

Curriculum Vitae - Jason C Neff

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Research Interests

My academic research interests focus on the biogeochemistry and land use change. My recent work focuses on human disturbance of dryland ecosystems, wind erosion of soils, and air pollution caused by large regional dust storms. In addition, I have active projects examining the complex issues surrounding the management of forests for carbon sequestration including the use of biomass fuels for electricity generation. I currently serve on the permanent secretariat implementation team for Future Earth working to establish the U.S. based hub of the Future Earth Secretariat and support the development of capacity building activities within Future Earth. I am also the founding director of the newly created Sustainability Innovation Lab at Colorado (SILC). SILC is a space to co-design and develop the knowledge, capacity and technology to accelerate the transition to a more sustainable world and to educate the next generation of researchers and entrepreneurs who will lead this change. SILC seeks to harness the power of academic, government, private and not-for-profit sectors to solve global problems in sustainability.

Educational Background

1999 Ph.D., Department of Biological Sciences, Stanford University. Advisor, Dr. Peter Vitousek.
1993 B.A., *Summa Cum Laude*. Environmental, Population, and Organismic Biology Department, University of Colorado at Boulder, Colorado

Academic Employment History

2015-Present, Professor, Environmental Studies Program
2014-Present, Faculty Director – US Hub of the Future Earth Secretariat.
2009-2014 Associate Professor, Geology Department and Environmental Studies Program
2012-2014 Associate Program Director/Undergraduate Director, Environmental Studies Program
2009-2012 Associate Program Director/Graduate Director, Environmental Studies Program
2003-2009, Assistant Professor, Geological Sciences and Environmental Studies Departments
2002-2006, Research Ecologist, Earth Surface Processes Team, U.S. Geological Survey, Denver, CO.
2000-2001, Mendenhall Postdoctoral Fellow, U.S. Geological Survey, Denver, CO
1999–2003, Scientist, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, CO and Adjunct Assistant Professor, Soil and Crop Sciences Department, Colorado State University
1995-1996, Teaching Assistant - Stanford University, Stanford, CA.

Awards, Honors, Leadership Training

2013 University of Colorado System - Excellence in Leadership Program Fellow AY 13/14
2008 Interdisciplinary Teaching Award and Residence Life Academic Teaching Award, CU Boulder
2004 A.W. Mellon Foundation, Conservation and Environment Junior Faculty Fellowship
2001 U.S. Geological Survey - Mendenhall Postdoctoral Fellow
1997 NASA Earth System Science Predoctoral Fellow
1994 National Science Foundation Predoctoral Fellow
1999 Outstanding Student Paper Award, Spring Meeting, Boston, MA, AGU
1998 Editor's citation for excellence in refereeing JGR- Atmospheres. AGU
1993 Outstanding Student Presentation: AGU, Front Range Meeting
1992 *Phi Beta Kappa*

Grants

Grantham Foundation. 2015-2018. The future of global agriculture under climate change and land degradation. (PI) \$413,000
National Science Foundation. 2015-2016. A Belmont Forum Scoping Workshop on Food, Water & Energy for Sustainable Global Urbanization: Accelerating Transitions to Sustainable Consumption and Production. (PI) \$75,694.
National Science Foundation. 2014-2017. Collaborative Research: Development of the U.S. Hub of the Future Earth Secretariat. (PI) \$1,270,925
National Science Foundation. 2014-2015. Collaborative Research: Initial development of the U.S. Hub of the Future Earth Secretariat. (PI) \$31,091
US Department of Agriculture. 2011-2015. Carbon Management on public lands in the intermountain west: multi-scale analysis of carbon stock responses to human and natural disturbance. (PI) \$617,296
National Science Foundation. 2010-2013. Acquisition of Liquid Chromatography and Sample Preparation Instrumentation for Enhanced Reconstruction of Quaternary Environmental Change (co-PI) \$203,444
U.S. Geological Survey - Rocky Mountain Cooperative Ecosystem Study Unit: 2009-2014. Modeling climate impacts on boreal soils. \$180,000
National Science Foundation – Long Term Ecological Research Program. 2004-2014. Niwot Ridge Long term ecological research site. Senior Personnel. ~\$85,000 Neff
US Geological Survey - Rocky Mountain Cooperative Ecosystem Study Unit: 2011-2014. Dust chemistry monitoring. \$75,000
A.D. Mellon Foundation. 2008-2013. Nitrogen Inputs and Cycling in Ecosystems of the Western Cape Province of South Africa. (PI) \$294,000.
National Science Foundation. 2009-2012. EAGER: Land use and climatic controls on dust deposition. (PI) \$250,681.
National Oceanic and Atmospheric Administration. 2009-2011. Climate change impacts on the ecosystems of the Colorado Plateau. (PI) \$100,000
Department of Interior, Bureau of Land Management. 2009-2010. Carbon management and climate change adaptation on public lands. (PI) \$91,850
U.S. Department of Interior, Bureau of Land Management - Rocky Mountain Cooperative Ecosystem Study Unit: 2009-2011. Evaluation of downscaled climate models for use in land management in the Four Corners region. \$98,000
US Department of Energy: 2006-2009. The Role of Boreal and Arctic Soils in Climate Feedbacks; Model Development and Testing (PI), \$335,656.

US Geological Survey - Rocky Mountain Cooperative Ecosystem Study Unit: 2005-2011. Geo-ecology of the Colorado Plateau. \$125,000

A.D. Mellon Foundation Junior Faculty Fellowship in Conservation and the Environment: 2004-2008. The role of essential elements in ecosystem structure and function. \$290,000

National Aeronautic and Space Administration: 2004-2007. The role of Africa in terrestrial carbon exchange and atmospheric CO₂: Reducing regional to global uncertainty in the carbon cycle. Co-PI, Collaborative with Niall Hanan (CSU) and Joe Berry (Carnegie Institute of Global Ecology), \$125,000 (\$650,000 total)

National Aeronautic and Space Administration: 2005-2008. Regional carbon storage responses to woody encroachment in western pinyon-juniper systems (NASA). Co-PI, Collaborative with Greg Asner (Carnegie) and Nichole Barger (CU). \$275,000 (\$600,000 total)

National Science Foundation – Division of Environmental Biology: 2005-2008. Collaborative Research: Fern Biogeochemistry and Ecosystem Stoichiometry. PI (CU), Collaborative with Vitousek PI (Stanford). \$150,000 (\$450,000 total)

National Science Foundation – Molecular and Cellular Biosciences: 2005-2011. Microbial Observatories: Niwot Ridge Alpine Site. Co-PI with Schmidt (PI), Martin (Co-PI) and Guralnik (Co-PI), \$120,000 (\$1,700,000 total)

NSF - OPP/RAISE: 2001-2005. Collaborative research, a measurement program in Siberia to assess disturbance-driven changes in arctic carbon balance (Neff PI – USGS portion). Collaborative with Jim Randerson (UC Irvine) and Terry Chapin (UAF), \$167,000 (\$1,100,000 total)

Publications

Books

A Changing Planet, Jason Neff, Pearson Education. Introductory Environmental Science digital textbook and learning system. Published Summer, 2015.

Peer Reviewed Articles

Reviewed journal articles are numbered. Peer reviewed and non-reviewed book chapters follow below (non-numbered). Student authored publications indicated by underlined author name, Postdoc publications indicated by a *.

Profile online at:

Google Scholar profile: Jason Neff

Researchgate: https://www.researchgate.net/profile/Jason_Neff

In Press

90. N.M. Mahowald, R. Scanza, J. Brahney, C.L. Goodale, P.G. Hess, J.K. Moore, J. Neff. *In press*. Aerosol deposition impacts on land and ocean carbon cycles. *Current Climate Change Reports*

Published or In Press

- 89.** Lu, X., K.C. Kelsey, S. Jian, X. Zhang, H. Zhao, Y. Cai, X. Wang, G. Cheng, & J.C. Neff. 2016. Effects of livestock grazing on ecosystem structure and function of alpine grasslands in Qinghai-Tibetan Plateau: a synthesis and review. *Ecosphere*.
- 88.** Xie, M., N. Mladenov, M.W. Willings, J.C. Neff, J. Wasswa, M.P. Hannigan. 2016. Water soluble organic aerosols in the Colorado Rocky Mountains, USA: composition, sources, and optical

- properties. *Scientific Reports*. DOI: 10.1038/srep39339
87. Reynolds, R.L., S.M. Munson, D. Fernandez, H.L. Goldstein, J.C. Neff, 2016. Concentrations of mineral aerosol from desert to plains across the central Rocky Mountains, western United states. *Aeolian Research* 23, pp 21-25. DOI: <http://dx.doi.org/10.1016/j.aeolia.2016.09.001>
 86. L Dilling, KC Kelsey, DP Fernandez, YD Huang, JB Milford, JC Neff, 2016. Managing Carbon on Federal Public Lands: Opportunities and Challenges in Southwestern Colorado Environmental management, 1-14. DOI: 10.1007/s00267-016-0714-2
 85. Z. Fan, J.C. Neff, W. Weider, 2016. Environmental controls over ecosystem primary production in an alpine tundra dry meadow. *Biogeochemistry*. DOI: 10.1007/s10533-016-0193-9
 84. Herrick, J.E., A. Beh, E. Barrios, I. Bouvier, M. Coetzee, D. Dent, E. Elias, T. Hengl, J.W. Karl, H. Liniger, J. Matuszak, J. C. Neff, L.W. Ndungu, M. Obersteiner, K.D. Shepard, K.C. Urama. R. van den Bosch, N. P. Webb. 2016 The land potential knowledge system (LandPKS): Mobile apps and collaboration for optimizing climate change investments. *Ecosystem Health & Sustainability*. V 2(3), Article e01209,
 83. Hinckley, E.L. M.D. SanClements, S.C. Elmendorf, A. Fox, A. Goodman, C. L. Meier, C.K. Lunch, W. D. Bowman, W.R. Weider, J.S. Baron; P.D. Blanken, N.D. Fierer, S.R. Anderson, J.C. Neff, & D.M. McKnight. 2016. Network Biogeochemistry for the Global Change Era. *Biogeochemistry*.
 82. J. Brahney, J. N. Mahowald., D.S. Ward, A.P. Ballantyne, & J.C. Neff. 2015. Is atmospheric phosphorus pollution altering global lake stoichiometry? *Global Biogeochemical Cycles*. DOI: 10.1002/2015GB005137
 81. J.M. Nyaga, J.C. Neff, & M.D. Cramer, 2015. The contribution of horizontal precipitation to nutrient deposition on the west coast of South Africa. *PLOS ONE*. 10 (5), e0126225-e0126225
 80. J. Brahney, A.P. Ballantyne, P. Kociolek, P.R. Leavitt, G.L. Farmer, & J.C. Neff. 2015. Ecological changes in alpine lake environments associated with dust transport and human activity in western Wyoming. *Limnology and Oceanography*. 60 (2), 678-695
 79. Z. Fan, J.C. Neff, N.P. Hanan, 2015. Modeling pulsed soil respiration in an African savanna ecosystem. *Ag and Forest Meteorology*. v200: pp 282-292, DOI: 10.1016/j.agrformet.2014.10.009
 78. K.C. Kelsey, K.L. Barnes, M.G. Ryan, & J.C. Neff. 2014. Short and long-term carbon balance of bioenergy electricity production fueled by forest treatments. *Carbon Balance and Management*. 9(6). DOI: 10.1186/s13021-014-0006-1.
 77. Z. Fan, J.C. Neff, M.P. Waldrop, A.P. Ballantyne*, M.R. Turetsky. 2014, Transport of oxygen in soil pore-water systems: Implications for modeling emissions of carbon dioxide and methane from peatlands. *Biogeochemistry*. DOI: 10.1007/s10533-014-0012-0.
 76. J. Brahney, Spaulding, S. Ballantyne, A.P., Otu, M., and Neff, J.C. 2014. Separating diagenetic, productivity, and anthropogenic source effects on sedimentary d15N variations. *Organic Geochemistry*. DOI: 10.1016/j.orggeochem.2014.07.003
 75. J. Brahney, *Ballantyne, A.P., Kociolek, P., Spaulding, S., Otu, M., Porwoll, T., Neff, J.C. 2014. Dust mediated transfer of phosphorus to alpine lake ecosystems. *Biogeochemistry* DOI: 10.1007/s10533-014-9994-x
 74. K. Kelsey, J.C. Neff. 2014. Estimates of Aboveground Biomass from Texture Analysis of Landsat Imagery. *Remote Sensing*. 6(7), 6407-6422; doi:10.3390/rs6076407
 73. J.M. Nyaga, M.D. Cramer, J.C. Neff. 2013. Atmospheric nutrient deposition to the west coast of South Africa. *Atmospheric Environment*. V81, pp 625-632, DOI: dx.doi.org/10.1016/j.atmosenv.2013.09.021
 72. C. Flagg, J.C. Neff, R. Reynolds, J. Belnap. 2013. Spatial and temporal patterns of dust emissions (2004-2012) in semi-arid landscapes, Southeastern Utah, USA. *Aeolian Research*. DOI: <http://dx.doi.org/10.1016/j.aeolia.2013.10.002>
 71. J.C. Neff, R.L. Reynolds, S.M. Munson, D. Fernandez, and J. Belnap. 2013. Large mineral particles dominate atmospheric aerosol concentrations at two remote western U.S. sites. *JGR – Atmospheres*. DOI:10.1002/jgrd.50855.

70. D.P Fernandez, J.C. Neff, C. Huang, G.P. Asner, N.N. Barger. 2013. Twentieth century carbon stock changes related to Piñon-Juniper expansion into a Black Sagebrush Community. *Carbon Balance and Management*. 8(8): doi:10.1186/1750-0680-8-8. (co-first authorship)
69. S. Castle, J.C. Neff. 2013. What controls plant nutrient use in high elevation ecosystems? *Oecologia*. 10.1007/s00442-013-2695-7
68. J. Brahney, *Ballantyne, A.P., J.C. Neff. 2013. Evidence for recent increases in dust deposition over regions of the United States. *Aeolian Research*. <http://dx.doi.org/10.1016/j.aeolia.2013.04.003>
67. C.R. Lawrence, R. Reynolds, M.E. Ketterer, J.C. Neff. 2013. Aeolian controls on soil geochemistry and weathering fluxes in high elevation ecosystems of the Rocky Mountains, Colorado. *Geochemica, Cosmochemica, Acta*. 107: 27-46.
66. Rangwala, I., J. Barsugli, K. *Cozzetto, J. Neff, J. Prarie. 2012. Mid-21st Century Projections in Temperature Extremes in the Southern Colorado Rocky Mountains from Regional Climate Models. *Climate Dynamics*. DOI) 10.1007/s00382-011-1282-z
65. K. C. Kelsey, K.P. Wickland, R.G. Striegl & J. C. Neff, 2012. Variation in soil carbon dioxide efflux at two topographically complex black spruce boreal forest. *Arctic and Alpine Research*. 44(4): 457-468.
64. *Ballantyne, A.P., J. Brahney, D. Fernandez, C.L Lawrence, J. Saros, J.C. Neff. 2011 Biogeochemical response of alpine lakes to a recent increase in dust deposition in the Southwestern US. *Biogeosciences*. V8 (no 9): 2689-2706. DOI: 10.5194/bg-8-2689-2011.
63. Lawrence, C.L., J.C. Neff, and L. Farmer. 2011. The accretion of aeolian dust in soils of the San Juan Mountains, CO, USA. *Journal of Geophysical Research –Earth Surface*. V116. DOI: 10.1029/2010JF001899.
62. *Fan, Z., J.C. Neff, J. Harden, T. Zhang, H. Veldhuis, C.I. Czimczik, G.C. Winston, J.O'Donnell. 2011. Water and heat transport in boreal soils: Implications for soil response to climate change. *Science of the Total Environment*. V409(10): 1836-1842. DOI: 10.1015/j.scitotenv.2011.02.009.
61. *C.E. Stewart, J.C. Neff, K. Amatangelo, P.M. Vitousek. 2011. Vegetation effects on soil organic matter chemistry of aggregate fractions in a Hawaiian Forest. *Ecosystems*. V14(3): 382-397. DOI: 10.1007/s10021-011-9417-y.
60. N.N. Barger, H.D. Adams, C. Woodhouse, J.C. Neff, and G.P. Asner. 2010. Influence of Livestock Grazing and Climate on Pinyon Pine (*Pinus edulis*) Dynamics. *Rangeland Ecology and Management*. Vol. 62, No. 6, pp. 531-539.
59. N. M. Mahowald, S. Kloster, S. Engelstaedter, J. K. Moore, S. Mukhopadhyay, J. R. McConnell, S. Albani, S. C. Doney, A. Bhattacharya, M. A. J. Curran, M. G. Flanner, F. M. Hoffman, D. M. Lawrence, K. Lindsay, P. A. Mayewski, J. Neff, D. Rothenberg, E. Thomas, P. E. Thornton, C. S. Zender. 2010. Observed 20th Century desert dust variability: Impacts on climate and biogeochemistry. *Atmos. Chem. Phys.*, 10, 10875-10893, 2010, doi:10.5194/acp-10-10875-2010.
58. K.P. Wickland, J.C. Neff, J Harden. 2010. The role of soil drainage class in carbon dioxide exchange and decomposition in boreal black spruce forest stands. *Canadian Journal of Forest Research*. Vol. 40 (11), pp 2123-2134.
57. *Z. Fan, J.C. Neff, K.P. Wickland. 2010, Modeling the production, decomposition, and transport of dissolved organic carbon in Boreal soils. *Soil Science*. 175 (5): 223-232.
56. C. Huang, G.P. Asner, N.N. Barger, J.C. Neff, and M.Lisa Floyd. 2010. Regional aboveground live carbon losses due to drought-induced tree dieback in pinon-juniper ecosystems. *Remote sensing and environment*. 114 (7): 1471-1479.
55. C.R. Lawrence, J.C. Neff, T. Painter, and C. Landry. 2010. Contemporary composition of Aeolian dust deposited in the San Juan Mountains, Colorado, USA. *Journal of Geophysical Research, Biogeosciences*, 115, G03007. doi:10.1029/2009JG001077
54. S.E. Buckingham, J.C. Neff, B. Titiz-Maybach, and R.L Reynolds. 2010. Chemical and textural controls on phosphorus mobility in drylands of southeastern Utah. *Biogeochemistry*. DOI: 10.1007/s10533-010-9408-7

53. J.P. Field, J. Belnap, D.D. Breshears, J.C. Neff, G.S. Okin, J.J. Whicker, T.H. Painter, S. Ravi, M.C. Reheis, and R. L. Reynolds. The ecology of dust: local to global-scale perspectives. *2009 Frontiers in Ecology and the Environment*. doi: 10.1890/090050
52. N.N. Barger, H.D. Adams, C. Woodhouse, J.C. Neff, G.P. Asner. 2009. Influence of livestock grazing and climate on Pinyon pine (*pinus edulis*) dynamics. *Journal of Range Management*. 62 (6): 532-539
51. C.R. Lawrence, J.C. Neff and J.P. Schimel. 2009 Does adding microbial mechanisms of decomposition improve soil organic matter models? A comparison of four models using data from a pulsed rewetting experiment. *Soil Biology and Biochemistry*. 41(9), 1923-1934. Doi:10.1016/j.soilbio.2009.06.016
50. J.C. Neff, N.N. Barger, W.T. Baisden, D.P. Fernandez, G.P. Asner. 2009. Soil carbon storage responses to expanding pinyon-juniper populations in Southern Utah. *Ecological Applications*. 19(6): 1405-1416.
49. C.R. Lawrence, and J.C. Neff. 2009. The physical and chemical flux of eolian dust across the landscape: A synthesis of observations and an evaluation of spatial patterns. *Chemical Geology*. 10.1016/j.chemgeo.2009.02.005
48. S.C. Castle, and J.C. Neff. 2009. Plant response to nutrient availability across variable bedrock geologies. *Ecosystems*. 10.1007/s10021-008-9210-8.
47. Huang, C., G.P. Asner, R. Martin, N.Barger, and J.C. Neff. 2009. Multi-Scale Analysis of Tree Cover and Aboveground Biomass in Pinyon-Juniper Woodlands of the Colorado Plateau, USA. *Ecological Applications*. 10.1890.97-2103.1
46. A. O'Donnell, M.R. Turesky, J.W. Harden, K.L. Manies, L.E. Pruett, G. Shetler, and J.C. Neff. 2009. Interactive effects of fire, soil climate and vegetation on CO₂ fluxes in a black spruce forest and peatland in interior Alaska. *Ecosystems*. 10.1007/s10021-008-9206-4
45. *A.S. Grandy, R.L. Sinsabaugh, J.C. Neff, M. Sturston, D.R. Zak. 2008. Molecular carbon chemistry and enzyme activities in soil fractions: ecosystem specific responses to N fertilization. *Biogeochemistry*. 10.1007/s10533-008-9257-9
44. *Z. Fan, J.C. Neff, J. Harden, and K.P. Wickland. 2008. Boreal soil carbon dynamics under a changing climate: a model inversion approach. *JGR - Biogeosciences*. 113, G04016, doi:10.1029/2008JG000723
43. D.R. Nemergut, A.R. Townsend, S.R. Sattin, K. Freeman, N. Fierer, J.C. Neff, W.D. Bowman, C.W. Schadt, M.N. Weintraub, S.K. Schmidt. 2008. The effects of chronic nitrogen fertilization on alpine tundra soil microbial communities: implications for carbon and nitrogen cycling. *Environmental Microbiology*. DOI: 10.1111/j.1462-2920.2008.01735.x
42. S.K. Schmidt, S.C. Reed, D.R. Nemergut, *A.S. Grandy, C.C. Cleveland, M.N. Weintraub, A.W. Hill, E.K. Costello, A.F. Meyer, A.M. Martin, J.C. Neff. 2008. The Earliest Stages of Microbial Ecosystem Succession in High-Elevation, Recently Deglaciated Soils. *Proceedings of the Royal Society, B*. DOI: 10.1098/rspb.2008.0808
41. J.C. Neff, *A.P. Ballantyne, G.L. Farmer, N.M. Mahowald, J.L. Conroy, C.C. Landry, J.T. Overpeck, T.H. Painter, C.R. Lawrence, and R.L. Reynolds. 2008. Increasing eolian dust deposition in the western United States linked to human activity. *Nature - Geosciences*. doi:10.1038/ngeo133
40. *Grandy, A.S., and J.C. Neff. (2008). Molecular C Dynamics Downstream: The Biochemical Decomposition Sequence and its Impact on Soil Organic Matter Structure and Function. *Science of the Total Environment*. doi:10.1016/j.scitotenv.2007.11.013
39. Goldstein, H.L., Reynolds, R.L., Reheis, M.C., Yount, J.C., and Neff, J.C. (2008). Compositional trends in eolian dust along a transect across the southwestern United States. *Journal of Geophysical Research - Earth Surface*. doi:10.1029/2007JF000751
38. Wickland K.P., J.C. Neff and G.R. Aitken. (2008) Dissolved organic carbon in the boreal forest: Sources, Chemistry and Biodegradability. *Ecosystems*. DOI:10.1007/s10021-007-9101-4.
37. K.P. Wickland and J.C. Neff (2008). Decomposition of black spruce forest soils: environmental

- and chemical controls. *Biogeochemistry*. 10.1007/s10533-007-9166-3
36. C. Wiedinmyer and J.C. Neff. (2007). Estimates of CO₂ from fires in the United States: Implications for Carbon Management. *Carbon Balance and Management*. 2:10
 35. Fernandez, D.P., J.C. Neff, and R.L. Reynolds. (2007) Biogeochemical and ecological impacts of livestock grazing in semi-arid Southeastern Utah, USA. *Journal of Arid Environments*. doi:10.1016/j.jaridenv.2007.10.009
 34. *A.S. Grandy, J.C. Neff, and M.N. Weintraub. (2007) Carbon structure and enzyme activities in alpine and forest ecosystems. *Soil Biology and Biochemistry*. v39: 2701-2711.
 33. Prior, C.A., W.Troy Baisden, F. Bruhn, and J.C. Neff. (2007) Identifying the optimal soil fractions for modeling soil carbon dynamics in New Zealand. *Radiocarbon*. 49 (2) 1093-1102
 32. T. H. Painter, A. P. Barrett, C. C. Landry, J. C. Neff, M. P. Cassidy, C. R. Lawrence, K. P. Thatcher, and G.L. Farmer. 2007. *Impact of disturbed desert soils on duration of mountain snowcover*. *Geophysical Research Letters* . V34, 12, L12502, 10.1029/2007GL030208.
 31. Williams, C.A., N.P. Hanan, J.C. Neff, R.J.Scholes, J. Berry, A.S. Denning, and D.F. Baker. (2007) Africa and the global carbon cycle. *Carbon Balance and Management*. 2:3 (07 Mar 2007)
 30. Neff, J.C., J. Finlay, S.A. Zimov, S.P. Davydov, J.J. Carrasco, E.A.G. Schuur, and A.I. Davydov. (2006). Seasonal changes in the age and structure of dissolved organic carbon in Siberian rivers and streams. *Geophysical Research Letters*. 33 (23), L23401, 10.1029/2006GL028222.
 29. Randerson, J.T., H. Liu, M.G. Flanner, S.D. Chambers, Y. Jin, P.G. Hess, G. Pfister, M.C. Mack, K.K. Treseder, L.R. Welp, F.S. Chapin, J.W. Harden, M.L. Goulden, E. Lyons, J.C. Neff, E.A.G. Schuur, and C.S. Zender. (2006). The impact of boreal forest fire on climate warming. *Science*. V314 (5802): 1130-1132.
 28. Dutta, K., E.A.G. Schuur, J.C. Neff, and S.A. Zimov. (2006) Potential carbon release from permafrost soils of Northeastern Siberia. *Global Change Biology*. 12(12), 2336-2351. doi: 10.1111/j.1365-2486.2006.01259.x
 27. Harden J. W., K. L. Manies, M.R. Turetsky, and J. C. Neff. (2006) Effects of wildfire and permafrost on soil organic matter and soil climate in interior Alaska. *Global Change Biology*. 12(12) 2391-2403, doi: 10.1111/j.1365-2486.2006.01255.x
 26. Chapin, F.S. III, G.M Woodwell, J.T. Randerson, G.M. Lovett, E.B. Rastetter, D.D. Baldocchi, D.A. Clark, M.E. Harmon, D.S. Schimel, R. Valentini, C. Wirth, J.D. Aber, J.J. Cole, M.L. Goulden, J.W. Harden, M. Heimann, R.W. Howarth, P.A. Matson, A.D. McGuire, J.M. Melillo, H.A. Mooney, J.C. Neff, R.A. Houghton, M.L. Pace, M.G. Ryan, S.W. Running, O.E. Sala, W.H. Schlesinger, and E.-D. Schulze. (2006). Reconciling Carbon Cycle Concepts, Terminology, and Methodology. *Ecosystems*. 9(7): 1041-1050.
 25. Neff J.C., R. Reynolds, R.L. Sanford, Jr., D. Fernandez, and P. Lamothe. (2006) Controls of bedrock geochemistry on soil and plant nutrients in Southeastern Utah. *Ecosystems*. 9(6): 879-893
 24. Reynolds, R.L., M.C. Reheis, J.C. Neff, H. Goldstein, and J. Yount. (2006) Late Quaternary eolian dust in surficial deposits of a Colorado Plateau Grassland: Controls on distribution and ecologic effects. *Catena* V66(3) 251-266.
 23. Finlay J. P, J.C. Neff, S. Zimov, A. Davydova, and S. Davydov. (2006) Snowmelt dominance of dissolved organic carbon in high-latitude watersheds: implications for characterization and flux of river DOC. *Geophysical Research Letters*, Vol. 33, No. 10, L10401
 22. Fernandez D. P., J.C. Neff, J. Belnap, and R. L. Reynolds. (2006) Soil respiration in a cold desert environment: abiotic regulators and thresholds. *Biogeochemistry*, 78(3): 247-265
 21. *Carrasco, J.J., J.C. Neff, and J.W. Harden. (2006) Modeling the long term accumulation of carbon in boreal soils. *Journal of Geophysical Research – Biogeosciences*. 111, Art. No. G02004, doi:10.1029/2005JG000087
 20. Wickland K.P., R.G. Striegl, J.C. Neff and T. Sachs.(2006) Effects of permafrost melting on CO₂ and CH₄ exchange of a poorly drained black spruce lowland. *Journal of Geophysical Research - Biogeosciences*. 111, G02011, doi:10.1029/2005JG000099

19. Rosenbloom N.A, J. W. Harden, J. C. Neff, and D. S. Schimel (2006), Geomorphic control of landscape carbon accumulation. *Journal of Geophysical Research - Biogeosciences*, 111, G01004, doi:10.1029/2005JG000077.
18. Reynolds R., J.C. Neff, M. Reheis, and P. Lamothe. (2006) Atmospheric dust in modern soil on aeolian sandstone, Colorado Plateau (USA): Variation with landscape position and contribution to potential plant nutrients. *Geoderma* 130:108-123
17. Neff J.C., R. Reynolds, J. Belnap, and P. Lamothe. (2005) Multi-decadal impacts of grazing on soil physical and biogeochemical properties in Southeast Utah. *Ecological Applications*, v15 (1), 87-95
16. Neff J.C., J.W. Harden, and G. Gleixner. (2005) Fire effects on soil organic matter content and composition in boreal interior Alaska. *Canadian Journal of Forest Research*. 35(9): 2178-2187
15. Cleveland C.C., J.C. Neff, A.R. Townsend, and E. Hood. (2004) Composition, dynamics, and fate of leached dissolved organic matter in terrestrial ecosystems: Results from a decomposition experiment. *Ecosystems*. 7:275-285
14. Harden, J. W. J.C. Neff, D.V. Sandberg, M.R. Turetsky, R. Ottmar, G. Gleixner, T.L. Fries, K.L. Manies (2004) Chemistry of burning the forest floor during the FROSTFIRE experimental burn, interior Alaska, 1999 *Global Biogeochemical Cycles*, Vol. 18, No. 3, GB3014 10.1029/2003GB002194 28 August 2004
13. Neff J.C., F.S. Chapin III and P.M. Vitousek. (2003) The role of dissolved organic nitrogen in nutrient retention and plant mineral nutrition; reconciling observations with ecological theory. *Frontiers in Ecology and Environmental Science*. 1(4): 205-211.
12. Neff J.C., A.R. Townsend, G. Gleixner, S. Lehman, J. Turnbull, and W. Bowman (2002). Variable effects of nitrogen additions on the stability and turnover of soil carbon. *Nature*. 419: 915-917
11. Neff J.C. and D.U. Hooper (2002) Vegetation and climate controls on the potential production of CO₂, DOC and DON production in northern latitude soils. *Global Change Biology*. 8: 872-884.
10. Neff J.C., E.A. Holland, F.J. Dentener, W.H. McDowell, and K.M. Russel (2002). Atmospheric organic nitrogen; Implications for the global N cycle. *Biogeochemistry*. 57/58: 99-136.
9. Randerson J.T., F.S. Chapin III, J.W. Harden, J.C. Neff, and M.E. Harmon (2002) Scaling terrestrial net carbon fluxes: A definition of net ecosystem production (NEP) that includes disturbance and non-CO₂ carbon fluxes. *Ecological Applications* 12(4): 937-947.
8. Asner G.P., A.R. Townsend, W.J. Riley, P.A. Matson, J.C. Neff and C.C. Cleveland (2001). Physical and biogeochemical controls of terrestrial ecosystem responses to nitrogen deposition. *Biogeochemistry* 54: 1-39
7. Neff J.C. and G.P. Asner. (2001) Dissolved organic carbon in terrestrial ecosystems: Synthesis and a model. *Ecosystems*. 4(1): 29-48
6. Holland E.A., J.C. Neff, A.R. Townsend and R. McKeown. (2001). Variability in the temperature response of decomposition in sub-tropical and tropical soils. *Global Biogeochemical Cycles*. 14(4): 1137-1153
5. Neff J.C., S.E. Hobbie and P.M. Vitousek (2000) Controls over the production and stoichiometry of dissolved organic carbon, nitrogen and phosphorus in tropical soils. *Biogeochemistry*, 51 (3):283-302
4. Silver W., J.C. Neff, E. Veldkamp, M. McGroddy, & M. Keller (2000) Patterns in soil chemical properties and root biomass along a soil texture gradient in a lowland Amazonian tropical forest. *Ecosystems*, 003(02): 0193-0209
3. Weitz A., E. Veldkamp, M. Keller, J.C. Neff, and P. Crill. (1998). Nitrous Oxide, Nitric Oxide and Methane Fluxes from Soils Following Clearing and Burning of Tropical Secondary Forest, *Journal of Geophysical Research - Atmospheres*.
2. Neff J.C., M. Keller, E.A. Holland, A. Weitz and E. Veldkamp (1995) Fluxes of nitric oxide from soils following the clearing and burning of a secondary tropical rain forest. *Journal of Geophysical Research - Atmospheres*, 100(D12) 25,913-25,922.

1. Neff J.C., W. Bowman, E.A. Holland, M. Fisk and S. Schmidt (1994) Fluxes of nitrous oxide and methane from nitrogen amended soils in a Colorado alpine ecosystem. *Biogeochemistry*, 27:23-33.

Peer-Reviewed Book Chapters

- Parton W.J., J.C. Neff and P.M. Vitousek. (2005) Modeling phosphorus dynamics in terrestrial ecosystems. (*In Organic Phosphorus and the Environment (BL Turner, E Frossard, ETH Lindau, DS Baldwin eds)* Oxford University Press. 350 pages. pp 325-347
- Aitkenhead-Peterson J., W.H. McDowell and J.C. Neff (2002). Sources, Production and Regulation of allochthonous dissolved organic matter. In (S. Findlay and R. Sinsabaugh, Eds.), *Aquatic Ecosystems, interactivity of dissolved organic matter*. Academic Press, Amsterdam, pp 26-70.

Other Publications (non peer reviewed)

- Ollinger S., G. Ågren, B. Berg, E. Davidson, C. Field, M. Lerdau, J. Neff, O. Sala, M. Scholes, and R. Sterner. (2003) New frontiers in the study of element interactions. In *Interactions of the Major Biogeochemical Cycles* (Melillo, Field and Moldan eds.). pp 63-91.
- Neff, J.C. and L.O. Hedin (2002). Building a Home for the Biogeosciences: Challenges for Understanding Terrestrial Ecosystems. *EOS* 83: 165-166.
- Gurney K.R. and J. Neff. (2000). "Carbon Sequestration Potential in Canada, Russia, and the United States Under Article 3.4 of the Kyoto Protocol," World Wildlife Fund.
- Vitousek P.M., P.A. Matson, L.O. Hedin, J. Fownes and J.C. Neff (1998). Within-system element cycles, input-output budgets and nutrient limitation. In (P. Groffman and M. Pace, Eds.), *Successes, Limitations and Frontiers in Ecosystem Ecology*. Springer-Verlag, Berlin.
- Neff J.C. (1996). Regulating nitrogen oxide emissions. In *Elements of Change*. Aspen Global Change Institute (S.J. Hassol and J. Katzenberger eds.). P 239-240.

Service

National and International

- Secretariat Implementation Team, US Hub of the global Future Earth Secretariat (2014-).
- Ecological Society of America Rapid Response Team - Biogeochemistry (2004-)
- Co-Author ESA - Climate change and Nuclear energy policy statements (2009 and 2010)
- ESA Membership Committee (1999-2001)
- AGU Biogeosciences Steering Committee (1999-2004)
- Session Chair for 7 AGU sessions 1999-2004
- Session Chair/co-organizer for 2005 ESA symposium

Editorial Work

- Ecosystems Associate Editor (2010-2104)
- Journal of Geophysical Research Biogeosciences Associate Editor (2005-2010)
- EOS Transactions, Biogeosciences Editor (2000-2003)

Advisory Boards, Review Panels & select working groups

- NEON isotope advisory working group, 2014, NASA Terrestrial Ecosystems Program Panel review, Summer, 2013. DOE Review panel – Oak Ridge National Lab SFA Proposal review. Washington, DC. April 2012. NSF Ecosystem Studies Review Panel (Spring 2006, Fall, 2006, Fall, 2011), DOE Program review – Carbon cycle and climate change programs at the National Labs (Summer, 2009), National

Center for Ecological Analysis and Synthesis (NCEAS) Science Advisory Board (2002-2005). Review Panel – National environment research council 5 year review of the Centre for Ecology and Hydrology in Swindon, UK, October 4-5, 2004. Others: InTeGrate ‘Programs that Bring Together Geoscience and Sustainability’. Stanford University, CA. 2012. DOE carbon cycle program writing team, Washington DC, Spring 2008. Water: Challenges at the Intersection of Human and Natural Systems NSF/DOE workshop, Richland WA, Batelle National Lab (2005). NCEAS Microbes and Ecosystems working group (2003-2004). SCOPE Multiple Element Interactions project (2002).

University

- Faculty Director, CU Future Earth secretariat development effort (2014-)
- Chair of Implementation Committee for the proposed school of the environment at CU Boulder (2013-2014)
- Member, Provost’s Environmental Science and Sustainability Visioning Committee 2012-2013.
- Member, CU Boulder Vice Chancellor’s Research Review Board (2012-2014).
- Member, Provosts Academic Advising Committee (2013-present),
- Chair, Search Committee for Quantitative Environmental Social Scientist, ENVIS, 2012-2013.
- CU Representative to the National Council for Science and the Environment, Council of Environmental Deans and Directors (2012-2014)
- Environmental Studies Undergraduate Director and Associate Director (2012-2014).
- Environmental Studies Graduate Director and Associate Director (2005-2006, 2010 to 2012)
- Environmental Studies Executive Committee (2007-2014)
- Environmental Studies Graduate committee (2003-2006)
- Environmental Studies Biogeoscience core director (2003-2012).
- Geology representative to Boulder Faculty Assembly (2013-2014),
- Environmental and Geology Program review committee – 2011-2012.
- Geology undergraduate committee 2012-2013, 2013-2014.
- Geology space committee 2011-2012.
- Faculty co-coordinator for the San Juan Collaboratory (University outreach program) 2008-2010
- Beverley Sears Graduate student grant committee, 2006 and 2007.
- Geology Honors Council Representative (Fall 07-09)
- Geology Executive Committee (Fall 06-08)
- Geology Program Review Undergrad committee (Fall 03-Spring 04)
- Geology Geochemistry search committee (Fall 04/Spring 05)
- Geology Undergraduate Curriculum committee (Spring 03-Spring 05).

Reviewer

Arctic and Alpine Research, Biogeochemistry, Catena, Canadian Journal of Forest Research, Catena, Ecology, Ecological Applications, Ecology Letters, Ecosystems, European Journal of Soil Science, Geoderma, Geophysical Research Letters, Global Change Biology, International Journal of Wildland Fire, JGR-Atmospheres, JGR-Biogeosciences, Journal of the Soil Science Society of America, Journal of Range Management, Journal of Arid Environments, Nature, Nonlinear Processes in Geophysics, Oecologia, Proceedings of the National Academy of Sciences, Quaternary International, Science, Soil Biology and Biochemistry, Water Resources Research. Funding: NSF Geosciences, Polar, International,

and Biology directorates, NASA Earth Systems Science program, Kearney Soil Science Program, ACS-Petroleum research fund, CAL-FED. Austrian and Dutch Academies of Science

Presentations

presentations listed to 2001

2014

- K. Kelsey, N. Barger, J. Neff, Interactions of climate and regional landscape physiography on high elevation forest growth. AGU Fall meeting, San Francisco. December 2014
- Z. Fan, J. Neff, N. Hanan. The pulsed response of soil respiration to precipitation in an African savanna ecosystem: a coupled measurement and modeling approach. AGU Fall meeting, San Francisco. December 2014
- US EPA (Denver). Dust in the intermountain west. Patterns, trends and implications. Denver Federal Center. *February, 2014 INVITED.*
- SPATIAL short course – University of Utah. Spatial analysis and isotope course, University of Utah. Invited lecturer. June, 2014.

2013

- K. Kelsey, D. Fernandez, J. Neff. 2013. Carbon management on public lands in SW Colorado. North American Carbon Program Meeting. Albuquerque, Jan 2013. Ph.D. Student primary author
- K. Kelsey & J. Neff. Creating a Multi-Proxy Based Estimate of Regional Carbon Stocks from Ground-Based Biomass Measurements and Remotely Sensed Imagery. AGU Fall meeting, San Francisco. Ph.D. student first author.

Jason Neff, UC Boulder - Recent trends in dust deposition and the role of dust storms in total particle concentrations in the Southwestern US. Airborne Mineral Dust Contaminants - Impacts on Human Health and the Environment Workshop. **INVITED** presentation.

2012

- J.C. Neff. Dust and air quality; an emerging interdisciplinary challenge for the intermountain west and desert dust in the western SU; the role of human disturbance on dust storms and nutrient transport across the rural west. Utah State University. Ecology Center Seminar Series. January 2012. **INVITED.**
- J.C. Neff. Blowin' in the Wind: Soil Particles in Our Air. Harmful? Can We Do Anything? Academy of Life Long Learning. Denver. October. 2012. **INVITED.** outreach
- J.C. Neff. Human health hazards and dust. CU School of Public Health. Denver. September, 2012. **INVITED.**
- F.E. Urban, R.L. Reynolds, J.C. Neff, D.P. Fernandez, M.C. Reheis, H. Goldstein, E. Grote, C. Landry. 2012. Atmospheric dust in the upper Colorado River Basin: Integrated analysis of digital imagery, total suspended particulate, and meteorological data. AGU Fall Meeting, SF, CA
- N. Mathabane*, K. Kelsey, J.C. Neff. Carbon stocks and sequestration: How much do we know? AGU fall meeting, SF, CA. *Summer 2012 RESESS Intern.

J.C. Neff. ENVS and Geology at CU Boulder. Presentation on program at InTeGrate workshop “Programs that Bring Together Geoscience and Sustainability”. Stanford University, CA

2011

- J.C. Neff. Building institutional partnerships to address climate change adaptation and regional environmental change. Ecological Society of America Annual Meeting. Austin TX. **INVITED**
- J.C. Neff, D. Fernandez; S.M. Munson; R.L. Reynolds. Desert dust in rural western US; the influence of dust storms, large particles, and land-use change on aerosol loads. AGU Fall meeting, 2011.
- C. Flagg, J. Neff; R.L. Reynolds; J. Belnap. Spatial and Temporal Variability of Fugitive Dust Flux from Colorado Plateau Landscapes. AGU Fall meeting, 2011
- J. Brahney; J. Neff; A. P. Ballantyne. The influence of nitrogen and dust deposition on alpine aquatic biogeochemistry. AGU Fall meeting, 2011
- J. Belnap, J.S. Deems, A. Kind, S. Munson, J. Neff; G. Okin, T.H. Painter; M.C. Reheis, R.L. Reynolds, B.P. Wilcox. Ecohydrology across Scales in an Arid, Human-dominated Landscape: Implications for Ecosystems, Water Availability and Human Interactions. AGU Fall meeting, 2011
- Neff, J.C. The Past, Present, and Future of Dust in the West. Biology Department Seminar, BYU, November, 2011 **INVITED**
- Neff J.C, Monitoring atmospheric dust in Colorado. Navajo Nation Environmental Protection Agency Biannual Meeting. 2011. **INVITED**
- Neff J.C, Desert dust in the western US; the role of human disturbance on dust storms and aerosol loads in the rural West. NOAA Seminar, 2011. **INVITED**

2010

- Neff, J.C. The biophysical and biogeochemical response of boreal soils to climate change. Stockholm University. **INVITED**
- Neff, J.C. Carbon Management in the San Juan Mountains. State of the San Juans Conference & US Forest service climate change adaptation workshop, San Juan Public Lands Center, Silverton, CO. **INVITED**
- Cozzetto, K., Neff, J.C. Downscaled precipitation projections from climate models in the Four Corners, State of the San Juans Conference & US Forest service climate change adaptation workshop, San Juan Public Lands Center. **INVITED**
- Kelsey, K., K.P. Wickland, R.G. Striegl, J.C. Neff. Spatial variability in soil CO₂ production and CO₂ efflux from a topographically complex mature black spruce forest, interior Alaska. 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.
- Reynolds, R.L., H. Goldstein, M.E. Miller, J.C. Neff, D. Fernandez, M.C. Reheis. : Distribution of Atmospheric Mineral Dust across Dryland Ecosystems. 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec. **INVITED**
- Mack, M.C., J.C. Finlay, J. DeMarco, F. Chapin, E.A. Schuur, J.C. Neff, S.A. Zimov. Nitrogen and phosphorus in Yedoma soils of Northeast Siberia: stocks, fluxes and the ecosystem consequences of nutrient release from permafrost thaw. 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.
- N. M. Mahowald, S. Kloster, S. Engelstaedter, J. K. Moore, S. Mukhopadhyay, J. R. McConnell, S. Albani, S. C. Doney, A. Bhattacharya, M. A. J. Curran, M. G. Flanner, F. M. Hoffman, D. M. Lawrence, K. Lindsay, P. A. Mayewski, J. Neff, D. Rothenberg, E. Thomas, P. E. Thornton, C. S. Zender. 2010. Observed 20th Century desert dust variability: Impacts on climate and biogeochemistry. . 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec. **INVITED**

2009

- Neff, J.C. How dust shapes ecosystems: the past, present and future. LTER Mini-symposium, National Science Foundation. **INVITED**
- Neff, J.C. The ecology of dust. Biology department symposium, Brown University **INVITED**
- Neff, J.C. Land use and dust. Biology department symposium, University of Utah **INVITED**
- Neff, J.C. Land use change and dust in the western US. Forestry department symposium, Northern Arizona University **INVITED**
- Neff, J.C. Atmospheric Nutrient Transport. IGERT distinguished seminar speaker. University of Minnesota. **INVITED**
- * Fan, Z. & J. Neff. Detection of climate change impacts on boreal soil carbon cycling: A model-based analysis of carbon stock and flux changes over the coming decades. AGU Fall Annual Meeting, San Francisco, CA
- * Meier, C.L. & J. Neff. Biogeography of soil organic matter molecular structure across multiple soil size fractions. AGU Fall Annual Meeting, San Francisco, CA
- Luo, H., H. W. Loescher, J. Neff, D. Fernandez. Aerosol Particle Monitoring and Dry Deposition Modeling at a Dry Plateau Site at Colorado. AGU Fall Annual Meeting, San Francisco, CA
- Fernandez, D. P., J. Neff, H. Luo, H. W. Loescher, T. Hehn. The role of large particles in aerosol concentration and flux estimates; a comparison of Total Suspended Particulate, PM10 and PM2.5 measurements for use in biogeochemical studies. AGU Fall Annual Meeting, San Francisco, CA.
- Reynolds, R., H. Goldstein, M. Ketterer, K. Moser, J. Neff, M. C. Reheis, J. G. Rosenbaum. Compositional Changes In Atmospheric Dust In Western United States During The Past 150 Years. R. L. AGU Fall Annual Meeting, San Francisco, CA
- *Stewart, C.E., J.C. Neff, T.K. Raab, M. Kramer, K.L. Amatangelo, and P.M. Vitousek. Soil organic carbon characterization by pyrolysis-gas chromatography-mass spectrometry (py-GC/MS) and tetramethylammonium-py-GC/MS: Tracing plant and microbial contributions to SOM. Ecological Society of America Annual Meeting. Albuquerque, New Mexico.
- *Stewart, C.E., J.C. Neff. Plant biomarker contributions to soil organic matter using two methods of pyrolysis-gas chromatography/mass spectrometry. International Symposium on Soil Organic Matter Dynamics: Land Use, Management, and Global Change. Colorado Springs, CO, 2009.

2008

- *Stewart, C.E., K. Amatangelo, and J.C. Neff. Contribution of species specific chemical signatures to soil organic matter in Kohala, HI. AGU Fall Annual Meeting, San Francisco, CA.
- Lawrence, C.R., J.C. Neff, and G.L. Farmer. Evaluating the contribution of eolian dust to the weathering flux from mountain soils. AGU Fall Annual Meeting, San Francisco, CA.
- Grandy, S., J.C. Neff, B. Sinsabaugh, K. Wickings. Nitrogen effects on organic dynamics and soil communities in forest and agricultural systems. AGU Fall Annual Meeting, San Francisco, CA.
- Neff, J.C. Climate change impacts and feedbacks in Boreal Ecosystems. Café Scientifique (Public talk), Boulder, CO. **INVITED**
- Lawrence, C.R. and J.C. Neff. Changes in regional dust emission. Geological Society of America Annual Meeting, **INVITED**
- Neff, J.C. The ecological implications of the global dust cycle. Ecological Society of America Annual Meeting. **INVITED**
- Neff, J.C., Land Use Change in SW Deserts, Dust Deposition and Its Impact on Colorado Ecosystems: Colorado Chapter of the Wildlife Societies Annual meeting – Denver, CO January, 2008, **INVITED**

Neff, J.C., Changes in mineral aerosol deposition over the past two centuries in Colorado. Colorado Directors of Environmental Health Quarterly Meeting, Denver, CO. **INVITED**
Neff, J.C., Cows, Bedrock and Biogeochemistry; land use change in the Western US. University of Arizona Geosciences Dept Colloquium. Tucson, AZ, **INVITED**

2007

- K.P. Wickland, J.C. Neff and G.R. Aitken. Chemistry and biodegradability of terrestrially-derived DOC in boreal black spruce forests of Alaska. American Society of Limnology and Oceanography.
- S. Buckingham and J.C. Neff. Data mining of landscape spatial patterns to identify controls on arid dryland productivity. American Society for Photogrammetry and Remote Sensing Annual Conference Tampa, FL, May 2007
- *A.S. Grandy, J.C. Neff, and C.A. Stewart. Biogeochemical controls over C structure: implications for C stabilization in disturbed ecosystems. Soil Science of America Annual Meeting. **INVITED**.
- Baisden, W.T., R.L. Parfitt, L.A. Schipper, J.C. Neff, C.A. Prior, K.M. Rogers, K.R. Tate, C. Ross, R.H. Wilde, S. Lambie, F. Bruhn, A. McKay. Modelling the measureable: Adaptive approaches to improve predictions of soil organic matter cycling. 2nd International Conferences on Mechanisms of Soil Organic Matter Stabilization, Adelaide, Australia.
- Rogers, K.M., W.T. Baisden, B. Gomez, M.J. Page, R. Boys, R. Parfitt, N. Preston, and J.C. Neff. Characterization of soil organic matter in New Zealand's sedimentary cascade. 2nd International Conferences on Mechanisms of Soil Organic Matter Stabilization, Adelaide, Australia.
- R. Reynolds, J. Neff, F. Urban, H. Goldstein, D. Fernandez, M. Reheis, J. Belnap. Nutrients in grassland soils of the central Colorado Plateau – Spatial controls by substrate composition, geomorphic settings and land-use effects. Geological Society of America Annual Meeting. Denver, CO.
- K.L. Amatangelo, T.K. Raab, J.C. Neff, M. P. Waldrop and P.M. Vitousek. Plant biochemistry and microbial community composition interactions determine litter decomposition dynamics. Ecological Society of America Annual Meeting, San Jose, CA.
- J.C. Neff, A. Ballantyne, L. Farmer, J. Conroy, D. Demaster, T. Painter, C. Landry. Human caused increases in dust deposition in a western US mountain range. Ecological Society of America Annual Meeting, San Jose, CA.
- K.L. Manies, J.W. Harden, M.C. Mack, B. Bond-Lamberty, K.P. O'Neill, J. C. Neff, M.R. Turetsky. Landscape controls on carbon and nitrogen cycling in boreal forests. Ecological Society of America Annual Meeting, San Jose, CA.
- J C Neff, N Hanan, J A Berry, C A Williams, D P Fernandez, R J Scholes. Seasonal controls on soil respiration fluxes and isotopic content in an African Savanna ecosystem: Implications for site to regional carbon flux estimates. American Geophysical Union Annual Meeting. San Francisco, CA.
- J C Neff, R L Reynolds, G L Farmer, M Reheis. The changing role of dust in biogeochemical cycling. American Geophysical Union Annual Meeting. San Francisco, CA. **INVITED**
- J W Harden, J C Neff. Soil carbon as a metric for longterm ecosystem function. American Geophysical Union Annual Meeting. San Francisco, CA. **INVITED**
- S C Castle, J C Neff. Plant Foliar Response to Soil Nutrient Availability Across Contrasting Geologic Settings. American Geophysical Union Annual Meeting. San Francisco, CA.
- *C E Stewart, K Amatangelo, J Neff. Chemical Composition of Soil Horizons and Aggregate Size Fractions Under the Hawaiian Fern *Dicranopteris* and Angiosperm *Cheirodendrom*. American Geophysical Union Annual Meeting. San Francisco, CA.
- T H Painter, N Mahowald, J C Neff. Climate response in the western United States to dust-shortened snow cover duration since late 1800s soil disturbance. American Geophysical Union Annual Meeting. San Francisco, CA.
- *Z Fan, J C Neff. An Evaluation of Soil Carbon Layer Dynamic in the Context of Global Warming. American Geophysical Union Annual Meeting. San Francisco, CA.

- C. Huang, G. Asner, R. Martin, N. Barger, J. Neff. A cross-scale remote sensing approach to estimate tree cover and aboveground biomass in pinyon-juniper woodlands of the Colorado Plateau, USA. American Geophysical Union Annual Meeting, San Francisco, CA.
- C.R. Lawrence, J.C. Neff, L. Farmer, T.H. Painter, C. Landry. Geochemical and isotopic estimates of eolian dust in soils of the San Juan Mountains, USA. American Geophysical Union Annual Meeting, San Francisco, CA.

2006

- Grandy, A.S. and J.C. Neff. 2006. Molecular chemistry of soil organic matter and enzyme dynamics in alpine ecosystems. Agronomy Abstracts, 2006, Indianapolis, IN. ASA, CSSA, SSA, Madison, WI.
- Williams C.A., N. Hanan, Joseph B, J. Collatz A. S. Denning, J.C. Neff, R.J. Scholes, Variability and vulnerability of carbon cycling in Africa: diagnosing controls on regional exchanges from forward and inverse modeling. American Geophysical Union Fall Meeting, 2006.
- Van Oost, K., J.W. Harden, T.A. Quine, J.C. Neff. Soil erosion and carbon dynamics: Establishing linkages between fine-scale processes and regional scale mass-balance. American Geophysical Union Fall Meeting, 2006.
- Wickland, K.P., J.C. Neff, G.R. Aiken. Dissolved organic carbon in boreal black spruce forest: Sources, Chemistry and Biodegradability. American Geophysical Union Fall Meeting, 2006.
- Davydov, S.P., J.C. Neff, N.I. Shiklomanov, A.I. Davydova, D. Fedorov-Davydov, J.C. Finlay, S.A. Zimov. Changes in the active-layer thickness in the north-eastern Kolma region and their effect on age and structure of dissolved organic carbon in streams. American Geophysical Union Fall Meeting, 2006.
- Harden, J.W., K. Van Oost, J.C. Neff, A.A. Berhe, N. Rosenbloom, D. Schimel. Soil carbon dynamics in relation to landscape dynamics. American Geophysical Union Fall Meeting, 2006.
- Neff, J. A little bit of Utah in Colorado: the influence of desert dust on the ecology of the San Juan Mountains. Pinhead Institute Town Talk, Telluride, CO. **INVITED**
- Neff, J. Cows, bedrock and biogeochemistry; how land use and climate affect the fertility of soils in the Western US. Washington State University/U of Idaho Geology seminar series. **INVITED.**
- Neff, J. The role of dust in terrestrial ecosystems. BIOGEMON; an international symposium on ecosystem behavior. **KEYNOTE ADDRESS.** 2006
- Neff, J. Controls on dissolved organic matter production and loss from soils. American Society for Limnology and Oceanography Annual Meeting. **INVITED.**
- *Grandy, A.S., J.Neff. The molecular chemistry of light and heavy fractions and enzyme dynamics in geochemically distinct soils. BIOGEMON; an international symposium on ecosystem behavior.
- Lawrence, C., J. Neff, T. Painter, S. Castle. The coupling of mountains and deserts: biogeochemical influence of eolian deposition in the San Juan Mountains, CO. BIOGEMON; an international symposium on ecosystem behavior.
- Buckingham, S.E., and Neff, J.N and Fernandez D. (May 2006). Hyperspectral Mapping of Phosphorus in Dryland Ecosystems. Poster Presentation at the American Society for Photogrammetry and Remote Sensing Annual Conference, Reno, NV.
- Painter, T.H, A.P. Barrett, J.C. Neff, C.C. Landry (2006). Radiative forcing by dust deposition in mountain snow cover. European Geophysical Union Meeting, Vienna, Austria.

2005

- Neff, J., Farmer, L., Painter, T., Landry, C. and Reynolds, R.L. Effects of desert dust on nutrient cycling in the San Juan Mountain, Colorado: EOS, Transactions of the American Geophysical Union. **INVITED.** 2005

- Painter, T H, Barrett, A P, Landry, C, Neff, J C 2005, Radiative effects of desert dust deposits to alpine snow: EOS, Transactions of the American Geophysical Union. 2005
- J Finlay, J Neff, S P Davydov, A I Davydova, S A Zimov: Source and Flux of DOC in the Kolyma River Watershed of North-East Siberia: EOS, Transactions of the American Geophysical Union. **INVITED**. 2005
- Reynolds, R.L., Neff, J.C., Reheis, M.C., and Belnap, J., Eolian dust: Physical and ecological linkages: George Wright Society Conference, Philadelphia, PA 2005.
- Reynolds, R.L., Neff, J.C., Urban, F., Reheis, M.C., Fernandez, D., Goldstein, H., Miller, M., and Belnap, J., 2005, Dust emission from grazed grasslands on Colorado Plateau (USA) drylands: Modern events and long-term effects: European Geosciences Union. 2005.
- Reynolds, R.L., Forester, R., Neff, J.C., and Reheis, M.C. Dust emission and deposition linking geomorphology, hydrology, and ecology: International Association of Geographers, Zaragoza, Spain. 2005
- Miller, M.E., Belnap, J., Reynolds, R.L., Neff, J.C., and Reheis, M., 2005, Cheatgrass performance in relation to soil characteristics in Colorado Plateau drylands: Ecology and Management of Pinyon-Juniper and Sagebrush Communities, FWS/BLM/PLP Conference. 2005
- Christopher A. Williams, Niall Hanan, Joseph Berry, Robert Scholes, A. Scott Denning, Jason Neff, Jeffrey Privette, 2005, Africa and the global carbon cycle: field networks and model studies of African carbon exchange, National Science Foundation US-Africa Workshop: Enhancing Collaborative Research on the Environment in Sub-Saharan Africa, Arlington, VA, January 24-26, 2005.
- T H Painter, A P Barrett, C Landry, J C Neff. Radiative effects of desert dust deposits to alpine snow. : EOS, Transactions of the American Geophysical Union. 2005
- Lawrence, C., J. Neff, J.Schimel, A. Miller, The CENTURY of microbes: Incorporating microbes into a soil organic matter model. Ecological Society of America Annual Meeting, Montreal, Quebec. **INVITED** Talk. 2005
- N. P. Hanan, C.A. Williams, R.J. Scholes, A.S. Denning, J.A. Berry, J. Neff & J. Privette. In (and Out) of Africa: estimating the carbon exchange of a continent. 7th Annual International CO2 Conference.

2004

- J.A. Kelleher, J.J. Carrasco, and J.C. Neff. Relating Pyrolysis GC-MS to Traditional Soil Organic Matter Characterization: a Comparative Study Across a Landscape. American Geophysical Union Annual Fall Meeting. 2004
- J.J. Carrasco, J.H. Harden, J.C. Neff. Understanding Long-Term Boreal Soil Carbon Accumulation: Insight from a Dynamic Layered Soil Model. American Geophysical Union Annual Fall Meeting . 2004
- R.L. Reynolds, Reheis M.C., Yount J., Goldstein H., Roberts H.M., Neff J.C. Dust and Nutrients in Modern and Late Quaternary Ecosystems of Central Colorado Plateau Drylands. American Geophysical Union Annual Fall Meeting. 2004
- Wickland K.P. Striegl R.G., Neff J.C. Soil Respiration and CH₄ fluxes in black spruce forests and adjacent thermokarst wetlands in interior Alaska. International Boreal Forests Research Association Annual Scientific Conference, Fairbanks, AK May 2004
- M.E. Miller, J. Belnap, R. Reynolds, R. Sanford, J. Neff, M. Reheis, R. Kokaly. Cheatgrass patterns on the Colorado Plateau. Effects of geology and earth-surface processes. Ecological Society of America Annual Meeting. 2004
- Neff J.C., R.L. Sanford, Jr., J. Belnap, M. Miller, R Reynolds. Plant stoichiometric response to landscape-scale variation in bedrock geochemistry; interactions of P, Ca and Fe in a semi-arid environment. Ecological Society of America Annual Meeting, 2004

Fernandez D.F., J.C. Neff, J. Belnap, , R.J. Reynolds. Decomposition in a desert environment: abiotic regulators and thresholds Ecological Society of America Annual Meeting, 2004
R. Reynolds, J. Neff, and M. Reheis Geology and ecosystems--a framework for understanding contemporary ecologic processes through geologic settings and processes. Ecological Society of America Annual Meeting, 2004. **INVITED**
Neff J.C. Eolian dust and southwestern ecosystems. University of California, Irvine, **INVITED** seminar Earth Sciences Department Colloquium Series, February 18th, 2004
Neff J.C. Land use and ecosystem processes in Utah. University of Illinois, Urbana-Champlain, **INVITED** seminar, Ecology and Evolutionary Biology department, April 7th, 2004

2003

Townsend AR, Neff JC, Lehman S. Nutrient Controls over Soil Organic Matter Turnover: Implications for Land Use Effects on Soil Carbon Storage. Eos Trans. AGU, 84(46), Abstract B31A-06 Fall Meet. Suppl., 2003
Wickland KP, Striegl RP, Neff JC. Soil Respiration in a Black Spruce Forest and Adjacent Thermokarst Wetlands in Interior Alaska. Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract B31C-0306, 2003
Rosenbloom NA, Harden JW, Neff JC, Schimel D. Landscape Evolution and Carbon Accumulation: Uniformitarianism Revisited. Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract H42C-1087, 2003
Reynolds RL, Neff JC, Reheis M, Goldstein H, Lamothe P. Distribution of Aeolian Dust Determined From Magnetic and Chemical Properties in Surficial Substrates of Grassland and Shrubland, Central Colorado Plateau (Utah. Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract B11F-06, 2003)
Marith Reheis, Robert L. Sanford Jr., Jayne Belnap, Richard Reynolds, and Jason Neff Silver linings: Fertility gains and losses through dust redistribution at local, regional, and global scales. Ecological Society of America Annual Meeting, 2003
Neff JC. Soil Science Society of America Meeting: Denver, CO September 2003? **INVITED**. Talk Title: Biogeochemical implications of dust erosion and deposition for terrestrial ecosystems.
Richard Reynolds, Marith Reheis, Jason Neff, Harland Goldstein, James Yount, Yarrow Axford, Helen Roberts, Mark Miller, Robert Sanford, Jayne Belnap Geologic, ecologic, climatic, and land-use interactions in the high desert of the central Colorado Plateau (USA)?the past 40,000 years. International Union for Quaternary Research Meeting, Reno NV. 2003
J. Harden, M. Turetsky, J. Carrasco, K. Manies, D. McGuire, J. Neff, M. Pavich, N. Rosenbloom, S.E. Trumbore, Q. Zhuang Toward understanding long-term terrestrial carbon: mechanisms, modern tools, and modeling of soil systems. International Union for Quaternary Research Meeting, Reno NV. 2003
Neff JC. National Center for Atmospheric Research: Boulder, CO October 21, 2003: **INVITED** Speaker Climate and Global Dynamics Seminar Series. The role of dust in terrestrial ecosystems
Neff JC. Institute for Ecosystem Studies: Millbrook, NY. October 30th, 2003: **INVITED** speaker, fall seminar series. Blowing in the wind: the biogeochemical implications of dust erosion and deposition in the Southwestern US.
Neff JC. University of Chicago, Geosciences Department: Chicago, IL, April, 2003: **INVITED** Speaker Departmental seminar series. N effects on alpine decomposition

2002

Ojima D., D. Schimel, T. Hilinski, R. McKeown, J. Neff. 2002 The Impact of Disturbance on Carbon Source and Sinks in Colorado Ecosystems. American Geophysical Union Fall Meeting.

- Wickland K. & J. Neff. 2002. Respiration and Dissolved Organic Carbon Dynamics in an Area Undergoing Permafrost Degradation. American Geophysical Union, Fall Meeting.
- Neff J., D. Schimel, D. Ojima, R. McKeown, S. Aulenbach, T. Hilinski, 2002. Wildland Fire, Fire Suppression, and the US Carbon Budget: a Colorado Case Study. American Geophysical Union, Fall Meeting.
- McGroddy, M., J. Neff, W. de Mello, & M. Keller. 2002. Deposition and Loss of Cations and Anions in a Lowland Forest on Highly Weathered Soils in the Amazon. American Geophysical Union, Fall Meeting.
- Cleveland C., J. Neff & A. Townsend, 2002. Production, bioavailability and isotopic composition of dissolved organic carbon: Results from a decomposition experiment. Ecological Society of America Annual Meeting
- Townsend A., J. Neff, W. Bowman & S. Lehman. 2002. Nitrogen additions change soil carbon structure and turnover times. Ecological Society of America Annual Meeting

2001

- Neff J., R. Reynolds, P. Lamotte & J. Belnap. Plant and microbial dynamics along gradients in soil texture and eolian dust accumulation in the Colorado plateau. American Geophysical Union Fall Meeting. 2001.
- Neff J., A. Townsend, G. Gleixner & W. Bowman. The role of nitrogen in organic matter decomposition in the Colorado Alpine. Denver University Biology Department Seminar Series, Denver, CO. **INVITED**. 2001.
- Neff, J.. Atmospheric Organic Nitrogen; A missing link the nitrogen cycle? Cornell University, Biogeochemistry Seminar Series, Ithaca, NY. **INVITED**. 2001
- Neff, J. The isotopic composition of soil organic matter: Experimental and modeling approaches to understand the $\delta^{13}\text{C}$ content of soil respiration. Invited seminar. Stanford University, Biogeochemistry Seminar Series. Stanford, CA **INVITED**. 2001
- Neff J., R. McKeown, J. Harden, R. Braswell & D. Schimel, Inverse and forward modeling approaches to understanding the $\delta^{13}\text{C}$ of soil respiration. America Geophysical Union Fall Meeting. 2000.
- J. Neff, E. Holland, F. Dentener, W. McDowell and K. Russell. Organic Nitrogen Deposition: Is it time to reconsider the measurement of N in precipitation. Ecological Society of America Annual Meeting. 2000.
- Neff J., R. Braswell, D. Schimel & R. McKeown. New approaches to modeling soil organic matter dynamics. Global Change in Terrestrial Ecosystems, Focus 1 Workshop. Jena, Germany. **INVITED**. 2000.

Teaching

Introduction to Biogeochemistry (GEOL/ENVS/EBIO 4160). 35 students.

Global Biogeochemical Cycles (GEOL 5700, 5840): Upper division undergraduate/graduate course in global element cycling. 25 students.

Graduate Environmental Science (ENVS 5002): Required graduate course for incoming students in the environmental studies programming including joint MBA/MS and Law/MS students in the Environmental Studies program. 15 students.

Introduction to Global Change (GEOL 1070): Introductory undergraduate course in environmental change including alteration of the global element cycles, water pollution, energy use and population growth. 90 students.

Introduction to Environmental Science (ENVS 1000): Introductory course in environmental science, policy and values. 405 students.

The Art and Science of Climate (ENVS 4700/5700): Experimental course teaching climate science and hydrology to non-science majors using unconventional testing and assessment techniques. 15 students.

Funding in the Environment Sciences (GEOL 5700): graduate seminar on funding opportunities, trends and proposal writing techniques. 15 students

Undergraduate, Graduate, and Postdoctoral Students

Undergraduate honors theses supervised:

Greg Farlow, honors thesis project (CHEM). GC/MS Analysis of Semi-Polar Contaminants in Total Suspended Particle (TSP) Filters from Colorado's Eastern Plains (Fort Collins), Mesa Verde National Park, and Niwot Ridge (Nederland). Cum Laude, May 2012

Kallie Barnes, honors thesis project (ENVS). Carbon balance and offsets for a biomass fuel plant in Pagosa Springs, CO. *Cum Laude* honors thesis, December 2011

Sarah Castle. *Magna Cum Laude* honors thesis. Nutrient Availability in Contrasting Geologic Settings. CU Boulder, ENVS. December 2005.

Meghan Worley. *Summa Cum Laude* honors thesis. Impact of Atmospheric Deposition on the Sr and Ca Cycles of a Sub-alpine Temperate Forest Ecosystem. CU Boulder, ENVS, April, 2006.

Graduate student theses supervised:

Kathy Kelsey, Ph.D. (ENVS). Carbon management on public lands in SW Colorado. Ph.D. 2015.

Justin Nyaga, Ph.D. (Botany, University of Cape Town). Nutritional contribution of atmospheric deposition to the Strandveld vegetation of West Coast National Park, South Africa. Co Advisor on Thesis, Nyaga funded by Neff grant and in residence at CU AY12/13. Ph.D. completed 2013.

Janice Brahney, Ph.D. (GEOL). Dust impacts on aquatic nutrient cycling and productivity. Ph.D. Completed, December, 2012.

Cody Flagg, M.S. (GEOL). Emission of dust from dryland soils. MS Completed 2012.

Kathy Kelsey, M.S. (GEOL). Carbon cycling in Alaskan Soils. MS 2011.

Eugene Bergh, M.S. (Geology, University of Cape Town). Co Advisor on thesis. M.S. Fall, 2011

Corey Lawrence, Ph.D. (GEOL). Impacts of aeolian deposition on ecosystem Ca cycling in a high elevation environment. Completed, May 2009.

Lisa Braun, M.S. (ENVS). ENVS MS – Biogeoscience Track, Coursework/Internship Track, M.S., spring 2009.

Sarah Castle, M.S. (GEOL). Nutrient cycling in geologically distinct alpine basins in the San Juan Mountains of Colorado. Completed, May, 2008

Julie Shapiro, M.S. (ENVS). ENVS MS – Social Science Track. Coursework/Internship Track, M.S., spring 2008

Kendra Morlingo-Bredlau (EBIO). Co-advised with Carol Wessman (EBIO). Impacts of compounded disturbance on nutrient cycling in the Routt National Forest. M.S. December, 2008

Kim Wickland, Ph.D. (GEOL). Carbon cycling along soil moisture gradients in a boreal forest environment. Completed, September 2006

Daniel Fernandez, MS (ENVS). Soil organic matter in the Canyonlands physiographic section of the Colorado Plateau: biochemical dynamics and land use perspectives. Completed May 2005.

Christopher Clack, MS (ENVS). Coursework/Internship Track. Completed May 2005.

Postdoctoral students supervised:

Ashley Ballantyne, 2010-2013. Duke University Ph.D. Geosciences postdoctoral fellow

Courtney Meier, CU Boulder Ph.D. 2007. USDA Soil biology and Biochemistry Postdoctoral Fellow. Start date, January, 2009-2010.

Karen Cozetto. CU Boulder, Ph.D. 2009. 2010-2011 Geosciences postdoctoral fellow.

Zhaosheng Fan, North Dakota State University, Ph.D. 2007-2011. Geosciences Postdoctoral Fellow.

Stuart Grandy, Ph.D. Michigan State University, 2005-2009, USDA Soil Biology and Biochemistry Postdoctoral Fellow.

Cathy Stewart, Colorado State University Ph.D. 2007. 2007-2009 Chancellors Diversity Fellowship.

Becca Barnes, Yale Ph.D., 2008. NSF EAR postdoctoral fellow. Research advisor – Richard Smith, USGS Boulder, Education advisor – Neff, CU Boulder. Start Date, October, 2008.

Jonathan Carrasco, Ph.D. CU Boulder, 2001-2002. USGS postdoctoral fellow.

Outreach and Communication

2014 Discover TV, High Country News, multiple freelance interviews; **2013**

9 news, Colorado public radio, National Geographic, numerous others; **2012**

5 interviews – magazine or newspapers; **2011** Interviews Nature Magazine, Earth Magazine, Wall Street Journal; **2010** Interview, KGNU Radio, May 14, 2010, Aspen Public Radio, May 12, 2010,

9news (Denver NBC Affiliate), May 16; **Prior to 2010** Research reported in the New York Times, National Public Radio, Colorado Public Radio, Associated Press, Reuters, and numerous national and international newspapers.