JENNIFER K. BALCH

Department of Geography
University of Colorado Boulder
http://www.colorado.edu/geography/jkbalch

EDUCATION

Yale University	School of Forestry & Environmental Studies	Ph.D.	2004-8
Yale University	School of Forestry & Environmental Studies	MSc.	2002-4
Princeton University	Ecology & Evolutionary Biology, and Certificate in Latin American Studies	A.B. with Honors	1999

PROFESSIONAL EMPLOYMENT & AFFILIATIONS

2019-	Associate Professor of Geography, University of Colorado Boulder
2019-	CIRES Fellow, University of Colorado Boulder
2022-	Director of Environmental Data Science Innovation and Inclusion Laboratory, CIRES, University of Colorado Boulder
2018-2021	University Director of the North Central Climate Adaptation Science Center, CIRES, University of Colorado Boulder
2015-2022	Director of Earth Lab, CIRES, University of Colorado Boulder
2014-2019	Assistant Professor of Geography, University of Colorado Boulder
2012-2014	Assistant Professor of Geography, Pennsylvania State University
2009-2012	Postdoctoral Associate, National Center for Ecological Analysis & Synthesis (NCEAS), University of California, Santa Barbara
2008-	Affiliated Researcher and Consultant, Woods Hole Research Center, Massachusetts
2004-	Affiliated Scientist, Amazon Institute of Environmental Research, Brasilia, Brazil
2004	Teaching Assistant, Yale University, School of Forestry & Environmental Studies
2001-2002	Research Associate, The Environmental Law Institute, Washington, D.C.
2000-2001	Researcher, International Biodiversity Observation Year, Colorado State University
2000	Legal Assistant, American Civil Liberties Union, New York City
1999-2000	Paralegal, LeBoeuf, Lamb, Greene, and MacRae L.L.C., New York City
1999	Intern, Lawyers' Committee for Human Rights, New York City
1999	National Science Foundation (NSF) - Research Experiences for Undergraduates Intern, American Museum of Natural History, New York City

HONORS & AWARDS

2018-2019	RIO Faculty Fellow
2016-2021	Ecological Society of America Early Career Fellow
2009-2011	NCEAS Postdoctoral Fellowship
2009	Bowman, Balch et al. 2009 paper selected as a "Faculty of 1000 Biology" important articles
2004-2007	NSF-Graduate Research Fellowship
2003-2004	Fulbright Fellowship, Venezuela

PUBLICATIONS

*co-lead authors contributed equally; †graduate student; ††undergraduate student; †††current or former postdoc

Preprints & in review

94. Jennifer Balch, Tyler McIntosh , Nayani Illangakoon , Karen Cummins , J. Morgan Varner , Winslow Hansen , Kate Marquis , Crystal Raymond , Brian Harvey , Rutherford Platt "Good fires in western U.S. forests (2010-2020)". 2024. *bio*R*xiv* (Preprint) and *Nature* (In Review)

93. Quarderer, N., A. Kaiser, E. Culler, K. Halama, A.K. Post, ††V. Iglesias, ††C. Nagy, C. Amaral, M. Walker, K. Rowell, **J.K. Balch**. "Advancing Data Science Proficiency in the Earth and Environmental Sciences: How an Earth Data Science Program is Helping Researchers Rethink Their Approach to Data Analytics". 2024. *OSF Preprints* (Preprint)

92. ††St. Denis, L.. E. Belval, B. Nowell, T. Finney, T. Tuff, ††N. Hemming-Schroeder, †M. Cook, V. Iglesias, †M. Murray, **J.K. Balch**. "From Flames to Memes: Decoding Community Reactions to Wildland Fire Management on Social Media" *Journal of Contingencies and Crisis Management* (Submitted)

91. †Mahood, A., T. Tuff, M. Cattau, ††V. Iglesias, T. Hanson, ††J. Stephens, ††N. Ilangakoon, †M. Cook, D. Barnard, N. Stavros, †A. DeCastro, **J.K. Balch**. "Local factors mediate climate and land use effects on global fire regimes (2003-2020)". 2024. *Research Square* (Preprint) and *PNAS* (Submitted)

90. ††J.J. Stephens, M. B. Joseph, ††V. Iglesias, T. Tuff, †A.L. Mahood, I. Rangwala, J. Wolken, **J.K. Balch**. "Fires of Unusual Size: Future of Extreme and Emerging Wildfires in a Warming United States (2020-2060)". 2023. *ESS Open Archive* (Preprint) and *Earth's Future* (In Review)

89. ††N.T. Ilangakoon, **J.K. Balch**, ††R.C. Nagy, ††V. Iglesias. "Postfire recovery of western US conifer forests (1984-2017) using space-borne lidar data". 2023. *bioRxiv* (Preprint) and *Ecosphere* (In Review)

88. L. Wasser, J. Palomino, L. Herwehe, J. McGlinchy, N. Quarderer, **J.K. Balch**, M.B. Joseph. "Student-Directed Learning in the Open Earth & Environmental Data Science Classroom". 2022. *OSF Preprints* (Preprint)

Peer-reviewed

87. † Spiers, A.I., †V.M. Scholl, J. McGlinchy, **J.K. Balch**, ††M.E. Cattau. 2025. "A review of UAS-based estimation of forest traits and characteristics in landscape ecology". *Landscape Ecology* 40, 29; DOI: 10.1007/s10980-024-01991-0.

86. Jennings, L., K. Jones, R. Taitingfong, A. Martinez, D. David-Chavez, R. Anolani Alegado, A. Tofighi-Niaki, J. Maldonado, B. Thomas, D. Dye, J. Weber, K. Spellman, S. Ketchum, R. Duerr, N. Johnson, **J.K. Balch,** S. Russo Carroll. 2025. "Governance of Indigenous data in open earth systems science". *Nature Communications* 16, 572; DOI:10.1038/s41467-024-53480-2.

85. Quarderer, N.A., L. Wasser, A.U. Gold, P. Montaño, L. Herwehe, K. Halama, E. Biggane, J. Logan, D, Parr, S. Brady, J. Sanovia, C. J. Tinant, E. Yellow Thunder, J. White Eyes, L. Poor Bear/Bagola, M. Phelps, T. O. Phelps, B. Alberts, M. Johnson, N. Korinek, W. Travis, N. Jacquez, K. Rohlehr, E. Ward, E. Culler, R.C. Nagy, **J.K. Balch**. 2025. "Fostering the Development of Earth Data Science Skills in a Diverse Community of Online Learners: A Case Study of the Earth Data Science Corps". *Journal of Statistics and Science Education* 33 (1) 3; DOI:10.1080/26939169.2024.2362886.

84. **Balch, J.K.,** ††V. Iglesias, †A.L. Mahood, †M.C. Cook, C. Amaral, A. DeCastro, S. Leyk, †T.L. McIntosh, R.C. Nagy, ††L. St. Denis, T. Tuff, E. Verleye, A.P. Williams, C.A. Kolden. 2024 "The fastest growing and most destructive fires in the U.S. (2001-2020)". *Science* 386 (6720), 425-431; DOI: 10.1126/science.adk5737.

83. McConnell, K., E. Fussell, J. DeWaard, S. Whitaker, K.J. Curtis, ††L. St. Denis, **J.K. Balch**, K. Price. "Rare and highly destructive wildfires drive human migration in the U.S." 2024. *Nature Communications* 14, Article No. 6631; DOI:10.1038/s41467-024-50630-4.

82. †Cook, M., T. Chapman, S. Hart, A. Paudel, **J.K. Balch**. "Mapping quaking aspen using seasonal Sentinel-1 and Sentinel-2 composite imagery across the Southern Rockies, USA". 2024. *Remote Sensing* 16, 1619; DOI: 10.3390/rs16091619.

81. Brando, P.M., D. Silvério, L. Maracahipes, R. Benzi, L. Paolucci, L. Maracahipes-Santos, L. Rattis, M.N. Macedo, **J.K. Balch**. "Legacies of multiple disturbances on fruit and seed patterns in Amazonia: Implications for forest functional traits". 2024. *Ecosphere* 15, e4780; DOI:10.1002/ecs2.4780.

80. Platt, R.V., T.B. Chapman, **J.K. Balch**. "Fire refugia are robust across Western US forested ecoregions, 1986-2021". 2023. *Environmental Research Letters*, 19(1), 014044.

79. Stavros, E.N., C. Gezon, †††L. St. Denis, †††V. Iglesias, C. Zapata, M. Byrne, L. Cooper, †M. Cook, E. Doyle, †††J. Stephens, M. Tapia, T. Tuff, E. Thomas, S. J. Maxted, R. Sen, **J.K. Balch**. "Environmental Resilience Technology: Sustainable Solutions Using Value-Added Analytics in a Changing World". 2023. *Applied Science*, 13(19), 11034; DOI.

78. McIntosh, T.L., E. Verleye, **J.K. Balch**, M. E. Cattau, †††N. T. Ilangakoon, †N. Korinek, †††R.C. Nagy, J. Sanovia, E. Skidmore, T. L. Swetnam, T. Tuff, N. Quarderer, C.A. Wessman. 2023. "Cyberinfrastructure deployments on public research clouds enable accessible Environmental Data Science education". *PEARC '23: Practice and Experience in Advanced Research Computing 2023: Computing for the Common Good*, 367 – 373. DOI: 10.1145/3569951.3597606.

77. J. T. Abatzoglou, C.A. Kolden, A.P. Williams, M. Sadegh, **J.K. Balch**, A. Hall "Downslope Wind-Driven Fires in the Western United States". 2023. *Earth's Future* 11(5), e2022EF003471.

76. †††L.A. St. Denis, K.C. Short, K. McConnell, †M.C. Cook, †††N.P. Mietkiewicz, M. Buckland, **J.K. Balch**. "All-hazards dataset mined from the US National Incident Management System 1999–2020". 2023. *Scientific Data* 10, Article no. 112.

75. P.E. Higuera, †M.C. Cook, **J.K. Balch**, E.N. Stavros, †A.L. Mahood. †††L.A. St. Denis. "Shifting social-ecological fire regimes explain increasing structure loss from Western wildfires". 2023. *PNAS Nexus*, 2(3), pgad005.

74. †A.L Mahood, M.B. Joseph, †A.I. Spiers, †††M.J. Koontz, †††N. Ilangakoon, †K.K. Solvik, N. Quarderer, J. McGlinchy, †V.M. Scholl, †††L.A. St Denis, †††R.C. Nagy, A. Braswell, M.W. Rossi, L. Herwehe, L. Wasser, †††M.E. Cattau, †††V. Iglesias, F. Yao, S. Leyk, **J.K. Balch**. "Ten simple rules for working with high resolution remote sensing data". 2023. *Peer Community Journal*, 3, Article No. e4.

73. †A.L. Mahood, †††M.J. Koontz, **J.K. Balch**. "Fuel connectivity, burn severity, and seedbank survivorship drive the grass fire cycle in a semi-arid shrubland". 2022. *Ecology*, 104, e3968.

72. †††V. Iglesias, W.R. Travis, **J.K. Balch**. "Recent droughts in the United States are among the fastest-developing of the last seven decades". 2022. *Weather and Climate Extremes*, 37, 100491.

71. †††M.J. Koontz, †V.M. Scholl, †A.I Spiers, †††M.E. Cattau, J. Adler, J. McClinchy, T. Goulden, B.A. Melbourne, **J.K. Balch**. "Democratizing macroecology: integrating occupied aerial systems with the National Ecological Observatory Network". 2022. *Ecosphere*, 13 (8), e4206.

70. †††M.E. Cattau, A.L. Mahood**, J.K. Balch**, C.A Wessman. "Modern pyromes: biogeographical patterns of fire characteristics across the contiguous United States". 2022. *Fire*, 5 (4), 95

69. J.K. Shuman, **J.K. Balch**, R.T. Barnes, P.E. Higuera, C.I. Roos, D.W. Schwilk, E.N. Stavros, T. Banerjee, M.M. Bela, J. Bendix, S. Bertolino, S. Bililign, K.D. Bladon, P.Brando, R.E. Breidenthal, B. Buma, D. Calhoun, L.M.V. Carvalho, M.E. Cattau, K.M. Cawley, S. Chandra, M.L. Chipman, J. Cobian-Iñiguez, E. Conlisk, J.D. Coop, A. Cullen, K.T. Davis, A. Dayalu, F. De Sales, M. Dolman, L.M. Ellsworth, S. Franklin, C.H. Guiterman, M. Hamilton, E.J. Hanan, W.D. Hansen, S. Hantson, B.J. Harvey, A. Holz, T. Huang, M.D. Hurteau, ǂǂN.T. Ilangakoon, M. Jennings, C. Jones, A. Klimaszewski-Patterson, L.N. Kobziar, J. Kominoski, B. Kosovic, M.A. Krawchuk, P. Laris, J. Leonard, S.M. Loria-Salazar, M. Lucash, H. Mahmoud, E. Margolis, T. Maxwell, J.L. McCarty, D.B McWethy, R.S. Meyer, J.R. Miesel, W.K. Moser, ǂǂR. C. Nagy, D. Niyogi, H.M. Palmer, A. Pellegrini, B. Poulter, K. Robertson, A.V. Rocha, M. Sadegh, F. Santos, F. Scordo, J.O. Sexton, A.S. Sharma, A.M.S. Smith, A.J. Soja, C. Still, T. Swetnam, A.D. Syphard, M.W. Tingley, A. Tohidi, A.T. Trugman, M. Turetsky, J.M. Varner, Y. Wang, T.Whitman, S. Yelenik, X. Zhang. "Reimagine fire science for the Anthropocene." 2022. *PNAS Nexus*, 1 (3), 1-14.

67. †A.L. DeCastro, A. Siems-Anderson, E. Smith, J.C. Knievel, B. Kosović, B.G. Brown, **J.K. Balch**. "Weather research and forecasting – fire simulated burned area and propagation direction sensitivity to initiation point location and time". 2022. *Fire*, 5 (3), 58.

66. ǂǂV. Iglesias*, N. Stavros*, **J.K. Balch***, K. Barrett, J. Cobian-Iñiguez, C. Hester, C.A. Kolden, S. Leyk, ǂǂR.C. Nagy, C.E. Reid, C. Wiedinmyer, E. Woolner, W.R. Travis. "Fires that matter: reconceptualizing fire risk to include interactions between humans and the natural environment". 2022. *Environmental Research Letters*, 17 (4), 045014.

65. †A.L. DeCastro, T.W. Juliano, B. Kosović, H. Ebrahimian, **J.K. Balch**. "A computationally efficient method for updating fuel inputs for wildlife behavior models using sentinel imagery and random forest classification: 2022. *Remote Sensing*, 14 (6), 1447.

64. ǂǂV. Iglesias, **J.K. Balch**, W.R. Travis. "US fires become larger, more frequent, and more widespread in the 2000s. 2022. *Science Advances*, 8 (11), DOI: 10.1126/sciadv.abc00

63. C.S. Juang, A.P. Williams, J.T. Abatzoglou**, J.K. Balch**, M.D. Hurteau, M.A. Moritz. "Rapid growth of large forest fires drives the exponential response of annual forest-fire area to aridity in the western United States. 2022. *Geophysical Research Letters* 49 (5), e2021GL097131.

62. E.J. Fusco, **J.K. Balch**, †A.L. Mahood, ǂǂR.C. Nagy, A.D. Syphard, B.A. Bradley. "The human-grass-fire cycle: how people and invasives co-occur to drive fire regimes". 2022. *Frontiers in Ecology and the Environment*, 20 (2), 117-126.

61. **J.K. Balch**, J.T. Abatzoglou, M.B. Joseph, ǂǂM.J. Koontz, †A.L. Mahood, J. McGlinchy, ǂǂM.E. Cattau, A.P. Williams. "Warming weakens the night-time barrier to global fire". 2022. *Nature*, 602 (7897), 422-448.

60. †A.L. Mahood, R.O. Jones, D.I. Board, **J.K. Balch**, J.C. Chambers. "Interannual climate variability mediates changes in carbon and nitrogen pools caused by annual grass invasion in a semi-arid shrubland". 2022. *Global Change Biology*, 28 (1), 267-284.

59. ǂǂR.C. Nagy*, **J.K. Balch***, E.K. Bissell, ǂǂM.E. Cattau, N.F. Glenn, B.S. Halpern, ǂǂN. Ilangakoon, B. Johnson, M.B. Joseph, S. Marconi, C. O'Riordan, J. Sanovia, T.L. Swetnam, W.R. Travis, L.A. Wasser, E.J. Woolner, P. Zarnetske … K. Zhu (includes 120 co-authors)."Harnessing the NEON data revolution to advance open environmental science with a diverse and data-capable community". 2021. *Ecosphere*, 12 (12), e03833.

58. †A.L. Mahood, E. Fleishman, **J.K. Balch**, F. Fogarty, N. Horning, M. Leu, M. Sillig, B.A. Bradley. "Cover-based allometric estimate of aboveground biomass of a non-native, invasive annual grass (Bromus tectorum L.) in the Great Basin, USA". 2021. *Journal of Arid Environments*, 193, 104582.

57. †V.M. Scholl, J. McGlinchy, T. Price-Broncucia, **J.K. Balch**, M.B. Joseph. "Fusion neural networks for plant classification: Learning to combine RGB, hyperspectral, and lidar data". 2021. *PeerJ*, 9, e11790.

56. †††V. Iglesias, A.E. Braswell, M.W. Rossi, M.B. Joseph, C. McShane, †††M.E. Cattau, †††M.J. Koontz, J. McGlinchy, †††R.C. Nagy, **J.K Balch**, S. Leyk, W.R. Travis. "Risky development: Increasing exposure to natural hazards in the United States". 2021. *Earth's Future*, 9 (7), e2020EF001795.

55. †††R.C. Nagy, E.J. Fusco, **J.K. Balch**, J.T. Finn, †A. Mahood, J.M Allen, B.A. Bradley. "A synthesis of the effects of cheatgrass invasion on US Great Basin carbon storage". 2021. *Journal of Applied Ecology*, 58 (2), 327-337.

54. Dolores Armenteras, María Constanza Meza, Tania Marisol González, Immaculada Oliveras, **J.K. Balch**, Javier Retana. "Fire threatens the diversity and structure of tropical gallery forests". 2021. *Ecosphere,* 12 (1), e03347.

53. Kendra K McLauchlan, Philip E Higuera, Jessica Miesel, Brendan M Rogers, Jennifer Schweitzer, Jacquelyn K Shuman, Alan J Tepley, J Morgan Varner, Thomas T Veblen, Solny A Adalsteinsson, **J.K. Balch**, et al. "Fire as a fundamental ecological process: Research advances and frontiers". 2020. *Journal of Ecology,* 108 (5), 2047-2069.

52. †††Nathan Mietkiewicz, **J.K. Balch**, Tania Schoennagel, Stefan Leyk, †††L.A. St Denis, Bethany A Bradley. "In the line of fire: consequences of human-ignited wildfires to homes in the US (1992–2015)". 2020. *Fire,* 3 (3), 50.

51. Roberta Thays dos Santos Cury, **J.K. Balch**, Paulo Monteiro Brando, †††Rafael Barreto Andrade, Renata Picolo Scervino, José Marcelo Domingues Torezan . "Higher fire frequency impaired woody species regeneration in a south-eastern Amazonian forest". 2020. *Journal of Tropical Ecology*, 36 (4), 190-198.

50. Colin Raymond, Radley M Horton, Jakob Zscheischler, Olivia Martius, Amir Agha Kouchak, **J.K. Balch**, Steven G Bowen, Suzana J Camargo, Jeremy Hess, Kai Kornhuber, Michael Oppenheimer, Alex C Ruane, Thomas Wahl, Kathleen White. "Understanding and managing connected extreme events". 2020. *Nature Climate Change,* 10 (7), 611-621.

49. **Balch, J.K.**, †††V. Iglesias, A. †††Braswell, M.W. Rossi, M.B. Joseph, †A.L. Mahood, T. Shrum, C. †White, V. †Scholl, B. ††McGuire, C. †Karban, M. †Buckland, & W. Travis. "Social-Environmental Extremes: rethinking extraordinary events as outcomes of interacting biophysical and social systems." 2020. *Earth's Future,* 8 (7), e2019EF001319.

48. Stefan Leyk, †††Johannes H Uhl, Dylan S Connor, †††Anna E Braswell, †††Nathan Mietkiewicz, **J.K. Balch**, Myron Gutmann. "Two centuries of settlement and urban development in the United States". 2020. *Science Advances,* 6 (23), eaba2937.

47. †††L. St. Denis, A Hughes, ††Jeremy Diaz, †Kylen Solvik, M. Joseph, **J.K. Balch**. "What I Need to Know is What I Don't Know!: Filtering Disaster Twitter Data for Information from Local Individuals". 2020. *Proceedings of the 17th International Conference on Information Systems for Crisis Response and Management, Blacksburg, VA, USA,* 24-27.

46. ††Cattau, M.E., C. Wessman, †A. Mahood, and **J.K. Balch.** "Anthropogenic and lightning-started fires are becoming larger and more frequent over a longer season length in the USA." *Global Ecology and Biogeography* 29 (4), 668-681.

45. Brendan M. Rogers, **J.K. Balch**, Scott J. Goetz, Caroline E.R. Lehmann, Merritt Turetsky . "Focus on changing fire regimes: interactions with climate, ecosystems, and society". 2020. *Environmental Research Letters,* 15 (3), 030201.

44. ††St. Denis L.A., N.P. ††Mietkiewicz, K.C. Short, M. Buckland, and **J.K. Balch**. "All-hazards dataset mined from the US National Incident Management System 1999–2014." *Nature - Scientific Data*, 7 (1), 1-18.

43. **Balch, J.K.**, ††Lise A St Denis, †Adam L Mahood, †††Nathan P Mietkiewicz, †Travis Williams, Joseph McGlinchy, †Maxwell C Cook . "FIRED (Fire Events Delineation): An open, flexible algorithm & database of US fire events derived from the MODIS burned area product (2001-19)". 2020. *Remote Sensing,* 12 (21), 3498.

42. †Victoria M Scholl, †††Megan E Cattau, Maxwell B Joseph, **J.K. Balch**. "Integrating national ecological observatory network (neon) airborne remote sensing and in-situ data for optimal tree species classification". 2020. *Remote Sensing,* 12 (9), 1414.

41. Fusco E.J., J.T. Finn, **J.K. Balch**, ††R.C. Nagy, B.A. Bradley. "Invasive grasses increase fire occurrence and frequency across US ecoregions." 2019. *Proceedings of the National Academy of Sciences* 116 (47), 23594-23599.

40. Brando, P.M., L. Paolucci, C. Ummenhofer, E. Ordway, H. Hartmann, ††M. Cattau, L. Rattis, V. Medjibe, M.T. Coe, and **J.K. Balch**. "Droughts, wildfires, and forest carbon cycling: a pantropical synthesis." 2019. *Annual Review of Earth and Planetary Sciences* 47, 555-581.

39. Williams, A.P., J.T. Abatzoglou, A. Gershunov, J. Guzman-Morales, D.A. Bishop, **J.K. Balch**, D.P. Lettenmaier. "Observed impacts of anthropogenic climate change on wildfire in California". 2019. *Earth's Future.*

38. Joseph, M., ††M. Rossi, ††N. Mietkiewicz, †A. Mahood, ††M. Cattau, ††L. St. Denis, R.C. Nagy, ††V. Iglesias, J. Abatzoglou, and **J.K. Balch**. "Spatiotemporal prediction of wildfire extremes with Bayesian finite sample maxima." 2019. *Ecological Applications.*

37. †Mahood, A. and **J.K. Balch**. "Repeated fires reduce plant diversity in Wyoming big sagebrush ecosystems (1984-2014)." 2019. *Ecosphere* 10(2):e02591; DOI:10.1002/ecs2.2591.

36. Brando, P.M., D. Silvério, L. Maracahipes dos Santos, C. dos Santos, S.R. Levick, M.T. Coe, M. Migliavacca, **J.K. Balch**, M.N. Macedo, D.C. Nepstad, L. Maracahipes, E.A. Davidson, G.P. Asner, O. Kolle, and S.E. Trumbore. "Prolonged tropical forest degradation due to compounding disturbances: Implications for CO2 and H2O fluxes." 2019. *Global Change Biology*, 25: 2855-2868.

35. Fusco E.J., J.T. Finn, J.T. Abatzoglou, **J.K. Balch**, †S. Dadashi, B.A. Bradley. "Detection rates and biases of fire observations from MODIS and agency reports in the conterminous U.S." 2019. *Remote Sensing of the Environment* 220: 30-40.

34. **Balch, J.K.**, T. Schoennagel, A.P., Williams, J.T. Abatzoglou, ††M. Cattau, ††N. Mietkiewicz, and ††L. St. Denis. 2018. "Switching on the big burn of 2017." *Fire* 1(1), 17; DOI:10.3390/fire1010017.

33. ††Nagy, R.C., †E., Fusco, B.A. Bradley, J.T. Abatzoglou, and **J.K. Balch**. 2018. "Human-related ignitions increase the number of large wildfires across U.S. ecoregions." *Fire* 1(1), 4; DOI:10.3390/fire1010004.

32. Abatzoglou, J.T., **J.K. Balch**, B.A. Bradley, and C.A. Kolden. 2018. "Human-related ignitions concurrent with high winds promote large wildfires across the USA." *International Journal of Wildland Fire* 27:377-386.

31. Metcalf, D.B., W. Rocha, **J.K. Balch**, P.M. Brando, C.E. Doughty, and Y. Malhi. 2018. "Impacts of fire on sources of soil CO2 efflux in a dry Amazon rain forest." *Global Change Biology* 2018, 00: 1–13; DOI: 10.1111/gcb.14305

30. **Balch, J.K.**, B.A. Bradley, J.T. Abatzoglou, ††R.C. Nagy, †E. Fusco, and †A. Mahood. 2017. "Human-started fires expand the fire niche across the U.S. (1992-2012)." *Proceedings of the National Academy of Sciences* 114 (11): 2946-2951. **Selected as one of RIO's top 10 research papers of 2017.**

29. Schoennagel, T., **J.K. Balch**, H. Brenkert-Smith, P.E. Dennison, B.J. Harvey, M.A. Krawchuk, N. Mietkiewicz, P. Morgan, M.A. Moritz, R. Rasker, M.G. Turner, and C. Whitlock. 2017. "Adapt to more wildfire in western North American forests as climate changes." *Proceedings of the National Academy of Sciences* 114 (18): 4582-4590.

28. B.A. Bradley, C.A. Curtis, E.J. Fusco, J.T. Abatzoglou, **J.K. Balch**, S. Dadashi, and M.N. Tuanmu. 2017. "Cheatgrass (*Bromus tectorum*) distribution in the intermountain Western United States and its relationship to fire frequency, seasonality, and ignitions." *Biological Invasions*. 1-14.

27. ††R.B. Andrade*, **J.K. Balch***, A. Parsons, D. Armenteras, R. Román-Cuesta, and J. Bulkan. 2017. "Scenarios in tropical forest degradation: carbon stock trajectories for REDD+." *Carbon Balance and Management* 12:6, DOI: 10.1186/s13021-017-0074-0.

26. ††R.B. Andrade, **J.K. Balch**, J.Y.O. Carreira, P.M. Brando, and A.V.L. Freitas. 2017. "The impacts of recurrent fires on diversity of fruit-feeding butterflies in a southeastern Amazon forest." *Journal of Tropical Ecology 33* (1), 22-32.

25. †Fusco, E., J. Abatzoglou, **J.K. Balch**, J. Finn, B. Bradley. 2016. "Quantifying the human influence on fire ignition across the western US." *Ecological Applications* 26(8): 2390–2401.

24. **Balch, J.K.**, ††R.C. Nagy, S. Archibald, D.M.J.S. Bowman, M. Moritz, C. Roos, A. Scott, and G. Williamson. 2016. "Global combustion: the connection between fossil fuel and biomass burning emissions (1997-2010)." Invited contribution to special issue of the *Philosophical Transactions of the Royal Society-B*.

23. Abatzoglou, J.T., C.A. Kolden, **J.K. Balch**, B.A. Bradley. 2016. "Controls on interannual variability in lightning-caused fire activity in the western US." *Environmental Research Letters* 11(2016): 045005.

22. **Balch, J.K.**, P.M. Brando, D.C. Nepstad, M.T. Coe, †D. Silvério, T.J. Massad, E.A. Davidson, P. Lefebvre, C. Oliveira-Santos, W. Rocha, †R.T.S. Cury, †A.L. Parsons, and K.S. Carvalho. 2015. "The susceptibility of southeastern Amazon forests to fire: Insights from a large-scale burn experiment." *BioScience* 65(9): 893-905.

21. †Parsons, A.L., **J.K. Balch**, ††R.B. de Andrade, and P.B. Brando. 2015. "The role of leaf traits in determining litter flammability of south-eastern Amazon tree species." *International Journal of Wildland Fire*; DOI:10.1071/WF14182.

20. Massad, T., **J.K. Balch,** ††C.L. Mews, ††P. Porto, B.H. Marimon Jr., R.M. Quintino, P.M. Brando, S.A. Vieira, S.E. Trumbore. 2015. "Early recruitment responses to interactions between frequent fires, nutrients, and herbivory in the southern Amazon." *Oecologia;* DOI:10.1007/s00442-015-3259-9.

19. Brando*, P.M., **J.K. Balch***, D.C. Nepstad*, D.C. Morton, F.E. Putz, M.T. Coe, †D. Silvério, M.N. Macedo, E.A. Davidson, C. Nóbrega, A. Alencar, B. Soares-Filho. 2014. "Abrupt increases in Amazonian tree mortality due to drought-fire interactions." *Proceedings of the National Academy of Sciences* 111: 6347-6352.

18. Roos, C.I., D.M.J.S. Bowman, **J.K. Balch**, P. Artaxo, W.J. Bond, M.A. Cochrane, C.M. D'Antonio, R.S. DeFries, F.H. Johnston, J.E. Keeley, M.A. Krawchuk, C.A. Kull, M. Mack, M.A. Moritz, S.J. Pyne, A.C. Scott, T.W. Swetnam. 2014. "Pyrogeography, historical ecology, and the human dimensions of fire regimes." *Journal of Biogeography* 41: 833–836.

17. Langen, T.A., T. Mourad, B.W. Grant, W.K. Gram, B.J. Abraham, D.S. Fernandez, M. Carroll, A. Nuding, **J.K. Balch**, J. Rodriguez, and S.E. Hampton. 2014. "Using large public datasets in the undergraduate ecology classroom." *Frontiers in Ecology and the Environment* 12: 362–363.

16. **Balch, J.K.**, B.A. Bradley, C. D'Antonio, and J. Gomez-Dans. 2013. "Introduced annual grass increases regional fire activity across the arid western USA (1980-2009)." *Global Change Biology* 19:173-183.

15. **Balch, J.K.**, T. Massad, P.M. Brando, D.C. Nepstad, and L.M. Curran. 2013. "Effects of high-frequency understory fires on woody plant regeneration in southeastern Amazonian forests." *Philosophical Transactions of the Royal Society B* 368: 20120157.

14. †Silvério, D.V., P.M. Brando, **J.K. Balch**, F.E. Putz, D.C. Nepstad, C. Oliveira-Santos, M.M.C. Bustamante. 2013. "Testing the Amazon savannization hypothesis: fire effects on the invasion of a neotropical forest by native cerrado and exotic pasture grasses." *Philosophical Transactions of the Royal Society B* 368: 20120427.

13. Rocha, W., D.B. Metcalfe, C.E. Doughty, P.M. Brando, †D.V. Silvério, K. Halladay, D.C. Nepstad, **J.K. Balch**, and Y. Malhi. 2013. "Ecosystem productivity and carbon cycling in intact and annually burnt forest at the dry southern limit of the Amazon rainforest (Mato Grosso, Brazil)." *Plant Ecology & Diversity;* DOIi: 10.1080/17550874.2013.798368.

12. Massad, T., E.A. Davidson, **J.K. Balch**, P.M. Brando, ††C.L. Mews, ††P. Porto, R.M. Quintino, S.A. Vieira, B.H. Marimon Jr., S.E. Trumbore. 2012. "Interactions between repeated fire, nutrients, and insect herbivores affect the recovery of diversity in the southern Amazon." *Oecologia;* DOI: 10.1007/s00442-012-2482-x.

11. Davidson, E.A., A. Araujo, P. Artaxo, **J.K. Balch**, I.F. Brown, M. Bustamante, M.T. Coe, R.S. DeFries, M. Keller, M. Longo, J.W. Munger, W. Schroeder, B.S. Soares-Filho, and C.M. Souza, and S.C. Wofsy. 2012. "The Amazon basin in transition." *Nature* 481: 321-328.

10. Brando, P.M., D.C. Nepstad, **J.K. Balch**, B. Bolker, M.C. Christman, M.T. Coe, and F.E. Putz. 2012. "Fire-induced tree mortality in a tropical forest: The roles of bark traits, tree size, wood density, and fire behavior." *Global Change Biology* 18: 630-641.

9. Carvalho, K., **J.K. Balch**, and P. Moutinho. 2012. "Influences of leafcutter ant *Atta* spp. (Hymenoptera: Formicidae) on vegetation recovery after fire in Amazonian transitional forest." *Acta Amazonica*, 42(1): 81-88.

8. Bowman, D.M.J.S., **J.K. Balch**, P. Artaxo, W.J. Bond, M.A. Cochrane, C.M. D'Antonio, R.S. DeFries, F.H. Johnston, J.E. Keeley, M.A. Krawchuk, C.A. Kull, M. Mack, M.A. Moritz, S.J. Pyne, C.I. Roos, A.C. Scott, N.S. Sodhi, T.W. Swetnam. 2011. "The human dimension of fire regimes on Earth." *Journal of Biogeography* 38: 2223–2236.

7. **Balch, J.K.**, D.C. Nepstad, L.M. Curran, P.M. Brando, O. Portela, †P. Guilherme, J.D. Reuning-Scherer, and O. de Carvalho Jr. 2011. "Size, species, and fire characteristics predict tree and liana mortality from experimental burns in the Brazilian Amazon." *Forest Ecology & Management* 261:68-77.

6. Carvalho, K., A. Alencar, **J.K. Balch**, P. Moutinho. 2011. "Leafcutter ant nests inhibit low-intensity fire spread in the understory of a transitional forest at the Amazon forest-savanna boundary." *Psyche*: Article ID 780713, 7 pages; DOI:10.1155/2012/780713.

5. **Balch, J.K.**, D.C. Nepstad, P.M. Brando, and A. Alencar. 2010. "Comment on 'The Incidence of Fire in Amazonian Forests with Implications for REDD.'" *Science* 330:1627.

4. Silveira, J.M., J. Barlow, A.V. Krusche, K.H. Orwin, **J.K. Balch**, and P. Moutinho. 2009. "Effects of experimental fires on litter decomposition in a seasonally dry Amazonian forest." *Journal of Tropical Ecology* 25:657-663.

3. Bowman, D.M.J.S.*, **J.K. Balch***, P. Artaxo, W.J. Bond, J.M. Carlson, M.A. Cochrane, C.M. D'Antonio, R.S. DeFries, J.C. Doyle, S.P. Harrison, F.H. Johnston, J.E. Keeley, M.A. Krawchuk, C.A. Kull, J.B. Marston, M.A. Moritz, I.C. Prentice, C.I. Roos, A.C. Scott, T.W. Swetnam, G.R. van der Werf, and S.J. Pyne. 2009. "Fire in the Earth system." *Science* 324:481-484.

2. **Balch, J.K.**, D.C. Nepstad, P.M. Brando, L.M. Curran, O. Portela, O. Carvalho Jr., and P. Lefebvre. 2008. "A negative fire feedback in a transitional forest of southeastern Amazonia." *Global Change Biology* 14:2276-2287.

1. Rodríguez*, J.P., **J.K. Balch***, and K.M Rodríguez-Clark. 2007. "Assessing extinction risk in the absence of species-level data: quantitative criteria for terrestrial ecosystems." *Biodiversity and Conservation* 16:183-209.

Peer-reviewed book chapters

Balch, J.K., D.C. Nepstad, and L.M. Curran. 2009. "Pattern and process: Fire-initiated grass invasion at Amazon transitional forest edges." Chapter 17 in *Tropical Fire Ecology: Climate Change, Land Use and Ecosystem Dynamics* (ed. Mark Cochrane). Springer/Praxis Publishing, UK.

Other publications, not peer-reviewed

Balch, J.K., Williams, A.P. 2024. "Extreme fires seasons are looming – science can help us adapt." *Nature* 634 (8036); doi: 10.1038/d41586-024-03433-y.

Balch, J.K., A.L. Mahood. 2024. "Drought fueled overnight burning propels large fire in North America". *Nature News and Views* 627, 273-274; doi: 10.1038/d41586-024-00536-4.

Higuera, P., **J.K. Balch**, M. Cook, N. Stavros. 2023. "Western wildfires destroyed 246% more homes and buildings over the past decade – fire scientists explain what's changing". *The Conversation, US edition,* February 1, 2023.

Willams, A.P., **J.K. Balch**. "The night breaks on fires are failing". 2022. *Nature* doi: 10.1038/d41586-022-00352-8.

Mietkiewicz, N., **J.K. Balch**. "Humans ignite almost every wildfire that threatens homes". 2020. *The Conversation,* September 18, 2020.

Balch, J.K., R.C. Nagy, and B.S. Halpern. 2020. "NEON is seeding the next revolution in ecology." *Frontiers in Ecology and the Environment*, 18 (1), 3-3.

Rogers, B.M., **J.K. Balch**, S. Goetz, C.E.R. Lehmann, & M. Turetsky. "Focus on changing fire regimes: Interactions with climate, ecosystems, and society." 2020. *Environmental Research Letters.*

Balch, J.K., B. Johnson, W. Travis, L. Wasser, M. Joseph, M. Cattau, M. Maestas, and C. Nagy. 2018. "Open Science: Key to accelerating interdisciplinary research & education." 2018. University of Colorado Boulder Academic Futures White Paper.

Wasser, L., L. Herwehe, **J.K. Balch**, M. Joseph, W. Travis, and B. Johnson. 2018. "Professional opportunities for existing and new students at CU Boulder." University of Colorado Boulder Academic Futures White Paper.

Smith, A., C. Kolden, S. Prichard, R. Gray, P. Hessburg, **J.K. Balch**. 2018. "Recognizing women leaders in fire science." Fire 1(2): 30. https://doi.org/10.3390/fire1020030.

Hampton, S.E., B.S. Halpern, M. Winter, **J.K. Balch**, J.N. Parker, J.S. Baron, M. Palmer, M.P. Schildhauer, P. Bishop, T.R. Meagher, and A. Specht. 2017. "Best practices for virtual participation in meetings: Experiences from synthesis centers." *The Bulletin of the Ecological Society of America* 98(1): 57-63.

Schoennagel, T., P. Morgan, **J.K. Balch**, P. Dennison, B. Harvey, R. Hutto, M. Krawchuk, M. Moritz, R. Rasker, and C. Whitlock. 2016. "Insights from wildfire science: a resource for fire policy discussions." *Headwaters Economics* online policy document: http://headwaterseconomics.org/wildfire/insights/

Balch, J.K. 2014. "Drought and fire change sink to source." *Nature* 506: 41-42. *Invited "News & Views" contribution.*

Balch, J.K. "Telling the stories behind the science." *Centre Daily Times*: April 22, 2013.

Balch, J.K., M.K. Carroll, and B.A. Bradley. 2012. "The invasive grass-fire cycle in the U.S. Great Basin*", Teaching Issues and Experiments in Ecology*: 8.

Kennedy, C.M., J. Wilkinson, and **J.K. Balch**. 2003. *Conservation thresholds for land use planners*. The Environmental Law Institute, Washington, D.C.

Select conference presentations

Balch, J.K., C. Nagy, C.H. Amaral, E. Culler, A. Gold, V. Iglesias, C. Monteleoni, J.N. Parker, J. Rattling Leaf, J. Sanovia, E.N. Stavros, S. Sullivan, T. Swetnam, T. Tuff, N. Quarderer. "The Environmental Data Science Innovation & Inclusion Lab (ESIIL): a next-generation NSF data synthesis center" ESA Annual Meeting 2023, Portland, OR.

McIntosh, T.L., E. Verleye, **J.K. Balch**, M. Cattau, N. T. Ilangakoon, N. Korinek, R.C. Nagy, J. Sanovia, E. Skidmore, T.L. Swetnam, T. Tuff, N. Quarderer, C.A. Wessman. "Cyberinfrastructure deployments on public research clouds enable accessible Environmental Data Science education". PEARC '23: Practice and Experience in Advanced Research Computing 2023, Portland, OR.

M Cook, **JK Balch**, L St Denis, S Leyk, J Uhl. "Drivers of Wildfire-Related Residential Structure Loss Across the Western United States (2001-2020)" AGU Fall Meeting 2022, Chicago, IL.

N Quarderer, **JK Balch**, RC Nagy, AU Gold, E Culler, L Herwehe, N Korinek, K Halama, J Sanovia, Caj Tinant, D Parr, E Biggane, J Logan, W Travis, L Wasser" The Earth Data Science Corps & ESIIL Stars Programs: models for learning and teaching environmental data science skills". AGU Fall Meeting 2022, Chicago, IL.

JK Balch, RC Nagy, C Amaral, E Culler, AU Gold, V Iglesias, C Monteleoni, J Rattling Leaf, JN Parker, J Sanovia, EN Stavros, SM Sullivan, TL Swetnam, T Tuff, N Quarderer. "The Environmental Data Science Innovation and Inclusion Lab (ESIIL): a next-generation NSF data synthesis center. AGU Fall Meeting 2022, Chicago, IL.

NT Ilangakoon, **J Balch**, ME Cattau, RC Nagy, CA Wessman, EN Stavros, J McGlinchy, V Scholl, N Korinek. "Western US forest vegetation recovery under compound disturbances". AGU Fall Meeting 2021 (virtual).

A DeCastro, MJ Koontz, TW Juliano, M Frediani, B Kosovic, **J Balch**. "Machine Learning, Process-Based Modeling, and Observational Data: The Wildfire Modeling Triangle". AGU Fall Meeting 2021 (virtual).

NT Ilangakoon, **J Balch**, RC Nagy. "Role of fire severity on forest resilience to wildfires: An integrated remote sensing approach". AGU Fall Meeting 2020 (virtual)

Amy DeCastro, Amanda Anderson, Jeremy Sauer, Ebone Smith, Jason C Knievel, Branko Kosovic, **J.K. Balch,** Barbara Brown . "The Sensitivity of WRF-Fire Predictions of Area, Location, and Propagation Direction to Changes in Ignition Point Location and Time". 2019. *AGU Fall Meeting Abstracts,* A23J-2948.

Jennifer Balch, Park Williams, Bethany Bradley, John T Abatzoglou, Paulo M Brando. "The human imprint on modern forest fire". 2019. *AGU Fall Meeting Abstracts,* 2019, B52C-03.

Balch, J.K., M.B. Joseph, Z. Schira, M.E. Cattau, N. Mietkiewicz, B. Johnson, and C.A. Wessman. "Unlocking the potential in data from NEON's airborne observation platform: Using deep-learning to classify tree species." Ecological Society of America Conference, New Orleans, LA, 2018

Balch, J.K., B.A. Bradley, J.T. Abatzoglou, R.C. Nagy, E. Fusco, and A. Mahood. "The role of people in modern U.S. fire regimes." NASA Wildland Fire Applications, 2017 Team Meeting, Boulder, CO, 2017

Balch, J.K., B.A. Bradley, J.T. Abatzoglou, R.C. Nagy, E. Fusco, and A. Mahood. "Human-started fires expand the fire niche across the U.S. (1992-2012)." Ecological Society of America Conference, Portland, OR, 2017

Balch, J.K., B.A. Bradley, C. D'Antonio, J. Gomez-Dans. "Introduced annual grass increases regional fire activity across the arid western USA (1980–2009)." NASA-Terrestrial Ecology Meeting, Washington, D.C. 2014

Abatzoglou, J., **J.K. Balch,** B.A. Bradley, and E. Fusco. "Lightning Ignited Fires over the Western United States." NASA-Terrestrial Ecology Meeting, Washington, D.C. 2014

Fusco, E., J. Abatzoglou, **J.K. Balch**, and B.A. Bradley. "Quantifying human influence on fire ignitions across the western U.S." NASA-Terrestrial Ecology Meeting, Washington, D.C. 2014

P.M. Brando, **J.K. Balch**, D.C. Nepstad, D.C. Morton, F.E. Putz, M.T. Coe, D. Silvério, M.N. Macedo, E.A. Davidson, C. Nóbrega, A. Alencar, B. Soares-Filho. "Abrupt increases in Amazonian tree mortality due to drought-fire interactions." American Geophysical Union Annual Meeting, San Francisco, CA. 2013

P.M. Brando, **J.K. Balch**, D.C. Nepstad, D. Morton, D. Silvério, C. Nóbrega, and F. Putz. "Tipping points of a neotropical forest: fire-drought interactions." Association of Tropical Biology and Conservation Conference, Bonito, Brazil. 2012

Balch, J.K., T.J. Massad, P.M. Brando, D.C. Nepstad, L.M. Curran. "Effects of high frequency understory fires on early plant succession in southeastern Amazonian forests." Association of Tropical Biology and Conservation Conference, Bonito, Brazil. 2012

P.M. Brando, D.C. Nepstad, **J.K. Balch**, F. Putz, and M.T. Coe. "Post-fire tree mortality in a tropical forest of Brazil: the roles of bark traits, plant size, and wood density." American Geophysical Union: Meeting of the Americas, Foz de Iguaçu, Brazil. 2010.

Balch, J.K., D.C. Nepstad, L.M. Curran, P.M. Brando, O. Portela, P. Guilherme, J.D. Reuning-Scherer, and O. de Carvalho Jr. "Experimental understory fires reduce carbon stores by killing small stems in the southern Amazon's seasonal forests." Association of Fire Ecology 4th International Congress: Fire as a Global Process, Savannah, GA. 2009

Balch, J.K., D.C. Nepstad, P.M. Brando, L.M. Curran, O. de Carvalho Jr., and P. LeFebvre. "A Negative Fire Feedback in a Transitional Forest of Southeastern Amazonia." LBA-ECO 11th Scientific Meeting, Salvador, Bahia, Brazil. 2007

Balch, J.K., D.C. Nepstad, L.M. Curran, P.M. Brando, O. de Carvalho Jr., and P. LeFebvre. "Effects of Recurrent Fire on Transitional Forest Dynamics in the Brazilian Amazon." 3rd International Fire Ecology and Management Congress, Special Symposium-Changing Fire Dynamics and Ecosystem Responses in Tropical Vegetation, San Diego, CA. 2006

Balch, J.K., D.C. Nepstad, L.M. Curran, P.M. Brando, O. de Carvalho Jr., and P. LeFebvre. "Fuel dynamics associated with recurrent fires in Amazonian transitional forests." LBA-ECO 10th Scientific Meeting, Brasilia, Brazil. 2005

Balch, J.K., D.C. Nepstad, L.M. Curran, P.M. Brando, O. de Carvalho Jr., and P. LeFebvre. "Wildfire in Mato Grosso's transitional forest: Initial effects on stem mortality and canopy structure, and consequences for future fire susceptibility." LBA-ECO 9th Scientific Meeting, Sao Paulo, Brazil. 2005

Balch, J.K., D.C. Nepstad, L.M. Curran, O. de Carvalho Jr., C. Azevedo-Ramos, and P.M. Brando. "Wildfire in the Amazon's transitional forests: Immediate impacts and positive feedbacks." Society for Conservation Biology Conference, Brasilia, Brazil. 2005

Balch, J.K. and J.P. Rodríguez. "Design and application of quantitative methods for estimating the extinction risk of Venezuela's terrestrial ecosystems." Venezuelan Ecology Congress, Margarita Island, Venezuela. 2003

GRANT FUNDING

Current

2024-2025 Moore Foundation: Western Fire & Forest Resilience Collaborative. Co-PI Balch (W. Hansen, PI) Total Award: $3,700,000

2024-2026 NASA: Urbanization and Fire Risk at the Global Wildland-Urban Interface: A Multi-Sensor Study of Past and Future Trends. Co-PI Balch. (K. Seto, PI) Total Award: $795,875

2023-2028 USFS: Wildfire Risk Reduction in Priority Firesheds using Potential Operational Delineations (PODs). Co-PI Balch. (J. Stephens, PI). Total Award: $584,000

2023-2025 USGS: Ecological Transformation to Enhance Carbon Storage and Biodiversity. Co-PI Balch (R.C. Nagy, PI). Total Award: $399,356

2022-2027 NSF: Environmental Data Science Innovation and Inclusion Lab (ESIIL): Accelerating discovery by fostering an open and diverse Earth data revolution. PI Balch. Total Award: $19,999,990

2020-2025 NSF: MRA: Macroscale Resilience: Assessing the recovery of western U.S. forests to compound disturbance by linking observations – from trees to ecoregions. PI Balch. Total CU-Boulder budget $1,536,000.

2021-2025 BLM-JFSP: Engineering Fire-resilient Forests: Understanding the potential for aspen to reduce wildfire hazard. PI Balch. Total Award: $499,998

2020-2025 OPP: Modeling Urban Fuel Loads and the Climatic Effects of Nuclear Wars. Co-PI Balch (B. Toon, CU PI). Total Award: $1,411,567

2019-2025 NSF CAREER: Fire impacts on forest carbon recovery in a warming world: training the next generation of Earth analysts by exploring a missing scale of observations. PI Balch. Total CU-Boulder budget $931,768

Past

2024 NSF: FIRE-PLAN Community Workshop. PI Balch. Supplementary Award: $233,416

2023 NSF: NSF-CNPq Workshop on Open and Synthesis Science in Climate Change and Biodiversity Research. PI Balch. Supplementary Award: $97,794

2022-2024 Deloitte: Data-Driven Wildfire Solutions: Building Capabilities for Resilience to Climate-driven Hazards . PI Balch. Total Award: $1,000,000

2021-2024 NSF: HNDS-I: HISTPLUS - Historical Settlement and Population Layers for the United States. Co-PI Balch (S. Leyk, PI). Total Award: $288,267

2021-2023 NC-CASC: Creating a North Central Regional Invasive Species and Climate Change (NC RISCC) Management Network. Co-PI Balch (R.C. Nagy, PI). Total Award: $439,901

2020-2023 Moore Foundation: Megafires: Conditions Associated with Large, Destructive California Wildfires. Co-PI Balch. Total Award: $152,075

2015-2022 Earth Lab, CIRES & The University of Colorado-Boulder Grand Challenge. PI Balch. $11,000,000

2019-2022 NSF: HDR DSC: Earth Data Science Corp – Fulfilling Workforce Demand at the Intersection of Environmental Science and Data Science. PI Balch (L. Wasser, former PI; N. Quaderer co-PI). Total-CU Boulder budget $1,180,445.

2019 NSF: NEON Science Summit: Initiating grassroots research communities through an 'unconference' PI Balch Total CU Boulder budget: $99,957

2018-2023 USGS/DOI North Central Climate Adaptation Science Center. PI Balch. $4,499,179 total; CU budget $3,854,339.

2017-2020 NSF GSS: Quantifying changes to carbon stocks and fluxes in the continental US caused by grass invasions. Co-PI Balch (B. Bradley, PI). $400,000 total; CU-budget $169,000.

2016-2019 USAID Partnerships for Enhanced Engagement in Research (PEER) Program: Degradation of tropical forests in Colombia: impacts of fire. Co-PI Balch (D. Armenteras, PI). $80,000.

2016-2019 Advanced Industries Accelerator Programs-Colorado State's Office of Economic Development and International Trade: Remote Sensing Tools Applications and Processing (TAP) Room. Co-PI Balch (S. Palo, PI). $1,467,838 total; CU budget $500,000.

2015-2018 Joint Fire Sciences Program: Relations among cheatgrass-driven fire, climate, and sensitive-status birds across the Great Basin. Co-PI Balch (E. Fleishman, PI). $300,000 total; CU budget: in-kind field support.

2014-2018 NASA-Terrestrial Ecology: Understanding Climate and Land Use Drivers of Invasive-Grass Fueled Fires Across the Western U.S. PI Balch. $582,245 total; CU budget $318,262.

2014-2016 USFS-SilvaCarbon: A synthesis of tropical forest degradation scenarios and carbon emissions trajectories for REDD+. PI Balch. $122,000.

2013-2015 FAPESP (São Paulo Research Foundation): The impact of recurrent forest fires on invertebrate communities in southeastern Amazon forests. Co-PI Balch (R. Andrade, PI). $74,819

2008-2013 NSF-Fire, land use, and the savannization of seasonally-dry Amazon forests. Postdoctoral Researcher Balch (M. Coe, PI). $1,495,164

2008-2010 NCEAS - Pyrogeography: Fire's Place in Earth System Science. Co-PI Balch (D.M.J.S. Bowman, PI). $121,100. Working group jointly funded by NCEAS and the Kavli Institute for Theoretical Physics.

2007-2008 P.E.O. Scholar Award for Women Graduate Students. Graduate Student. $10,000

2005 Heinz Scholar for Environmental Research. Graduate Student. $11,000

2004 Yale Institute for Biospheric Studies Grant. Graduate Student. $5,000

2003 Yale Tropical Resources Institute Grant. Graduate Student. $2,500

INVITED SEMINARS

2024 "Understanding Fast Fires Through Earth Science Data" FEMA-NASA-ESIIL Webinar Panelist, December 2024, Hosted online by FEMA.

2024 "Our changing fire regimes." Invited seminar speaker, March 2024, Department of Global Ecology, Carnegie Institution for Science, Stanford CA

2023 "Our changing fire regimes." Invited colloquium speaker, November 2023, Department of Environmental Studies, University of Colorado, Boulder

2023 "Our changing fire." 2023 Mike and Mabelle Hardy Fire Management Lecture, April 2023, W.A. Franke College of Forestry and Conservation, University of Montana, Missoula MT

2020 "Our changing fire regimes." Invited keynote speaker, September 2020, National Academies of Sciences Engineering Medicine: Wildland Fires: Towards Improved Understanding and Forecasting of Air Quality Impacts – A Workshop. Virtual.

2019 "The human imprint on modern fire regimes." Invited colloquium speaker, February 2019, Yale University School of Forestry & Environmental Studies, New Haven, CT

2019 "The human imprint on modern fire regimes." Invited colloquium speaker, February 2019, Lamont-Doherty Earth Observatory, New York.

2018 "The North Central Climate Adaptation Science Center". Invited speaker at the Great Plains Tribal Water Alliance Fall Meeting, Rapid City, South Dakota.

2018 "We bring fire with us: The role of people in changing modern U.S. fire regimes". Invited speaker at National Academy of Sciences, Board on Earth Sciences and Resources webinar

2017 "The role of people in current and future U.S. fire," Invited keynote speaker at USFS-National Academy of Sciences workshop: "A Century of Wildland Fire Research: Contributions To Long-term Approaches For Wildland Fire Management"

2017 "Earth Lab: A slice of Earth systems data and analytics," Niwot LTER Network & CU Boulder-Anschutz Climate and Health workshop

2016 "Fire in the Earth System: feedbacks and consequences for modeling dynamics," NCAR

2016 "Earth Lab: a new synthesis center at CU-Boulder," USGS Powell Center

2016 "Local to global consequences of human-altered fire regimes in tropical forests," Columbia University Ecology Seminar Series

2016 "Earth Lab," Boulder GEO MeetUp

2015 "Earth Lab: Accelerating discovery with a view from space," Denver Museum of Natural History

2015 "The Invasive Grass-Fire Cycle in Two Frontiers: The Southeastern Amazon and the Western U.S.," The Royal Society-London.

2013 "Frontier fire in the Amazon: Local to global consequences of human-altered fire regimes in tropical forests," Penn State University, Department of Geosciences

2012 "Frontier fire in the Amazon: Local to global consequences of human-altered fire regimes in tropical forests," Penn State University, Department of Geography Coffee Hour

2012 "Frontier fire in the Amazon: Local to global consequences of human-altered fire regimes in tropical forests," University of California-Santa Barbara, Geography Department

2011 "Frontier fire in the Amazon: Local to global consequences of human-altered fire regimes in tropical forests," University of British Columbia, Biodiversity Research Centre

2011 "Frontier fire in the Amazon: Local to global consequences of human-altered fire regimes in tropical forests," Northern Arizona University, School of Earth Sciences and Environmental Sustainability

2010 "Frontier fire in the Amazon: Local to global consequences of human-altered fire regimes in tropical forests," University of California-Riverside, Biology Department

2007 "Fuel dynamics associated with recurrent fires in Amazonian transitional forests," University of Colorado-Boulder, Veblen Biogeography Lab

2007 "Fuel dynamics associated with recurrent fires in Amazonian transitional forests," Woods Hole Research Center

2006 "Effects of frequent fire on Amazon transitional forests in the agricultural frontier," Grupo A. Maggi, Division of Farm Management, Brazil

2005 "Repeat fires at the Amazon's edge: Will these forests survive?" Federal University of Para, Brazil

TEACHING EXPERIENCE

Courses taught at CU-Boulder
Environmental Systems 1: Climate and Vegetation (GEOG 1001; 4 credits)
Global Change Ecology: Understanding Earth System Resistance and Resilience (GEOG 4120; 3 credits)
Earth Analytics (GEOG 4100/5100; 3 credits)
Carbon dynamics: understanding the changing pulse of the planet's land surface (GEOG 5100; 3 credits)
Extremes: understanding the drivers, trends, and consequences of extraordinary disturbance events (GEOG 5241; 3 credits)
Tropical Forest Dynamics: Linking Function, Biodiversity, and Conservation (Independent Study)

Courses taught at Penn State
Introduction to Physical Geography (GEOG 010)
Tropical Forest Dynamics: Linking Function, Biodiversity, and Conservation (GEOG 596)
Global Change Ecology: Understanding Earth System Resistance and Resilience (GEOG 497a)

PhD theses supervised
Tyler McIntosh, Ph.D. student in Geography/Ecology and Evolutionary Biology, CU-Boulder; in progress
Mia Murray, Ph.D. Candidate in Geography, CU-Boulder; in progress
Max Cook, Ph.D. Candidate in Geography, CU-Boulder; in progress
Adam Mahood, Ph.D., 2021, CU-Boulder; Evidence for and Mechanisms of Ecosystem Transformation in the Great Basin of the Western United States
Amy DeCastro, Ph.D., 2022, CU-Boulder; Integrating Remote Sensing, Behavior Modeling, and Machine Learning to Better Understand the Patterns and Drivers of Wildfire

Masters theses supervised
Amy Parsons, M.A., 2014, Penn State University; The role of leaf traits in determining the flammability of southeastern Amazon forests
Adam Mahood, M.A. in Geography, 2017, CU-Boulder; Long-Term Effects of Repeated Fires on the Diversity and Composition of Great Basin Sagebrush Plant Communities
Sepideh Dadashi, M.A. in Geography, 2018, CU-Boulder; What is a fire? Identifying individual fire events using the MODIS burned area product
Mollie Buckland, M.A., 2019 in Geography, CU-Boulder. What is a megafire? Defining the social and physical dimensions of extreme U.S. wildfires (1988-2014)

Victoria Scholl, M.A., 2019 in Geography, CU-Boulder. Assessing the integration and pre-processing of NEON Airborne remote sensing and in-situ data for optimal tree species classification

Kylen Solvik, M.A. in Geography, 2020, CU-Boulder; Topic Modeling to Track Wildfire Information Flows Between the Public and Officials Using Twitter and Emergency Management Records

Nathan Korinek, M.A. in Geography, 2024; CU-Boulder; Does Fire Beget Fire? An Investigation of Fire's Influence on Future Fire Severity in Western US Forests

Undergraduate theses supervised

Barbara Munin, B.A. in Geography, 2014, Penn State Univesrity; The Non-native Grass-Fire Cycle: The Dynamic and Spatiotemporal Relationships between Grass Species and Fire Regimes

Mollie Buckland, B.A. in Geography, *summa cum laude*, 2016, CU-Boulder; Wildfire, Climate, and Species Distribution: Possible Futures of the Rocky Mountain White Fir (A. concolor var. concolor) in Colorado and New Mexico

Dylan Murphy, B.A. in Geography, CU-Boulder; Using random forest machine learning methods to identify spatiotemporal patterns of cheatgrass invasion through Landsat landcover classification in the Great Basin (1984-2011)

Committees, University of Colorado

Kylen Solvik, Ph.D. student in Geography, topic: Modeling to Track Wildfire Information Flows Between the Public and Officials Using Twitter and Emergency Management Records, Primary Advisor: Yaffa Truelove

Hallie Adams, Ph.D. student in Geography, topic: Linking Subsurface Complexity, Tree Physiology, and Ecohydrologic Processes in Semi-arid Forests, Primary Advisor: Holly Barnard.

Caitlin White, Ph.D. student in EBIO, topic: Invasion in semi-arid U.S. ecosystems, Primary Advisor: K. Suding.

Claire Simpson, M.A. student in Geography, topic: Forecasting post-fire vegeataion recovery dynamics using deep learning and remote sensing, Primary Advisor: Morteza Karimzadeh.

Claire Karban, Ph.D. student in EBIO, topic: Using new technologies to maximize plant recruitment in large-scale dryland restoration, Primary Advisor: N. Barger, defended 2022.

Brittany Selander, Ph.D. student in Geography, topic: Evolution of steep rocky hillslopes, Primary Advisor: S. Anderson, defended 2022.

Yuying Ren, M.A. student in Geography, topic: Refining the wildland-urban interface for Colorado, Primary Advisor: S. Leyk, defended 2021.

Nicholas Luchetti, Ph.D. student in Atmospheric Chemistry, topic: Evaluating thunderstorm outflow boundaries in complex terrain, Primary Advisor: K. Friedrich, defended in 2020.

Robbie Andrus, Ph.D. student in Geography, topic: Assessing regeneration niche limitations to upslope migration of subalpine forests: Implications of a changing climate and shifting disturbance regimes, Primary Advisor: T. Veblen, defended in 2019.

Kyle Rodman, Ph.D. student in Geography, topic: Modeling the potential for future post-fire changes in southern Rockies tree species dominance, Primary Advisor: T. Veblen, defended 2019.

Committees, Other Institutions

Roberta Cury, Ph.D. student at the University of Londrina, Brazil, topic: Higher fire frequency impaired woody species regeneration in a transitional forest of southeastern Amazonia, Primary Advisor: J.M. Domingues Torezan, defended 2018.

Kathryn McConnell, PhD student at Yale University, topic: Post-fire migration patterns in the western U.S.

Supervision of Postdoctoral Researchers

Rafael Andrade, PhD, 2013-2015, Fire frequency effects on butterfly communities in Southeastern Amazonia.

Megan Cattau, PhD, Earth Lab Postdoctoral Scholar, 2016-2019, Scaling understanding of disturbance interactions across the southern Colorado Rockies (co-advisor with Dr. Carol Wessman).

Nate Mietkiewicz, PhD, Earth Lab Postdoctoral Scholar, 2016-2019. Exploring the human and climate-drivers of fire across the conterminous U.S.

R. Chelsea Nagy, PhD, Program Manager and Research Scientist for Earth Lab, 2015-2022, Determining how human- and lightning-started fires vary across ecoregions of the U.S.

Michael Koontz, PhD, Earth Lab Postdoctoral Scholar, 2019-2021, Western U.S. Megafires.

Lise St. Denis, PhD, Research Scientist, 2016-2021, Building a social sensor of natural disasters with Twitter.

Virginia Iglesias, PhD, Earth Lab Postdoctoral Scholar, 2017-2020, Understanding coupled extremes.

Ginikanda (Nayani) Ilangakoon, PhD, Earth Lab Postdoctoral Scholar, 2020-2023, Understanding post-fire carbon recovery.

Jilmarie Stephens, PhD, NC CASC Postdoctoral Scholar, 2020-2023, Understanding future fire under a changing climate.

Nicole Hemming-Schroeder, PhD, Earth Lab Postdoctoral Scholar, 2023-, The 2020 East Troublesome Fire: What may have happened in Estes Park if there had been one more windy day?

Kyle Manley, PhD, CIRES Visiting Postdoctoral Fellow, 2024-, Social-ecological impacts of wildfire and prescribed fire in the US West.

SERVICE

University service

Director, Environmental Data Science Innovation & Inclusion Lab (ESIIL), 2022-, key responsibilities include:

1. Managing the leadership team composed of:
    - Dr. Chelsea Nagy, Associate Director (direct report)
    - Dr. Cibele Amaral, Director of the Analytics (direct report)
    - Dr. Nathan Quarderer, Director of Education (direct report)
    - James Rattling Leaf Sr., Tribal Liaison (direct report)
    - Dr. Susan Sullivan, DEIA Lead
    - Dr. Anne Gold, Evaluation Lead
    - Dr. Claire Monteleoni, AI Lead
    - Dr. John Parker, Science of Team Science Lead
    - Ming Posa, Executive Assistant (direct report)
    - Dr. Tyson Swetnam, CyVerse Liasion
2. Cultivating the involvement of ESIIL External Advisory Board
3. Fostering professional development of ESIIL postdocs
4. Implementing institutional approaches for inclusion and establishing center-wide DEI processes, procedures and information resources
5. Developing cloud computing capabilities for the ESIIL network
6. Developing educational resources and opportunities such as the ESIIL Stars Program and Advanced Earth Data Science Textbook
7. Building a collaboration space in SEEC that houses the ESIIL and fosters connection with Earth Lab and NC-CASC
8. Cultivating collaborations with tribal colleges, universities and nations (e.g. AIHEC, Rosebud Sioux Tribe), synthesis centers and data providers (NCEAS, NEON, LTER), and others

Director, North Central Climate Science Adaptation Center, 2018-2021, key responsibilities included:

1. Managing full-time 11 professional staff, with 6 direct reports:
    - Dr. Jane Wolken, Program Manager (direct report)
    - Dr. Leah Wasser, Director of Earth Analytics Education Initiative (direct report)
    - Dr. Max Joseph, Data Analytics Expert (direct report)
    - Dr. Imtiaz Rangwala, Climate Science Lead (reports to B. Travis)
    - Dr. Heather Yocum, Stakeholder Engagement Lead (reports to B. Travis)

James Rattling Leaf, Sr., Research Associate (direct report)
Lauren Herwehe, Program Manager for the Education Initiative
Dr. Christy Miller Hesed, Research Associate, Grasslands Project (reports to H. Yocum)
Dr. Jilmarie Stephens, Research Associate, Future of Fire Project (direct report)
Dawn Umpleby, Executive Administrative Assistant (direct report)
Katherine Halama, Communications Assistant

2. Tribal Climate Leaders Program
3. Coordinate involvement of CU faculty, including:
   Dr. William Travis, Adaptation Co-lead
   Dr. Lisa Dilling, Adaptation Co-lead

Director, Earth Lab, 2015-2022, key responsibilities included:

1. Managing the following full-time professional staff:
   Dr. Natasha Stavros, Director of the Analytics Hub (direct report)
   Dr. Leah Wasser, Director of Earth Analytics Education Initiative (direct report)
   Dr. Chelsea Nagy, Program Manager (direct report)
   Dawn Umpleby, Executive Administrative Assistant (direct report)
   Dr. Max Joseph, Data Analytics Expert
   Joe McGlinchy, Remote Sensing Expert
   Lauren Herwehe, Program Manager for the Education Initiative
   Dr. Nathan Quarderer, Course Developer
2. Cultivating the involvement of more than 28 faculty affiliates
3. Fostering a cohort of 10 Earth Lab postdocs over the duration (served as primary advisor to three and co-advisor of one)
4. Financially supported 12 Earth Lab GRAs and 21 Earth Lab undergraduate interns
5. Building a collaboration space in SEEC that houses the Earth Lab community
6. Cultivating grant development and submissions
7. Developing cloud computing capabilities for our research and student communities
8. Creating a new professional certificate (launches August 2018) and full masters in Earth Analytics
9. Cultivating collaborations with industry partners at Ball Aerospace, DigitalGlobe, Newmont Mining, Lockheed Martin, Stantec, Amazon Web Services, Raytheon, Wright Water Engineers, aWhere, Google Earth Engine, Twitter, and others

Department & CIRES service

2014-2015 Diversity committee
2015-2016 Space committee
2016-2018 Professional Masters committee
2018-2019 Graduate Student Committee
2019-2020 Newsletter Committee
2020-2021 Personnel Committee
2021-2022 Diversity/Anti-racism Committee
2022-2023 Colloquium Committee
2023-2024 Chair, Search Committee for CIRES/Geography Faculty Position, Environmental Data Science

Professional service

Member of the Scientific Advisory Board, NCEAS, 2014-2021

Reviewer for *Biological Conservation, Biotropica, Conservation Biology, Diversity and Distributions, Ecography, Environmental Research Letters, Geophysical Research Letters, Journal of Sustainable Forestry, Nature, Nature-Climate Change, Oecologia, Proceedings of the National Academy of Sciences, PLOS-One,* and *Remote Sensing of Environment.*

Reviewer for National Science Foundation 2012, 2013, 2020; National Oceanic and Atmospheric Administration 2010; and National Aeronautics and Space Administration 2014.

Workshops conducted

2018 Earth Lab's "Extremes Collider." Co-led two-day, cross-sector workshop on understanding and predicting extreme events, May 3-4.

2017 Earth Lab's "Science Slam." Led full-day workshop to identify key research frontiers in global environmental change research on campus, December 18.

2016 "Generating Usable Fire Science from Incident Command Reports." Co-led full-day workshop with fire scientists and fire managers, CU Boulder, June 22.

2011 "The human imprint on global fire." J.K. Balch and D.M.J.S. Bowman. Led Pyrogeography Working Group meeting hosted by NCEAS, September 26-28.

2011 "Sustainable fire regimes." C. Roos, J.K. Balch, and D.M.J.S. Bowman. Led Pyrogeography Working Group meeting hosted by NCEAS, September 29-30.

2010 "Fire, nature, and culture." D.M.J.S. Bowman and J.K. Balch. Led Pyrogeography Working Group meeting hosted by NCEAS, April 19-24.

2008 "Pyrogeography and climate change." J.K. Balch, D.M.J.S. Bowman, and B. Marston. Led miniconference hosted by the Kavli Institute for Theoretical Physics and the National Center for Ecological Analysis and Synthesis (NCEAS), May 27-30.

Media outreach

Washington Post Opinion Article, January 10, 2025: "Fires are moving much faster now. Here's how to prepare".

Radio Ecoshock Interview, November 20, 2024: " Arctic Flames".

Fox Weather Interview, November 12, 2024: "Study finds speed, not size, is what makes wildfires deadly"

PBS Interview, November 1, 2024: "Is This Type of Fire IMPOSSIBLE to Stop?"

ABC7 News Interview, August 15, 2023: "7News speaks to author on the country's growing wildfire problem amid Maui devastation".

Washington Post Opinion Article, August 12, 2023: "Our wildfire problem is growing beyond our ability to tame it".

Washington Post Opinion Article, June 11, 2023: "Wildfires were once slowed by night and winter. Not anymore".

COMPASS Training Participant & Host: "Media and Science-to-Policy Workshop" by Nancy Baron, participant in 2010 workshop, coordinated workshop for Penn State University faculty fellows (September 2013 & 2014), and additional workshop for Earth Lab participants at CU-Boulder (Fall 2017). Also, in Fall 2017 hosted panel of four leading environment reporters for CU campus panel on "Communicating science in a post-truth world."

Chris Joyce, NPR, April 2013 & May 2018: Hosted 1-day visit by NPR journalist to meet with students and faculty about their upcoming research at Penn State and CU Boulder.

Carbon EARTH Science Communications Workshop, November 2012 & September 2013: Designed workshop on media communications and delivering a succinct message for 25 graduate fellows at Penn State.

Selected media coverage

Reuters, January 24, 2025. "Fast Fires", by Ally J. Levine, Clare Farley, Tiana McGee and Daisy Chung.

Bloomberg, January 15, 2025. "How to survive the next urban firestorm", by Todd Woody.

Inside Climate News, January 11, 2025. "The Dichotomy of a Deadly Paradise—How Urban Sprawl and Climate Change Fuel LA's Fires", by Jireh Deng.

AP Press, January 11, 2025. "It's not really the typical time for nasty California fires. What changed that?", by Seth Borenstein.

Scientific American, January 8, 2025. "Palisades and Eaton Fires Show Rising Dangers of Fast-Moving Blazes:, by Stephanie Pappas.

Washington Post, November 11, 2024. "Why wildfires in the eastern US can be more destructive than you may think", by Scott Dance.

Bloomberg, October 24, 2024. "Wildfires Are Gaining Speed, a Worrying Trend for the US West", by Todd Woody.

New York Times, October 24, 2024. "Wildfires in the West Aren't Just Getting Bigger. They're Faster, Too", by Raymond Zhong.

New Scientist, October 24, 2024. "Some wildfires are growing twice as fast as they did two decades ago", by James Dineen.

KUNR, August 21, 2024. "Study: Only the most destructive wildfires lead residents to move elsewhere", by Murphy Woodhouse.

CBS News Colorado, April 6, 2024. "Xcel Energy to cut power to 55k people along Colorado's front range amid wildfire risk on Saturday", by Austen Erblat, Logan Smith.

ABC10, July 12, 2023. "Drones, satellites and AI: How California fights its unpredictable wildfires with analytics", by Julie Cart.

Washington Post, February 16, 2022. "Wildfires are becoming more intense at night and lasting longer, study finds", by Kasha Patel.

KUNC, January 3, 2022. "Climate change, new construction mean more ruinous fires", by Associated Press.

CPR News, January 3, 2022. "Why a fire scientist sees climate fingerprints on the suburban Boulder County fires", by Sam Brasch.

CPR News, September 5, 2019. "How Quickly Could The Amazon Rainforest Become The Amazon Grassland? Within 10 Years, This Boulder Scientist Discovered", by Xandra McMahon

NY Times, August 20, 2018. "Behind Most Wildfires, a Person and a Spark: 'We Bring Fire With Us'", by Tim Arango.

NY Times, July 27, 2018. "As Carr Fire Kills 2 in California, Firefighters Reflect on a Job Now 'Twice as Violent'", by Scott Bransford, Jennifer Medina and Jose A. Del Real.

NPR, July 29, 2018. "When The Weather Is Extreme, Is Climate Change To Blame?", by Laurel Wamsley.

Colorado Public Radio, June 28, 2018. "Extreme Drought, Fire Danger Push Mountain Resorts To Douse July 4 Fireworks," by Grace Hood.

Science Friday, September 22, 2017. "How Will The Wildfires Of Today Fuel The Fires Of Tomorrow?" by Ira Flatow.

NPR, February 27, 2017. "What's The Leading Cause Of Wildfires In The U.S.? Humans," By Christopher Joyce.

Science, September 12, 2017. "Who is starting all those wildfires? We are," by Warren Cornwall.

BBC, December 6, 2012. "Wildfires fanned by invasive grass species," by Matt McGrath.

National Public Radio, December 5, 2012. "In Arid West, Cheatgrass Turns Fires Into Infernos," by Christopher Joyce.

International Business Times, December 5, 2012. "Invasive Grass Fuels Wildfires In Western US," by Roxanne Palmer.

New York Times, July 30, 2012. "Out West, 'Black Fingers of Death' Offer Hope Against an Invader," by F. Barringer.

Scientific American, September 15, 2011. "New research details wise and foolish fire activities throughout human evolution," by T. Stecker.

ClimateWire, September 15, 2011. "New framework to help managers assess the role of fire in communities," by T. Stecker.

The Independent, October 14, 2011. "Not all wildfires are disasters - New report gives historical framework of fire," by Kamilla Plambeck.

Folha de São Paulo (major Brazilian newspaper), August 23, 2010. "The last scientific burn," by Sabine Righetti.

Jornal Nacional (primetime Brazilian television news program), August 20, 2010. "Scientists set fires in Mato Grosso to see how the forest recovers," by Jonas Campos.

Globo Rural, September 27, 2009. "Scientists try to respond to questions about the Amazon's future," by Ivaci Matias.

Mother Jones, September 8, 2009. "Brazil preps for more forest fires," by Gabriela Lessa.

BBC Mundo, August 24, 2009. "Burning the Amazon, to understand it better," by Laura Plitt.

The Economist, August 6, 2009. "Burning issues: A new experiment is setting the Amazon on fire," by Natasha Loder.

Miller-McCune Magazine, May 6, 2009. "To manage wildfires must manage change first," by Michael Todd.

Reuters, April 23, 2009. "Fires make climate change worse," by Deborah Zabarenko.

National Public Radio, October 1, 2007. "To slow Amazon fires, scientists light their own," by Christopher Joyce.

The Boston Globe, November 27, 2006. "Amazon burning," by Indira Lakshmanan.

Other synergistic activities

Consulted by the Colorado Governor's Office of Climate Preparedness and Disaster Recovery in support of the Colorado Climate Preparedness Roadmap, December 2023

Invited panelist, Paving the Way for Continental Scale Biology: Tools and Approaches for Connecting Research Across Scales (A Webinar Series), The National Academies of Sciences, Engineering, and Medicine, June 15, 2023

Invited scientific expert, COMPASS briefing on the state of knowledge on drought & fire interactions, Senator Feinstein and Representative Huffman's office, July 13-14, 2016

Participant in CU-Boulder's LEAP program, May 2015

SilvaCarbon Invited Expert – Panel on Forest Degradation and Associated Emissions, October 24-26, 2011, Washington D.C. Provided technical expertise for this interagency effort of the U.S. government (USAID, USFS, and USGS) that aims to assist developing countries in monitoring and managing forest and terrestrial carbon as part of REDD (Reduced Emissions from Deforestation and Degradation).

Aliança da Terra firefighter training, August 17-20, 2010, Fazenda Tanguro, Mato Grosso, Brazil. Trained six professional firefighters on how to contain and manage low-intensity understory wildfires.

Governors' Global Climate Summit 2: On the Road to Copenhagen, September 30-October 2, 2009, Los Angeles, California. Invited by Governor Schwarzenegger's office to represent NCEAS.

Field site visit by Patricia Woertz, C.E.O. of Archer Daniels Midland Company, August 2008. Hosted Ms. Woertz and her vice presidents at Fazenda Tanguro during a regional tour to investigate sustainable development practices in the Amazon, including better fire management.

Querencia Town Hall Meeting, August 15, 2005. Invited to explain our experimental burn to over 100 cattle ranchers, soy farmers, and local government officials from the town of Querencia, in the Brazilian state of Mato Grosso.