Curriculum Vitae – Jason C Neff

Professor, The Environmental Studies Program
Director, The Sustainability Innovation Lab at Colorado (SILC)
University of Colorado at Boulder
Phone: Office 303.492.6187; Mobile 303.818.4022
Email: neffjc@colorado.edu

Education

1999 Ph.D. Department of Biological Sciences, Stanford University.
1993 B.A. Summa Cum Laude. Environmental Biology, University of Colorado at Boulder

Publications and Grant Summary (details on following page)

Grants: PI or Co-PI on awards totaling ~$14,000,000 as PI and ~6,000,000 million as co-PI since 2003 including awards from the NSF, DOE, NASA, USDA, BLM, USGS, NOAA, USAID, the Mellon Foundation and the Grantham Foundation.
Publications: Google Scholar Statistics: ~15,000 citations; h-index= 56; 41 papers with >100 citations.

Examples of Leadership and Administrative Experience

2016- Present	***Founding Director, The Sustainability Innovation Lab at Colorado (SILC)***. I Created SILC (an independent center) at CU Boulder in 2016 to create a new campus center for impact-oriented sustainability science and innovative new approaches to technology use in development. I have led the center through annual revenue growth from $50,000 in 2016 to annual averages over 3 million dollars per year in 2018-2022 and total grant commitments of ~20 million dollars. In establishing SILC, I put in place fiscal and human resource management and oversight processes, led staff growth from 0- over 14 FTE in less than three years.
2014-2016	***Faculty Director: US Hub of the Future Earth Secretariat***. I led the creation of the US Hub of Future Earth in Colorado from 2014 to 2016. In this role, I negotiated a partnership agreement between hubs in five countries, obtained funding from the NSF to support the hub (totaling 1.2 million per year), oversaw a transparent and open search for a permanent hub director, and established the administrative home for Future Earth at CU Boulder.
2012-2014, Fall 2016	***Undergraduate Program Director & Associate Program Director, Environmental Studies Program***. In this role, I was responsible for the 1000 student undergraduate program for ENVS including a major curriculum overhaul. In this time, I led the establishment of a new university certificate program in *global environmental development* and I spearheaded the implementation of a program wide undergraduate climate and outcomes survey.
2014-2015	***Chair of the implementation committee for new college of the environment and sustainability.*** In this role, I oversaw multiple faculty workgroups

	developing a vision for a new college of the environment including curriculum, governance, financial management and other areas.
2013-2014	***Member***, Provost's Environmental Science and Sustainability Visioning Committee
2012-2014	***Member***, Vice Chancellor's for Research Faculty Review Board and Provosts Academic Advising committee.
2012-2014	***CU Boulder Representative*** to the National Council for Science and the Environment, Council of Environmental Deans and Directors
2005; 2009-2012	***Graduate Program Director & Associate Program Director***, Environmental Studies Program. In this role, I oversaw a graduate program of approximately 60 M.S. and Ph.D. Students including development and allocation of financial aid/support, development of a graduate curriculum, and served as the primary point of contact for graduate student concerns and advising.

Professional Experience

2015-Present	Professor, Environmental Studies Program
2009-2014	Associate Professor, Geological Sciences and Environmental Studies Program
2003-2009	Assistant Professor, Geological Sciences and Environmental Studies Departments
2001-2006	Research Ecologist, Earth Surface Processes Team, U.S. Geological Survey, Denver, Colorado
1999–2001	Scientist, Natural Resource Ecology Laboratory, Colorado State University and Visiti Scientist at the Max Plank Institute for Biogeochemistry, Jena, Germany.

Fellowships, Leadership training and awards

2017	College Scholars Award, College of Arts and Sciences, CU Boulder
2013	University of Colorado System - Excellence in Leadership Program Fellow (one of two fellows at CU Boulder selected for a year-long leadership training program)
2008	Interdisciplinary Teaching and Residence Life Teaching Award
2004-2006	A.W. Mellon Foundation, Conservation and Environment Jr Faculty Fellow
2001-2002	U.S. Geological Survey - Mendenhall Postdoctoral Fellow
1997-1999	NASA Earth System Science Pre-Doctoral Fellow
1994-1997	National Science Foundation Pre-Doctoral Fellow
1992	*Phi Beta Kappa, University of Colorado at Boulder*

Grants

LandPKS Development program (USDA ARS), PI, $330,000, 12/1/2021-5/30/2023, USDA, PI

Digital Geospatial Tools Consortium – building a new era of predictive agricultural innovation to improve farming systems and the livelihoods of smallholder farmers. 10/1/2020-9/30/23. $450,000. USAID/KSU Prime, PI.

Sustaining and Improving LandPKS to Support USDA Conservation Programs through Soil Survey. 3/1/2020-2/27/2022. USDA-NRCS. $200,000. PI

In-Situ Data Collection with Remote Sensing for Machine Learning Parameter Estimates and

Improved Hydrologic Models for Flood, Drought and Agricultural Yield Forecasting. 9/1/20-8/31/23, $650,000 NASA Servir, Co-PI

LandPKS Extension and Capacity Building for Global Use. 3/1/2020-2/27/2022. International Fertilizer Development Center/USAID. $200,000 PI.

Open Technology Ecosystem for Agricultural Management (OPENTeam). 10/01/2019-09/30/2020. Foundation for Food and Agriculture Research. $167,332 in 2019 (~$540,000 total to 2022), PI

Strengthening Land Degradation Neutrality and drought resilience data and decision-making. 11/1/19-4/4/21. Conservation International/Global Environment Facility. $168,567.00 PI

Detecting soil degradation and restoration through a novel coupled sensor and machine learning framework. 10/01/20219 - 9/31/2022. USDA-NIFA + UK-NERC. $799,047 @ CU, $1,840,000 total. PI

Remote and On-the-Ground Land-Use Suitability Analysis to Guide Decision Making in Niger. 10/1/19-9/31/20. International Fertilizer Development Center/USAID. $150,000 PI

World Bank Innovation Fund. 2019-2020. Map4TheFuture; a consortium leveraging spatial and mobile technologies to increase yields on smallholder cocoa farms in Ghana. $77,000 (PI)

USDA-ARS. 2019-2021. Development of the Land Potential Knowledge System. (PI – CU modeling program) $367,000

USDA-ARS/USAID. 2016-2019. Enhancing the Land Potential Knowledge System (a mobile tool to support decision making in small scale global agricultural systems). (PI – CU modeling program) $1,067,000.

USDA-ARS/BLM 2018. U.S. application of the LandPKS mobile application for range management. $75,000. PI

National Science Foundation – Long Term Ecological Research Program. 2016-2021. Niwot Ridge Long term ecological research site. (Co-PI*) $1,100,000. *wrote and received funding, transfer PI role to US Hub Director when hired.

Grantham Foundation. 2015-2018. The future of global agriculture under climate change and land degradation. (PI) $483,000

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. Core support for the U.S. Hub of the Future Earth Secretariat. (co-PI*) $2,400,000. *wrote and received funding, transfer PI role to US Hub Director when hired.

National Science Foundation. 2014-2017. Collaborative Research: Development of the U.S. Hub of the Future Earth Secretariat. (co-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. (PI) $180,000

National Science Foundation – Long Term Ecological Research Program. 2004-2014. Niwot Ridge Long term ecological research site. (Senior Personnel). ~$1,200,000

US Geological Survey - Rocky Mountain Cooperative Ecosystem Study Unit: 2011-2014. Dust chemistry monitoring. (PI) $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. (PI) $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. (PI) $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. (PI) $290,000

NASA: 2004-2007. The role of Africa in terrestrial carbon exchange and atmospheric CO_2: Reducing regional to global uncertainty in the carbon cycle. Co-PI, $650,000

NASA: 2005-2008. Regional carbon storage responses to woody encroachment in western pinyon-juniper systems. Co-PI, $600,000

National Science Foundation – Division of Environmental Biology: 2005-2008. Collaborative Research: Fern Biogeochemistry and Ecosystem Stoichiometry. Co-PI $450,000

National Science Foundation – Molecular and Cellular Biosciences: 2005-2011. Microbial Observatories: Niwot Ridge Alpine Site. Co-PI $1,700,000

NSF - OPP/RAISE: 2001-2005. Collaborative research, a measurement program in Siberia to assess disturbance-driven changes in arctic carbon balance Co-PI $1,100,000.

*I led the effort to secure these awards and then handed PI status to the incoming U.S. Hub Director

Publications

Books

A Changing Planet, Jason Neff (sole author), Pearson Education. Published Fall, 2015, revised 2017 and 2nd edition published 2021, ISBN-13: 9780136783183; 20-chapter comprehensive introductory university-level environmental science digital textbook paired with a structured online assessment system I designed based on best practices in formative assessment.

Patents

Provisional Patent Application No 63/263,444 Title: An integrated system for the detection and monitoring of soil carbon sequestration CU Reference No.: CU5725B-PPA1

Publications (graduate student authors underlined, Postdocs = *)

M Atreya*, S DeSousa, JB Kauzya, E Williams, A Hayes, KV Dikshit, J Nielson, A Palmgren, S Khorchidian, S Liu, A Gopalakrishnan, E Bihar, CJ Bruns, R Bardgett, JN Quinton, J Davies, JC Neff, GL Whiting. 2022 A Transient Printed Soil Decomposition Sensor based on a Biopolymer Composite Conductor**.** Advanced Science. 2205785. https://doi.org/10.1002/advs.202205785

Atreya, M, G. Marinick, C Baumbauer, K Dikshit, S Liu, C Bellerjeau, N Charlotte; J Nielson, S Khorchidian, A Palmgren, Y Sui, R Bardgett, D Baumbauer, C Bruns, Carson, J Neff, AvArias, G Whiting. 2022, Wax blends as tunable encapsulants for soil-degradable electronics. *ACS* Appl. Electron. Mater. 4, 10, 4912–4920

Maynard JJ, E Yeboah, S Owusu, M Buenemann, JC Neff, JE Herrick. 2022. Accuracy of regional-to-global soil maps for on-farm decision making: Are soil maps "good enough"? EGU sphere, 1-35

Ballantyne AP, Liu Z, Anderegg WRL, Yu Z, Stoy P, Poulter B, Vanderwall J, Watts J, Kelsey K, Neff J. 2021 "Reconciling carbon-cycle processes from ecosystem to global scales." Frontiers in ecology and the environment. 19 (1) (February 01, 2021): 57-64.

Ippolito TA, Herrick JE, Dossa EL, Garba M, Ouattara M, Singh U, Stewart ZP, Prasad PVV, Oumarou IA, Neff JC. 2021 "A Comparison of Approaches to Regional Land-Use Capability Analysis for Agricultural Land-Planning." Land. 10 (5) (May 01, 2021): ARTN 458.

Jang* WS, Neff JC, Im Y, Doro L, Herrick JE. "The Hidden Costs of Land Degradation in US Maize Agriculture." 2021 Earth's Future. 9 (2) (February 01, 2021): ARTN e2020EF001641.

Crawford, J.T.*, ELS Hinckley, JC Neff. 2020. Long-term trends in acid precipitation and watershed elemental export from an alpine catchment of the Colorado Rocky Mountains, USA. Journal of Geophysical Research, Biogeosciences. 32020.JG05683.

Quandt, A. J. Herrick, G. Peacock, S. Salley, A. Buni, C.C. Mkalawa, J. Neff. 2020. A standardized land capability classification system for land evaluation using mobile phone technology. Journal of Soil and Water Conservation. http://doi.org/10.2489/jswc.2020.00023

Bae JH, Han J, Lee D, Yang JE, Kim J, Lim KJ, Neff JC, Jang WS*. 2019 "Evaluation of Sediment Trapping Efficiency of Vegetative Filter Strips Using Machine Learning Models." Sustainability. 11 (24) .

JT Crawford*, ELS Hinckley, MI Litaor, J Brahney, JC Neff. 2019. Evidence for accelerated weathering and sulfate export in high alpine environments. Environmental Research Letters 14 (12), 124092

JE Herrick, J Neff, A Quandt, S Salley, J Maynard, A Ganguli Prioritizing land for investments based on short-and long-term land potential and degradation risk: A strategic approach. 2019. Environmental science & policy 96, 52-58

J Brahney, AP Ballantyne, M Vandergoes, T Baisden, JC Neff. 2019. Increased Dust Deposition in New Zealand Related to Twentieth Century Australian Land Use. Journal of Geophysical Research: Biogeosciences 124 (5), 1181-1193

WS Jang*, Y Lee, JC Neff, Y Im, S Ha, L Doro. 2019. Development of an EPIC parallel computing framework to facilitate regional/global gridded crop modeling with multiple scenarios: A case study of the United States. Computers and electronics in agriculture 158, 189-200

KF Wentz, JC Neff, KN Suding. 2019. Leaf temperatures mediate alpine plant communities' response to a simulated extended summer. Ecology and evolution 9 (3), 1227-1243

K.C. Kelsey, M.D. Redmond, N.N. Barger, J.C. Neff. 2018. Species, climate and landscape physiography drive variable growth trends in subalpine forests. Ecosystems 21(1), 125-140.

N.M. Mahowald, R. Scanza, J. Brahney, C.L. Goodale, P.G. Hess, J.K. Moore, J. Neff. 2017. Aerosol deposition impacts on land and ocean carbon cycles. *Current Climate Change Reports. 3(1):16-31*

Lu*, X., K.C. Kelsey, S. Jian, X. Zhang, H. Zhao, Y. Cai, X. Wang, G. Cheng, & J.C. Neff. 2017. Effects of livestock grazing on ecosystem structure and function of alpine grasslands in Qinghai–Tibetan Plateau: a synthesis and review. *Ecosphere*.

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
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
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
Z. Fan*, J.C. Neff, W. Weider, *2016*. Model-based analysis of environmental controls over ecosystem primary production in an alpine tundra dry meadow. *Biogeochemistry*. DOI: 10.1007/s10533-016-0193-9
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,
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*.
*J. Bra*hney, 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
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
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
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*
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.
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.
J. Brahney, Spaulding, S. Ballantyne, A.P., Otu, M., and Neff, J.C. *2014*. Separating diagenetic, productivity, and anthropogenic source effects on sedimentary $d^{15}N$ variations. *Organic Geochemistry*. DOI: 10.1016/j.orggeochem.2014.07.003
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*
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
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.*
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

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.

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)

S. Castle, J.C. Neff. *2013*. What controls plant nutrient use in high elevation ecosystems? *Oecologia.* 10.1007/s00442-013-2695-7

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

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.*

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

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.*

*****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.

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.

*****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.

*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.

N.N. Barger, H.D. Adams, C. Woodhouse, J.C. Neff, and G.P. Asner. 2010. Influence Livestock Grazing and Climate on Pinyon Pine (Pinus edulis) Dynamics. *Rangeland Ecology and Management*. Vol. 62, No. 6, pp. 531-539.

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.

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.

*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.*

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.

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, GO3007. doi:10.1029/2009JG001077

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

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

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

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

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.

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

S.C. Castle, and J.C. Neff. *2009*. Plant response to nutrient availability across variable bedrock geologies. *Ecosystems*. 10.1007/s10021-008-9210-8.

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

A. O'Donnell, M.R. Turresky, 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

*****A.S. Grandy, R.L. Sinsabaugh, J.C. Neff, M. Sturstova, 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

*****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

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

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. P*roceedings of the Royal Society, B*. DOI: 10.1098/rspb.2008.0808

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

*****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

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

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.

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

C. Wiedinmyer and J.C. Neff. (2007). Estimates of CO_2 from fires in the United States: Implications for Carbon Management. Carbon Balance and Management. 2:10

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

*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.

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. R*adiocarbon.* 49 (2) 1093-1102

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.

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)

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.

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.

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*

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

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.

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

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.

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

Fernandez D. P., J.C. Neff, J. Belnap, and R. L. Reynolds. (2006) Soil respiration in a cold desert environment: abiotic regulators and thresholds. *Biogeochemistr*y, 78(3): 247-265

*****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

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

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.

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

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

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

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

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

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.

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

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.

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.

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.

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

Neff J.C. and G.P. Asner. (2001) Dissolved organic carbon in terrestrial ecosystems: Synthesis and a model. *Ecosystems*. 4(1): 29-48

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

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

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

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.*

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.

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

IRP (2019). Land Restoration for Achieving the Sustainable Development Goals: An International Resource Panel Think Piece. Herrick, J.E., Abrahamse, T., Abhilash, P.C., Ali, S.H., Alvarez-Torres, P., Barau, A.S., Branquinho, C., Chhatre, A., Chotte, J.L., Cowie, A.L., Davis, K.F., Edrisi, S.A., Fennessy, M.S., Fletcher, S., Flores-Díaz, A.C., Franco, I.B., Ganguli, A.C., Speranza, C.I, Kamar, M.J., Kaudia, A.A., Kimiti, D.W., Luz, A.C., Matos, P., Metternicht, G., Neff, J., Nunes, A., Olaniyi, A.O., Pinho, P., Primmer, E., Quandt, A., Sarkar, P., Scherr, S.J., Singh, A., Sudoi, V., von Maltitz, G.P., Wertz, L., Zeleke, G. A think piece of the International Resource Panel. United Nations Environment Programme, Nairobi, Kenya

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)

Matta, J., Platais, G., Neff, J. To scale your social enterprise more quickly, build a better ladder. Conscious Company Magazine. (2019) October. https://conscioucompanymedia.com/social-entrepreneurship/to-scale-your-social-enterprise-more-quickly-build-a-better-ladder/

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.