}\text{N}$. *Biogeochemistry* 80(2):143-171.
- Morales, S.E., P.J. Mouser, N. Ward, S.P. Hudman, N. J. Gotelli, D.S. Ross and T.A. Lewis. 2006. Comparison of bacterial communities in New England *Sphagnum* bogs using terminal restriction fragment length polymorphism (T-RFLP). *Microbiol. Ecol.*52(1): 34-44.
- Hayden, M.J. and D.S. Ross. 2005. Denitrification as a nitrogen removal mechanism in a Vermont peatland. *J. Environ. Qual.* 34:2052-2061.
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- Negra, C., D.S. Ross, and A. Lanzirotti. 2005. Oxidizing behavior of soil manganese: interactions among abundance, oxidation state, and pH. *Soil Sci. Soc. Am. J.* 69:353-361.
- Ross, D.S., G.B. Lawrence, and G. Fredriksen. 2004. Mineralization and nitrification patterns at eight northeastern us forested research sites. *Forest Ecol. Manage.* 188:317-335.
- Ross, D.S. and H.C. Hales. 2003. Sampling-induced increases in net nitrification in the Brush Brook (Vermont) watershed. *Soil Sci. Soc. Am. J.* 67, 318-326.
- Ross, D.S., R.J. Bartlett, and H. Zhang. 2001. Photochemically induced formation of the "Al₁₃" tridecameric polycation in the presence of Fe(III) and organic acids. *Chemosphere* 44:827-832.
- Ross D.S., H.C. Hales, G.C. Shea-McCarthy, and A. Lanzirotti. 2001. Sensitivity of soil Mn oxides: drying and storage cause reduction. *Soil Sci. Soc. Am. J.* 65:736-743.
- Ross D.S., H.C. Hales, G.C. Shea-McCarthy, and A. Lanzirotti. 2001. Sensitivity of soil Mn oxides: XANES spectroscopy may cause reduction. *Soil Sci. Soc. Am. J.* 65:744-752.
- Young, E.O. and D.S. Ross. 2001. Phosphate release from seasonally flooded soils: a laboratory microcosm study. *J. Environ. Qual.* 30:91-101.
- Ross, D.S. and R.J. Bartlett. 1997. Charge fingerprints of forest organic horizons from northeastern USA. *Aust. J. Soils Res.* 35: 553-564.
- Ross, D.S., M.B. David, G.B. Lawrence, and R.J. Bartlett. 1996. Exchangeable hydrogen explains the pH of Spodosol Oa horizons. *Soil Sci. Soc. Am. J.* 60: 1926-1932.
- Ross, D.S. and R.J. Bartlett. 1996. Field-extracted Spodosol solutions and soils: aluminum, organic carbon, and pH interrelationships. *Soil Sci. Soc. Am. J.* 60:589-595.
- Ross, D.S. and R.J. Bartlett. 1995. Apparent pH independence of charge in forest organic surface soil horizons. *Water Air Soil Pollut.* 85:1113-1118.

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- Ross, D.S., T.R. Wilmot, and J. Larsen. 1994. Testing sugarbush soils: effects of sample storage and drying. *Commun. Soil Sci. Plant Anal.* 25: 2899-2908.
- Ross, D.S. 1993. Comment on "Solution sulfate chemistry in three sulfur-retentive Hydrandepts". *Soil Sci. Soc. Am. J.* 57:293
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- Hunter, D. and D.S. Ross. 1991. Evidence for a phytotoxic hydroxy-aluminum polymer in organic soil horizons. *Science* 251:1056-1058.
- Ross, D.S., R.J. Bartlett, and F.R. Magdoff. 1991. Exchangeable cations and the pH independent distribution of cation exchange capacities in Spodosols of a forested watershed. *In* R.J. Wright, V.C. Baligar, and R.P. Murmann (eds.). *Plant-soil interactions at low pH.* pp 81-92. Kluwer Academic Publishers, the Netherlands.
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- Bartlett, R.J., D.S. Ross, and F.R. Magdoff. 1987. A simple kinetic fractionation of reactive aluminum in soil "solutions". *Soil Sci. Soc. Am. J.* 51:1479-1482.
- Magdoff, F.R., R.J. Bartlett, and D.S. Ross. 1987. Soil pH buffering and acidification of forest soils. *Soil Sci. Soc. Am. J.* 51:1384-1386.
- Ross, D.S., R.J. Bartlett, and F.R. Magdoff. 1986. Determination of aluminum in forest soil leachate. *Atomic Spectroscopy* 7: 158-160.
- Magdoff, F.R., D. Ross, and J. Amadon. 1984. A soil test for nitrogen availability to corn. *Soil Sci. Soc. Am. J.* 48:1301-1304
- Murphy, W.M., D.T. Dugdale, and D.S. Ross. 1983. Problems in predicting legume fertility needs in steepland pasture improvement with soil tests. *Commun. Soil Sci. Plant Anal.* 14:1193-1200.
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- Ross, D.S. and R.J. Bartlett. 1981. Evidence for nonmicrobial oxidation of manganese in soil. *Soil Sci.* 132:153-160.
- Ross, D.S., R.E. Sjogren, and R.J. Bartlett. 1981. Behavior of chromium in soils: IV. Toxicity to microorganisms. *J. Environ. Qual.* 10:145-148.

Publications (book chapter)

- Drizo, A., Seitz, E., Twohig, E., Weber, D., Bird, S. and Ross, D. 2008. The role of vegetation in phosphorus removal by cold climate constructed wetland: the effects of aeration and growing season. pp. 236-251. *In* Vymazal, J. (ed) Wastewater treatment, plant dynamics and management in constructed and natural wetlands, Springer Publishing.
- Bartlett, R.J. and D.S. Ross. 2005. Redox processes in soil. pp. 461-487. *In* D.L. Sparks (ed) Chemical processes in soil. Amer. Soc. Agron., Madison, WI.

Publications (non-refereed)

- Ross, D.S. and Q. Ketterings. 2011. Recommended methods for determining soil cation exchange capacity. *In* A. Wolf and J. McGrath (ed) Recommended soil testing procedures for the northeastern United States, 3rd ed. Northeastern Regional Publication No. 493, <http://ag.udel.edu/extension/agnr/soiltesting.htm>
- Hoskins, B. and D.S. Ross. 2011. Sample preparation and extraction. *In* A. Wolf and J. McGrath (ed) Recommended soil testing procedures for the northeastern United States, 3rd ed. Northeastern Regional Publication No. 493, <http://ag.udel.edu/extension/agnr/soiltesting.htm>
- Griffin, G., W. Jokela, D. Ross, D. Pettinelli, T. Morris and A. Wolf. 2011. Recommended nitrate tests. *In* A. Wolf and J. McGrath (ed) Recommended soil testing procedures for the northeastern United States, 3rd ed. Northeastern Regional Publication No. 493, <http://ag.udel.edu/extension/agnr/soiltesting.htm>
- Sleeper, D. et al. 2009. Vermont's changing forests: Key findings on the health of forested ecosystems from the Vermont Monitoring Cooperative. Vermont Monitoring Cooperative. Release date: 10/26/09. <http://www.uvm.edu/vmc/documents/synthesisReport.pdf>
- Ross, D.S. 2006. Research and monitoring: Linking soil and stream processes. Vermont Monitoring Newsletter Winter 2006, Volume 11, Number 1.
- Jokela, W., F. Magdoff, R. Bartlett, S. Bosworth and D. Ross. 2004. Nutrient recommendations for field crops in Vermont. UVM Extension Br. 1390, 23 p.
- Ross, D.S., C. Negra, and A. Lanzirrotti. 2001. Association of lead with soil manganese oxides. Science Highlights, National Synchrotron Light Source Activity Report, 2.34-39.
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- Ross, D.S., H.C. Hales, G.C. Shea-McCarthy. 1997. Reduction of Soil Mn Oxides During XANES Studies. National Synchrotron Light Source Activity Report.
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- Hoskins, B. and D.S. Ross. 1995. Sample preparation and extraction. *In* J.T. Sims and A. Wolf (ed.) Recommended soil testing procedures for the northeastern United States, 2nd ed. Northeastern Regional Publication No. 493, Univ. of Delaware Press.
- Griffin, G., W.E. Jokela, and D.S. Ross. 1995. Recommended soil nitrate-N tests. *In* J.T. Sims and A. Wolf (ed.) Recommended soil testing procedures for the northeastern United States, 2nd ed. Northeastern Regional Publication No. 493, Univ. of Delaware Press.

Grants Received

- Ross, D.S., H.M. Darby, S.E. Hurley, J.W. Faulkner, E.D. Roy, E.C. Adair and A.T. Classen. Acquisition of an ICP-OES for a multiuser facility. USDA AFRI. \$49,975. 4/1/2019-3/31/2020.
- Faulkner, J.W., D.S. Ross and K. Workman. Improving our understanding of interactions between BMPs, tile drainage, and P losses in subsurface and surface runoff. Lake Champlain Sea Grant. \$149,997. 3/1/2019-2/28/2021.
- Wemple, B, R. Diehl, K. Underwood and D. Ross. Evaluating floodplain potential for sediment and nutrient retention: Development of a framework to assist in Lake Champlain Basin planning. Lake Champlain Basin Program. \$168,076. 10/1/18-9/30/20.
- Ross, D.S. and J.W. Faulkner. Equipment for phosphorus in tile drainage study. College of Agriculture / Extension Seed Grant. \$4,895. 3/1/2018-2/28/2019.
- Ross, D.S. Phosphorus export and speciation from tile drained agricultural soils of Vermont's Lake Champlain Basin. USDA Hatch. \$60,450. 10/1/17-9/30/20.
- Ross, D.S. and S.W. Bailey (with K. McGuire, B. Strahm, M. Schreiber of Virginia Tech.). Collaborative Research: Lateral weathering gradients typify critical zone architecture in glaciated catchments. NSF Low Temperature Geochemistry and Geobiology. \$189,176 (UVM), \$332,716 (Virginia Tech.). 9/1/2017-8/31/2019
- Ross, D.S., B.C. Wemple and V.L. Perillo. Phosphorus export from forested watersheds in the Missisquoi Basin. USGS Water Center. \$10,000. 3/1/17-2/28/18.
- Van Houten et al. VT EPSCoR RII Track I Submission: Lake Champlain Basin Resilience to Extreme Events (BREE). NSF EPS Award #1556770. \$20M. 6/1/2016-5/31/21.
- Ross, D.S., B.C. Wemple, N.Patch and G. Sabourin. Quantifying soil phosphorus concentrations and stream loads in forested watersheds of Vermont: implications for water quality protection. Northern States Research Cooperative Theme 1. \$10,000. 9/1/2015-5/31/2016.
- Faulkner, J.W., D. Ross, S. Bosworth, H. Darby, J. Carter, J. Tilley. Revision of the Vermont Phosphorus Index for Improved Nutrient Management and Water Quality. USDA-NRCS Vermont Conservation Innovation Grant. \$150,051. 1/1/2106-12/31/2016.
- Ross, D.S. Organic phosphorus transformations in stream corridor agricultural soils of Vermont's Lake Champlain Basin. USDA Hatch. \$60,000. 10/1/2014-9/30/2017.

- Driscoll, C.T., J.D. Demers, D.S. Ross, J.B. Shanley and A.K. Sauer. Assessing biological mercury hotspots in montane ecosystems of the Northern Forest. Northern States Research Cooperative Theme 4. \$114,797. 7/1/2014-5/31/2017.
- Ross, D.S. and B.C. Wemple. Organic phosphorus forms and transformations in Lake Champlain stream corridor soils. Vermont Water Center (USGS). \$80,000. 3/1/2014-2/28/2016.
- Ross, D.S., J.H. Görres, C.M. Danks, S.H. Wilmot and C.v.H. Cogbill. Earthworm and land-use legacy effects on belowground carbon in the managed northern forest. Northern States Research Cooperative Theme 1. \$73,072. 6/26/2012-9/30/2015.
- Wemple, B.C. and D.S. Ross. Evaluating effectiveness of BMP implementation on gravel roads to reduce sediment and phosphorus runoff. Vermont Water Center (USGS) and VT ANR. \$86,443. 3/1/2012-2/28/2014.
- Van Houten, J. and K. Chu. Adaptation to climate change in the Lake Champlain Basin: New understanding through complex systems modeling. NSF EPSCoR. \$20M. 9/1/2011-8/21/2016 (Ross is one of the funded investigators).
- Ross, D.S. Carbon and nutrient dynamics in Vermont's forested and agricultural soils. USDA Hatch. \$60,000. 10/1/2012-9/30/2015.
- Ross, D.S. Determining phosphorus release potential from eroding streambank sediments in the Lake Champlain Basin of Vermont. Vermont Water Center (USGS). \$19,989. 3/6/2011-3/4/2012.
- McGuire, K.J., S.W. Bailey, T.D. Bullen and D.S. Ross. Collaborative Research: Landform controls on hydrologic flowpaths and pedogenesis explain solute retention and export from pedon to catchment scales. NSF Hydrology. \$422,307 (\$84,305 UVM). 8/15/2010-7/31/2013.
- Wemple, B.C., L. Morrissey, D.M. Rizzo, D.S. Ross. Assessing road drainage impacts to Lake Champlain water quality. Lake Champlain Basin Program. \$99,313. 9/1/2010-8/31/2012.
- Sebestyen, S.D., D.S. Ross and J.B. Shanley. A survey of nitrate isotopes to detect atmospheric nitrate inputs to stream and soil waters of forested watersheds in the northeastern USA. Northern States Research Cooperative, Theme 2. \$14,919. 7/1/2010-9/30/2012.
- Gilker, R. E., D. Ross, J. Gorres, A. Matthews and J. Colby. Increasing carbon sequestration in Vermont pastures. USDA Conservation Innovation Grant – Vermont. \$74,881. 9/1/2009-8/31/2012.
- Ross, D.S. and J. Juillerat. Mercury litterfall deposition in the northern forest: influence of tree species and earthworms. Northern States Research Cooperative, Theme 1 Graduate Research Assistant Grant. \$25,000. 7/1/2009-12/31/2010.
- Ross, D.S. and E.O. Young. Estimating soil phosphorus concentrations along erodible stream corridors in Chittenden County, Vermont. Vermont Water Center (USGS), VT Agency of Natural Resources and the Linthilac Foundation. \$73,784. 3/1/2009-2/28/2011.

- Ross, D.S. Quantifying carbon pools, sequestration potential, and reactivity in Vermont soils. USDA Hatch. \$45,000, 10/1/2008-9/30/2011.
- Ross, D.S. Analysis of long-term forest soils monitoring at Mt. Mansfield and Lye Brook Wilderness Area. Vermont Monitoring Cooperative. \$15,000, 1/1/2009-12/31/2009.
- Ross, D.S. and E.O. Young. Soil phosphorus landscape variability and soil mapping in a stream corridor of the Northern Lake Champlain watershed. Vermont Water Center (USGS) and VT Agency of Natural Resources. \$48,052, 3/1/2008-2/28/2009.
- Ross, D.S. and S. Wilmot. Soil carbon and other quality indicators in managed northern forests. Northern States Research Cooperative, Theme 1. \$99,442, 8/1/2007-7/30/2009.
- Drizo, A., Druschel, G., Ross, D. USDA Special Hatch Project. Constructed Wetlands Center for Research, Education, and Outreach at the University of Vermont: pollutant removal processes and mechanisms. 9/1/2007-3/31/2009. \$165,013.
- Ross, D.S. and S.B. Bailey. Determining forest soil calcium supplies: a reconciled chemical and mineralogical approach. Northern States Research Cooperative, Theme 2. \$57,500, 7/6/2006-6/30/2008.
- Ross, D.S., J.P. Tilley, E.O. Young, and K. Underwood. Phosphorus availability from the soils along two streams of the Lake Champlain Basin: mapping, characterization and seasonal mobility. USGS/VT ANR. \$56,776, 3/06/2006-3/05/2007.
- Wemple, B.C., D.S. Ross and J.B. Shanley. Enhancing the Mt. Mansfield paired-watershed study through detailed field measurements and infrastructure development. Linthilac Foundation. \$29,809, 9/1/2006-8/31/2008.
- Ross, D.S. Long-term forest soils monitoring at Mt. Mansfield and Lye Brook Wilderness Area. Vermont Monitoring Cooperative. \$5,000, 1/1/2006-12/31/2006.
- Ross, D.S. Nitrogen movement through Vermont forest ecosystems impacted by N deposition. USDA Hatch. \$43,500, 10/1/2005-9/30/2008.
- Drizo, A. and D.S. Ross. Phosphorus removal from dairy effluents using constructed wetlands and active filters technology. USDA NRCS. \$85,000. 7/1/2005 - 6/30/2006.
- Drizo, A., D.S. Ross and T.A. Lewis. Constructed Wetlands Center for Research, Education, and Outreach at the University of Vermont. USDA-CSREES \$162,200. 7/1/2005-6/30/2006.
- Drizo, A., M. Vayda and D.S. Ross. Alternative Technologies for P Removal from Agricultural Effluents. USDA-CSREES. \$86,412. 9/15/2005-8/15/2007.
- Wemple, B.C., D.S. Ross and J.B. Shanley. Understanding Spatial Patterns in Stream Nitrate Yield in Watersheds of the Northeastern U.S. VT EPSCoR graduate student support. \$25,000 1/1/2005-12/31/2005.
- Ross, D.S. and S.B. Bailey. Determining the mineralogical identity of occult calcium in forest soils of the northeast. Northern States Research Cooperative. \$37,810, 6/1/2004-7/31/2006.

- Ross, D.S., Wemple, B.C., Campbell, J., Lawrence, G.B., Shanley, J., Bailey, S. Nitrification rates across NERC sites: Temporal variability, riparian sources, and predictive ability. Northern States Research Cooperative. \$71,400, 7/1/2004-9/30/2006.
- Drizo, A., D.S. Ross, and T.A. Lewis. Constructed wetlands center for agricultural effluent management at the University of Vermont: performance and operational design parameters. USDA-CSREES Special Research Grant. \$138,366, 7/1/2004-6/30/2005.
- Drizo, A. and D.S. Ross. Alternative technologies for P removal from agricultural effluents: USDA-CSREES Special Research Grant, Environmentally Friendly Products. \$97,113. 7/1/2004-6/30/2006.
- Ross, D.S., D.C. Foss, and T.A. Lewis. Constructed wetlands center for research, education, and outreach at the University of Vermont. USDA-CSREES Special Research Grant. \$172,741, 7/1/2003-6/30/2004.
- Ross, D.S., Lewis, T.A., Foss, D.C. Constructed wetland center for research, education and outreach. Lake Champlain Basin Program. \$64,000, 9/1/2003-8/31/2004.
- Ross, D.S. Soil processes and nitrate movement through Vermont forested ecosystems. USDA Hatch. \$49,241, 10/1/2002-9/30/2005
- Ross, D.S., Wemple, B.C., Campbell, J., Lawrence, G.B., Shanley, J., Bailey, S. Nitrification rates and stream nitrate export across NERC sites. Northern States Research Cooperative. \$90,000. 9/01/2002-12/31/2004.
- Ross, D.S., Wemple, B.C., Shanley, J. Support for stream chemical analysis of VMC high elevation paired watershed study. \$4,724, 5/1/2002-12/31/2003. VT Dept. of Forest, Parks and Recreation.
- Wemple, B., D.S. Ross and J.B. Shanley. Water quantity and quality dynamics in high-elevation watersheds: Developing a scientific approach to understanding ski area impacts in Vermont. USGS Water Center. \$59,674, (\$6,100 subaward to D.S. Ross) 2002-2004.
- DeHayes, D.H. and T.D. Perkins. Evaluating the threat that acid rain-induced calcium depletion poses to tree health and forest sustainability. US EPA Coop. \$25,294 subaward to coPI D.S. Ross. 2002-2005.
- Allen, C.W. and N.J. Gotelli. Development of a multidisciplinary research culture in environmental science and engineering at the University of Vermont. NSF \$300,000 (sub-award to senior investigator D.S. Ross of \$55,366), 2001-2003.
- Ross, D.S., T.A. Lewis, B. Wemple, C. Hession and A. Lini. Baseline data from a high-elevation watershed in the Green Mountains. Vermont EPSCoR EPA. \$4,892, 2001-2002.
- Ross, D.S. and T.A. Lewis. Community structure of ammonia oxidizing bacteria in forest soils. UVM University Committee on Research and Scholarship. \$5,000, 2001-2002.
- Ross, D.S. Behavior of soil manganese oxides. Post-doctoral student funded by Vermont EPSCoR NSF. \$28,000, 2001.

- Ross, D.S. Soil manganese oxides: oxidation and retention of contaminant metals and organics. USDA Hatch. \$33,000, 2000-2002.
- DeHayes, D.H. and T.D. Perkins. Acid deposition effects on forest ecosystems in Vermont. US EPA Coop. \$22,000 subaward to coPI D.S. Ross. 2000-2002.
- Ross, D.S. and A. Lini. Microbial and physico-chemical control of nitrogen mobility in forest ecosystems. USDA NRI, \$100,000. 1999-2001.
- Ross, D.S. and A. Lini. Assessing nitrogen transformations and export in two contrasting forested watersheds. Vermont EPSCoR NSF. (fellowship and minigrant, 1st year and renewal) \$47,180. 1999-2000.
- Lini, A. and D.S. Ross. Equipment of the UVM Environmental Stable Isotope Laboratory. UVM RAC, \$12,325, 1999.
- Ross, D.S. Assessing nitrogen transport and transformations in two contrasting watersheds. UVM Hatch \$33,700, 1997-2000.
- Ross, D.S. and A. Lini. Method development for soil and water nitrification studies. UVM UCRS, \$5,000, 1997-1998.
- Ross, D.S. and R.J. Bartlett. Mobility of N, P and Cr in wetlands related to redox in the light and in the dark. UVM Hatch \$35,375, 1996-1999.
- Ross, D.S., P.S. Kindstedt, T. Scherbatskoy, W.S. Harper, W.E. Jokela, D.H. DeHayes, J. Hoffman, J.W. Hughes. Acquisition of an inductively coupled plasma atomic emission spectrometer. USDA-NRICGP \$49,975, 1996-1997.
- Ross, D.S., R.J. Bartlett, and F.R. Magdoff. What determines the pH of forest soil surface horizons? USDA-NRICGP. \$80,000, 1993-1995.

Presentations

- Ross, D.S., B.C. Wemple, K.L. Underwood, and S.D. Hamshaw. 2019. Impact of Tropical Storm Irene on bank erosion and phosphorus mobilization along the main stem of the Mad River. Winter meeting of the Vermont Geological Society, Norwich, VT, February.
- Wemple, B., D. Ross, J. Garton, S. Hamshaw, and D. Rizzo. 2019. Investigating the effects of gravel roads on water quality in the Lake Champlain Basin. Winter meeting of the Vermont Geological Society, Norwich, VT, February.
- Diehl, R., B. Wemple, K. Underwood, D. Ross. 2019. Evaluating floodplain potential for sediment and nutrient retention: Development of a framework to assist in Lake Champlain Basin planning. Winter meeting of the Vermont Geological Society, Norwich, VT, February.
- Ross, D.S., S.W. Bailey, B.D. Strahm, K.J. McGuire, M. Schreiber, J. Bower, J. Benton, S. Duston and A. Pennino. 2019. Lateral weathering gradients in the critical zone of an upland glaciated catchment. Soil Science Society of America International Meeting, San Diego, CA, January.

- Duston, S., B.D. Strahm, K.J. McGuire, D.S. Ross, M. Schreiber, S.W. Bailey, J. Benton, and A. Pennino. 2019. Contribution of organic acidity on the weathering engine of the critical zone. Soil Science Society of America International Meeting, San Diego, CA, January.
- Ross, D.S. 2019. Changes in nitrogen and phosphorus release induced by seeps and riparian flooding from headwaters to the main stem of streams feeding Lake Champlain. New Hampshire Association of Natural Resource Scientists Annual Conference. Concord, NH, January.
- Ross, D., S. Bailey, A. Quintana, T. Villars, S. Wilmot and J. Duncan. 2018. Trends (?) in exchangeable cations after fifteen years into a 150-year soil monitoring study. Forest Ecosystem Monitoring Cooperative Annual Meeting, Burlington, VT, December.
- Bower, J., D.S. Ross, S.W. Bailey, K.J. McGuire, B.D. Strahm, M.E. Schreiber, K. Ashe, J. Benton, and S. Duston. 2018. Quantifying mineral weathering across lateral gradients using a whole-regolith approach. American Geophysical Union Annual Meeting, Washington D.C., December.
- Benton, J. M.E. Schreiber, K.J. McGuire, B.D. Strahm, D.S. Ross, S.W. Bailey, J. Bower, and S. Duston. 2018. Characterizing subsurface hydrologic fluxes within a glaciated watershed. American Geophysical Union Annual Meeting, Washington D.C., December.
- Ross, D., S. Bailey, T. Villars, A. Quintana, J. Shanley, S. Wilmot, and J. Duncan. 2018 Sixteen years into a 150-year soil monitoring study. North American Forest Soils Conference, Quebec, CA, June.
- Ross, D.S., V.L. Perillo and B.C. Wemple. 2018. The potential contribution of streambanks to phosphorus loads in the Lake Champlain Basin, with a focus on the Missisquoi River. Lake Champlain Conference, Burlington, VT, January.
- Lancellotti, B., D. Ross, E. Piersiak, C. Adair, J. Perdrial, A. Schroth. 2107. Quantifying phosphorus in soils of riparian buffers influenced by different land use practices. American Geophysical Union, New Orleans, LA, December.
- Ross, D.S., J. Shanley, S.W. Bailey, T. Villars, S. Wilmot, A. Quintana, J. Duncan. 2017. Ongoing Monitoring of Forest Soil Mercury in Vermont, USA. International Conference on Mercury as a Global Pollutant, Providence, RI, July.
- Ross, D.S., B.C. Wemple and V. L. Perillo. 2017. The potential contribution of streambanks to phosphorus-driven eutrophication in a mixed land-use basin, Lake Champlain (Vermont, USA). International Interdisciplinary Conference on Land Use and Water Quality: Effect of Agriculture on the Environment, The Hague, the Netherlands, May.
- Ross, D.S., B.C. Wemple and C. Balling. 2017. Changes in near-stream soil phosphorus resulting from extreme-event driven erosion. Chapman Conference on Extreme Climate Event Impacts on Aquatic Biogeochemical Cycles and Fluxes, San Juan, PR, January.
- McGuire, K.J., S.W. Bailey, D.S. Ross, B.D. Strahm and M.E. Schreiber. 2016. Lateral weathering gradients in glaciated catchments. AGU Fall Meeting, San Francisco, CA, December

- Ross, D.S., J. Gorres, M. Knowles, C. Cogbill, S. Wilmot, J. Juillerat, C. Danks. 2016. Carbon stocks in Vermont's managed forests: complex interaction of soil properties, land-use history and earthworms. Soil Science Society of America annual meetings, Phoenix, AZ, November.
- Klaiber, L.B., E.O. Young, S. Kramer, K. Griffith and D. S. Ross. 2016. Impacts of agricultural tile drainage on water, phosphorus, and sediment losses. Soil Science Society of America annual meetings, Phoenix, AZ, November.
- Lawrence, G.B., M.R. Antidormi, M. Vadeboncoeur, P. Hazlett, I.J. Fernandez, S.W. Bailey and D. S. Ross. 2016. Does long-term storage of air-dried soils effect the results of chemical analyses commonly performed on forest soils? Soil Science Society of America annual meetings, Phoenix, AZ, November.
- Perillo, V.L., C. Balling, D.S. Ross and B.Wemple. 2016. Potential for P release in streambank soils of different land uses in the Missisquoi River (Vermont, USA). Soil Science Society of America annual meetings, Phoenix, AZ, November.
- Ross, D.S., J. Gorres, M. Knowles, C. Cogbill, S. Wilmot, C. Danks. 2106. Vermont's managed forests and soil carbon stocks: interaction among land-use history, earthworms and site. ECANUSA 2016, Burlington, VT, October.
- Ross, D.S. 2016. Earthworm and land-use legacy effects on carbon in the forest soils of Vermont. The Northeast Natural History Conference 2016. Springfield, MA, April.
- Underwood, K.L., C. Alves, D.S. Ross, M.M. Dewoolkar and D.M. Rizzo. 2016. Influence of geomorphic setting on distribution of nutrient stocks in Lake Champlain basin floodplains. Northeastern Section, Geological Society of America, Albany, NY, March.
- Ross, D.S. 2016. Carbon in forest soils of Vermont: interactions with past land use and earthworms. Northeastern States Research Cooperative (NSRC) and the Vermont Agency of Natural Resources speaker series, Montpelier, VT, March
- Ross, D.S. 2016. Phosphorus in streambank soils in the Lake Champlain Basin. Lake Champlain Basin Program, Technical Advisory Committee, Grand Isle, VT, January.
- Bailey, S.W., K.J. McGuire and D.S. Ross. 2015. Moving the watershed ecosystem approach beyond the black box with sensor technologies and new conceptual models. H42B:04. AGU Annual Meeting, San Francisco, CA, December.
- Bailey, S.W. and D.S. Ross. 2015. Thresholds in soil mineral weathering and relation to streamwater chemistry in glaciated catchments of the northeastern USA. H33F-1678. AGU Annual Meeting, San Francisco, CA, December.
- Bailey, S.W. and D.S. Ross. 2015. Connections and gaps between mineral weathering and biology in forested watersheds of the northeastern USA. Soil Science Society of America annual meetings, Minneapolis, MN, November.
- Perillo, V.L., C. Balling, D.S. Ross and B.C. Wemple. 2015. Preliminary characterization of organic phosphorus species in soils along the Missisquoi River (Vermont, USA). Soil Science Society of America annual meetings, Minneapolis, MN, November.

- Ross, D.S., E.R. Ishee, K.M. Garvey and R.R. Bourgault. 2015. Phosphorus contribution from eroding streambank soils of Vermont's Lake Champlain Basin. Soil Science Society of America annual meetings, Minneapolis, MN, November.
- Bailey, S.W. and D.S. Ross. 2015. Thresholds in mineral weathering in glaciated catchments of the northeastern USA. Gordon Research Conference on Catchment Sciences: Interactions of Hydrology, Biology and Geochemistry, New London, NH, June.
- Knowles, M.E., D.S. Ross and J. Gorres. 2015. Earthworm presence in northern forests: impact on distribution of soil carbon within aggregate fractions. Northeastern Ecosystem Research Cooperative, Saratoga, NY, March.
- Ross, D.S. 2015. Rock-eating mycorrhizae, hydropedology and a new hypothesis for mineral weathering in upland catchments. Marvin Lecture Series, Plant Biology Dept., UVM, February.
- Ross, D.S. 2014. Twelfth-year update on a 200-yr soil monitoring study. Vermont Monitoring Cooperative annual meeting, Burlington, VT, December.
- Young, E.O., D.S. Ross and B. Hoskins. 2014. Extractable soil phosphorus concentrations as determined by molybdate colorimetric procedures and ICP: Influence of soil properties. Soil Science Society of America annual meetings, Long Beach, November.
- Ross, D.S. 2014. Base saturation and cation exchange in forest soils: a history of concepts and problems. Soil Science Society of America annual meetings, Long Beach, November.
- Ross, D.S. 2014. Hydropedology at Hubbard Brook: Chemistry and morphology of vertical versus lateral spodic horizons. Northeast Regional Cooperative Soil Survey Conference, Plymouth State University, June.
- Ross, D.S. 2014. Update from the second decade of Vermont's 200-yr soil monitoring experiment. Society of Soil Scientists of Northern New England, Burlington, February.
- Ross, D.S., R. Bourgault and S.W. Bailey. 2013. Hydropedologic influence on soil manganese distribution, form and reactivity near seeps in a forested catchment. Soil Science Society of America annual meetings, Tampa Bay, November.
- Knowles, M.E., D.S. Ross and J. Gorres. 2013. Earthworm invasion in northern forests: impact on distribution of soil carbon within aggregate fractions. Soil Science Society of America annual meetings, Tampa Bay, November.
- Kevin J. McGuire, K.J., S.W. Bailey, T.D. Bullen, D.S. Ross, R. Bourgault, J.P. Gannon and C.P. Gillin. 2013. A hydropedologic framework for mapping spatial patterns of runoff generation and biogeochemical export in catchments. Soil Science Society of America annual meetings, Tampa Bay, November.
- Bourgault, R., D.S. Ross, S. Bailey, K.J. McGuire and T.D. Bullen. 2013. Hydropedology of podzols at Hubbard Brook, NH. Soil Science Society of America annual meetings, Tampa Bay, November.
- Ross D., J. Shanley, S. Bailey, T. Villars, S. Wilmot, N. Burt, N. Kamman. 2013. Long-term monitoring of forest soil mercury by the Vermont Monitoring Cooperative. In: 11th International Conference on Mercury as a Global Pollutant, Edinburgh, Scotland, August.

- Ross, D.S., R. Bourgault and S.W. Bailey. 2013. Hydropedologic influence on soil manganese distribution, form and reactivity near seeps in a forested catchment. Gordon Research Conference on Catchment Sciences: Interactions of Hydrology, Biology and Geochemistry, New London, NH, June.
- Bourgault, R., D.S. Ross, S.W. Bailey. 2013. A hydropedologic approach to characterizing soil variability in a headwater catchment. Northeast Ecosystem Research Cooperative 2013 Conference, Saratoga, NY, March.
- Ross, D.S. 2012. Tenth-year update on a 200-yr soil monitoring study. Vermont Monitoring Cooperative annual meeting, Burlington, VT, November.
- Young, E.O., D.S. Ross, B.J. Cade-Menun, C. Alves, T. Villars. 2012. Assessing native phosphorus availability in riparian soils of northwestern Vermont. Soil Science Society of America annual meetings, Cincinnati, October.
- Bourgault, R., D.S. Ross, S. Bailey, K. McGuire, P.A. Brousseau. 2012. Hydropedology of podzols at Hubbard Brook, NH. Soil Science Society of America annual meetings, Cincinnati, October.
- Bailey, S.W. and D.S. Ross. 2012. The role of mineral weathering dynamics in the calcium cycle of northern hardwood forest soils in a changing world: reconciling mineral depletion and mass balance studies. Soil Science Society of America annual meetings, Cincinnati, October.
- Young, E.O., D.S. Ross and B.R. Hoskins. 2012. Evaluating soil test P variation based on measurement by molybdate colorimetry and ICP. Soil Science Society of America annual meetings, Cincinnati, October.
- Ross, D.S. and S.W. Bailey. 2012. The role of mineral weathering dynamics in the calcium cycle of northern hardwood forest soils in a changing world: analytical approaches to quantifying mineralogy. Soil Science Society of America annual meetings, Cincinnati, October.
- Ross, D.S. 2012. Disturbing problems with nitrification rate measurements in forest soils. Biogeomon 2012, Northport, ME, July.
- Sebestyen S.D., J.B. Shanley, D.S. Ross, E.M. Elliott, C. Kendall, E.W. Boyer. 2012. Identifying when, where, and why atmospheric nitrate is directly transported to streams in nitrogen polluted forests. Biogeomon, Northport, ME, July.
- Sebestyen S.D., J.B. Shanley, D.S. Ross, E.M. Elliott, C. Kendall, E.W. Boyer. 2012. Identifying when, where, and why atmospheric nitrate is directly transported to streams in nitrogen polluted forests. Annual Meeting, Society for Freshwater Sciences, Louisville, KY, May.
- Bourgault, R.R. and D.S. Ross. 2012. Spatial investigation of soil chemistry in a manganese-rich seep area of Watershed 3. Hubbard Brook Cooperators Meeting, West Thornton, NH, July.
- Bourgault, R.R., D.S. Ross, S.W. Bailey, P.A. Brousseau, J.P. Gannon, K.J. McGuire and T.D. Bullen. 2012. Landscape-scale pedogenic relationships between soil carbon and

- secondary metal oxides in Hubbard Brook podzols, northeastern US. Goldschmidt 2012, Montreal, Canada, June.
- Wemple, B, K. Garvey, L. Morrissey, A. Pechenick, D. Rizzo, and D. Ross. 2012. Hydrological connectivity of road and stream networks and implications for material transfer and channel morphology. GM6.2/HS9.6/SSS5.21, European Geophysical Union, Vienna, Austria, April.
- Ross, D.S., J.I. Juillerat and M.S. Bank. 2011. Mercury in litterfall and upper soil horizons across fifteen managed forest sites in Vermont, USA. Northern New England Forests Research Symposium, South Burlington, VT, December.
- Ishee, E.R. and D.S. Ross. 2011. Characterizing phosphorus in eroding streambank soils in Chittenden County, Vermont. H43F-1279, AGU Annual Meeting, San Francisco, CA, December.
- McGuire, K.J., S.W. Bailey, J.P. Gannon, T.D. Bullen and D.S. Ross. 2011. Soil morphology as an indicator for spatial patterns of runoff generation thresholds (Invited). H44F-03, AGU Annual Meeting, San Francisco, CA, December.
- Bullen, T.D., S.W. Bailey, K.J. McGuire, M.A. Zimmer and D.S. Ross. 2011. Determining solute sources and water flowpaths in a forested headwater catchment: advances with the Ca-Sr-Ba multi-tracer. EP51F-07, AGU Annual Meeting, San Francisco, CA, December.
- Ross, D, J. Juillerat and S. Wilmot. 2011. Soil carbon monitoring plots in Vermont's sustainably managed forests. Annual meeting of the Vermont Monitoring Cooperative, Burlington, VT, October.
- Bourgault, R., D. Ross, S. Bailey, K. McGuire and P. Brousseau. 2011. A catchment-scale hydrogeological approach to understanding variations in soil genesis and chemistry at Hubbard Brook, NH. Annual meeting of the Soil Science Society of America, San Antonio, TX, October.
- Ishee, E. and D. Ross. 2011. Contribution of streambank erosion as a non-point source of phosphorus to Lake Champlain. Annual meeting of the Soil Science Society of America, San Antonio, TX, October.
- Jamison, B., R. Gilker, J. Gorres and D. Ross. 2011. Keyline plowing as a tool to mitigate soil compaction occurring in rotationally grazed dairy pastures. Annual meeting of the Soil Science Society of America, San Antonio, TX, October.
- Ross, D, J. Juillerat and S. Wilmot. 2011. Soil carbon monitoring plots in Vermont's sustainably managed forests. Annual meeting of the Soil Science Society of America, San Antonio, TX, October.
- Ross, D.S. and J.I. Juillerat. 2011. Tree species composition effects on mercury deposition in managed forests of Vermont. 10th International Conference on Mercury as a Global Pollutant, Halifax, NS, July.
- Bourgault, R, D. Ross, S. Bailey and K. McGuire. 2011. A catchment-scale hydrogeological approach to understanding variations in soil genesis and chemistry at Hubbard Brook,

- NH. Gordon Research Conference on Catchment Sciences: Interactions of Hydrology, Biology and Geochemistry, Lewiston, ME, July.
- Bullen, T., S. Bailey, M. Zimmer, K. McGuire, R. Bourgault and D. Ross. 2011. Hydropedology reveals spatial distribution of processes controlling stream solute sources: chemical and isotopic clues. Gordon Research Conference on Catchment Sciences: Interactions of Hydrology, Biology and Geochemistry, Lewiston, ME, July.
- Ross, D.S., J.I. Juillerat and S. Wilmot. 2011. Monitoring plots to detect change in soil carbon pools in Vermont's managed forests. Woody Biomass Energy Research Symposium for the Northern Forest, Burlington, VT, April.
- Ross, D.S. 2011. The carbon beneath your footprints: how much and how stable is the carbon in Vermont's forest soils (invited) New England Society of American Foresters 91st Winter Meeting, Fairlee, VT, March.
- Ross, D.S., S.W. Bailey, G.B. Lawrence, J.B. Shanley, G. Fredriksen, A.E. Jamison and P.A. Brousseau. 2010. Near-surface soil carbon, C/N ratio and tree species are tightly linked across northeastern USA watersheds. AGU Annual Meeting, San Francisco, CA, December.
- Bullen, T.D., Bailey, S.W., McGuire, K.J., Brousseau, P., Ross, D.S., Bourgault, R., Zimmer, M.A., 2010. Understanding metal sources and transport processes in watersheds: a hydropedologic approach (invited). AGU Annual Meeting, San Francisco, CA, December.
- Ross, D.S., R. Gilker, J. Gorres and J. Colby. 2010. Forage radish enhancement of soils (increasing carbon sequestration in Vermont pastures). Merck Forest and Farmland Center, Rupert, VT, October.
- Ross, D.S., J.I. Juillerat and S. Wilmot. 2010. Soil carbon monitoring plots in Vermont's managed forests. Eastern CANUSA Forest Science Conference, Edmundston, New Brunswick, October.
- Ross, D.S. and A. Lanzirrotti. 2010. Oxidation of added Mn(II) in soils as observed by the Cr Oxidation Test and Mn K α XANES spectroscopy. Goldschmidt 2010, Knoxville, TN, June.
- Juliette I. Juillerat and D.S. Ross. 2010. Mercury deposition through litterfall and subsequent accumulation in soils: Does forest community type matter? Goldschmidt 2010, Knoxville, TN, June.
- Young, E.O., D.S. Ross, C. Alves, and T. Villars. 2010. Spatial variability of riparian soil phosphorus at a site along the Rock River. Lake Champlain 2010 Conference, Burlington, VT, June.
- Ross, D.S. 2010. Forest reference soil sample exchange updated results. Fourth Workshop of the Northeastern Soil Monitoring Network, Troy, NY, March.
- Ross, D.S., J.I. Juillerat and S. Wilmot. 2010. Carbon in managed northern forests. Fourth Workshop of the Northeastern Soil Monitoring Network, Troy, NY, March.

- Juillerat, J.I. and D. S. Ross. 2009. Mercury deposition through litterfall and subsequent accumulation in soils: influence of forest community type. Annual meeting of the American Geophysical Union, San Francisco, December.
- Ross, D.S., S.W. Bailey and M.J. Jercinovic. 2009. Calcium mineralogy in forest soil profiles from three northeastern sites having a wide range in total calcium. Annual meeting of the Soil Science Society of America, Pittsburgh, November.
- Young, E.O., D.S. Ross, B. Cade-Menun and C.W. Liu. 2009. Importance of organic phosphorus in floodplain soils from northwestern Vermont as revealed by nuclear magnetic resonance spectroscopy and phosphatase enzymes. Annual meeting of the Soil Science Society of America, Pittsburgh, November.
- Juillerat, J.I. and D. S. Ross. 2009. Mercury deposition through litterfall and subsequent accumulation in soils: influence of forest community type. NYSERDA-Environmental Monitoring, Evaluation and Protection annual meeting, Albany, NY, October.
- Ross, D.S. 2009. Calcium-aluminum exchange in forested catchments--is there a tipping point? Gordon Conference on Biogeochemistry of Catchments, Proctor Academy, NH, July.
- Ross, D.S. 2009. A curiously strong relationship between carbon, C/N ratio and tree species in surface soils from northeastern USA research watersheds. Carbon in the northern forest. Traverse City, Michigan, June.
- Ross, D.S. and B. Cahoon. 2009. Using NRCS Soil Survey information in a study of phosphorus in floodplain soils in the Lake Champlain basin of Vermont (invited). 2009 Vermont Cooperative Soil Survey Conference, South Burlington, VT May.
- Wilmot, S, D.S. Ross (presenter), J. Juillerat, M. Stewart and T. Villars. 2009. Mapping soil carbon in Vermont with NRCS data. Third Workshop of the Northeastern Soil Monitoring Network, Troy, NY March.
- Ross, D.S. and S.W. Bailey. 2009. Lab methods Survey/Round-robin sample exchange. Third Workshop of the Northeastern Soil Monitoring Network, Troy, NY March.
- Ross, D.S. 2009. Cross-site study of ten small watersheds in the NERC. Third Workshop of the Northeastern Soil Monitoring Network, Troy, NY March.
- Ross, D.S. 2009. Understanding soil testing (invited). Thirteenth Annual Vermont Grazing Conference, Randolph, January.
- Ross, D.S. and J. Juillerat. 2008. Surface soil carbon, nitrogen and tree species are tightly linked in northeastern USA forested watersheds. Annual meeting of the American Geophysical Union, San Francisco, December.
- Ross, D.S. and S.W. Bailey. 2008. Persistence of charcoal in soils of the Cone Pond watershed and possible effects on soil chemistry. Biennial meeting of the Northeast Ecosystem Research Cooperative, Durham, NH, November.
- Yanai, R.D., J.B. Shanley, S.W. Bailey, T.J. Fahey, T.G. Siccama, R.A. Hallett, R.B. Smith, D.S. Ross, H.M. Engelman, and B.B. Park. 2008. Cross-site comparison of nutrient cycling in hardwood and softwood stands on contrasting soil. Biennial meeting of the Northeast Ecosystem Research Cooperative, Durham, NH, November.

- Ross, D.S. 2008. Carbon in forest surface soils of the northeast: tight linkages to both nitrogen and tree species. Annual meeting of the Vermont Monitoring Cooperative, Burlington, October.
- Ross, D.S., S. Wilmot, J.I. Juillerat. 2008. Carbon and other quality indicators in managed northern forests. Annual meeting of the Vermont Monitoring Cooperative, Burlington, October.
- Ross, D.S. and S.W. Bailey. 2008. Persistence of charcoal in soils of the Cone Pond (New Hampshire) watershed and possible effects on soil chemistry. Annual meeting of the Soil Science Society of America, Houston, October.
- Young, E.O. and D.S. Ross. 2008. Prevalence and potential bioavailability of water-soluble organic phosphorus in riparian soils. Annual meeting of the Soil Science Society of America, Houston, October.
- Auch, W.E., D.S. Ross and F.S. Gilliam. 2008. A proposed C, N, and P model for northern New England hardwood forest vegetation and soils. Annual meeting of the Soil Science Society of America, Houston, October.
- Yanai, R.D., J.B. Shanley, S.W. Bailey, T.J. Fahey, T.G. Siccama, R.A. Hallett, R.B. Smith, D.S. Ross, H.M. Engelman, and B.B. Park. 2008. Cross-site comparison of nutrient cycling in hardwood and softwood stands on contrasting soils. Ecological Society of America annual meetings, Milwaukee, August.
- Auch, W.E. and D.S. Ross. 2008. Global primary productivity, respiration, litter decomposition, and climate: Revisiting a paradigm. Ecological Society of America annual meetings, Milwaukee, August.
- Ross, D.S. 2008. Soil base saturation: a history of concepts and present day problems. Plants & Soils (joint meeting of Northeastern ASA, Canadian Society of Agronomy and Canadian Society of Hort. Sci.), Montreal, July.
- Young, E.O. and D.S. Ross. 2008. Using laboratory microcosms to study reactive phosphorus release in floodplain soils. Plants & Soils (joint meeting of Northeastern ASA, Canadian Society of Agronomy and Canadian Society of Hort. Sci.), Montreal, July.
- Ross, D.S. 2008. Carbon, C/N ratios and tree species are tightly linked in northeastern USA mountain research watersheds. Mountain soils under a changing climate and land-use. Swiss Federal Research Institute for Forest, Snow and Landscape Research WSL, Birmensdorf, Switzerland, March.
- Young, E.O., D.S. Ross, C.Alves, T. Villars. 2008. Linking soil-landscape factors to phosphorus levels in Vermont floodplains. Lake Champlain: Our Lake, Our Future, Burlington, January.
- Kaur, A. and D.S. Ross. 2007. Enriched groundwater seeps in Vermont's forest ecosystems: sources or sinks for nitrate? Annual meeting of the American Geophysical Union, San Francisco, December.
- Auch, W. and D.S. Ross. 2007. Global patterns in litter decomposition: a synthesis Annual meeting of the American Geophysical Union, San Francisco, December.

- Ross, D.S. 2007. A cross-site comparison of factors influencing soil nitrification rates in northeastern USA forested watersheds. Marvin Lecture Series, Plant Biology Dept., UVM, November.
- Ross, D.S. 2007. Carbon and C/N ratios are remarkably linked in northeastern USA forest research sites Annual meeting of the Soil Science Society of America, New Orleans, November.
- Alves, C., E.O. Young, and D.S. Ross. 2007. Evaluating phosphorus availability in Vermont floodplain soils. Annual meeting of the Soil Science Society of America, New Orleans, November.
- Ross, D.S., B.C. Wemple, J.B. Shanley, G.B. Lawrence, S.W. Bailey, J. Campbell, A. Jamison, G. Fredriksen. 2007. In northeastern USA research watersheds, forest soil surface horizon C/N is amazingly well correlated to carbon. Gordon Conference on Biogeochemistry of Catchments, New London, NH, July.
- Kaur, A. and D. S. Ross. 2007. Soil moisture and seasonal variation in N transformation rates in near stream seeps of Brush Brook and Sleepers River research watershed sites. Gordon Conference on Biogeochemistry of Catchments, New London, NH, July.
- Auch, W. and D. S. Ross. 2007. Decomposition across a biogeoclimatic mosaic: Addressing climate and litter chemistry axioms. Gordon Conference on Biogeochemistry of Catchments, New London, NH, July.
- Ross, D.S. 2007. Soils explain everything: studying the movement of acid rain through Vermont's forested watersheds. CALS seminar series for Vogelmann Award winners, UVM, April.
- Ross, D.S. 2007. Linking stream nitrate export from forested watersheds to soil processes. Integrated Research on Water in the Environment, VT EPSCoR, Burlington, VT, March.
- Young, E.O., D. Ross, J. Tilley, K. Underwood, and C. Alves. 2006. Phosphorus availability along two small streams in Vermont: mapping, characterization and potential mobility. Annual meeting of the Soil Science Society of America, Indianapolis, IN, November.
- Ross, D., B. Wemple, A. Kaur, G. Lawrence, J. Shanley, S. Bailey, and J. Campbell. 2006. Unexpected things one can discover whilst doing a cross-site study of nitrification rates. Meeting of the Northeast Ecosystem Research Cooperative, Durham, NH, October.
- Drizo, A., Ross, D., Weber, D., Twohig, E. and Bird, S. 2006. Constructed wetlands for dairy effluent treatment in Vermont: 36 months of operation. Proceedings of the 10th International Conference on Constructed Wetlands for Water Pollution Control, Lisbon, Portugal, September.
- Wemple, B., Shanley, J., Denner, J., Ross, D., Mills, K. 2006. Hydrology and water quality in two mountain basins of the northeastern US: assessing baseline conditions and effects of ski area development. Meeting of the Northeast Ecosystem Research Cooperative, Durham, NH, October.

- Ross, D., Bailey, S., Jercinovic, M., Guest, C., Morgan, C. 2006. New methods (EPMA and synchrotron-xrd) for identifying and quantifying soil calcium minerals. Meeting of the Northeast Ecosystem Research Cooperative, Durham, NH, October.
- Auch, W., and D. Ross. 2006. Northeastern forest floor nitrogen and pH heterogeneity: a thirty-day microcosm leachate study. Meeting of the Northeast Ecosystem Research Cooperative, Durham, NH, October.
- Ross, D.S., C. Negra, C. Guest, A. Lanzirrotti. 2006. Natural association of heavy metals with manganese oxides in some high-Mn soils of Vermont, USA. Clay Minerals Society, Ile d'Oleron, France, June.
- Shanley, J.B., Sebestyen, S.D., Boyer, E.W, and Ross, D. 2005. Contrasts in flushing patterns among solutes. Abstract H22B-03. Annual meeting of the American Geophysical Union, San Francisco, December.
- Ross, D.S., H.C. Hales, and G. Fredriksen. 2005. Mechanism for the rapid increase in soil nitrification after sampling disturbance. Annual meeting of the Soil Science Society of America, Salt Lake City, Utah, November.
- Villars, T.R., S.W. Bailey, D.S. Ross, and J.B. Shanley. 2005. The first steps in a 200-year soil monitoring study in Vermont. Annual meeting of the Soil Science Society of America, Salt Lake City, Utah, November.
- Jokela, W.E., D.S. Ross, and J.P. Tilley. 2005. Twelve years of dairy manure nutrient analysis in Vermont: agronomic and environmental implications. Annual meeting of the Soil Science Society of America, Salt Lake City, Utah, November.
- Ross, D.S. and E.O. Young. 2005. Phosphorus release from seasonally flooded soils. National Soil Erosion Research Laboratory, West Lafayette, Indiana, October.
- Wemple, B.C., D.S. Ross, and A. Kaur. 2005. Understanding spatial patterns in stream nitrate yield in watersheds of the northeastern U.S. Vermont EPSCoR, Burlington, Vermont, August.
- Cunningham, M.A., R. Giordano, R.E. Murray, D.S. Ross and A. Drizo. 2005. Assessment of diversity of denitrifying bacteria in the surface compost of a constructed wetland using nitrite reductase genes. Vermont EPSCoR, Burlington, Vermont, August.
- Ross, D.S., H.C. Hales, G. Fredriksen, and A. Kaur. 2005. Mechanism for the rapid increase in soil nitrification after disturbance. Gordon Conference on Biogeochemistry of Catchments, Waterville, Maine, July.
- Lawrence, G.B., Ross, D.S., Sebestyen, S.D., Burns, D.A., Murdoch, S., Shanley, J.B., Sutherland, J.S., Nierzwicki-Bauer, S.A., Boylen, C. W. 2005. A new twist on the seasonality of nitrate retention and release in watersheds of the northeastern U.S. Acid Rain 2005; 7th International Conference on Acid Deposition, Prague, The Czech Republic, June.
- Ross, D.S. and R.J. Bartlett. 2005. Soil, dirt and manganese oxides: mechanisms of change. Annual meeting of the Clay Mineral Society, Burlington, Vermont, June.

- Ross, D.S., H.C. Hales, and G. Fredriksen. 2005. Rapid and drastic changes in the ^{15}N signature of forest soil nitrate. American Geophysical Union spring meeting, New Orleans, May.
- Ross, D.S. 2005. A brief history of soil chemistry and soil testing (invited). Green Mountain Section of the American Chemical Society. Middlebury, Vermont, May.
- Ross, D.S., T.R. Villars, S.W. Bailey, N. Burt, S. Wilmot. 2004. The first steps in a 200-year soil monitoring study. Annual meeting of the Vermont Monitoring Cooperative, Burlington, Vermont.
- Ross, D.S., G. Fredriksen, A. Jamison, B.C. Wemple, G.B. Lawrence, J.B. Shanley, S. Bailey, and J. Campbell. 2004. Linking nitrification rates in northeastern USA watersheds to stream export of nitrate. Annual Meetings of the Soil Science Society of America, Seattle, WA.
- Drizo, A. D.S. Ross, T.A. Lewis, P. Munoz, and S. Bird. 2004. Constructed wetlands for agricultural effluent treatment at the University of Vermont: first six months of operation. International Conference on Constructed Wetlands, Avignon, France.
- Ross, D.S., S. Bailey, J.B. Shanley, G. Fredriksen, and A. Jamison. 2004. Soil net nitrification rates and exchangeable calcium in ten small upland watersheds of the northeastern USA. American Geophysical Union Spring Meeting, Montreal, Canada.
- Jamison, A., Ross, D.S., B.C. Wemple, and J.B. Shanley. 2004. Relating landscape, vegetative, and soil characteristics with net nitrification rates in forested watersheds. American Geophysical Union Spring Meeting, Montreal, Canada.
- Ross, D.S., G. Fredriksen, and A. Jamison. 2003. Forest soil net nitrification rate measurements: relationship to soil and landscape factors. Annual Meetings of the Soil Science Society of America, Indianapolis, IN.
- Negra, C. and D.S. Ross. 2003. Interactions of soil manganese oxides and heavy metals. Annual Meetings of the Soil Science Society of America, Denver, CO.
- Ross, D.S. 2003. Nitrification rates and stream nitrate export across NERC sites. Meeting of the Northern States Research Cooperative, Burlington, VT.
- Ross, D.S., B.C. Wemple, J.B. Shanley, G.B. Lawrence, S. Bailey, J. Campbell, A. Jamison, and G. Fredriksen. 2003. Do soil nitrification and stream nitrate export mirror watershed characteristics in northeastern USA catchments? Gordon Conference on Biogeochemistry of Catchments, New London, NH.
- Ross, D.S. 2003. Regional study of ecosystem nitrate movement: initial results from Lye Brook site. Annual meeting of the Vermont Monitoring Cooperative, Burlington, VT.
- Ross, D.S., B.C. Wemple, J.B. Shanley, G.B. Lawrence, S. Bailey, J. Campbell, A. Jamison, and G. Fredriksen. 2002. Nitrification rates and stream nitrate export across NERC sites. Meeting of the Northeast Ecological Research Collaborative, Portsmouth, NH.
- Ross, D.S. and G. Fredriksen 2002. Does nitrification occur in forest soils when nobody is there to observe it II? Meeting of the Northeast Ecological Research Collaborative, Portsmouth, NH.

- Ross, D.S., G.B. Lawrence and J.B. Shanley. 2002. Characterizing forested watershed nitrification potential with 24-hour rate measurements. Annual Meetings of the Soil Science Society of America, Indianapolis, IN.
- Negra, C., D.S. Ross and A. Lanzirotti. 2002. Soil manganese oxides: pH effect on XANES and reactivity. Clay Mineral Society Annual Meetings, Boulder, CO.
- Ross, D.S. 2002. Stable isotope and nitrification research in the Brush Brook watershed. Northeast Ecosystem Research Cooperative workshop on a cross site synthesis of forest ecosystem response to elevated atmospheric N deposition, Woods Hole, MA.
- Ross, D.S. and H.C. Hales. 2001. Nitrification transformation rate measurements and reality. Annual Meetings of the Soil Science Society of America, Charlotte, NC.
- Negra, C. and D.S. Ross. 2001. Spatial correlation of heavy metals and soil Mn oxides. Annual Meetings of the Soil Science Society of America, Charlotte, NC.
- Lawrence, G.B. and D.S. Ross. 2001. Accumulation of nitrogen in forest soils continues to cause episodic acidification of streams in calcium-depleted watersheds. The Second International Conference on Nitrogen, Potomac Maryland.
- Ross, D.S. and C. Negra. 2001. Association of lead with soil manganese oxides. Sixth International Conference on the Biogeochemistry of Trace Elements, Guelph, Ontario.
- Ross, D.S., G.B. Lawrence, and G.Fredriksen. 2001. Nitrification Measurements at Two Sites in the Catskills and Adirondacks. Environmental monitoring, evaluation, and protection in New York: Linking science and policy. Albany, New York.
- Ross, D.S. 2001. Does nitrification occur in forest soils when nobody is there to observe it? Gordon Conference on Hydrobiogeochemistry of Forested Watersheds, New Hampshire.
- Ross, D.S. 2001. Soil nitrogen transformations at Mt. Mansfield & Lye Brook relative to other northeastern research sites. Vermont Monitoring Cooperative, Annual Cooperators Meeting, Univ. Vermont.
- Ross, D.S., H.C. Hales, and A. Lini. 2001. Isotopic composition of nitrate in two contrasting watersheds. Geological Society of America Northeastern Section, Burlington, VT.
- Minocha, R., G.B. Lawrence, D.S. Ross, R.A. Hallett, S. Long. 2001. Changes in foliar biochemical stress indicators (putrescine and arginine) and their relationship to foliar and soil chemistry in response to acid deposition in Delaware River Basin. Ecological Society of America.
- Ross, D.S. 2000. Research activities on Camels Hump, Vermont. Workshop on mapping forest sensitivity to acidic deposition in northeastern forest ecosystems: a collaborative approach. Northeast Ecological Research Collaborative, Portsmouth, NH.
- Negra, C. and D.S. Ross. 2000. Metal sorption and oxidation on soil manganese oxides. Surface Chemical Processes in Natural Environments, Monte Verità, Switzerland.
- Hales, H.C., D.S. Ross, and A. Lini. 2000. Isotopic signatures of nitrate in two contrasting watersheds. Soil Science Society of America annual meetings, Minneapolis, MN.

- Ross D.S., C. Negra, H.C. Hales, A. Lanzirrotti, and W. Rao. 2000. Oxidative properties of high Mn soils. Soil Science Society of America annual meetings, Minneapolis, MN.
- Ross, D.S., H.C. Hales, and A. Lini. 2000. Fate of nitrogen deposition in a forested ecosystem. Vermont Monitoring Cooperative, Annual Cooperators Meeting, Univ. Vermont.
- Ross D.S., H.C. Hales, G.C. Shea-McCarthy. 1999. The oxidative behavior of Mn oxides in high-Mn soils. Sixth International Conference on the Biogeochemistry of Trace Elements, Vienna, Austria.
- Ross D.S., H.C. Hales, R.J. Bartlett, and G.C. Shea-McCarthy. 1999. Soil, dirt and manganese oxides. Univ. of Hohenheim, Stuttgart, Germany.
- Matschonat, G., D.S. Ross, and G.B. Lawrence. 1999. Does organically complexed Al charge in acid forest soils? Annual Meetings of the Soil Science Society of America, Salt Lake City.
- Matschonat, G., D.S. Ross, and G.B. Lawrence. 1999. Interdependence of pH, cation exchange capacity and organically complexed Al in organic-rich acid forest soils, Critical Loads Copenhagen 1999. Copenhagen, Denmark.
- Matschonat, G. and D.S. Ross. 1999. Beeinflusst organisch komplexiertes Al die Ladungseigenschaften der organischen Substanz saurer Waldböden (Does organically complexed Al affect the charge of the organic substance in acid forest soils?), German Soil Science Society, Hannover, Germany.
- Hales, H.C. and D.S. Ross. 1999. What limits nitrification in the forest floor? Annual Meetings of the Soil Science Society of America, Salt Lake City, UT.
- Ross, D.S., H.C. Hales, R.J. Bartlett, and G. C. Shea-McCarthy. 1998. Soil manganese oxidation state changes during storage and analysis. Annual Meetings of the Soil Science Society of America, Baltimore, MD.
- Ross, D.S., H.C. Hales, and G. C. Shea-McCarthy. 1998. Oxidation of Added Mn(II) After Beam Exposure? Annual meeting of NCR-174, Synchrotron X-ray Sources in Soil Science Research, Argonne National Laboratories, Illinois.
- Ross, D.S. and H.C. Hales. 1998. Understanding the phenomenon of disturbance-induced rapid nitrification. Ninth North American Forest Soils Conference, Lake Tahoe, CA.
- Hales, H.C. and D.S. Ross. 1997. Disturbance-induced nitrification: a footstep study. Gordon Conference on Hydrobiogeochemistry of Forested Watersheds, New Hampshire.
- Ross, D.S. 1997. XANES data suggests reduction of soil Mn oxides during analysis. Annual meeting of NCR-174, Synchrotron X-ray Sources in Soil Science Research, Argonne National Laboratories, Illinois.
- Ross, D.S. 1996. Extractable aluminum fractions are closely related in acid high-carbon soil horizons. Annual Meetings of the Soil Science Society of America, Indianapolis, IN.
- Ross, D.S. and R.J. Bartlett. 1994. What determines the pH of acid forest soil surface horizons? Annual Meetings of the Soil Science Society of America, Seattle, WA.

- Ross, D.S., R.J. Bartlett, and Z. Dong. 1993. Some aspects of the soil chemistry of the tridecameric aluminium polycation. Third International Symposium on Plant-Soil Interactions at Low pH. Coolum, Australia.
- Ross, D.S. and R.J. Bartlett. 1993. Cation exchange capacity of forest soil organic matter. Eight North American Forest Soils Conference. Gainesville, Florida.
- Ross, D.S. and R.J. Bartlett. 1992. Soil and soil solution pH, ionic strength, and acidity in Spodosols. Agronomy Abstracts Annual Meetings of the Soil Science Society of America, Minneapolis, MN.
- Ross, D.S., R.J. Bartlett, F.R. Magdoff, and G.J. Walsh. 1991. The influence soils, bedrock, and groundwater seeps on the differing chemistry of two tributaries of Brush Brook, Vermont. Annual Meetings of the Soil Science Society of America, Denver, CO.
- Ross, D.S., R.J. Bartlett, and F.R. Magdoff. 1990. Exchangeable cations and the pH independence of cation exchange capacities in Spodosols of a forested watershed. Second International Symposium on Plant-Soil Interactions at Low pH. Beckley, WV.
- Ross, D.S., R.J. Bartlett, and F.R. Magdoff. 1989. Nitrification in forested Spodosols disturbed by sampling. Annual Meetings of the Soil Science Society of America, Las Vegas, NV.
- Ross, D.S., R.J. Bartlett, and F.R. Magdoff. 1988. Soil chemical studies in a northern temperate forest. Acidic Deposition and Forest Decline: An International Symposium. Rochester, NY.
- Ross, D.S., R.J. Bartlett, and F.R. Magdoff. 1988. Interrelationships between soil solution Al, pH, exchangeable Al, and soluble organic carbon in forested Spodosols. Northeastern Branch-American Society of Agronomy, Anaheim, CA.
- Ross, D.S., R.J. Bartlett, and F.R. Magdoff. 1987. Cation exchange capacity and exchangeable aluminum and hydrogen in podsolized soils of a forested watershed. Annual Meetings of the Soil Science Society of America, Atlanta, GA.
- Ross, D.S., R.J. Bartlett, and F.R. Magdoff. 1986. Soil solution studies in a forested mountain watershed. Northeastern Branch-American Society of Agronomy. Newark, DE.

Courses Taught (current)

Soils and Sustainability: Mesopotamia to Vermont (HCOL 186, 3 credits) spring 2016, 2018

Chemistry of Soil and Water (PSS 264, 4 credits), alternate springs (odd years)

Soil and Water Pollution and Bioremediation (PSS 269, 3 credits), alternate springs (even years)

Pollutant Movement through Air, Land and Water (ENSC 160, 4 credits), fall, co-taught with Carol Adair of the Rubenstein School of Environment and Natural Resources

Orientation to Environmental Science (ENSC 009, 1 credit), fall, co-taught with Alan McIntosh of the Rubenstein School of Environment and Natural Resources

(past)

Soil Organic Matter (PSS 297, 3 credits), fall 2010
Fundamentals of Soil Science (PSS 298, 3 credits), summer 2010
Plant & Soil Science Seminar Series (PSS 393/4, 1 credit), fall 2009/spring 2010
Soil Classification Practicum (PSS 297, 2 credits), fall 2008
Soil Science Colloquium (PSS 302, 1 credit), spring 2008, 2010
Soil Morphology, Classification and Land Use (PSS 261, 3 credits), fall 2006
Advanced Independent Study (PSS 297, 3 credits), summer 2005
Readings in Forest Biogeochemistry (PSS 381 Graduate Special Topics, 1 credit), spring 2003
Soil Water Movement (PSS 266, 3 credits), spring 2000, 2004
Advanced Soil Chemistry (PSS 297, 2 credits), spring 2000

Student Advising

Director for CALS Integrated Environmental Sciences undergraduate major (appointed annually)

CALS Environmental Sciences undergraduate advisees: 24 students current

Plant and Soil Science graduate student advisees: 3

Jenny Bower, Ph.D.

Laura Klaiber, Ph.D.

Leanna Thalmann, M.S.

Graduate Student Committees (8 current)

Keegan Griffith, MS, PSS

Vanesa Perillo, PhD, PSS

Jesse Armfield, MS, Geology

Meghan Leduc, MS, Geology

Kathryn Wrigley, PhD, RSEN

Grant Reeder, MS, Geology

Nicole Rogers, PhD, RSEN

Rebecca Tharp, PhD, PSS

Independent Study, Independent Research and Internship Advising

Environmental Sciences (CALS, CAS and RSEN students):

2016/2017: Lily Calabrese, Samantha Howley, Jacob Chioffi, Kelsey Colbert

2014/2015: Micah Berman, Matt Lipke, Nate Tomlinson

2013/2014: Kristi D'Agati, Claudia Lawton, Christine Loughlin, Emily Secor, Emily Whalen

2012/2013: Noah Ahles, Matt Comrie, Alex Corren, Ali Sadeghi, Ashley Walker, Emily Whalen

2011/2012: Charlotte Ford, Ethan Morehouse, Alex Kliminski

2010/2011: Rachel Meyer, Charlotte Ford, Rebecca Bailey

2009: Jerome Barner, Kate Riley, Chauncey Smith, Emily West

2008: Patricia Brousseau
2007: Rob Hunt
2005: George Fowler, Zach Ewell
2004: Erik Decker, Audrey Leduc, Ari Lejfer, Gabe Mason;
2003: Kate Traverse
2002: Ari Lejfer, Kristin Williams
2001: Budd Batchelder
2000: Jennifer Dwyer

EPSCoR student interns:

2017: Co-mentored Emily Persiak, UVM
2016: Mentored Rebecca Roman and Valeria Santana, Univ. Puerto Rico
2015: Co-mentored Hannah Boudreau and Alex Morton, UVM.
2014: Co-mentored Alex Morton, UVM and Lawrence Hall, CCV.
2013: Emily Secor and Patrick Murphy, UVM; Maria Diaz and Paloma Rodriguez, University of Puerto Rico, San Juan
2012: Courtney Dyche, UVM; Andrea Mejia, Universidad Metropolitana, San Juan, Puerto Rico' Lorianny Rivera, University of Puerto Rico, San Juan
2010: Karoline Rios and Dorielys Valentin, Universidad Metropolitana, San Juan, Puerto Rico
2009: Angel Garcia and Edward Garcia, Universidad Metropolitana, San Juan, Puerto Rico

Honors thesis and other undergraduate advising:

Fall 2015-Spring 2016: Kelly Westhelle, RSENr, ENSC, faculty co-advisor
Fall 2012-Spring 2013: John Boucher, RSENr ENSC, faculty advisor
Fall 2012-Spring 2013: Tom Gephardt, CALS ENSC, faculty advisor
Fall 2011-Spring 2012: Anna Yatzor, CAS ENSC, faculty co-advisor
Fall 2011-Spring 2012: Cassie McGoldrick, RSENr ENSC, faculty advisor
Fall 2010-Spring 2011: Chris Page, CALS ENSC, faculty advisor
Fall 2010-Spring 2011: Kacy Roeder, CALS ENSC, faculty advisor
Fall 2009-Spring 2010: Kate Riley, CALS ENSC, faculty advisor

URECA: John Boucher: Paired planting of sunflower and Indian mustard for improved lead phytoextraction. 2012.

URECA: Natalia Fajardo: evaluation of composting techniques for the food residue processing plant in Puente Nacional, Colombia. 2005/2006.

URECA: Denise Bradley: Relationship between microbial soil DNA profiles and nitrification rates in forest soils (worked with Rosanna Giordano). 2004/2005.

McNair Scholars Program: Maya Thomas, summer 2009.

Environmental Science (senior project advisor), Geology: Guin Fredriksen, 2000; Joseph Peters, 2002; Marianne Muth, 2003.

Professional Service Activities

Topic editor, *Frontiers*, Riparian Buffer Nutrient Dynamics and Water Quality.

Journal manuscript reviewer:

American Midland Naturalist, Annals of the New York Academy of Sciences, Applied Geochemistry, Arabian Journal of Science and Engineering, Australian Journal of Soil Science, Biogeochemistry, Canadian Journal of Forest Research, Canadian Journal of Soil Science, Catena, Ecosystems, Environmental Engineering Science, Environmental Monitoring and Assessment, Environmental Pollution, Environmental Science and Technology, European Journal of Soil Science, Forest Ecology and Management, Forest Science, Geoderma, International Journal of Environmental Analytical Chemistry, Journal of the American Water Resources Association, Journal of Environmental Quality, Journal of Geophysical Research, Journal of Soil Contamination, Northern Journal of Applied Forestry, Land Degradation and Development, Plant and Soil, PLOS ONE, Scandinavian Journal of Forest Research, Soil Biology and Biochemistry, Soil Science, Soil Science Society of America Journal, Water Air and Soil Pollution

Proposal reviewer:

Proposal Review Panel for USDA AFRI Renewable Energy, Natural Resources and the Environment, September 2014, Washington D.C.

Proposal Review Panel for NIH/NIEHS Biogeochemical Interactions Affecting Bioavailability for in situ Remediation of Hazardous Substances, Durham, NC, April, 2014.

Proposal Review Panel for USDA AFRI Renewable Energy, Natural Resources and the Environment, June 2013, Washington D.C.

Proposal Review Panel for Imaging and Microprobes: Environmental and Geosciences at the National Synchrotron Light Source, Brookhaven National Laboratory, 2007-present.

NSF Ecosystems, 1996-present (not all years)

NSF Earth Sciences, 2004-present

Lake Champlain Basin Program Water Quality Improvement Grants, 2010

Jeffries Memorial Trust, 2010

NSF Hydrological Sciences, 2008-2009

South African NRF, 2009

USDA Small Business Innovation Research, 2000-2009, 2013-2015

UVM Hatch panel, 2003, 2005, 2008, 2009

USDA National Research Initiative, 1995-2008

Ohio State University SEED program, 2006-2007

Vermont EPSCoR SBIR panel, 1999-2007 (not all years)

Panel, USDA NRI Watershed Processes & Water Resources, 2004, Washington D.C.

Panel, USDA Tropical and Subtropical Agricultural Research, 2004, Honolulu, HI.

Panel, NY State Energy Research and Development Authority environmental program, 2002.

EuroCLIMATE (European Science Foundation), 2004

Univ. Maine Hatch, 2004, Clemson Univ. Hatch, 2001, 2003

Committee Service (regional):

Current:

Northeast Coordinating Committee on Soil Testing (NEC-1012), 1996-present, chair (2009)

Northeast Ecosystems Research Cooperative

Northeast Soil Monitoring Workgroup (steering committee) 2006-present

Former:

Northeastern Branch of the Amer. Soc. of Agron. representative to ASA (2011-2014)
North Central Comm. on Synchrotron X-ray Sources in Soil Science Research (NCR-174)
North Central Committee on Forest Soils (NCR-102)

Committee Service (UVM)

Current:

Faculty Senate Financial and Physical Planning Committee, 2003-present (past chair)
Steering Committee on Incentive Based Budgeting, 2013-present
PSS Graduate Committee, 2004-2008, 2009-present
Soil Testing Committee, 1989-present

Former:

Faculty Senate Executive Council, 2010-2016
Strategic Capital Plan Committee, 2010-2014
Faculty Rep to Board of Trustees Budget, Finance and Investment Committee, 2010-2015
Clean Energy Fund Committee, 2008-2011
PSS Chair review, 2009-2010
PSS Seminar Committee, 2009-2010
Search Committee for Assistant Professor in Ecological Soil Management (chair), 2007-2008
Environmental Council (Charter Member), 1998-2008
University of Vermont Press Advisory Board, 2005-2007
Forage Testing Committee, 1989-2005
Committee to create an integrated Environmental Science major, 2001-2005
PSS Curriculum Committee, 2000-2004
Hills Building replacement space needs assessment, 2002
Search Committee for Research Assistant Professor for constructed wetland, 2003
Search Committee for PSS chair, 2003-2004
Search Committee for PSS lecturer, 2004

Miscellaneous:

As part of the Vermont Genetics Network funding system, mentored Andrew Vermilyea, Assistant Professor, Natural Sciences Department, Castleton State College, 2012-2015

Participating in the Vermont EPSCoR Center for Workforce Development & Diversity high school program to participate in NSF-funded Research on Adaptation to Climate Change, summer training and continuing soil analyses, 2012-2015

Mentored two South Burlington High School students on their science projects. Raihan Kabir was a grand prize winner at the 2012 Vermont State Science and Mathematics Fair; bronze medal winner at the 2012 Intel International Science and Engineering Fair in Houston, TX; and finalist at the International Sustainable World Energy, Engineering, and Environment Project Olympiad in Pittsburg, PA. His project was on bioremediation of arsenic contamination with ferns.

Sponsored a high school teacher in my laboratory for five weeks during the summer of 2004 as part of HELIX and VT EPSCoR's Summer of Science.

Taught a workshop on forest soils for the Vermont Family Forests, May, 2004.

Taught a workshop in a teacher training course, Earth, Water, and Sky: The Bio/Geo/Chemical Connections, organized by Horace Puglisi, a 5th grade science teacher in Essex Town, 2001.

Other professional activities:

Director, UVM Environmental and Agricultural Testing Laboratory.

The Agricultural and Environmental Testing Lab (AETL), in the Plant and Soil Sciences Department, has been providing soil testing service for over 40 years to UVM researchers, Vermont's agricultural community and homeowners. The mission of the Department of Plant and Soil Science (PSS) is to expand, integrate, and extend the knowledge of plant/soil ecosystems in the production of plants, the creation of a living landscape and the sustenance of environmental quality. In conjunction with UVM Extension, the AETL provides fertility recommendations for field crops, horticultural crops, home gardens, lawns and other assorted crops. Manure and compost testing services have been provided for over 25 years. Results from all of these tests are used for research purposes and to support nutrient management planning to both optimize crop growth and protect our environment.

The AETL also provides analytical services for University researchers, primarily inorganic chemical analysis of soils, sediments, water, plant tissue and waste products. Using instrumentation housed in PSS, the AETL offers services that range from full access for hands-on analysis by researchers to simple sample submission with analysis completely performed by the AETL. Training is provided for undergraduate and graduate students, technicians and researchers. These services continue to be provided to a wide range of researchers from all units.