Jonathan Sanderman, PhD

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Education

Ph.D.	**University of California, Berkeley**, Department of Environmental Science, Policy and Management, Division of Ecosystem Science, Advisor: Ronald Amundson	2007
Sc.B.	**Brown University**, Dual major in Environmental Studies and Ecology, with honors	1998

Professional Employment

2015-present	**Associate Scientist**, Woodwell Climate Research Center (Woods Hole Research Center)
2015-2019	**Visiting Scientist**, CSIRO Australia
2011-2015	**Senior Research Scientist** and **Research Team Leader**, CSIRO Australia
2009-2011	**Research Scientist**, CSIRO Australia
2008-2009	**Postdoctoral Research Scholar**, University of California Santa Cruz
2008	**Postdoctoral Research Associate**, University of California Berkeley

Additional research experience

2002-2007 **Doctoral Research**, UC Berkeley
Dissolved organic matter controls on terrestrial carbon sequestration and export
Thesis committee: Ronald Amundson, William Dietrich and Elizabeth Boyer

1999 **Post-Baccalaureate Research Assistant**, Brown University
Changes in soil C and N stocks during 30 years of forest regrowth following a clear-cut at Hubbard Brook, NH. Supervisor: Steven Hamburg

1997 **NSF Research Experience for Undergraduates**, Harvard Forest LTER
The effects of elevated soil temperatures on root and microbial respiration in a mixed hardwood forest. Supervisors: Paul Steudler and Jerry Melillo, The Ecosystems Center, Woods Hole, MA

Refereed journal articles (* indicates student led)

80. Pittaki-Chrysodonta Z, Hartemink AE, **Sanderman J**, Ge Y, Huang J (2021) Evaluating three calibration transfer methods for predictions of soil properties using mid-infrared spectroscopy. Soil Science Society of America Journal. https://doi.org/10.1002/saj2.20225

79. Ernakovich JG, Baldock J, Creamer C, **Sanderman J**, Kalbitz K, Farrell M (2021) A combined microbial and ecosystem metric of carbon retention efficiency explains land cover-dependent soil microbial biodiversity–ecosystem function relationships. Biogeochemistry. doi.org/10.1007/s10533-020-00736-w

78. **Sanderman J**, Baldock JA, Dangal SRS, Ludwig S, Potter S, Rivard C, Savage K (2021) Soil organic carbon fractions in the Great Plains of the United States: an application of mid-infrared spectroscopy. Biogeochemistry. https://doi.org/10.1007/s10533-021-00755-1

77. Luk SY*, Todd-Brown K, Eagle M, McNichol AP, **Sanderman J**, Gosselin K, Spivak AC (2021). Soil organic carbon development and turnover in natural and disturbed salt marsh environments. Geophysical Research Letters, 48(2), e2020GL090287.

76. Nave LE, Bowman M, Gallo A, Hatten JA, Heckman KA, Matosziuk L, Possinger AR, SanClements M, **Sanderman J**, Strahm BD, Weiglein TL, Swanston CW (2021) Patterns and predictors of soil organic carbon storage across a continental-scale network. Biogeochemistry. DOI: 10.1007/s10533-020-00745-9.

75. Dangal SRS, **Sanderman J** (2020) Is Standardization Necessary for Sharing of a Large Mid-Infrared Soil Spectral Library? Sensors 20: 6729. https://doi.org/10.3390/s20236729

74. Wijewardane N, Ge Y, **Sanderman J**, Ferguson R (2020) Fine grinding is needed to maintain the high accuracy of MIR spectroscopy for soil property estimation. Soil Science Society of America Journal. https://doi.org/10.1002/saj2.20194

73. Qin Z, Griscom B, Huang Y, Yuan W, Chen X, Dong W, Li T, **Sanderman J**, Smith P, Wang F, Yang S (2020) Delayed impact of natural climate solutions. Global change biology. https://doi.org/10.1111/gcb.15413

72. Amelung W, **Sanderman J** amongst 19 others (2020) Towards a global-scale soil climate mitigation strategy. Nature Communications 11: 5427. https://doi.org/10.1038/s41467-020-18887-7

71. Ewers Lewis CJ, Young MA, Ierodiaconou D, Baldock JA, Hawke B, **Sanderman J**, Carnell PE, Macreadie PI (2020) Drivers and modelling of blue carbon stock variability in sediments of southeastern Australia. Biogeosciences 17: 2041-2059. https://doi.org/10.5194/bg-17-2041-2020

70. Goldstein A, Turner WR, Spawn SA, Anderson-Teixeira KJ, Cook-Patton S, Fargione J, Gibbs HK, Griscom B, Hewson JH, Howard JF, Ledezma JC, Page S, Koh LP, Rockstrom J, **Sanderman J**, Hole DG (2020) Protecting irrecoverable carbon in Earth's ecosystems. Nature Climate Change 10: 287-295. https://doi.org/10.1038/s41558-020-0738-8

69. **Sanderman J**, Grandy AS (2020) Ramped thermal analysis for isolating biologically meaningful soil organic matter fractions with distinct residence times. SOIL 6: 131-144. doi: 10.5194/soil-6-131-2020

68. Werner W, **Sanderman J**, Melillo J (2020) Reduced soil organic matter in a long-term soil warming experiment lowers soil water holding capacity and affects soil thermal and hydrological buffering. Journal of Geophysical Research-Biogeosciences 125(4): e2019JG005158. doi: 10.1029/2019JG005158

67. Bossio DA, Cook-Patton SC, Ellis PW, Fargione J, **Sanderman J**, Smith P, Wood S, Zomer RJ, von Unger M, Emmer IM, Griscom BW (2020) The role of soils in natural climate solutions. Nature Sustainability. https://doi.org/10.1038/s41893-020-0491-z

66. **Sanderman J**, Savage K, Dangal SRS (2020) Mid-infrared spectroscopy for prediction of soil health indicators in the United States. Soil Science Society of America Journal 84: 251-261. doi: 10.1002/saj2.20009

65. Bradford M, **Sanderman J** amongst 15 others (2019) Soil carbon science for policy and practice. Nature Sustainability 2:1070-1072. doi:10.1038/s41893-019-0431-y

64. Roe S, **Sanderman J** amongst 18 others (2019) Contribution of the land sector to a 1.5°C world. Nature Climate Change 9:817-828. doi:10.1038/s41558-019-0591-9

63. Serrano O, **Sanderman J** amongst 36 others (2019) Blue Carbon hotspot in Australia: toward the conservation of coastal vegetated habitats through the implementation of carbon trading schemes. Nature Communications 10:4313. doi:10/1038/s41467-019-12176-8

62. Spivak AC, **Sanderman J**, Bowen JL, Canuel EA, Hopkinson CS (2019) Global-change controls on soil-carbon accumulation and loss in coastal vegetated ecosystems. Nature Geoscience 12:685-692. doi: 10.1038/s41561-019-0435-2

61. Bulseco AN*, Giblin AE, Tucker J, Murphy AE, **Sanderman J**, Hiller-Bittrolff K, Bowen JL (2019) Nitrate addition stimulates microbial decomposition of organic matter in salt marsh sediments. Global Change Biology 25(10):3224-3241. doi: 10.1111/gcb.14726

60. Hamburg SP, Vadeboncoeur MA, Johnson CE, **Sanderman J** (2019) Losses of mineral soil carbon largely offset biomass accumulation 15 years after whole-tree harvest in a northern hardwood forest. Biogeochemistry 144:1-14. doi: 10.1007/s10533-019-00568-3

59. Macreadie PI, Atwood TB, Seymour JR, Fontes MS, **Sanderman J**, Nielsen DA, Connolly RM (2019) Vulnerability of seagrass blue carbon to microbial attack following exposure to warming and oxygen. Science of the Total Environment 686:264-275.

58. Dangal SRS, **Sanderman J**, Wills S, Rameriz-Lopez L (2019) Accurate and precise prediction of soil properties from a large mid infrared spectral library. Soil Systems 3(1): 11 doi: 10.3390/soilsystems3010011

57. Fargione JE, **Sanderman J** amongst 37 others (2018) Natural climate solutions for the United States. Scientific Advances 4: eaat1869

56. Sokol NW*, **Sanderman** J, Bradford MA (2018) Pathways of mineral-associated soil organic matter formation: integrating the role of plant carbon source, chemistry and point-of-entry. Global Change Biology. doi: 10.1111/gcb.14482

55. Hengl T, Walsh M, **Sanderman J**, Wheeler I, Harrison SP, Prentice IC (2018) Global mapping of potential natural vegetation: an assessment of Machine Learning algorithms for estimating land potential. PeerJ 6:e5457. doi: 10.7717/peerj/5457

54. Adkins J*, **Sanderman J**, Miesel J (2019) Soil carbon pools and fluxes vary across a burn severity gradient three years after a wildfire in Sierra Nevada mixed-conifer forest. Geoderma 333:10-22. doi: 10.1016/j.geoderma.2018.07.009

53. Parker T, **Sanderman J**, Holden R, Blume-Werry G, Sjogersten S, Large D, Castro-Diaz M, Subke J-A, Wookey P (2018) Exploring drivers of litter decomposition in a greening Arctic: Results from a transplant experiment across a tree-line. Ecology. doi: 10.1002/ecy.2442

52. **Sanderman J**, Hengl T, Fiske G *et al.* (2018) A global map of mangrove forest soil carbon at 30 m spatial resolution. Environmental Research Letters 13:055002. doi: 10.1088/1748-9326/aabe1c

51. Wang X*, **Sanderman J**, Yoo K (2018) Climate-Dependent Topographic Effects on Pyrogenic Soil Carbon in Southeastern Australia. Geoderma 322:121-130.

50. **Sanderman J** (2018) Comment on "Climate legacies drive global soil carbon stocks in terrestrial ecosystems". Scientific Advances 4(3):e1701482. doi: 10.1126/sciadv.1701482

49. Ewers Lewis C*, Carnell P, **Sanderman J**, Baldock J, Macreadie P (2018) Variability and vulnerability of coastal 'blue carbon' stocks: A case study from southeast Australia. Ecosystems 21:262-279.

48. Abney RB*, **Sanderman J**, Johnson D, Fogel ML, Berhe AA (2017) Post-wildfire erosion in mountainous terrain leads to rapid and major redistribution of soil organic carbon. Frontiers in Earth Science 5:99. doi: 10.3389/feart.2017.00099

47. Griscom B, **Sanderman J** amongst 27 others (2017) Natural pathways to climate mitigation. Proceedings of the National Academy of Sciences 114(44):11645-11650.

46. **Sanderman J**, Kramer M (2017) Dissolved organic matter retention in volcanic soils with contrasting mineralogy: a column sorption experiment. Biogeochemistry 135(3):293-306.

45. **Sanderman J**, Hengl T, Fiske G (2017) The soil carbon debt of 12,000 years of human land use. Proceedings of the National Academy of Sciences 114(36):9575-9580.

44. Lajtha K, **Sanderman J** amongst 29 others (2017) Brave new world. Biogeochemistry 133: 3. doi: 10.1007/s10533-017-0316-y

43. Trevathan-Tackett SM*, Macreadie PI, **Sanderman J**, Baldock J, Howes JM, Ralph PJ (2017) A global assessment of the chemical recalcitrance of seagrass tissues: implications for long-term carbon sequestration. Frontiers in Plant Science 8:925.

42. **Sanderman J**, Berhe AA (2017) Biogeochemistry: The soil carbon erosion paradox. Nature Climate Change 7(5): 317-319. doi:10.1038/nclimate3281

41. **Sanderman J**, Farrell M, Macreadie P, Hayes M, McGowan J, Baldock J (2017) Is demineralization with dilute hydrofluoric acid a viable method for isolating mineral stabilized soil organic matter? Geoderma 304: 4-11.

40. Jauss V*, Sullivan P, **Sanderman J**, Smith D, Lehmann J (2017) Pyrogenic carbon distribution in soils of the northeastern United States. Geoderma 296: 69-78.

39. Trevathan-Tackett SM*, Seymour J, Nielsen D, Macreadie P, Jeffries T, **Sanderman J**, Baldock J, Howes J, Steven A, Ralph P (2017) Sediment anoxia limits microbial-driven seagrass carbon remineralization under warming conditions. FEMS Microbiology Ecology 93(6). doi:10.1093/femsec/fix033

38. Macreadie P, Ollivier Q, Kelleway J, Serrano O, Carnell P, Ewers C, Atwood T, **Sanderman J**, Baldock J, Connolly R, Duarte C, Lavery P, Steven A, Lovelock C (2017) Carbon sequestration by Australian tidal marshes. Scientific Reports 7: 44071. doi:10.1038/srep44071

37. Ahmed Z*, Woodbury P, **Sanderman J**, Hawke B, Jauss V, Solomon D, Lehmann J (2017) Assessing soil carbon vulnerability in the Western USA by geo-spatial modeling of pyrogenic and particulate carbon stocks. Journal Geophysical Research – B 122, doi:10.1002/2016/JG003488.

36. **Sanderman J**, Creamer C, Baisden WT, Farrell M, Fallon S (2017) Greater soil carbon stocks and faster turnover rates with increasing agricultural productivity. SOIL 3: 1-16.

35. **Sanderman J**, Baisden WT, Fallon S (2016) Redefining the inert soil carbon pool. Soil Biology and Biochemistry 92: 149-152.

34. Macreadie P, Trevathan-Tackett S, Skilbeck C, **Sanderman J**, Curlevski N, Jacobsen G, Seymour J (2015) Losses and recovery of organic carbon from a seagrass ecosystem following disturbance. Proceedings of the Royal Society B 282: 20151537.

33. Chappell A, Baldock J, **Sanderman J** (2015) The global significance of omitting soil erosion from soil organic carbon cycling schemes. Nature Climate Change 6: 187-191.

32. **Sanderman J**, Reseigh J, Wurst M, Young M-A, Austin J (2015) Impacts of rotational grazing on soil carbon in native grass-based pastures in Southern Australia. PLoS ONE 10(8): e0136157.

31. Creamer C, Farrell M, **Sanderman J** and Baldock J (2015) Divergent responses of organic matter composition to incubation temperature. Geoderma 259-260: 279-287.

30. Jones A*, **Sanderman J**, Allen D, Dalal R, Schmidt S (2015) Subtropical Podosol chronosequence reveals that soil carbon stabilization is not governed by litter quality. Biogeochemistry 124: 205-217
*undergraduate student

29. **Sanderman J**, Krull E, Kuhn T, Hancock G, McGowan J, Maddern T, Fallon S (2015) Deciphering sedimentary organic matter sources in a coastal estuary: Insights from radiocarbon measurements and NMR spectroscopy. Limnology and Oceanography 60: 739-753

28. Warneke S, Macdonald B, Macdonald L, **Sanderman J**, Farrell M (2015) Abiotic dissolution and biological uptake of nitrous oxide in Mediterranean woodland and pasture soil. Soil Biology and Biochemistry 82: 62-64

27. Saidy AR*, Smernik RJ, Baldock JA, Kaiser K, **Sanderman J** (2015) Microbial degradation of organic carbon sorbed onto phyllosilicate clays with and without hydrous iron oxide coating. European Journal of Soil Science 66: 83-94

26. Creamer C, de Menezes A, Krull E, **Sanderman J**, Newton-Walters R, Farrell M (2015) Microbial community structure mediates response of soil C decomposition to litter addition and warming. Soil Biology & Biochemistry 80: 175-188

25. **Sanderman J**, Baldock J, Maddern T (2014) Similar composition but differential stability of mineral retained organic matter across four classes of clay minerals. Biogeochemistry 121: 409-424

24. Baldock JA, Hawke B, **Sanderman J**, Macdonald LM (2013) Predicting contents of soil carbon and its component fractions from diffuse reflectance mid-infrared spectra. Soil Research 51: 577-595

23. Lohse KA, **Sanderman J**, and Amundson R (2013) Identifying sources and processes influencing nitrogen export to a small stream using dual isotopes of nitrate. Water Resources Research 49: 1-17

22. Baldock JA, **Sanderman J**, Macdonald LM, Massis A, Hawke B, Szarvas S, McGowan J (2013) Quantifying the allocation of soil organic carbon to biologically significant fractions. Soil Research 51: 561-576

21. Roper MM, Fillery IRP, Jongepier R, Macdonald LM, **Sanderman J**, Baldock JA (2013) Allocation into soil organic matter fractions of 14C captured via photosynthesis by two perennial grass pastures. Soil Research 51: 748-759

20. Sanderman J, Fillery IRP, Jongepier R, et al. (2013) Carbon sequestration under subtropical perennial pastures I: Overall trends. Soil Research 51: 760-770

19. Sanderman J, Fillery IRP, Jongepier R, et al. (2013) Carbon sequestration under subtropical perennial pastures II: Carbon dynamics. Soil Research 51: 771-780

18. Saidy AR*, Smernik RJ, Baldock JA, Kaiser K, **Sanderman J** (2013) The sorption of organic carbon onto differing clay minerals in the presence and absence of hydrous iron oxide. Geoderma 209-210: 15-21

17. Sanderman J, Kramer MG (2013) Ecosystem nutrient status drives dissolved organic matter production but not biochemistry: Results from the Hawaiian Archipelago. Biogeochemistry 113: 259-269

16. Sanderman J, Chappell A (2013) Uncertainty in soil carbon accounting due to unrecognized soil redistribution. Global Change Biology 19: 264-272

15. Mavi MS*, **Sanderman J**, Chittleborough DJ, Cox JW, and Marschner P (2012) Salinity and sodicity affect soil respiration and dissolved organic matter dynamics differentially in soils varying in texture. Soil Biology & Biochemistry 45: 8-13

14. Kramer MG, **Sanderman J**, Chadwick O, Chorover J, and Vitousek PM (2012) Sorption of dissolved oxidized lignin to reactive particles controls long-term carbon storage in soil. Global Change Biology, 18(8): 2594-2605

13. Thomas DT, **Sanderman J**, Eady SJ, Masters DG, and Sanford P (2012) Whole farm net greenhouse gas abatement from establishing kikuyu-based perennial pastures in South-Western Australia. Animals, 2(3): 316-330, doi:10.3390/ani2030316

12. Sanderman J (2012) Can management induced changes in the carbonate system drive soil carbon sequestration? A review with particular focus on Australia. Agriculture, Ecosystems and Environment 155: 70-77

11. Chappell A**, Sanderman J**, Thomas M, Reed A, Leslie C (2012) The implications for soil organic carbon accounting of soil redistribution dynamics in agricultural south-eastern Australia**.** Global Change Biology 18(6): 2081-2088

10. Saidy AR*, Smernik RJ, Baldock JA, Kaiser K, **Sanderman J**, Macdonald LM (2012) Effect of clay mineralogy and hydrous iron oxides on labile organic carbon stabilization. Geoderma 173-174: 104-110

9. Mavi MS*, Marschner P, Chittleborough DJ, Cox JW, and **Sanderman J** (2012) Salinity and sodicity affect soil respiration and dissolved organic matter dynamics differentially in soils varying in texture. Soil Biology & Biochemistry 45: 8-13

8. Sanderman J, and Baldock JA (2010) Accounting for soil carbon sequestration in national inventories: A soil scientist's perspective. Environmental Research Letters 5: 034003

7. Sanderman J and Amundson R (2010) Soil carbon dioxide production and climatic sensitivity in contrasting California ecosystems. Soil Science Society of America Journal 74: 1356-1366

6. Sanderman J, Lohse KA, Baldock JA, and Amundson R (2009) Linking soils and streams: Sources and chemistry of dissolved organic matter in a small coastal watershed. Water Resources Research 45: W03418

5. Yoo K, Mudd SM, **Sanderman J**, Amundson R, and Blum A (2009) Spatial patterns and controls of soil chemical weathering rates along a transient hillslope. Earth and Planetary Science Letters 288:184-193

4. Sanderman J, and Amundson R (2009) A comparative study of dissolved organic carbon transport and stabilization in California forest and grassland soils. Biogeochemistry 92: 41-59

3. Sanderman J, Baldock JA, and Amundson R (2008) Dissolved organic carbon chemistry and dynamics in contrasting forest and grassland soils. Biogeochemistry 89: 181-198

2. Ewing SA, **Sanderman J**, Baisden WT, Wang Y, and Amundson R (2006) Role of large-scale soil structure in organic carbon turnover: Evidence from California grassland soils. Journal of Geophysical Research 111: G03012

1. Sanderman J, Amundson RG, and Baldocchi DD (2003) Application of eddy covariance measurements to the temperature dependence of soil organic matter mean residence time. Global Biogeochemical Cycles 17: 1061

Book chapters, reports and conference proceedings

Hengl, T, **Sanderman J** (2019) Spatial prediction and assessment of soil organic carbon. In: Predictive Soil Mapping with R, T. Hengl and R.A. MacMillian, eds. OpenGeoHub Foundation, Wageningen, the Netherlands, www.soilmapper.org, ISBN: 978-0-359-30635-0

Harden J, **Sanderman J**, Hugelius G (2017) Soils and the carbon cycle. In: The International Encyclopedia of Geography: People, the Earth, Environment and Technology, Richardson D, ed. John Wiley and Sons, Ltd.

Sanderman J, Viscarra Rossel R, Hicks W (2013) Improved measurement and understanding of soil carbon and its fractions. CSIRO Sustainable Agriculture Flagship Report to the Australian Department of Agriculture's Filling the Research Gap Program.

Thorburn PJ**,** Robertson MJ, Clothier BE, Snow VO, Charmley E, **Sanderman J**, Teixera E, Dynes RA, Hall A, Brown H (2013) Climate change and agriculture in Australia and New Zealand: Impacts, adaptation and mitigation potential. In: Handbook of Climate Change and Agroecosystems: Global and Regional Aspects and Implications, D. Hillel and C. Rosenzweig, eds. Imperial College Press, UK, 36 p.

Sanderman J, Baldock J, Hawke B, Macdonald L, Massis-Puccini A, Szarvas S (2011) National Soil Carbon Research Programme: Field and laboratory methodologies. CSIRO Sustainable Agriculture Flagship. Available online at: http://www.clw.csiro.au/publications/science/2011/SAF-SCaRP-methods.pdf

Sanderman J and Baldock JA (2010) Have agronomic field trials provided sufficient data to predict soil carbon sequestration rates? Proceedings of the 19th World Congress of Soil Science: Soil solutions for a changing world, Brisbane, Australia, 1-6 August 2010. Congress Symposium 4: greenhouse gases from soils, 102-105.

Baldock JA, **Sanderman J**, Farquharson R (2010) Capturing carbon in Australian soils: potentials and realities. Proceedings of the 19th World Congress of Soil Science: Soil solutions for a changing world, Brisbane, Australia, 1-6 August 2010. Congress Symposium 7: Soil carbon sequestration, 1-4.

Sanderman J, Farquharson R, and Baldock JA (2010) Soil carbon sequestration potential: A review for Australian agriculture. A report to the Australian Department of Climate Change. 82 pp. Available online at: http://www.csiro.au/resources/Soil-Carbon-Sequestration-Potential-Report.html

Sanderman J, and Amundson RG (2005) Biogeochemistry of decomposition and detrital processing. In: Treatise on Geochemistry, Volume 8: Biogeochemistry, H.D. Holland and K.K. Turekein, eds. Elsevier Science Ltd, Oxford, UK, 68 p.

Research Grants and Contracts (federal and private sources)

Conscience Bay Research (2021-2023) Rangeland Carbon Tracking and Management Tool (PI, $720,000)

Australian Research Council Discovery Program (2021-2023) Pyrogenic carbon sequestration in Australian soils (co-PI, $440,000)

New Zealand Ministry of Business, Innovation and Employment Endeavour Fund (2021-2026) The Tree Microbiome Project: at the root of climate proofing forests (PI sub-award, $200,000)

Breakthrough Energy Investments (2020-2021) Soil amendment evaluation for climate mitigation (PI, $75,000)

Environmental Defense Fund (2020-2021) Soil carbon market protocol evaluation (PI, $40,000)

USDA NIFA AFRI Foundational Program (2020-2023) FACT CIN: Soil spectroscopy for the global good (PI, $990,000)

Gordon Family Foundation (2020) A soil health snapshot of the United States: Phase II (PI, $25,000)

WHRC Fund for Climate Solutions (2020-2021) Soil carbon restoration potential (PI, $100,000)

Indigo Ag (2019-2021) Design and analytical support for the Terraton Experiment (PI, $62,000)

WHRC Fund for Climate Solutions (2019-2020) A new approach for rangeland carbon monitoring (PI, $144,000)

USDA NIFA AFRI Foundational Program (2017-2020) Soil carbon cycle science in the big data era (PI, $800,000)

WHRC Fund for Climate Solutions (2018-2019) Towards quantifying the northern pyrogenic carbon cycle (PI, $47,000)

Department of Justice FBI Laboratory (2018) Assessment of National Soil Survey Mid-IR spectra for use in forensic geographic attribution of soils (PI, $30,000)

Gordon Family Foundation (2018-2019) A soil health snapshot of the United States: Phase I (PI, $75,000)

DOE FICUS JGI-EMSL (2017-2018): Combining high resolution organic matter characterization and microbial meta-omics to assess the effects of nutrient loading on salt marsh carbon sequestration (co-PI)

WHOI NOSAMS Research Initiative (2017): Can ramped pyrolysis-oxidation isolate biologically meaningful pools of soil organic matter? (PI)

The Nature Conservancy (2016-2017): Mapping the distribution of soil carbon storage for world mangrove areas (PI, $70,000)

Blue Moon Fund (2016-2017): Climate stabilization through land carbon management (co-PI, $500,000).

The Nature Conservancy (2015-2017): Natural Climate Solutions (co-PI, $550,000)

CSIRO Office of the Chief Executive Postdoctoral Fellowship (2014-2017): The soil organic matter conundrum: why are thermodynamically unstable compounds stable in soils? (co-PI, $768,000)

CSIRO Wealth from Oceans Flagship Research Grant (2013-16): Understanding the composition, origin and turnover of Blue Carbon (co-PI, $420,000)

Australia's Clean Energy Future: Filling the Research Gap, Department of Agriculture, Fisheries and Forestry Research Grant (2012-14): Native Perennial Vegetation: building stable soil carbon and farm resilience (PI, $350,000)

Australia's Clean Energy Future: Filling the Research Gap, Department of Agriculture, Fisheries and Forestry Research Grant (2012-13): Improved understanding and measurement of soil carbon fractions (PI, $150,000)

CSIRO Sustainable Agriculture Flagship Research Grant (2012-14): Tracing carbon accumulation and turnover using radiocarbon (PI, $207,000)

CSIRO Chief's Capability Development Fund Grant (2012-13): Measurement of the stable isotope composition of methane (PI, $56,000)

CSIRO Chief's Capability Development Fund Grant (2012-14): Natural abundance radiocarbon measurements as a tool for studying the terrestrial carbon cycle (PI, $106,000)

Australian National Flagship Collaboration Fund (2011), Australian National University: Tracing soil carbon turnover using radiocarbon (co-PI, $100,000)

CSIRO Sustainable Agriculture Flagship Research Grant (2010-11): Towards a mechanistic understanding of the temperature sensitivity of decomposition (PI, $74,000)

Australia's Farming Future: Climate Change Research Program, Department of Agriculture, Fisheries and Forestry Research Grant (2009-12): Soil carbon research program, Grant to CSIRO ($9,600,000)

Australian Department of Climate Change Research Grant (2009-11): Enhancing FullCAM [the Australian National Carbon Accounting System], Grant to CSIRO ($1,020,000)

CSIRO Sustainable Agriculture Flagship Research Grant (2009-10): The stoichiometry of mineral stabilized organic matter (PI, $78,000)

NSF Doctoral Dissertation Improvement Grant (2005): Characterization of dissolved organic matter using nuclear magnetic resonance spectroscopy (PI, $12,000)

Kearney Foundation of Soil Science Research Grant (2005-06): Dissolved organic matter controls on terrestrial carbon sequestration and export from contrasting ecosystems (co-PI, $80,000)

Kearney Foundation of Soil Science Research Grant (2003-04): Dissolved organic matter controls on terrestrial carbon sequestration and export from contrasting ecosystems (co-PI, $67,840)

Awards and fellowships

2011 **CSIRO Land and Water Publication Award** (best publication in past year): Accounting for soil carbon sequestration in national inventories: A soil scientist's perspective

2007 Best poster presentation at **3rd International Conference on Mechanisms of Organic Matter Stabilisation and Destabilisation in Soils and Sediments**, Adelaide, Australia

2006-07 **Professor Earl Storie Memorial Scholarship**, UC Berkeley

2001-04 **NASA Earth System Science Graduate Student Fellowship** ($66,000), Global trends in soil organic matter residence time

Invited presentations

Sanderman J (2020) Soil spectroscopy to fill the soil data gap. Google FAIR Agriculture Group, 2 December 2020, Remote.

Sanderman J (2020) Reflectance spectroscopy as a valuable tool in forest science. Scion Research, New Zealand, 10 June 2020, Remote.

Sanderman J (2019) Soil carbon sequestration: from potential to reality. Indigo Ag, 19 July 2019, Boston, MA.

Sanderman J (2019) Soil carbon sequestration: from potential to reality. Food security and climate change: 4 per 1000 initiative new tangible global challenges, 17-19 June 2019, Poitiers, France.

Sanderman J, Dangal SR, Ferguson R, Wysocki D, Webb JB, Stern LA (2018) Soil spectroscopy for geographic attribution in forensic science. American Geophysical Union Fall Meeting, 9-14 December 2018, Washington DC.

Sanderman J (2018) Natural Climate Solutions: Who, what, where, when and why? 24 July 2018. Department of Marine Chemistry and Geochemistry, WHOI.

Sanderman J (2018) Can the soil save us? Understanding the role of soil organic matter in climate mitigation (in a data limited world). 25 Jan 2018. Stanford University and US Geologic Survey, Menlo Park.

Sanderman J (2017) Understanding the role of soil organic matter in climate mitigation. 1 Dec 2017. University of New Hampshire.

Farrell M, **Sanderman J** (2017) Dissolved organic nitrogen: recent terrestrial advances and aquatic implications. ASLO 2017 Aquatic Sciences Meeting, 26 Feb – 3 Mar 2017, Honolulu, USA.

Sanderman J, Baisden WT, Creamer C, Farrell M, Fallon S (2016) Insights from time-series radiocarbon measurements of soil carbon fractions along a productivity gradient. American Geophysical Union Fall Meeting, 11-16 December 2016, San Francisco, USA.

Sanderman J (2016) Soil carbon – part of the problem, part of the solution. 3 Oct 2016, Department of Land Resources & Environmental Sciences, Montana State University.

Sanderman J, Baldock J (2015) Is all mineral stabilized organic matter microbial in origin? Insights from NMR spectroscopy. 5th International Symposium on Soil Organic Matter, 20-24 Sept 2015, Gottingen, Germany.

Sanderman J (2015) The Soil Organic Matter Conundrum: Why do Thermodynamically Unstable Compounds Persist in Soils. 15 Sept 2015. Ecosystems Seminar Series, Marine Biological Laboratory.

Sanderman J (2015) A soil scientist gets his feet wet: Musings on blue carbon sequestration. 1 Sept 2015. Woods Hole Oceanographic Institute Marine Chemistry & Geochemistry Seminar Series.

Sanderman J (2014) Reassessing soil carbon model assumptions with insightful isotope studies. 8 Oct 2014.The Hawkesbury Institute for the Environment, University of Western Sydney, NSW Australia

Baldock J, **Sanderman J**, Macdonald L (2014) Soil organic carbon: Developments in measurement and composition. Australian National Soil Science Conference, 23-27 Nov 2014, Melbourne, VIC, AU.

Chappell A, Baldock J, **Sanderman J** (2014) The Significance of Excluding Soil Erosion from C Cycling and Land Surface Models. NCF RCN FORECAST Workshop, 11-14 June 2014, Breckenridge, CO, USA.

Sanderman J, Lohse KA, Baldock J, Amundson R (2013) Linking soils and streams: production, consumption, transformation and export of dissolved organic matter in two contrasting watersheds. AGU Chapman Conference on Soil Mediated Drivers of Coupled Biogeochemical Transformations, 21-24 October 2013, Tucson, USA.

Sanderman J, Macdonald L, Baldock J (2011) Soil carbon sequestration: perspectives from Australia. American Geophysical Union Fall Meeting, 4-9 December 2011, San Francisco, USA.

Sanderman J (2011) Soil organic matter fractions. ASPAC/ASSSA Soil Carbon Workshop, 22 November 2011, Adelaide, Australia.

Lohse KA, **Sanderman J**, Amundson R (2011) Linking soil nitrogen cycling to hydrologic transport at the plot to catchment scale. American Geophysical Union Fall Meeting, 4-9 December 2011, San Francisco, USA.

Sanderman J, Baldock JA, Farquharson (2009) Can agricultural soils effectively remove legacy carbon from the atmosphere? Lessons from Australian long-term soil experiments. *EOS transactions, AGU 90*(52), Fall meeting suppl., Abstract #B34B-08

Lohse KA, **Sanderman J**, Amundson R (2008) Coupling water, carbon and nitrogen cycles at the hillslope to catchment scale. *EOS transactions, AGU 89*(53), Fall meeting suppl., Abstract #H24A-05

Sanderman J, Kramer M, Chadwick O, Chorover J, Derry L (2008) Dissolved organic matter production and stabilization across pedogenic thresholds, *EOS transactions, AGU 89*(53), Fall meeting suppl., Abstract #B11E-08

Yoo K, Mudd SM, **Sanderman J**, Amundson R, Blum A (2008) Soil and saprolite geochemistry along an eroding to depositional hillslope transect. *EOS transactions, AGU 89*(53), Fall meeting suppl., Abstract #B53G-01

Teaching Experience

2017-2019	Lecturer	*Soils and the global carbon cycle*	Woods Hole Partnership in Education Program
2006	Graduate Student Instructor	*The Biosphere* Instructors: Steve Beissinger, Ron Amundson	UC Berkeley
2005, 2001	Graduate Student Instructor	*Soil Characteristics* Instructor: John G. McColl (2001), Ronald Amundson (2005)	UC Berkeley
2002	Graduate Student Instructor	*Soils of California* Instructors: Michael Singer, Ronald Amundson	UC Berkeley and UC Davis
1998	Teaching Assistant	*Ecosystem Analysis* Instructor: Steven Hamburg	Brown University
1997	Teaching Assistant	*Introduction to Environmental Science* Instructor: Steven Hamburg	Brown University

Student and intern advising (*co-supervisor)

Postdoctoral Fellows

2021-present	Rachel Rubin, Woodwell Climate Research Center *Soil carbon market protocol evaluation*
2020-present	Asa Gholizadeh, Woodwell Climate Research Center *Soil spectroscopy for the global good*
2017-2020	Shree Dangal, WHRC *Soil carbon cycle science the in the big data era*
2014-2017	Jessica Ernakovich*, CSIRO *The soil organic matter conundrum: why are thermodynamically unstable compounds stable in soils?*

PhD students

2018-present	Sheron Luk*, MIT-WHOI Joint Program *Capturing the spatial heterogeneity of salt marsh carbon storage*
2018-2021	Daniel Kane*, Yale FES *Soil carbon sequestration: measuring and quantifying co-benefits*
2016-2019	Andrew Jones*, University of Queensland, Australia *Evaluating soil carbon turnover along the Cooloola chronosequence*
2013-2017	Rebecca Lever*, University of California, Merced *Geomorphic controls on pyrogenic carbon accumulation*
2009-2012	Akhmad Saidy*, University of Adelaide & CSIRO, Australia *Effects of clay mineralogy on organic matter mineralization*
2009-2012	Manpreet Singh Mavi*, University of Adelaide, Australia *The role of dissolved organic matter in saline and sodic soils*

Honors students

2013	Xénia Weber, Australian National University *Do fodder shrubs create islands of fertility in semi-arid grazing systems?*
2012	Andrew Jones, University of Queensland, Australia *Evaluating soil carbon turnover along the Cooloola chronosequence*

Interns

2019	Fidaa Janoudi, Project Intern *Soil carbon cycle science in the big data era*
2018	Tyler O'Keefe, Project Intern *Soil carbon cycle science in the big data era*
2018	Rebecca Holloway, WHRC Summer Internship *Fractionation of Great Plains soils*
2017	Carlos Rivero, Woods Hole Partnership in Education Program *Disentangling organic from inorganic signals in FTIR spectroscopy*
2016	Emily Cheney, Brown University Summer Internship *Soil carbon debt meta-analysis*
2016	Ulrich Kakoa, Woods Hole Partnership in Education Program *Are salt marshes susceptible to carbon loss follow eutrophication?*

Professional society membership and service

- Member Soil Enrichment Protocol working group for the Climate Action Reserve
- Steering Committee member on soil spectroscopy of the FAO Global Soil Partnership's Global Soil Laboratory Network (GLOSOLAN)
- Scientific advisor to the Fishing Cat Conservancy (fishingcat.org) dedicated to protecting and restoring mangrove forests in SE Asia
- Member of scientific advisory board for Lawrence Berkeley National Lab ARPA-e ROOTS project Associated Particle Imaging (API) for Non-Invasive Determination of Carbon Distribution in Soil (DE-FOA-0001565)
- Associate Editor for the journal, *Biogeochemistry* (2010 – present)
- Member of scientific organizing committee for Wageningen Soil Conference 2019 Understanding Soil Functions, Wageningen, the Netherlands, Aug 27-30 2019
- Partnership in Education Program instructor and advisor (2016 – 2019): Woods Hole based program to provide minority undergraduate students with an intensive summer research experience
- Earth Team Volunteer (2015 – present) with the USDA National Cooperative Soil Survey working on building FTIR spectroscopy based rapid prediction tools for State Soil Survey offices
- Active member of the NSF funded Coastal Carbon Research Coordination Network (2018 – present)
- Member of the SNAPP Managing Soil Carbon Working Group (2016 – 2019) to help identify and close knowledge gaps in the benefits of soil carbon for soil health and agriculture (http://snappartnership.net/groups/managing-soil-carbon/)
- Co-convener of 2014 Goldschmidt Conference session, "The Soil Organic Matter Conundrum: Why do Thermodynamically Unstable Compounds Persist in Soils?"
- Ad hoc reviewer for *National Science Foundation, Australian Research Council, Australian Sugar Cane Research and Development Corporation, Netherlands Organization for Scientific Research, Swiss National Science Foundation*
- Membership: American Geophysical Union, Soil Science Society of America, Ecological Society of America, Sigma Xi
- Manuscript reviews for *Agriculture, Ecosystems and Environment, Biogeochemistry, Biogeosciences, Ecology, Environmental Research Letters, Environmental Science and Technology, European Journal of Soil Science, Geoderma, Geophysical Research Letters, Global Change Biology, Journal of Geophysical Research – Biogeosciences, Journal of Hydrology, Nature Climate Change, Nature Geoscience, Plant and Soil, PLoS ONE, Soil Biology and Biochemistry, Soil Research, Soil Science Society of America Journal, Soil Use and Management*
- Admission interviews for Brown University through the Brown Alumni Schools Committees (2001-2008)
- Graduate student representative to UC Berkeley Ecosystem Sciences faculty (2004-05)

Selected other conference abstracts

Sanderman J, Todd-Brown KE, Hengl T, Dangal SRS, et al. (2020). Spectroscopy to fill the soil data gap. ASA-CSSA-SSSA International Annual Meeting. November 2020

Dangal SR, Schwalm CR, **Sanderman J** (2020). Potential for Soil Carbon Sequestration in the US Great Plain Agricultural Region: Quantifying Management and Climate Driven Changes. In AGU Fall Meeting 2020. AGU.

Rivard C, **Sanderman J**, Watts J, Ewing SA, Wojcik K, McLeod M (2020). Developing a New Geospatial Approach for Rangeland Carbon Monitoring. In AGU Fall Meeting 2020. AGU.

Heuvelink G, Angelini M, Poggio L, Bai Z, Batjes N, van den Bosch R, ... & **Sanderman J** (2020). Space-time machine learning for modelling soil organic carbon change. In EGU General Assembly Conference Abstracts (p. 3621).

Luk S, Eagle ME, **Sanderman J**, Gosselin K, Spivak AC (2020). Evaluating the vulnerability of salt marsh soil organic matter to microbial decomposition. In Ocean Sciences Meeting 2020. AGU.

Sanderman J, Baldock J, Dangal SR, Savage KE (2019). Regional mapping of biologically significant carbon fractions aided by mid infrared spectroscopy. AGU Fall Meeting, 2019, B42D-07.

Dangal SRS, **Sanderman J** (2019) Application of Piecewise Direct Standardization for Precise and Accurate Prediction of Soil Properties and Carbon Fractions Using Spectra from Multiple Spectrometers. In ASA, CSSA and SSSA International Annual Meetings.

Miesel J, **Sanderman J**, Sherif F (2019) Mid-infrared spectroscopy for characterizing soil organic matter: methodological overview and emerging opportunities for soil science. In ASA, CSSA and SSSA International Annual Meetings.

Ernakovich JG, Baldock J, Creamer C, **Sanderman J**, Kalbitz K, Farrell M (2018) The Effect of Microbial Diversity on Organic Matter Transformations in Soils. In AGU Fall Meeting Abstracts.

McElvein A, Ludwig S, Fiske G, Natali S, Mann PJ, Melton S, **Sanderman J** (2018) Mapping Belowground Carbon Pools and Potential Vulnerability in the Yukon-Kuskokwim Delta, Alaska. In AGU Fall Meeting Abstracts.

Sanderman J, Grandy AS (2018) Ramped thermal analysis for isolating biologically meaningful soil organic matter fractions with distinct residence times. In AGU Fall Meeting Abstracts.

Sanderman J, Dangal SRS, Baldock J, Ferguson R, Wills S (2018) Spectroscopic mining of soil archives to fill critical data gaps. In: 21WCSS: Proceedings of the 21st World Congress of Soil Science; 2018, August 12-17; Rio de Janeiro, Brazil: SBCS. Vol. II, p.537

Ernakovich JG, Baldock J, Carter T, Davis R-A, Kalbitz K, **Sanderman J**, Farrell M (2017) Quantifying the effect of plant growth on litter decomposition using a novel, triple-isotope label approach. American Geophysical Union Fall Meeting, 11-15 December 2017, New Orleans, USA.

Wills SA, **Sanderman J** amongst 12 others (2017) Soil Bulk Density by Soil Type, Land Use and Data Source: Putting the Error in SOC Estimates. American Geophysical Union Fall Meeting, 11-15 December 2017, New Orleans, USA.

Sanderman J, Hengl T, Fiske G, Solvik K, Landis E (2017) Global mangrove forest soil carbon mapping at 30 m resolution. Coastal and Estuarine Research Federation 24th Biennial Conference, 5-9 November 2017.

Bulseco-McKim AN. Giblin AE, Tucker J, **Sanderman J**, Spivak AC, Hiller K, Bowen JL (2017) Does the addition of nitrate stimulate decomposition of organic matter in salt marsh sediments? Coastal and Estuarine Research Federation 24th Biennial Conference, 5-9 November 2017.

Ewers Lewis CJ, Carnell P, **Sanderman J**, Baldock J, Trevathan-Tackett SM (2017) Distribution, drivers, and disturbance of blue carbon stocks in southeast Australia. Coastal and Estuarine Research Federation 24th Biennial Conference, 5-9 November 2017.

Trevathan-Tackett SM, Macreadie PI, Baldock J, **Sanderman J** *et al.* (2017) From living seagrass to soil stocks: Dynamics of recalcitrant carbon in seagrass meadows. Coastal and Estuarine Research Federation 24th Biennial Conference, 5-9 November 2017.

Hengl T, Heuvelink G, **Sanderman J**, MacMillan R (2017) Spatiotemporal models of global soil organic carbon stock to support land degradation assessments at regional and global scales: limitations, challenges and opportunities. In EGU General Assembly Conference Abstracts (Vol. 19, p. 14946).

Jauss V, Sullivan P, Lehmann J, **Sanderman J**, Daub M (2017) Alternative modelling approaches for estimating pyrogenic carbon, soil organic carbon and total nitrogen in contrasting ecoregions within the United States. In EGU General Assembly Conference Abstracts (Vol. 19, p. 497).

Sanderman J, Hengl T, Fiske G (2016) Global impact of land use on soil carbon storage. American Geophysical Union Fall Meeting, 11-16 December 2016, San Francisco, USA.

Moore T, **Sanderman J**, Baldock J, Plante A (2016) Soil organic matter composition from correlated thermal analysis and nuclear magnetic resonance data in Australian national inventory of agricultural soils. American Geophysical Union Fall Meeting, 11-16 December 2016, San Francisco, USA.

Lehmann J, Jauss V, Ahmed Z, Sullivan P, **Sanderman J**, Woodbury P (2016) Pyrogenic carbon distribution in landscapes and input to aquatic systems. American Geophysical Union Fall Meeting, 11-16 December 2016, San Francisco, USA.

Miesel JR, Reiner AL, Ewell CM, **Sanderman J**, Maestrini B, Adkins J (2016) Quantifying Fire's Impacts on Total and Pyrogenic Carbon Stocks in Mixed-Conifer Forests: Results from Pre- and Post-Fire Measurements in Active Wildfire Incidents. American Geophysical Union Fall Meeting, 11-16 December 2016, San Francisco, USA.

Ludwig S, Natali, Holmes RM, Mann PJ, **Sanderman J**, Schade JD (2016) Fire Effects on Vegetation Community, Carbon Pools, and Permafrost Vulnerability in Subarctic Tundra. American Geophysical Union Fall Meeting, 11-16 December 2016, San Francisco, USA.

Sanderman J, Baldock J, Farrell M, Macreadie P, McGowan J (2015) Is demineralization with dilute hydrofluoric acid a viable method for isolating mineral stabilized soil organic matter? American Geophysical Union Fall Meeting, 13-18 Dec 2015, San Francisco, CA USA.

Ernakovich J, Baldock J, Creamer C, **Sanderman J**, Farrell M (2015) The role of microbial biodiversity in soil C stabilization. 5th International Symposium on Soil Organic Matter, 20-24 Sept 2015, Gottingen, Germany.

Baker T, **Sanderman J**, Morgan JW, Robertson F, Kitching M, Croatoo G, Crawford D, Oliver I (2015) Soil carbon changes from the conversion of native C4-dominated grassland to C3-dominated agricultural land uses in south-eastern Australia. 5th International Symposium on Soil Organic Matter, 20-24 Sept 2015, Gottingen, Germany.

Pendall E, Carrillo, Nie M, Osanai Y, Nelson L, **Sanderman J**, Baldock J, Hovenden M (2014) Root mediation of soil organic matter feedbacks to climate change. American Geophysical Union Fall Meeting, 15-19 Dec 2014, San Francisco, CA USA.

Sanderman J, Reseigh J, Wurst M, Young M-A, Austin J (2014) Impacts of rotational grazing on soil carbon in native grass-based pastures. Australian National Soil Science Conference, 23-27 Nov 2014, Melbourne, VIC, AU.

Chappell A, Baldock J, **Sanderman J** (2014) The significance for Australian soil organic carbon (C) sequestration of omitting soil erosion from C cycling. Climate Adaptation 2014 Future Challanges, 30 Sept – 02 Oct 2014, Gold Coast, QLD, AU.

Lever, R, **Sanderman J**, Johnson D, Berhe AA (2014) Characterization of soil organic matter fractions in fire-affected hillslopes using mid-infrared spectroscopy. Ecological Society of America Annual Meeting 2014, Sacramento, CA

Pendall E, **Sanderman J**, Osanai Y, Baldock J, Hovenden M (2014) Soil organic carbon storage under elevated CO_2 is dependent on plant species: a role for carbon quality? Goldschmidt Conference, 8-13 June 2014, Sacramento, USA.

Chappell A, Baldock J, Viscarra-Rossel R, **Sanderman J** (2014) Estimate soil erosion to attribute carbon storage to management practice. Soil Change Matters, 24-27 Mar 2014, Bendigo, VIC, AU.

Sanderman J, Fallon S, Baisden WT (2013) Greater carbon stocks and faster turnover rates within increasing agricultural productivity. American Geophysical Union Fall Meeting, 8-12 December 2013, San Francisco, USA.

Lever R, **Sanderman J**, Berhe AA (2013) Quantifying organic carbon fluxes in eroding hillslopes through MIR spectroscopy. American Geophysical Union Fall Meeting, 8-12 December 2013, San Francisco, USA.

Creamer C, Krull E, **Sanderman J**, Farrell M (2013) Increased loss of soil-derived carbon in response to litter addition and temperature. American Geophysical Union Fall Meeting, 8-12 December 2013, San Francisco, USA.

Baisden WT, Schipper LA, **Sanderman J**, Keller ED, Mudge PL, Dodd MB (2013) Achieving model-data harmony by viewing C and N isotopes through the same window: grazed pasture irrigation treatments over 42 years in New Zealand. American Geophysical Union Fall Meeting, 8-12 December 2013, San Francisco, USA.

Sanderman J, Fallon S, Baisden WT (2013) Are soil carbon decay constants truly constant? Insights from time series 14C measurements. Australasian Environmental Isotope Conference, 11-12 July 1013, Perth

Sanderman J, Fillery IRP, Roper MM, Murphy D, Baldock JA, Wang E (2012) Moving beyond carbon bean counting: what information do we need to truly assess soil carbon sequestration? American Geophysical Union Fall Meeting, 3-7 December 2012, San Francisco, USA.

Sanderman J, Maddern T, Baldock J (2012) Mineral stabilized organic matter: An isotope tracer study. SOM-5 Workshop, 7-11 October 2012, Ascona, Switzerland.

Baiden WT, Shipper L, **Sanderman J**, Dodd M (2012) Unravelling changes in soil C stabilisation and destabilisation due to treatments over 30+ years in agricultural trials. SOM-5 Workshop, 7-11 October 2012, Ascona, Switzerland.

Sanderman J, Fallon SJ, Krull ES, Kuhn T, Hancock GJ, McGowan (2011) On the use of radiocarbon to decipher sedimentary organic matter sources. American Geophysical Union Fall Meeting, 4-9 December 2011, San Francisco, USA.

Sanderman J, Kuhn T, Krull E, McGowan J, Maddern T, Hancock G, Fallon S (2011) The Logan-Albert Estuary: a sedimentary record of biogeochemical change. 11th Australasian Environmental Isotope Conference, 12-14 July 2011, Cairns, QLD.

Lohse KA, **Sanderman J**, Amundson R (2009) Identifying sources and processes influencing nitrogen export to a small stream using dual isotopes of nitrate. *EOS transactions, AGU 90(52*), Fall meeting suppl., Abstract #H41E-0937

Sanderman J, Roper M, Macdonald L, Maddern T, Fillery I, Baldock JA (2009) Soil carbon sequestration under perennial pastures in Western Australia: Isotopic evidence from C3-C4 vegetation shifts. 10th Australasian Environmental Isotope Conference, Perth, Australia.

Sanderman J, Amundson R, Baldock JA (2007) A predictable terrestrial signature to riverine dissolved organic carbon? *EOS transactions, AGU 87*(52), Fall meeting suppl., Abstract #B11A-0058

Yoo K, **Sanderman J**, Mudd SM, Amundson R (2007) Soil and solution based assessments of weathering along a hillslope transect in coastal California. *EOS transactions, AGU 87*(52), Fall meeting suppl., Abstract #H43C-1507

Mudd SM, Yoo K, **Sanderman J** (2007) How can residence time control on weathering rates be distinguished from hydrologic control? *EOS transactions, AGU 87*(52), Fall meeting suppl., Abstract #H43C-1506

Sanderman J, Amundson RG (2007) The role of dissolved organic carbon in the soil carbon cycle. 3rd Conference on Mechanisms of Organic Matter Stabilisation and Destabilisation in Soils and Sediments, Adelaide, Australia.

Sanderman J, Amundson RG (2007) Dissolved organic matter in upland soils: Fluxes, chemistry, and its importance in the terrestrial C cycle. ESA/SER Joint Meeting, San Jose, CA.

Sanderman J, Amundson RG, Baldock JA (2006) The biogeochemistry of dissolved organic carbon: Isotopic and spectroscopic insights from an upland Mediterranean catchment. *EOS transactions, AGU 87*(52), Fall meeting suppl., Abstract #B31E-03

Sanderman J (2006) Linking Soils and Streams: Dissolved organic carbon fluxes and transformations in two Mediterranean catchments. Biogeomon: 5th International Symposium on Ecosystem Behavior, UC Santa Cruz, CA.

Lohse KA, **Sanderman J**, Amundson RG (2005) Influence of Hydrological Flow Paths on Rates and Forms of Nitrogen Losses from Mediterranean Watersheds. *EOS transactions, AGU 86*(52), Fall meeting suppl., Abstract #H23D-1448

Sanderman J, Lohse KA, Amundson RG (2005) The importance of hydrologic flow path in determining the retention or loss of dissolved solutes from upland ecosystems. NSF sponsored workshop – Frontiers in Exploration of the Critical Zone, University of Delaware.

Sanderman J, Yoo K, Amundson RG (2005) Toposequence of solutes vs. soil elemental chemistry in headwater catchments: A report on field sampling and preliminary data. NSF sponsored workshop – Frontiers in Exploration of the Critical Zone, University of Delaware.

Sanderman J, Amundson RG, Baldock JA (2005) Dissolved organic matter controls on terrestrial carbon sequestration and export. 2nd International Conference on Mechanisms of Organic Matter Stabilization in Soils, Asilomar, CA.

Sanderman J, Amundson RG, McColl JG (2004) Dissolved organic carbon controls on terrestrial carbon sequestration and export, Soil Science Society of America, 68th Annual Meeting, Seattle, WA.

Sanderman J, Ewing SA, Amundson RG, Baisden WT (2003) Large scale structural sequestration of subsurface soil organic matter, *EOS transactions, AGU 84*(46), Fall meeting suppl., Abstract #B31D-0334

Sanderman J (2001) The effect of climate on the residence time of soil organic matter. *EOS transactions, AGU 82*(47), Fall meeting suppl., Abstract #B51A-0178

Media and other public communications

February 2021 The Guardian interviewed **J Sanderman** discussing soil carbon markets (https://www.theguardian.com/environment/2021/feb/19/soil-carbon-what-role-can-it-play-in-reducing-australias-emissions)

July 2020 Civil Eats quoted **J Sanderman**'s work on soil carbon debt (https://civileats.com/2020/07/15/the-world-food-prize-winner-says-soil-should-have-rights/)

July 2020 Mashable interviewed **J Sanderman** for a story regenerative agriculture (https://mashable.com/article/what-is-regenerative-agriculture/)

June 2020 Mother Jones article interviewed **J Sanderman** on potential for regenerative agriculture to mitigate climate change (https://www.motherjones.com/environment/2020/07/indigo-agriculture-carbon-farming-sequestration-agriculture-climate-change-emissions-soil-health/)

March 2020 Ecowatch article feature **J Sanderman**'s research on mangrove soil carbon storage (https://www.ecowatch.com/mexico-mangroves-oil-refinery-2645409162.html?rebelltitem=1#rebelltitem1)

November 2019 Mother Jones article quoted **J Sanderman** discussing limits to carbon sequestration potential (https://www.motherjones.com/food/2019/11/regenerative-agriculture-cattle-ranching/)

Sept 2019 Grist.org quoted **J Sanderman** responding to Democratic candidates positions on soil carbon sequestration (https://grist.org/article/can-we-stop-stupid-politics-from-ruining-carbon-farming/)

Feb 2019 Article in InsideScience interviewed J Sanderman on new mangrove research (https://www.insidescience.org/news/map-mangrove-height-reveals-carbon-rich-coastal-forests)

June 2018 Article in physicsworld.com titled, "Global mangrove soil carbon map aids conservation," written by James Tyrrell, features work just published by **J Sanderman** and co-authors (https://physicsworld.com/a/global-mangrove-soil-carbon-map-aids-conservation/)

May 2018 Hindustan Times published a series of articles featuring **J Sanderman**'s mangrove soil carbon research (https://www.hindustantimes.com/mumbai-news/less-than-1-of-india-s-mangrove-cover-deforested-in-15-years-global-study/story-oXZgLeTXf9yg2QheuCj0JL.html)

April 2018 E&E Climate Wire (https://www.eenews.net/climatewire/2018/04/30/stories/1060080397) and Mongabay (https://news.mongabay.com/2018/05/new-study-finds-mangroves-may-store-way-more-carbon-than-we-thought/) both wrote features on **J Sanderman**'s mangrove research

November 2017 Scientific American article, How dirt can clean the air, **J Sanderman** discusses limits to soil carbon sequestration (https://www.scientificamerican.com/article/how-dirt-can-clean-the-air/)

November 2017 **J Sanderman** was interviewed by Kay Wood on Planet Philadelphia Radio on land-use, climate change and soil carbon loss (https://www.mixcloud.com/PlanetPhiladelphia/philly-schools-energy-future-agriculture-climate-change-planet-philadelphia-gtown-radio-11317/)

November 2017 **J Sanderman** was quoted in a Mongabay news article on carbon sequestration in Savannas (https://news.mongabay.com/2017/11/carbon-sequestration-role-of-savanna-soils-key-to-climate-goals/)

August 2017 Washington Post article, This is why when you talk about climate change, you can't ignore agriculture, featured new work by **J Sanderman** (https://www.washingtonpost.com/news/energy-environment/wp/2017/08/23/this-is-why-when-you-talk-about-climate-change-you-cant-ignore-agriculture/?utm_term=.f738b4903331)

August 2017 Reuters article, Agriculture a culprit in global warming, says U.S. research, featured new work by **J Sanderman** (https://www.reuters.com/article/us-global-climatechange-agriculture-idUSKCN1B20TR)

April 2017 **J Sanderman** discussed the impact of climate change on home gardens on Cape Cod in the Cape Cod Times (http://www.capecodtimes.com/news/20170418/cape-gardeners-battle-weather-highs-and-lows, print edition: April 19, 2017)

April 2017 Grist.org feature article, A crucial climate mystery is just under our feet, featured work by **J Sanderman** (http://grist.org/article/a-crucial-climate-mystery-is-just-under-our-feet/) (story was also featured in Wired Magazine online)

March 2017 Co-authored editorial titled "Brave New World" discussing the importance of science and the emerging role of scientists as advocates in the journal *Biogeochemistry* (https://link.springer.com/article/10.1007/s10533-017-0316-y)

December 2016 *PBS NewsHour* interviewed **J Sanderman** about the soil carbon climate feedbacks (https://goo.gl/mKHLlk)

November 2016 **J Sanderman** was interviewed by Chris Mooney of *The Washington Post* about the soil carbon feedback to climate change (http://wpo.st/8oeI2)

October 2016 Article in WHRC's Canopy magazine titled "After the fire, measuring the soil" featured **J Sanderman**'s research developing rapid methods to measure char content of soils (https://issuu.com/woodsholeresearchcenter/docs/canopy_fall_2016)

October 2013 **J Sanderman** was interviewed by *New Scientist* to discuss recent research on the carbon sink in post-communist Russia

April 2013 ABC Lateline produced an in-depth story on soil carbon sequestration including an interview with **J Sanderman**. Length: 12 min 08 sec

December 2012 Article in *Stock, Crop and Country* highlighted new research project by **J Sanderman**

October 2012 **J Sanderman** was interviewed on ABC Newcastle Radio discussing why soil carbon is not yet part of the government's Carbon Farming Initiative. Length: 5 min 21 sec

June 2012 **J Sanderman** presented a talk on soil carbon sequestration at a Healthy Soils and Carbon Farming Workshop sponsored by Rural Solutions SA held in Hahndorf, SA

December 2011 **J Sanderman** and J Baldock were interviewed for an article on soil carbon appearing in the Australian and New Zealand Grapegrower and Winemaker

March 2011 Article, Can Kikuyu improve soil organic carbon levels on Kangaroo Island, written by **J Sanderman** for Rural Solutions, South Australia's Kangaroo Island Agricultural Trials 2010 Results book

September 2010 Article in Queensland Country Life, "Boosting soil carbon," features **J Sanderman's** research (http://fw.farmonline.com.au/files/69/53/10/000105369/x02qcl037p.pdf)

September 2010 Article, "Farming Carbon," in ECOS Magazine (vol 156) features research lead by **J Sanderman** (http://www.ecosmagazine.com/?paper=EC156p24)

August 9, 2010 Article on environmentalresearchweb.org titled, "There's no accounting for soil carbon," written by Liz Kalaugher, features work just published by **J Sanderman** and Jeff Baldock (http://environmentalresearchweb.org/cws/article/news/43436)

July 2010 Article, "Digging up the facts on soil carbon," in ECOS Magazine (vol 155: 14-15) features research lead by **J Sanderman** (http://www.ecosmagazine.com/?act=view_file&file_id=EC155p14.pdf)

June 2010 Article titled, "Soil carbon build-up under Kikuyu pastures", was written by **J Sanderman** for the EverGreen Farmers Group June 2010 Newsletter (www.evergreen.asn.au)

May 27, 2010 Brian Keating, Jeff Baldock and **J Sanderman** presented, "Ploughing through soil carbon: Science foundations and directions", at the National Business Leaders Forum on Sustainable Development, Parliament House, Canberra, Australia

April 16, 2010 ABC Rural radio's Tim Marshall, presenter, talked to **J Sanderman**, CSIRO, about carbon levels in soil. Sanderman says each piece of soil is different. Sanderman gives advice on getting carbon back into the soil. Length: 4 min 36 sec

February 24, 2010 **J Sanderman** gave a seminar on soil carbon sequestration at a Perennial Pasture workshop (organised by the EverGraze Farming Group) in Luncindale, South Australia. The workshop was attended by nearly 100 regional graziers

January 29, 2010 **J Sanderman** presented keynote talk at the Naracoorte Carbon Forum sponsored by Primary Industries and Resources South Australia and attended by 80 regional farmers