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PROFESSIONAL PREPARATION

Colorado College	Biology	B.A.	2001
Colorado College	Science Education	M.A.	2003
University of Colorado, Boulder	Ecology & Evolutionary Biology	Ph.D.	2011

APPOINTMENTS

2023 – present	Scientist VI / Project Scientist III
2019 – 2023	Project Scientist II
2014 – 2019	Project Scientist I NSF-National Center for Atmospheric Research, Climate & Global Dynamics Laboratory
2012 - present	Research Scientist University of Colorado, Institute of Arctic and Alpine Research
2011 – 2014	Postdoctoral Research Fellow National Center for Atmospheric Research, Advanced Studies Program
2011	Postdoctoral Fellow University of Colorado, Chancellor's Diversity Fellowship

PUBLICATIONS

Peer Reviewed

* denotes graduate student or undergraduate co-authors

1. Foster, AC, LR Hawkins, D Kennedy, GB Bonan, RA Fisher, JF Needham, RG Knox, CD Koven, **WR Wieder**, K Dagon, & DM Lawrence. (2026). Contrasting Parametric Sensitivities in Two Global Vegetation Models Using Parameter Perturbation Ensembles. *Journal of Advances in Modeling Earth Systems*, 18(3), e2025MS005590. doi:10.1029/2025MS005590.
2. Kavoo*, T, D Kennedy, S Kumar, **WR Wieder**, & D Lombardozzi (2026). Reducing Uncertainties in Coupled Carbon-Water Cycle Predictions—A Parameter Perturbation Ensemble Experiment at Three NEON Tower Sites in the Southeastern United States. *Journal of Geophysical Research: Atmospheres* 131(4), e2025JD043780. doi: 10.1029/2025JD043780.
3. Jay, KR, **WR Wieder**, SC Elmendorf, MJ Spasojevic, & KN Suding (2026). Plant functional trait uncertainty can outweigh climate scenario uncertainty in tundra ecosystem productivity. *New Phytologist* 249, 1188-1203. doi: 10.1111/nph.70740.
4. Kennedy D, K Dagon, DM Lawrence, RA Fisher, BM Sanderson, N Collier, F Hoffman, CD Koven, E Kluzek, S Levis, X Lu, KW Oleson, CM Zarakas, Y Cheng, AC Foster, MD Fowler, LR Hawkins, T Kavoo, S Kumar, AJ Newman, PJ Lawrence, F Li, DL Lombardozzi, Y Luo, SK Shuman, ALS Swann, SC Swenson, G Tang, **WR Wieder**, AW Wood (2025). One-at-a-Time Parameter Perturbation Ensemble of the Community Land Model, Version 5.1. *Journal of Advances in Modeling Earth Systems*, 17(8), e2024MS004715. doi:10.1029/2024ms004715.

5. Rocci KS, D Pierson, FV Jevon, A Polussa AM Oliverio, MA Bradford, PB Reich, **WR Wieder** (2025). Integrating microbial community data into an ecosystem-scale model to predict litter decomposition in the face of climate change *Global Change Biology* 31(7), e70352. doi:10.1111/gcb.70352.
6. Malhotra A, JAM Moore, S Weintraub-Leff, K Georgiou, AA Berhe, SA Billings, MA de Graaff, JM Fraterrigo, AS Grandy, E Kyker-Snowman, M Lu, C Meier, D Pierson, SJ Tumber-Dávila, K Lajtha, **WR Wieder**, RB Jackson (2025). Fine root and soil carbon stocks are positively related in grasslands but not in forests. *Communications Earth & Environment*, 6(1), 497. doi:10.1038/s43247-025-02486-9.
7. Georgiou, K., D Angers, RE Champiny, MF Cotrufo, ME Craig, S Doetterl, AS Grandy, JM Lavallee, Y Lin, E Lugato, C Poepflau, KS Rocci, SA Schweizer, J Six, and **WR Wieder**. (2025). Soil Carbon Saturation: What Do We Really Know? *Global Change Biology*. 31(5), e70197. doi:10.1111/gcb.70197.
8. Matthes H, A Damseaux, S Westermann, C Beer, A Boone, E Burke, B Decharme, H Genet, E Jafarov, M Langer, F-J Parmentier, P Porada, A Gagne-Landmann, D Huntzinger, B Rogers, C Schädel., T Stacke, J Wells, and **W Wieder** (2025), Advances in Permafrost Representation: Biophysical Processes in Earth System Models and the Role of Offline Models. *Permafrost and Periglacial Process.* doi:10.1002/ppp.2269
9. Lombardozzi DL, **WR Wieder**, G Keppel-Aleks, J Lai, Z Luo, Y Sun, I Simpson, D Lawrence, G Bonan, X Lin, C Koven, P Friedlingstein, K Lindsay (2025). Agricultural Fertilization Significantly Enhances Amplitude of Land-Atmosphere CO₂ Exchange. *Nature Communications*. 16, 1742. doi:10.1038/s41467-025-56730-z
10. Yao, Y*, A Ducharne, B Cook, S De Hertog, K Aas, P Arboleda-Obando, J Buzan, J Colin, M Costantini, B Decharme, D Lawrence, P Lawrence, LR Leung, MH Lo, D Narayanappa, **W Wieder**, R-J Wu, T Zhou, J Jaegermeyr, S McDermid, Y Pokhrel, M Elling, N Hanasaki, P Muñoz, L Nazarenko, K Otta, Y Satoh, T Yokohata, L Jin, X Wang, V Mishra, S Ghosh, W Thierry (2025) Impacts of irrigation expansion on moist-heat stress based on IRRMIP results. *Nature Communications*. 16, 1045 doi:10.1038/s41467-025-56356-1
11. Bonan, GB, C Deser, **WR Wieder**, DL Lombardozzi, F Lehner. (2024). When is a trend meaningful? Insights to carbon cycle variability from an initial-condition large ensemble. *npj Climate and Atmospheric Science*, 7(1), 320. doi:10.1038/s41612-024-00878-w.
12. Bonan GB, O Lucier, DR Coen, AC Foster, JK Shuman, MM Laguë, ALS Swann, DL Lombardozzi, **WR Wieder**, KM Dahlin, AV Rocha, MD SanClements (2024). Reimagining Earth in the Earth System. *Journal of Advances in Modeling Earth Systems*, 16, e2023MS004017. doi:10.1029/2023MS004017. § 10 most-cited papers published in 2024 by JAMES.
13. **Wieder WR**, M Hartman, E Kyker-Snowman, B Eastman, K Georgiou, D Pierson, K Rocci, AS Grandy (2024). Simulating Global Terrestrial Carbon and Nitrogen Biogeochemical Cycles with Implicit and Explicit Representations of Soil Microbial Activity. *Journal of Advances in Modeling Earth Systems*, 16(6), e2023MS004156. doi:10.1029/2023ms004156.
14. Kim I-W, A Timmermann, J-E Kim, KB Rodgers, S-S Lee, H Lee, **WR Wieder** (2024). Abrupt increase in Arctic-Subarctic wildfires caused by future permafrost thaw. *Nature Communications*, 15, 7868. doi:10.1038/s41467-024-51471-x.
15. Graven, HD, H Warren, HK Gibbs, S Khatiwala, C Koven, J Lester, I Levin, SA Spawn-Lee, **WR Wieder** (2024). Bomb radiocarbon evidence for strong global carbon uptake and turnover in terrestrial vegetation. *Science*, 384(6702), 1335-1339. doi:10.1126/science.adl4443.
16. Lennon JT, RZ Abramoff, SD Allison, RM Burckhardt, KM DeAngelis, JP Dunne, SD Frey, P Friedlingstein, CV Hawkes, BA Hungate, S Khurana, SN Kivlin, NM Levine, S Manzoni, AC Martiny, JBH Martiny, NK Nguyen, M Rawat, D Talmy, K Todd-Brown, M Vogt, **WR Wieder**, EJ Zakem (2024). Priorities, opportunities, and challenges for integrating microorganisms into Earth system models for climate change prediction. *mBio* 0:e00455-24. doi:10.1128/mbio.00455-24

17. Emard KA, O Cameron*, **W Wieder**, D Lombardozzi, R Morssm, & N Sobhani (2024). Integrating Farmers' Perspectives into Earth System Model Development: Interviews with End Users in the Willamette Valley, Oregon, to Guide Actionable Science. *Weather, Climate, and Society*. 16(3), 453-465. doi:10.1175/wcas-d-23-0066.1.
18. Rocci K, MF Cotrufo, J Ernakovitch, E Foster, S Frey, K Georgiou AS Grandy, A Malhotra, P Reich, E Schlerman* & **WR Wieder** (2024). Bridging 20 years of soil organic matter frameworks: empirical support, model representation, and next steps *Journal of Geoscientific Research - Biogeosciences*. 129(6), e2023JG007964. doi:10.1029/2023jg007964. § 10 most-cited papers published in 2024 by JRG-B
19. Holland, MM, C Hannay, J Fasullo, A Jahn, JE Kay, M Mills, IR Simpson, **W Wieder**, P Lawrence, E Kluzek, and D Bailey (2024). New model ensemble reveals how forcing uncertainty and model structure alter climate simulated across CMIP generations of the Community Earth System Model. *Geosci. Model Dev.*, 17, 1585–1602, doi: 10.5194/gmd-17-1585-2024.
20. Georgiou K, CD Koven, **WR Wieder**, WJ Riley, J Pett-Ridge, NJ Bouskill, RZ Abramoff, E Slessarev A Ahlström, MD Hartman, AFA Pellegrini, D Pierson, BN Sulman, Q Zhu, RB Jackson (2024). Emergent temperature sensitivity of soil organic carbon driven by mineral associations. *Nature Geoscience*, 17, 205–212, doi:10.1038/s41561-024-01384-7.
21. Eastman, BA, **WR Wieder**, MD Hartman, ER Brzostek, and WT Peterjohn (2024). Can models adequately reflect how long-term nitrogen enrichment alters the forest soil carbon cycle? *Biogeosciences*, 21, 201–221, doi:10.5194/bg-21-201-2024
22. Rocci, KS, CC Cleveland, BA Eastman, K Georgiou, AS Grandy, MD Hartman, E Hauser, H Holland-Moritz, E Kyker-Snowman, D Pierson, PB Reich, EP Schlerman* & WR Wieder (2023). Aligning theoretical and empirical representations of soil carbon-to-nitrogen stoichiometry with process-based terrestrial biogeochemistry models. *Soil Biology and Biochemistry*, 109272. doi:10.1016/j.soilbio.2023.109272.
23. Hauser E, **WR Wieder**, GB Bonan, & CC Cleveland (2023). Flexible foliar stoichiometry reduces the magnitude of the global land carbon sink. *Geophysical Research Letters*, 50(21), e2023GL105493. doi:10.1029/2023gl105493.
24. Jay KR, **WR Wieder**, SC Swenson, JF Knowles, S Elmendorf, H Holland-Moritz, KN Suding (2023). Topographic Heterogeneity and Aspect Moderate Exposure to Climate Change Across an Alpine Tundra Hillslope. *Journal of Geophysical Research: Biogeosciences*, 128, e2023JG007664. doi:10.1029/2023JG007664.
25. Lombardozzi DL, **WR Wieder**, N Sobhani, BG Bonan, D Durden, D Lenz, M SanClements, S Weintraub-Leff, E Ayres, CR Florian, K Dahlin, S Kumar, ALS Swann, CM Zarakas*, C Vardeman, & V Pascucci. (2023). Overcoming barriers to enable convergence research by integrating ecological and climate sciences: the NCAR–NEON system Version 1. *Geosci. Model Dev.*, 16(20), 5979-6000. doi:10.5194/gmd-16-5979-2023.
26. Val Martin, M, E Blanc-Betes, KM Fung, EP Kantzas, IB Kantola, I Chiaravalloti, LT Taylor, LK Emmons, **WR Wieder**, NJ Planavsky, MD Masters, EH DeLucia, APK Tai, & DJ Beerling (2023). Improving nitrogen cycling in a land surface model (CLM5) to quantify soil N₂O, NO and NH₃ emissions from enhanced rock weathering with croplands. *Geosci. Model Dev.*, 16(20), 5783-5801. doi:10.5194/gmd-16-5783-2023.
27. Shah, SH, CR O'Lenick, JS Wan, A Ramos-Valle, KD Ash, OV Wilhelmi, CM Edgeley, MJ Molina, J Moulite, CA Chunga Pizarro, K Emard, OZ Cameron, JM Done, CW Hazard, TM Hopson, M Jones, F Lacey, MA Lachaud, D Lombardozzi, M Méndez, RE Morss, K Rieke, F Tormos-Aponte, **WR Wieder**, & CL Williams (2023). Connecting physical and social science datasets: challenges and pathways forward. *Environmental Research Communications*, 5(9), 095007. doi: 10.1088/2515-7620/acf6b4.
28. Liao, C, X Lu, Y Huang, F Tao, DM Lawrence, CD Koven, KW Oleson, **WR Wieder**, E Kluzek, X Huang, & Y Luo (2023). Matrix Approach to Accelerate Spin-Up of CLM5. *Journal of Advances in Modeling Earth Systems*, 15(8), e2023MS003625. doi:10.1029/2023MS003625.

29. Le Noë, J, S Manzoni, R Abramoff, T Bölscher, E Bruni, R Cardinael, P Ciais, C Chenu, H Clivot, D Derrien, F Ferchaud, P Garnier, D Goll, G Lashermes, M Martin, D Rasse, F Rees, J Sainte-Marie, E Salmon, M Schiedung, J Schimel, **W Wieder**, S Abiven, P Barré, L Cécillon, & B Guenet (2023). Soil organic carbon models need independent time-series validation for reliable prediction. *Communications Earth & Environment*, 4(1), 158. doi: 10.1038/s43247-023-00830-5.
30. Heckman, KA, AR Possinger, BD Badgley, MM Bowman, AC Gallo*, JA Hatten, LE Nave, MD SanClements, CW Swanston, TL Weiglein*, **WR Wieder**, BD Strahm (2023). Moisture-driven divergence in mineral-associated soil carbon persistence. *Proceedings of the National Academy of Sciences*. 120(7), e2210044120. doi:10.1073/pnas.2210044120.
31. Dynarski, K, F Soper, S Reed, **W Wieder**, C Cleveland (2023) Patterns and controls of foliar nutrient stoichiometry and flexibility across United States forests. *Ecology*. 104(2), e3909. doi:10.1002/ecy.3909.
32. Halpern, B. S., Boettiger, C., Dietze, M. C., Gephart, J. A., et al. (2023). Priorities for synthesis research in ecology and environmental science. *Ecosphere*, 14(1), e4342. doi:10.1002/ecs2.4342.
33. **Wieder WR**, D Kennedy, F Lehner, KN Musselman, KB Rodgers, N Rosenbloom, IR Simpson, R Yamaguchi (2022). Pervasive alterations to snow-dominated ecosystem functions under climate change. *Proceedings of the National Academy of Sciences*, 119(30), e2202393119. doi:10.1073/pnas.2202393119. Including press coverage from [ABC News](#), [The Hill](#), [Forbes](#), [9 News](#), and the [Boulder Daily Camera](#),
34. Bui, HX, A Timmermann, J-Y Lee, ED Maloney, Y-X Li, J-E Kim, J Shuman; S-S Lee; **WR Wieder** (2022). Summer midlatitude stationary wave patterns synchronize Northern Hemisphere wildfire occurrence. *Geophysical Research Letters*, 49, e2022GL099017. doi:10.1029/2022GL099017
35. Pierson D, KA Lohse, **WR Wieder**, NR Patton*, J Facer*, M-A de Graaff, K Georgiou, MS Seyfried, G Flerchinger, R Will* (2022) Optimizing process-based models to predict current and future soil organic carbon stocks at high-resolution. *Scientific Reports* 12, 10824. doi: 10.1038/s41598-022-14224-8.
36. Jevon FV, A Polussa*, AK Lang, JW Munger, SA Wood, **WR Wieder** & MA Bradford (2022). Patterns and controls of aboveground litter inputs to temperate forests. *Biogeochemistry*, 161(3), 335-352. doi:10.1007/s10533-022-00988-8.
37. Rastetter, EB, BKwiatkowski, DW Kicklighter, AB Plotkin, H Genet, J Nippert, K O'Keefe, SS Perakis, S Porder, SS Roley, RW Ruess, JR Thompson, **WR Wieder**, K Wilcox, RD Yanai (2022) N and P constrain C in ecosystems under climate change: role of nutrient redistribution, accumulation, and stoichiometry. *Ecological Applications*. 32(8), e2684. doi: 10.1002/eap.2684.
38. Koven, C, VK Arora, P Cadule, RA Fisher, CD Jones, DM Lawrence, J Lewis, K Lindsey, S Mathesius, M Meinshausen, M Mills, Z Nicholls, BM Sanderson, NC Swart, **WR Wieder**, & K Zickfeld (2022). Multi-century dynamics of the climate and carbon cycle under both high and net negative emissions scenarios. *Earth Syst. Dynam.*, 13, 885-909. doi: 10.5194/esd-13-885-2022.
39. Yeager, SG, N Rosenbloom, AA Glanville, X Wu, I Simpson, H Li, MJ Molina, K Krumhardt, S Mogen, K Lindsay, D Lombardozi, **W Wieder**, WM Kim, JH Richter, M Long, G Danabasoglu, D Bailey, M Holland, N Lovenduski, WG Strand, and T King (2022). The Seasonal-to-Multiyear Large Ensemble (SMYLE) Prediction System using the Community Earth System Model Version 2. *Geosci. Model Dev.*, 15, 6451-6493. doi: 10.5194/gmd-15-6451-2022
40. Nevison, C, C Goodale, P Hess, **WR Wieder**, J Vira (2022). Nitrification and denitrification in the Community Land Model: Model experiments compared to observations at the Hubbard Brook LTER *Ecological Applications* 32, e2530. doi: 10.1002/eap.2530.
41. Rodgers, KB, SS Lee, N Rosenbloom, A Timmermann, G Danabasoglu, C Deser, J Edwards, JE Kim, I Simpson, K Stein, M Stuecker, R Yamaguchi, T Bodai, ES Chung, L Huang, W Kim, JF Lamarque, D Lombardozi, **W Wieder**, S Yeager (2021). Ubiquity of human-induced changes in climate variability, *Earth Syst. Dynam.*, 12, 1393–1411, doi:10.5194/esd-12-1393-2021.
42. Kyker-Snowman E*, DL Lombardozi, GB Bonan, SJ Cheng, JS Dukes, SD Frey, EM Jacobs, JM Rady*, NG Smith, RQ Thomas, **WR Wieder**, AS Grandy (2021). Increasing the spatial and temporal impact of

ecological research: A roadmap for integrating a novel terrestrial process into an Earth system model. *Global Change Biology*. 28, 665– 684 doi:10.1111/gcb.15894.

43. Polussa A*, J Gonzalez-Rivero*, J Fields*, FV Jevon, SA Wood **WR Wieder**, MA Bradford (2021). Scale dependence in microbial functional equivalence and difference. *Soil Biology and Biochemistry*. 163, 108451. doi:10.1016/j.soilbio.2021.108451.
44. **Wieder, WR**, Z Butterfield*, K Lindsay, DL Lombardozzi, & G Keppel-Aleks (2021). Interannual and seasonal drivers of carbon cycle variability represented by the Community Earth System Model (CESM2). *Global Biogeochemical Cycles*, 35(9); e2021GB007034. doi:10.1029/2021GB007034.
45. Harms, TK, PM Groffman, L Aluwihare, C Craft, **WR Wieder**, SE Hobbie, SG Baer, JM Blair, S Frey, CK Remucal, JA Rudgers, & SL Collins (2021). Patterns and trends of organic matter processing and transport: Insights from the US Long-Term Ecological Research network. *Climate Change Ecology*, 2, 100025. doi: 10.1016/j.ecochg.2021.100025.
46. Georgiou, K, A Malhotra, **WR Wieder**, J Ennis, MD Hartman, BN Sulman, AA Berhe, AS Grandy, E Kyker-Snowman*, K Lajtha, JAM Moore, D Pierson*, & RB Jackson (2021). Divergent controls of soil organic carbon between observations and process-based models. *Biogeochemistry*. 156, 5–17. doi:10.1007/s10533-021-00819-2.
47. Jian, J, B Bond-Lamberty, D Hao, BN Sulman, KF Patel, J Zheng, K Dorheim, SC Pennington, MD Hartman, D Warner, & **WR Wieder** (2021). Leveraging observed soil heterotrophic respiration fluxes as a novel constraint on global-scale models. *Global Change Biology*, 27, 5392-5403. doi:10.1111/gcb.15795.
48. **Wieder, WR**, D Pierson, S Earl, K Lajtha, GS Baer, F Ballantyne, AA Berhe, SA Billings, LM Brigham, SS Chacon, J Fraterrigo, SD Frey, K Georgiou, MA de Graaff, AS Grandy, MD Hartman, SE Hobbie, C Johnson, J Kaye, E Kyker-Snowman, ME Litvak, M Mack, A Malhotra, JAM Moore, K Nadelhoffer, C Rasmussen, WL Silver, BN Sulman, X Walker, & S Weintraub (2021). SoDaH: the SOils DATA Harmonization database, an open-source synthesis of soil data from research networks, version 1.0. *Earth Syst. Sci. Data*, 13(5), 1843-1854. doi:10.5194/essd-13-1843-2021.
49. Bradford, MA, SA Wood, ET Addicott, EP Fenichel, N Fields, J González-Rivero, FV Jevon, DS Maynard, EE Oldfield, A Polussa*, EB Ward, & **WR Wieder** (2021). Quantifying microbial control of soil organic matter dynamics at macrosystem scales. *Biogeochemistry*. doi: 10.1007/s10533-021-00789-5.
50. Billings, SA, K Lajtha, A Malhotra, AA Berhe, M-A de Graaff, S Earl, J Fraterrigo, K Georgiou, S Grandy, S Hobbie, JAM Moore, K Nadelhoffer, D Pierson*, C Rasmussen, WL Silver, BN Sulman, S Weintraub, **W Wieder** (2021). Soil organic carbon is not just for soil scientists: measurement recommendations for diverse practitioners. *Ecological Applications* 31(3), e02290. doi:10.1002/eap.2290.
51. Bonan, GB, DL Lombardozzi, WR Wieder (2021). The signature of internal variability in the terrestrial carbon cycle. *Environmental Research Letters*, 16(3), 034022. doi:10.1088/1748-9326/abd6a9
52. Jones, JA, PM Groffman, J Blair, FW Davis, H Dugan, EE Euskirchen, SD Frey, TK Harms, E Hinckley, M Kosmala, S Loberg, S Malone, K Novick, S Record, AV Rocha, BL Ruddell, EH Stanley, C Sturtevant, A Thorpe, T White, **WR Wieder**, L Zhai, & K Zhu (2021). Synergies among environmental science research and monitoring networks: A research agenda. *Earth's Future* 9, e2020EF001631. doi:10.1029/2020ef001631.
53. Vira, J, P Hess, J Melkonian, **WR Wieder** (2020). An improved mechanistic model for ammonia volatilization in Earth system models: Flow of Agricultural Nitrogen version 2 (FANv2). *Geoscientific Model Development* 13(9), 4459-4490. doi:10.5194/gmd-13-4459-2020
54. Kyker-Snowman E*, **WR Wieder**, SD Frey, AS Grandy (2020). Stoichiometrically coupled carbon and nitrogen cycling in the MICrobial-MIneral Carbon Stabilization model version 1.0 (MIMICS-CN v1.0). *Geoscientific Model Development*, 13(9), 4413-4434. doi:10.5194/gmd-13-4413-2020
55. Lehmann, J, CM Hansel, C Kaiser, M Kleber, K Maher, S Manzoni, N Nunan, M Reichstein, JP Schimel, MS Torn, **WR Wieder**, & I Kögel-Knabner, I. (2020). Persistence of soil organic carbon caused by functional complexity. *Nature Geoscience* doi:10.1038/s41561-020-0612-3

56. Durden, DJ, S Metzger, H Chu, N Collier, KJ Davis, AR Desai, J Kumar, **WR Wieder**, M Xu, FM Hoffman (2020). Automated Integration of Continental-Scale Observations in Near-Real Time for Simulation and Analysis of Biosphere–Atmosphere Interactions. Nichols J, B Verastegui, AB Maccabe, O Hernandez S. Parete-Koon, & T Ahearn (Eds.) *Driving Scientific and Engineering Discoveries Through the Convergence of HPC, Big Data and AI*. SMC 2020. Communications in Computer and Information Science, vol 1315. Springer, Cham. doi:10.1007/978-3-030-63393-6_14.
57. Shi, Z*, SD Allison, Y He, PA Levine*, AM Hoyt*, J Beem-Miller*, Q Zhu, **WR Wieder**, SE Trumbore, & JR Randerson (2020). The age distribution of global soil carbon inferred from radiocarbon measurements *Nature Geoscience* 13, 555-559. doi:10.1038/s41561-020-0596-z
58. Lombardozi DL, Y Lu, PJ Lawrence, DM Lawrence, S Swenson, KW Oleson, **WR Wieder**, EA Ainsworth (2020). Simulating agriculture in the Community Land Model version 5. *JGR-Biogeosciences*. 125, e2019JG005529. doi:10.1029/2019JG005529
59. Basile SJ*, X Lin, **WR Wieder**, MD Hartman, G Keppel-Aleks (2020). Leveraging the signature of heterotrophic respiration on atmospheric CO₂ for model benchmarking. *Biogeosciences* 17, 1293-1308. doi:10.5194/bg-17-1293-2020
60. Zhang H, DS Goll, YP Wang, P Ciais, **WR Wieder**, et al. (2020). Microbial dynamics and soil physicochemical properties explain large scale variations in soil organic carbon. *Global Change Biology*, 26, 2668-2685 doi:10.1111/gcb.14994.
61. Chen, Y*, **WR Wieder**, AL Hermes*, ELS Hinckley (2020). The role of physical properties in controlling soil nitrogen cycling across a tundra-forest ecotone of the Colorado Rocky Mountains, U.S.A. *CATENA*, 186, 104369. doi:10.1016/j.catena.2019.104369
62. **Wieder WR**†, MD Hartman, B Sulman, CD Koven, MA Bradford. (2019). Arctic systems could drive global losses or gains in soil carbon under climate change. *Geophysical Research Letters*, 46, 14486-14495. doi:10.1029/2019GL085543. †Highly downloaded paper (top 10%).
63. Lawrence DM, et al. (2019). The Community Land Model version 5: Description of new features, benchmarking, and impact of forcing uncertainty. *Journal of Advances in Modeling Earth Systems*. 11, 4245– 4287. doi:10.1029/2018MS001583.
64. Malhotra, A., K Todd-Brown, L Nave, et al. (2019). The landscape of soil carbon data: emerging questions, synergies and databases. *Progress in Physical Geography: Earth and Environment*. 43(5), 707-719. doi:10.1177/0309133319873309.
65. Fisher RA, **WR Wieder**, BM Sanderson, CD Koven, KW Oleson, C Xu, J Fisher, M Shi, AP Walker, DM Lawrence (2019). Parametric controls on vegetation responses to biogeochemical forcing in the CLM5. *Journal of Advances in Modeling Earth Systems*. 11, 2879–2895 doi:10.1029/2019ms001609.
66. **Wieder WR**, DM Lawrence, RA Fisher, GB Bonan, SJ Cheng, CL Goodale, AS Grandy, CD Koven, DL Lombardozi, KW Oleson, & RQ Thomas (2019). Beyond static benchmarking: Using experimental manipulations to evaluate land model assumptions. *Global Biogeochemical Cycles*. 33, 1289–1309 doi:10.1029/2018GB006141.
67. Bonan GB, DL Lombardozi, **WR Wieder**, KW Oleson, DM Lawrence, FM Hoffman, & N Collier (2019). Model Structure and Climate Data Uncertainty in Historical Simulations of the Terrestrial Carbon Cycle (1850–2014). *Global Biogeochemical Cycles*, 33, 1310–1326 doi:10.1029/2019GB006175
68. Cheng C, P Hess, **WR Wieder**, RQ Thomas et al. (2019). Decadal impacts of nitrogen additions on temperate forest carbon sinks: A data-model comparison. *Biogeosciences*, 16, 2771-2793. doi:10.5194/bg-16-2771-2019.
69. Weintraub SR, A Flores, **WR Wieder**, et al. (2019). Leveraging Environmental Research and Observation Networks to Advance Soil Carbon Science. *JGR-Biogeosciences*. 124, 1047–1055 doi:10.1029/2018JG004956.

70. Taylor P, C Cleveland, F Soper, **WR Wieder**, S Dobrowski, C Doughty AR Townsend (2019). Greater stem growth, woody allocation, and aboveground biomass in Paleotropical forests than in Neotropical forests. *Ecology*, 100, e02589. doi:10.1002/ecy.2589.
71. Vicca S, B Stocker, S Reed, **WR Wieder**, et al. (2018). Using research networks to create the comprehensive datasets needed to assess nutrient availability as a key determinant of terrestrial carbon cycling. *Environmental Research Letters*, 13, 125006. doi:10.1088/1748-9326/aaeae7.
72. Sulman BN, et al. (2018). Multiple models and experiments underscore large uncertainty in soil carbon dynamics. *Biogeochemistry*, 141, 109-123. doi:10.1007/s10533-018-0509-z.
73. Lombardozzi DL, GB Bonan, **W Wieder**, AS Grandy, C Morris*, DL Lawrence (2018). Cover crops may cause winter warming in snow-covered regions. *Geophysical Research Letters*, 45, 9889-9897. doi:10.1029/2018GL079000
74. Schädel C, C Koven, DM Lawrence, et al. (2018). Divergent patterns of experimental and model-derived permafrost ecosystem carbon dynamics in response to Arctic warming. *Environmental Research Letters*, 13, 105002. doi:10.1088/1748-9326/aae0ff.
75. Blankinship JC, et al. (2018). Improving understanding of soil organic matter dynamics by triangulating theories, measurements, and models. *Biogeochemistry* 140, 1-13. doi:10.1007/s10533-018-0478-2.
76. Bowles TM, SS Atallah, EE Campbell, ACM Gaudin, **WR Wieder**, AS Grandy (2018). Addressing agricultural nitrogen losses in a changing climate. *Nature Sustainability* 1, 399–408. doi:10.1038/s41893-018-0106-0.
77. Burns SP*, SC Swenson, **WR Wieder**, DM Lawrence, GB Bonan, JF Knowles, PD Blanken (2018). A Comparison of the Diel Cycle of Modeled and Measured Latent Heat Flux During the Warm Season in a Colorado Subalpine Forest. *Journal of Advances in Modeling Earth Systems* 10, 617-651. doi:10.1002/2017ms001248.
78. **Wieder WR**, MD Hartman, B Sulman, YP Wang, CD Koven, GB Bonan (2018). Carbon cycle confidence and uncertainty: exploring variation among soil biogeochemical models. *Global Change Biology*, 24, 1563-1579 doi:10.1111/gcb.13979.
79. Rasmussen C, K Heckman, **WR Wieder**, et al. (2018). Beyond clay: towards an improved set of variables for predicting soil organic matter content. *Biogeochemistry*, 137, 297–306 doi:10.1007/s10533-018-0424-3.
80. Koven CD, G Hugelius, DM Lawrence, **WR Wieder** (2017). Climatological temperature sensitivity of soil carbon is higher in cold than warm climates. *Nature Climate Change*, 7, 817-822 doi:10.1038/nclimate3421.
81. Bradford MA, et al. (2017). A test of the hierarchical model of litter decomposition *Nature Ecology and Evolution*, 1, 1836-1845, doi:10.1038/s41559-017-0367-4
82. Soper F, PG Taylor, **WR Wieder**, et al. (2017). Modest gaseous nitrogen losses point to conservative nitrogen cycling in a lowland tropical forest watershed. *Ecosystems*, doi:10.1007/s10021-017-0193-1.
83. **Wieder WR**, JF Knowles, PD Blanken, SC Swenson, KN Suding (2017). Ecosystem function in complex mountain terrain: combining models and long-term observations to advance process-based understanding. *JRG-Biogeosciences*, 122, 825–845 doi:10.1002/2016JG003704.
84. Taylor P, CC Cleveland, **WR Wieder**, B Sullivan, C Doughty, SZ Dobrowski, A Townsend (2017). Temperature and rainfall interact to control carbon cycling in tropical forests. *Ecology Letters*, 20(6), 779-788, doi:10.1111/ele.12765.
85. Buchkowski RW*, MA Bradford, AS Grandy, OJ Schmitz, **WR Wieder** (2017). Applying population and community ecology theory to advance understanding of belowground biogeochemistry. *Ecology Letters*, 20, 231-245, doi:10.1111/ele.12712.
86. Crowther TW, KEO Todd-Brown, CW Rowe, **WR Wieder**, et al. (2016). Quantifying global soil carbon losses in response to warming. *Nature*, 540: 104-108, doi:10.1038/nature20150.

87. Grandy, AS, **WR Wieder**, K Wickings, and E Kyker-Snowman* (2016). Beyond microbes: Are fauna the next frontier in soil biogeochemical models? *Soil Biology and Biochemistry*, 102: 40-44, doi:10.1016/j.soilbio.2016.08.008
88. Bradford MA, **WR Wieder**, GB Bonan, N Fierer, PA Raymond, TW Crowther (2016). Managing uncertainty in soil carbon feedbacks to climate change. *Nature Climate Change* 6: 751-758, doi:10.1038/nclimate3071
89. Bradford MA, B Berg, DS Maynard*, **WR Wieder**, SA Wood (2016). Understanding the dominant controls on litter decomposition. *Journal of Ecology* 104: 229–238 doi:10.1111/1365-2745.12507
90. Hinckley ELS, SP Anderson, JS Baron, PD Blanken, GB Bonan, WD Bowman, SC Elmendorf, N Fierer, AM Fox, KJ Goodman, KD Jones, DL Lombardozzi, CK Lunch, JC. Neff, MD SanClements, KN Suding, **WR Wieder** (2016). Optimizing Available Network Resources to Address Questions in Environmental Biogeochemistry. *BioScience* 66(4), 317-326, doi:10.1093/biosci/biw005
91. Fan, Z, J Neff, **WR Wieder** (2016). Model-based analysis of environmental controls over ecosystem primary production in an alpine tundra dry meadow. *Biogeochemistry* 128(1-2), 35-49, doi:10.1007/s10533-016-0193-9
92. Luo, Y, et al. (2016). Toward more realistic projections of soil carbon dynamics by Earth system models, *Global Biogeochem. Cycles*, 30, 40–56, doi:10.1002/2015GB005239
93. **Wieder WR**, CC Cleveland, WK Smith, K Todd-Brown (2015). Future productivity and carbon storage limited by terrestrial nutrient availability. *Nature Geoscience* 8, 441–444 doi:10.1038/ngeo2413
94. **Wieder WR**, CC Cleveland, WK Smith, K Todd-Brown (2015). Reply to ‘Land unlikely to become large carbon source’. *Nature Geoscience* 8, 893–894 doi:10.1038/ngeo2606
95. **Wieder WR**, AS Grandy, CM Kallenbach*, PG Taylor, GB Bonan (2015). Representing life in the Earth system with soil microbial functional traits in the MIMICS model. *Geoscientific Model Development*, 8(6), 1789-1808, doi:10.5194/gmd-8-1789-2015
96. **Wieder WR** et al. (2015). Explicitly representing soil microbial processes in Earth system models. *Global Biogeochemical Cycles*. 29: 1782–1800 doi:10.1002/2015GB005188.
97. Smith, WK, SC Reed, CC Cleveland, AP Ballantyne, WRL Anderegg, **WR Wieder**, SW Running (2015). Satellite observations call into question Earth system model projections of global terrestrial CO₂ fertilization *Nature Climate Change* 6: 306-301 doi:10.1038/nclimate2879.
98. **Wieder WR**, CC Cleveland, DM Lawrence, GB Bonan (2015). Effects of model structural uncertainty on carbon cycle projections: biological nitrogen fixation as a case study. *Environmental Research Letters* 10: 044016 doi:10.1088/1748-9326/10/4/044016
99. Cleveland CC, P Taylor, D Chadwick, K Dahlin, CE Doughty, Y Malhi, WK Smith, B Sullivan, **WR Wieder**, AR Townsend (2015). A comparison of plot-based, satellite and Earth system model estimates of tropical forest net primary production. *Global Biogeochemical Cycles* 29, 626-644 doi:10.1002/2014gb005022
100. Taylor PG, **Wieder WR**, Weintraub SR, Cohen S, Cleveland CC, Townsend AR. (2015). Organic forms dominate hydrologic nitrogen export from a lowland tropical watershed. *Ecology* 96:1229–1241 doi:10.1890/13-1418.1
101. **Wieder WR**, AS Grandy, CM Kallenbach*, BG Bonan (2014). Integrating microbial physiology and physiochemical principles in soils with the MIMICS model. *Biogeosciences* 11: 3899–3917 doi:10.5194/bg-11-3899-2014
102. Bradford MA, RJ Warren, P Baldrian, TW Crowther, DS Maynard, EE Oldfield*, **WR Wieder**, SA Wood, RJ King (2014). Climate fails to predict wood decomposition at regional scales. *Nature Climate Change* 4, 625–630 doi:10.1038/nclimate2251
103. Wang YP, BC Chen, **WR Wieder**, YQ Luo, M Leite, BE Medlyn, M Rasmussen, MJ Smith, FB Augusto, & F Hoffman (2014). Oscillatory behavior of two nonlinear microbial models of soil carbon decomposition. *Biogeosciences* 11: 1817–1831 doi:10.5194/bg-11-1817-2014

104. **Wieder WR**, J Boehnert, GB Bonan (2014). Evaluating soil biogeochemistry parameterizations in Earth system models with observations. *Global Biogeochemical Cycles* 28: 211-222 doi:10.1002/2013GB004665
105. Hinckley ES, **W Wieder**, N Fierer, and EA Paul (2014). Digging into the world beneath our feet: Bridging knowledge across scales in the age of global change. *Eos, Transactions American Geophysical Union* 95: 96-97 doi:10.1002/2014EO110004
106. Taylor PG, T Bilinski, H Fancher**, C Cleveland, D Nemergut, S Weintraub, **WR Wieder**, A Townsend (2014). Palm oil wastewater methane emissions and bioenergy potential. *Nature Climate Change* 4: 151-152 doi:10.1038/nclimate2154
107. Graham EB*, **WR Wieder**, JW Leff, SR Weintraub, AR Townsend, CC Cleveland, L Philippot, DR Nemergut. (2014). Do we need to understand microbial communities to predict ecosystem function? A comparison of statistical models of nitrogen cycling processes. *Soil Biology and Biochemistry* 68: 279–282 doi:10.1016/j.soilbio.2013.08.023
108. **Wieder WR**, GB Bonan, SD Allison (2013). Global soil carbon projections are improved by modelling microbial processes. *Nature Climate Change* 3: 909–912 doi:10.1038/nclimate1951
109. Bonan G, M Hartman, W Parton, **W Wieder** (2013). Evaluating litter decomposition in Earth system models with long-term litterbag experiments: An example using the Community Land Model version 4 (CLM4). *Global Change Biology* 19: 957–974 doi:10.1111/gcb.12031.
110. **Wieder WR***, CC Cleveland, PG Taylor, DR Nemergut, E Hinckley, L Philippot, D Bru, SR Weintraub, M Martin, AR Townsend (2013). Experimental removal and addition of leaf litter inputs reduces nitrate production and loss in a lowland tropical forest. *Biogeochemistry*. 113: 629-642
111. Pinder, RW, ND Bettez, GB Bonan, TL Greaver, **WR Wieder***, WH Schlesinger, EA Davidson (2013). Impacts of human alteration of the nitrogen cycle in the US on radiative forcing. *Biogeochemistry* 114:24-40
112. Weintraub SR*, **WR Wieder**, CC Cleveland, AR Townsend (2013). Organic matter inputs shift soil enzyme activity and allocation patterns in a wet tropical forest. *Biogeochemistry*. 114: 313-326
113. Leff JW*, **WR Wieder***, PG Taylor*, AR Townsend, DR Nemergut, AS Grandy, CC Cleveland (2012). Experimental litterfall manipulation drives large and rapid changes in soil carbon cycling in a wet tropical forest. *Global Change Biology* 18: 2969-2979
114. **Wieder WR***, CC Cleveland, CC, AR Townsend (2011). Throughfall exclusion and leaf litter manipulation drive higher rates of soil N₂O emissions from a lowland wet tropical forest. *Global Change Biology* 17: 3195–3207
115. Cleveland CC, AR Townsend, P Taylor*, S Alvarez-Clare*, MMC Bustamante, G Chuyong, P Grierson, KE Harms, BZ Houlton, A Marklein*, W Parton, S Porder, SC Reed, CA Sierra*, WL Silver, EVJ Tanner & **WR Wieder***. (2011). Relationships among net primary productivity, nutrients and climate in tropical rain forest: a pan-tropical analysis. *Ecology Letters* 14: 939-947.
116. Cleveland CC, **WR Wieder***, SC Reed*, AR Townsend (2010). Experimental drought in a wet tropical forest increases soil carbon dioxide losses to the atmosphere. *Ecology* 91: 2313-2323.
117. Nemergut DR, CC Cleveland, **WR Wieder***, CL Washenberger, AR Townsend (2010). Plot-scale manipulations of organic matter inputs to soils correlate with shifts in microbial community composition in a lowland tropical rain forest. *Soil Biology and Biochemistry* 42: 2153-2160.
118. **Wieder WR***, CC Cleveland, AR Townsend (2009). Controls over leaf litter decomposition in wet tropical forests. *Ecology* 90: 3333–3341.
119. **Wieder WR***, CC Cleveland, CC, AR Townsend (2008). Tropical tree species composition affects the oxidation of dissolved organic matter from litter. *Biogeochemistry* 88:127–138.
120. **Wieder WR*** (2006). Communicating the nature of science through historical perspectives on science. *American Biology Teacher* 68: 200-205.
121. **Wieder WR****, & NW Bower (2004). Fire history of the Aiken Canyon grassland-woodland ecotone in the southern foothills of the Colorado Front Range. *Southwestern Naturalist* 49: 239 –243.

Non-Peer Reviewed

122. Weintraub-Leff, SR & **WR Wieder** (2021). Special issue: new insights into soil carbon cycling leveraging networks, synthesis, and long-term studies. *Biogeochemistry* 156, 1–3. doi:10.1007/s10533-021-00844-1
123. **Wieder, WR**, D Pierson, SR Earl, K Lajtha, S Baer, F Ballantyne, AA Berhe, S Billings, LM Brigham, SS Chacon, J Fraterrigo, SD Frey, K Georgiou, M de Graaff, AS Grandy, MD Hartman, SE Hobbie, C Johnson, J Kaye, E Snowman, ME Litvak, MC Mack, A Malhotra, JAM Moore, K Nadelhoffer, C Rasmussen, WL Silver, BN Sulman, X Walker, and S Weintraub. 2020. SOils DATA Harmonization database (SoDaH): an open-source synthesis of soil data from research networks ver 1. Environmental Data Initiative doi:10.6073/pasta/9733f6b6d2ffd12bf126dc36a763e0b4 (Accessed 2020-07-16).
124. **Wieder WR**, MA Bradford, AS Grandy, J Talbot (2016). Turning uncertainty into opportunity by advancing theory and models. White paper submitted by request to the Department of Energy Offices of Advanced Scientific Computing Research (ASCR) and Biological and Environmental Research (BER).
125. **Wieder WR**, SD Allison, MA Bradford, AS Grandy, EL Hinckley, SC Reed, B Stephens (2015). Scaling soil processes with data from above and below: Using space-based and local observations to advance our capacity to project carbon cycle-climate feedbacks. White paper submitted for the *2017-2027 Decadal Survey for Earth Science and Applications from Space (ESAS 2017)* for The National Academies of Sciences, Engineering, and Medicine.
126. **Wieder WR** (2014). Soil carbon: Microbes, roots and global carbon. *Nature Climate Change* 4: 1052–1053 doi:10.1038/nclimate2454
127. **Wieder WR**, J Boehnert, GB Bonan and M Langseth (2014). RegridDED Harmonized World Soil Database v1.2. [Data set]. Available on-line from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, TN, USA. doi:10.3334/ORNLDAAC/1247
128. Bonan GB, S Levis, and **WR Wieder** (2012). A modeller's perspective of long-term integrated data series of ecosystem-atmosphere processes. *ILEAPS Newsletter* 12: 6-9.

FUNDING AND AWARDS

2025	Clarivate Highly Cited Researcher	
2025	NSF 2515537 Collaborative Research: <i>Density dependent plant-mycorrhizal-soil interactions create self-reinforcing feedbacks on woody encroachment in tundra ecosystems</i> (Wieder PI) press release	\$1,471,168
2025	NSF 2513025 Collaborative Research: Frameworks: <i>SCI-SWIM: Sustainable Community Infrastructure for Stable Water Isotope Modeling Enabling Earth System Research</i> (Wieder co-PI) press release	\$2,552,220
2024	Mentorship Award: University Corporation for Atmospheric Research	
2024	Clarivate Highly Cited Researcher	
2024	NSF 2409246 DISES: <i>Evaluating the effectiveness of climate-smart agriculture to build climate resilience</i> (Wieder co-PI)	\$379,552
2024	NSF 2320667 BII: EMBER: <i>Embedding Molecular Biology in Ecosystem Research in an era of increasing fire and drought</i> . (Wieder co-I)	\$746,133
2023	Clarivate Highly Cited Researcher	
2023	DOE BER, <i>Responses of plant and microbial respiration sources to changing cold-season climate drivers in the East River watershed</i> (Wieder co-I)	\$298,835
2023	DOE EMSL Resources: <i>A high-resolution view of the plant–microbe–mineral interactions affecting C-cycling in thawed permafrost soils</i> (Wieder co-I)	\$100,000
2022	NSF 2224439, LTER: <i>Long-term research on the dynamics of high-elevation ecosystems: A framework for understanding rates of ecological response to climate change</i> . (Wieder co-I)	\$7,650,000
2022	NSF 1755088 (Amendment 066), NCAR and NEON cyberinfrastructure collaborations to enable convergence research linking the atmospheric and biological sciences. Phase 2: <i>Spatial scaling and Earth system prediction</i> . (Wieder Senior Personnel)	\$600,000

2021	NSF 2120804, <i>Collaborative Research: GCR: Converging scientific and sociocultural characterization of climate-change refugia in headwater basins.</i> (Wieder co-I)	\$102,313
2021	NCAR Early Career Faculty Innovator Program, <i>Integrating climate data into farm management: A case study in the Willamette Valley, Oregon to guide actionable science</i> Kelsey Emard Oregon State University, PI	
2020	NSF 2039932: <i>Data CI Pilot: NCAR and NEON Cyberinfrastructure Collaborations to Enable Convergence Research Linking the Atmospheric and Biological Science.</i> (Wieder Senior Personnel)	\$599,996
2020	NSF ARCSS-2031238: <i>Collaborative Research: Permafrost–climate feedbacks: How interactions among plants, microbes, and minerals affect biogeochemical projections in a changing Arctic</i> (Wieder Co-I)	\$347,143
2020	DOE EMSL resources <i>Integrative analysis of multi-omic data across NEON eco-climatic regions</i> (Wieder Co-I)	\$78,600
2020	USDA NIFA-AFRI 2020-67019-31395 <i>Soil organic matter synthesis- Improving models with data from cross-site observations and manipulations</i> (Wieder PI)	\$50,000
2019	NSF DEB-1926413 <i>Collaborative Proposal: MRA: Understanding how local-scale controls on litter decomposition shape emergent macrosystem biogeochemical patterns</i> (Wieder Co-I)	\$391,704
2019	DOE EMSL resources <i>Exploring soil organic matter dynamics in a warming world using an array of warming experiments and soil models</i> DOI: 10.25582/v01.proj.2019.51092 (Wieder Co-I)	\$52,834
2019	University of Colorado, Boulder Research & Innovation Seed Grant Program <i>Measuring the pulse of global change at the interface of Earth & Life</i> (Wieder Co-I)	\$49,990
2018	NSF DEB-1754126 RCN: <i>INCyTE: Investigating Nutrient Cycling in Terrestrial Ecosystems: Integrating Observations, Experiments, and Models</i> (Wieder Co-I)	\$499,912
2017	LTER-NCO Working Group <i>Advancing soil organic matter research: Synthesizing multi-scale observations, manipulations & models</i> (Wieder PI)	\$55,000
2017	NASA NNX17AK19G <i>Developing a mechanistic understanding of variability in the atmospheric CO₂ growth rate owing to interannual climate oscillations</i> (Wieder Co-I)	\$196,000
2017	Bjerknes Visiting Fellow, Bjerknes Center and Uni Research Climate, Bergen Norway	\$2,500
2016	DOE BSS-DE-SC0016364 <i>Microbial metabolic dependency and its impacts on the soil carbon cycle</i> (W. Wieder Co-I)	\$140,000
2016	US Environmental Protection Agency <i>Closing the terrestrial nitrogen cycle in the Community Land Model to evaluate carbon cycle and environmental consequences of reactive nitrogen</i> (W. Wieder PI)	\$150,000
2015	US Dept. of Energy <i>Benchmarking and Improving Microbial explicit Soil Biogeochemistry Models</i> (W. Wieder PI)	\$500,000
2014	US Dept. of Agriculture <i>EaSM-3 Decadal prediction of sustainable agricultural and forest management – Earth system prediction differs from climate prediction</i> (Wieder Senior Personnel)	\$889,000
2013	U.S Geological Survey <i>Evaluating soil biogeochemistry models with data</i> (Wieder Senior Personnel)	\$22,500
2018	University Corp. for Atmos. Res. Outstanding Publication Award, nominated	
2014	Gene E. Likens Outstanding Publication Award (ESA Biogeosciences)	
2013	Modelling Complex Ecological Dynamics Award- 3 rd prize	
2011	National Center for Atmospheric Research, ASP-ISP Postdoctoral Fellowship	
2011	University of Colorado, Chancellor's Diversity Initiative Postdoctoral fellowship	
2009	NSF EAR-0910012 <i>Dissertation Research: Conservative nitrogen cycling in wet tropical forests?</i> (Wieder Co-I)	\$15,000
2008	NSF Graduate Research Fellowship	
2007	ARSC Foundation Scholarship	
2007	Soil Ecology Society, Parkinson Award	
2006	University of Colorado, Graduate School Student Award	
2000	Rhodes Scholarship, state semi-finalist	
1997	Boettcher Foundation Scholar	

SYNERGISTIC ACTIVITIES

1. *Educator*

- Lectured at the CESM Tutorial (2016-2022, 2024, 2025), CLM tutorials (2014, 2016, 2019, 2022, 2023), LWMG-CUPID tutorial (2026) and ASP C-cycle workshop (2013). This included redesigning the Community Land Model tutorial to be delivered virtually and using cloud computing resources and running with Jupyter notebooks
- Initiated Research Opportunities for Students in Environmental Sciences (ROSES), a program that helps place and support undergraduate research assistants in labs at CU-Boulder. Designed and implemented K-12 curriculum through workshops at CU-Boulder and in association with local school districts.
- High School Science teacher 2002-2006.

2. *Supervisor, provided direct supervision for:*

- Sam Levis, Scientist VI, NSF-NCAR: CGD (2024-present)
- Keith Oleson, Scientist VI, NSF-NCAR: CGD (2024-present)
- Erik Kluzek, SE III, NSF-NCAR: CGD (2023-present)
- Sam Rabin, SE II, NCAR: CGD (2023-present)
- Katya Jay, Postdoc, CU Boulder (2021-2023)
- Katie Rocci, Postdoc CU Boulder (2023-2025)

3. *Leadership and Service*

- Co-Chair of the CESM Land Model Working Group (LMWG, 2020-present)
- Member, Niwot Ridge LTER Executive Committee (2019-present).
- Co-Investigator and steering committee member, for INCyTE RCN (2018-2024).
- Principal Investigator for LTER-NCO Synthesis Working Group (2018-2020).
- Member, Scientific Steering Committee Deep Soil Ecotron, University of Idaho (2021).
- Member, Molecular Observation Network (MONet), EMSL/PNNL (2022)
- Member, LTER Science Council Steering Committee (“Organic Matter”, 2018).
- Member, Niwot Ridge LTER Scientific Steering Committee (2018-2019).
- Member, NEON Terrestrial biogeochemistry technical working group (2017-2019).
- Member, *Global Change Biology* Editorial Advisory Board (2017-2019).
- Participant and writer, selected for the DOE Biological and Environmental Research Advisory Committee (BERAC) Grand Challenges II workshop this is developing recommendations for the next 20 years of research priorities for the DOE (2017).
- Invited speaker at the National Academies of Sciences, Engineering, and Medicine “The Evolving Soil Interface of the Earth System” Washington DC, April 2016.
- Keynote presentation at workshop to set DOE Terrestrial Ecosystem Sciences (TES) and Biological and Environmental Research (BER) funding priorities for belowground processes, Bethesda MD May 2014.

4. *Mentor.* For Ph.D. students, undergraduate research assistants, & SOARS protégées. Students were from CU-Boulder, University of West Virginia, University of New Hampshire, Cornell University, University of Tennessee, Yale University, and NCAR

5. *Invited Speaker.* Including AGU (2025, 2024, 2023, 2021, 2019, 2018, 2016, 2015, 2013), ESA (2017, 2015, 2014 & 2012), University of Wisconsin (2026); University of Colorado Boulder (2022, 2019); École Normale Supérieure, Paris France (2021), University of Vermont (2019); Pacific Northwest National Laboratory (2019); Bjerknes Center, Bergen Norway (2017, 2015); Cornell University (2016, 2013), University of New Hampshire (2014), University of California Merced (2014), University of Colorado Denver, NCAR, NEON.
6. *Collaborator.*
 - Participant VERDE working group at ESIL (2026)
 - Co-Chair, member and presenter of the Land Model and Biogeochemistry Working Groups (NCAR).
 - Participant, Rethinking Soil Carbon Modeling workshop, Burghausen, Germany, Oct. 2018.
 - Participant, DOE Soil Carbon Dynamics Working Group (2018-2025).
 - Participant, Powell Center Working Group on soil carbon- fractions and radiocarbon (2016-2018).
 - Participant, steering committee for the NSF working group to examine synergies Between NEON and LTER working group (2016-2018).
 - Participant, British Royal Society Discussion on Soil-atmosphere C fluxes, Oct. 2017
 - Invited speaker & participant for INTERFACE RCN: Saint Petersburg, FL Jan. 2016
 - Organizing committee and invited speaker for FORECAST RCN: Breckenridge, CO June 2014.
 - Invited speaker for NSF FORECAST RCN: Biosphere II, AZ Oct. 2014.
7. *Reviewer and Editor.*
 - Guest editor, Special issue: new insights into soil carbon cycling leveraging networks, synthesis, and long-term studies. *Biogeochemistry*, Published Sept 2021
 - Reviewer for journals including: PNAS, Nature, Nature Climate Change, Nature Geoscience, Biogeochemistry, Biogeosciences, Earth's Future, Ecological Applications, Ecology, Ecology Letters, Ecosystems, Environmental Research Letters, Frontiers in Ecology and the Environment, Geoscientific Model Development, Global Biogeochemical Cycles, Global Change Biology, Geophysical Research Letters, ISME, JAMES, JGR Biogeosciences, Nature Communications, New Phytologist, Oecologia, Science of the Total Environment, Scientific Reports, Soil Biology and Biochemistry, & Ecosystems.
 - For programs and panels in NSF and DOE.