# Curriculum Vitae – Jason C Neff

Professor, The Environmental Studies Program
Director, The Sustainability Innovation Lab at Colorado (SILC)
University of Colorado at Boulder

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### **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 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: ~10,900 citations, h-index= 47, 34 papers with >100 citations.

## **Examples of Leadership and Administrative Experience**

2016- Present	Founding Director, The Sustainability Innovation Lab at Colorado (SILC).
	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 close to \$3,000,000 in 2018/19
	with total grant commitments of ~eleven million dollars. In establishing SILC, I put
	in place fiscal and human resource management and oversight processes, led staff growth from 0- over 10 FTE in less than two 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	Undergraduate Program Director & Associate Program Director, Environmental
2016	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.
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-	Graduate Program Director & Associate Program Director, Environmental
2012	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 Visitir
	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**

World Bank Innovation Fund. 2019-2020. Map4TheFuture; a consortium leveraging spatial and mobile technologies to increase yields on smallholder cocoa farms in Ghana. \$60,000 (PI)

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 CO₂: 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**

95+ peer reviewed publications, 1 sole-authored introductory environmental science textbook and online assessment system, 7 peer reviewed book chapters and reports. Full publication and citation list at my <u>Google scholar</u> page.

#### **Books**

A Changing Planet, Jason Neff (sole author), Pearson Education. Published Fall, 2015, revised 2017, ISBN: 9780321693907 and 9780321688309; 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.

Publications (graduate student authors underlined, Postdocs = \*)

#### In Review

- A. Quandt, J.Salerno, J. Neff, J.Hartter, J.Herrick, T. Baird, T. McCabe, E. Xu. In Review. Mobile Phones and Agricultural Productivity in Tanzania. *Information Technologies and International Development*
- J.E. Herrick, J. Neff, A. Quandt, S. Salley, J. Maynard, A. Ganguli, B. Bestelmeyer. In Review. Prioritizing land for investments based on short- and long-term land potential and degradation risk. Environmental Science and Policy.

#### **Published**

- W.S. Jang, Y. Lee, J.C. Neff, Y. Im, S. Ha, L. Doro. In Review. 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 Technology in Agriculture*
- K.F. Wentz, J.C. Neff, K.N. Suding. 2018 Leaf Temperatures Mediate Alpine Plant Communities' Response to a Simulated Extended Summer. *Ecology and Evolution*
- 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., <u>K.C. Kelsey</u>, 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, <u>KC Kelsey</u>, 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.
- <u>J. Brahney, J.</u> 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. <u>Brahney</u>, 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
- <u>K.C. Kelsey, K.L. Barnes, M.G. Ryan, & J.C. Neff. 2014.</u> 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 porewater 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<sup>15</sup>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
- <u>K. Kelsey</u>, 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.
- <u>D.P Fernandez</u>, 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)

- <u>S. Castle</u>, J.C. Neff. *2013*. What controls plant nutrient use in high elevation ecosystems? *Oecologia*. 10.1007/s00442-013-2695-7
- <u>J. Brahney</u>, 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
- <u>C.R. Lawrence</u>, 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., <u>J. Brahney</u>, D. Fernandez, <u>C.L Lawrence</u>, 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.
- <u>Lawrence, C.L.</u>, 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.
- <u>K.P. Wickland</u>, 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.
- <u>C.R. Lawrence</u>, 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
- <u>S.E. Buckingham</u>, 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
- <u>C.R. Lawrence</u>, 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
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- <u>C.R. Lawrence</u>, 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
- <u>S.C. Castle</u>, 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 <u>K.P. Wickland</u>. 2008. Boreal soil carbon dynamics under a changing climate: a model inversion approach. *JGR Biogeosciences*. 113, G04016, doi:10.1029/2008JG000723
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- 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
- J.C. Neff, \*A.P. Ballantyne, G.L. Farmer, N.M. Mahowald, J.L. Conroy, C.C. Landry, J.T. Overpeck, T.H. Painter, <u>C.R. Lawrence</u>, and R.L. Reynolds. *2008*. Increasing eolian dust deposition in the western United States linked to human activity. *Nature Geosciences*. doi:10.1038/ngeo133
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- <u>Wickland K.P.</u>, 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.

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- C. Wiedinmyer and J.C. Neff. (2007). Estimates of CO<sub>2</sub> from fires in the United States: Implications for Carbon Management. Carbon Balance and Management. 2:10
- <u>Fernandez, D.P.</u>, 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.
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- Neff J.C. and G.P. Asner. (2001) Dissolved organic carbon in terrestrial ecosystems: Synthesis and a model. *Ecosystems*. 4(1): 29-48
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- 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
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- 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

- 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 (2014-2016). Ecological Society of America Rapid Response Team - Biogeochemistry (2004-2015) 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 (2010-2015)

Journal of Geophysical Research Biogeosciences Associate Editor (2005-2010)

EOS Transactions, Biogeosciences Editor (2000-2003)

Note, I had to reduce my editorial activities to support the completion of my textbook.

#### Advisory Boards, Review Panels & select working groups

Advisor, Innovation4Sustainabilty Platform, Berlin, Germany 2018-, 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**

- Founding Director, The Sustainability Innovation Lab at Colorado
- Faculty Director, CU Future Earth secretariat development effort (2014-2016)
- 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, ENVS, 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).

### **Graduate and Postdoctoral Student Trainees**

- Katherine Wentz, M.S. (ENVS). The dual role of climate and leaf traits in governing alpine ecosystem productivity in an extended summer. M.S. 2017
- 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). 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:

- Won Soek Jang, 2016 present. Purdue University Ph.D.. SILC simulation modeling and machine learning postdoctoral fellow.
- Tegenu Engda, 2016-present. University of Wyoming Ph.D., SILC erosion and agricultural modeling fellow.
- 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.

## **Presentations (last five years listed)**

- Soil erosion constraints on global agricultural productivity potential. WS Jang, J Neff, J Herrick, L Doro. EGU General Assembly Conference Abstracts 20, 10743, 2018
- The global Land-Potential Knowledge System (LandPKS): a mobile app and cloud computing for sustainable land management, research and crowdsourcing. JC Neff, T Engda, Z Fan, JE Herrick, C Holmes, WS Jang, C Kenny, ... EGU General Assembly Conference Abstracts 20, 11115, 2018
- Dirt: Integrating Scientific and Local Knowledge to Support Global Land Management. G Okin, J Herrick, B Bestelmeyer, NP Hanan, JC Neff, DPC Peters, O Sala, .... AGU Fall Meeting Abstracts 2017
- Development of a Distributed Parallel Computing Framework to Facilitate Regional/Global Gridded Crop Modeling with Various Scenarios. W Jang, TA Engda, JC Neff, J Herrick. AGU Fall Meeting Abstracts 2017
- Platform for big data in Agriculture Convention, Cali Columbia. Innovation centers and big data. Jason Neff. September 19-22, 2017 **INVITED**
- University Innovation centers panel. Despande Symposium on innovation and entrepreneurship in higher ed. Lowell MA, June 12-14, 2017 **INVITED**
- University of Colorado Foundation Board of Trustees, Innovation at the intersection of poverty and agriculture. October, 2017. **INVITED**
- A21K-2299: COARSEMAP: synthesis of observations and models for coarse-mode aerosols. AGU Fall Meeting, Many authors
- H11C-1194: Development of a Distributed Parallel Computing Framework to Facilitate Regional/Global Gridded Crop Modeling with Various Scenarios. Wonseok Jang\*, Tegenu Engda\*, Jason Neff, Jeffrey Herrick. \*Postdcocs. AGU Fall Meeting. 2017
- H43C-1656: Catchment Integration of Sensor Array Observations to Understand Hydrologic Connectivity. Stephanie Redfern, Ben Livneh, Noah Molotch, Katie Suding, Jason neff, Eve Hinkley. AGU Fall Meeting. 2016
- The Impact of Climate Change on Photosynthesis: Modeling the Role of Water Use Efficiency and Nitrogen Use Efficiency in Alpine Tundra Plant Communities. KF Wentz, JC Neff, Z Fan. AGU Fall Meeting Abstracts 2016
- PA42A-09: Dirt: Integrating Scientific and Local Knowledge to Support Global Land Management. Jeff Herrick, Greg Okin, Brandon Bestelmeyer, Niall Hanan, Jason Neff, Deb Peters, Osvaldo Sala, Shawn Salley, Enrique Vivoni, Syke WIllis. AGU Fall Meeting
- Several other presentations on the Land potential Knowledge system project at Society for Range management, Soil science society of America, and The World Bank. Jeff Herrick Lead
- 2016 AGU Fall Meeting. <u>K. Wentz</u>, J. Neff., Z. Fan, The Impact of Climate Change on Photosynthesis: Modeling the Role of Water Use Efficiency and Nitrogen Use Efficiency in Alpine Tundra Plant Communities
- UN Foundation UN General Assembly week panel on social impact entrepreneurship and innovation, Columbia University, September, 2016. **INVITED**
- SPATIAL short course University of Utah. Spatial analysis and isotope course, University of Utah. Invited lecturer. June, 2016.
- Led roundtable discussion on the development of a peace technology accelerator program between universities and private sector at the U.S. Institute of Peace Peacetech summit, February, 2016.
- Presentation at Garfield Library (Rifle) on dust and drought in the west. March 30-31, **INVITED** Duke University Biology Department Seminar, November, 2015 **INVITED**

- SPATIAL short course University of Utah. Spatial analysis and isotope course, University of Utah. Invited lecturer. June, 2015.
- L Dixon & J. Neff, 2015, Assessing Student Attitudes toward Environmental Science and Environmental Problems: Is there a Gender Gap? AESS conference.
- R. Reynolds, S. Munson, D. Fernandez, J. Neff, 2015. High concentrations of regional dust from deserts to plains across the central Rocky Mountains, USA. AGU Fall Meeting 2015.
- 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.
- 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
- <u>K. Kelsey</u> & 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.
- 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 2012