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## Current position(s)

*Research Physical Scientist*, NASA Goddard Institute for Space Studies, New York, New York  
*Adjunct Associate Research Scientist*, Lamont-Doherty Earth Observatory, Palisades, New York

## Areas of specialization

drought, land surface-climate interactions, paleoclimate, plant phenology

## Appointments held

2009-pres Research Physical Scientist (GS-14), NASA-GISS, New York  
2009-pres Adjunct Research Scientist, LDEO, New York  
2009 Scientific Programmer/Analyst, NASA-GISS/Sigma Space Partners  
2007-2009 NOAA Global Change Postdoctoral Fellow, NASA-GISS/LDEO

## Education

2007 PhD in Environmental Science, University of Virginia (Advisors: Howard Epstein, Paolo D'Odorico)  
2004 MSc in Environmental Science, University of Virginia (Advisor: Michael E. Mann)  
2001 BS in Environmental and Forest Biology, SUNY College of Environmental Science and Forestry

## Awards, Fellowships, & Invited Lectures

2017 CIRES Distinguished Lecturer, University of Colorado, Boulder  
2017 Stephen S Visher Lecturer, Indiana University  
2015 Kavli Fellow, Sixth Indo-American Frontiers of Science Symposium, US National Academy of Sciences  
2013 NASA Early Career Achievement Medal  
2010 2009 Editors' Citation for Excellence in Refereeing, AGU  
2007 NOAA Climate and Global Change Postdoctoral Fellowship, NOAA  
2007 Maury Environmental Sciences Prize, University of Virginia

## Peer Reviewed Publications

†student or postdoc in our research group

- [104] Herrera D, Ault TR, Fasullo JT, Coats S, Carillo CM, **Cook BI**, Williams AW (*in review*) “Exacerbation of the 2013–2016 Pan-Caribbean Drought by Anthropogenic Warming”, *Geophysical Research Letters*
- [103] †Baek SH, Smerdon JE, Seager R, Williams AP, **Cook BI** (*in review*) “Pacific Ocean forcing and atmospheric variability are the dominant causes of spatially widespread droughts in the contiguous United States”, *Journal of Geophysical Research, Atmospheres*
- [102] Hanley ME, **Cook BI**, Fenner M (*in review*) “Climate variation and reproductive frequency and acorn yield in English Oaks”, *Journal of Plant Ecology*
- [101] †Singh D, McDermid SP, **Cook BI**, Puma MJ, Nazarenko L, Kelly M (*in review*) “Distinct influences of land-cover and land-management on seasonal climate”, *Journal of Geophysical Research, Atmospheres*
- [100] Chamberlain CJ, **Cook BI**, Cortazar Atauri IG, Wolkovich EM (*in review*) “Rethinking False Spring Risks”, *Trends in Ecology and Evolution*
- [99] †Bishop DA, Williams AP, Seager R, Fiore AM, **Cook BI**, Mankin JS, Singh D, Smerdon JE, Rao MP (*in review*) “Investigating the causes of increased 20th-century precipitation over the southeastern United States”, *Journal of Climate*
- [98] †Rao MP, Cook ER, **Cook BI**, Palmer J, Uriarte M, Devineni N, Lall U, D’Arrigo RD, Woodhouse CA, Moinuddin A, Zafar MU, Khan N, Khan A, Wahab M (*in review*) “Six centuries of Upper Indus Basin streamflow variability and its climatic drivers”, *Water Resources Research*
- [97] Jones MD, Jaber NA, Baird D, **Cook BI**, Cuthbert M, Dean JR, Djamali M, Eastwood W, Enzel Y, et al. (*in review*) “20,000 years of societal vulnerability and adaptation to climate change in southwest Asia”, *WIREs Water*
- [96] †Singh D, Seager R, **Cook BI**, Cane M, Ting M, Cook ER, Davis M, (*in review*) “Climate and the Global Famine of 1876-78”, *Journal of Climate*
- [95] **Cook BI**, Williams AP, Smerdon J, Palmer JG, Cook ER, Stahle DW (*in review*) “Extreme tropical Pacific forcing of the late sixteenth century North American megadrought”, *Journal of Geophysical Research-Atmospheres*, doi: 10.1175/JCLI-D-17-0172.1
- [94] Ettlinger A, Chuine I, **Cook BI**, Dukes JS, Ellison AM, Johnston MR, Panetta AM, Rollinson CR, Vitasse Y, Wolkovich EM (*in review*) “How do climate change experiments actually change climate?”, *Ecology Letters*
- [93] McDermid S, Montes C, **Cook BI**, Puma M, Kiang NY, (*in review*) “The sensitivity of land-atmosphere coupling to modern agriculture in the northern mid-latitudes”, *Journal of Climate*
- [92] †Steiger NJ, Smerdon JE, Cook ER, **Cook BI** (2018) “A reconstruction of global hydroclimate and dynamical variables over the Common Era”, *Nature Scientific Data*, doi:10.1038/sdata.2018.86
- [91] **Cook BI**, Mankin JS, Anchukaitis KJ (2018) “Climate Change and Drought: From Past to Future”, *Current Climate Change Reports*, doi: 10.1007/s40641-018-0093-2
- [90] Lemordant L, Gentine P, Swann A, **Cook BI**, Scheff J (2018) “Vegetation physiology controls continental water cycle responses to increasing CO<sub>2</sub>”, *Proceedings of the National Academy of Sciences*, doi: 10.1073/pnas.1720712115

- [89] †Mankin JS, Seager R, Smerdon JE, **Cook BI**, Williams AP, Horton R (2018) “Blue water tradeoffs with ecosystems in a CO<sub>2</sub>-enriched climate”, *Geophysical Research Letters*, doi: 10.1175/JCLI-D-17-0213.1
- [88] Hessler AE, Anchukaitis KJ, Kelsema C, **Cook BI**, Byambasuran O, Leland C, Naching B, Pederson N, Tian H, Andreu-Hayles L (2018) “Past and Future Drought in Mongolia”, *Science Advances*, Vol. 4, no. 3, e1701832, DOI:10.1126/sciadv.1701832
- [87] **Cook BI**, Williams AP, Mankin JS, Seager R, Smerdon J, Singh D (2018) “Revisiting the leading drivers of Pacific coastal drought variability in the Contiguous United States”, *Journal of Climate*, 31, 25–43, doi: 10.1175/JCLI-D-17-0172.1
- [86] Ault TR, St. George S, Smerdon J, Coats S, Mankin J, Carrillo C, **Cook BI** (2018) “A robust null hypothesis for the potential causes of megadrought in western North America”, *Journal of Climate*, 31, 3–24, doi: 10.1175/JCLI-D-17-0154.1
- [85] Williams AP, **Cook BI**, Smerdon JE, Bishop DA, Seager R, Mankin JS (2017) “The 2016 southeastern US drought: an extreme departure from centennial wetting and cooling”, *Journal of Geophysical Research, Atmospheres*, 122, 10,888–10,905, doi: 10.1002/2017JD027523
- [84] †Mankin JS, Smerdon JE, **Cook BI**, Williams AP, Seager R (2017) “The curious case of projected 21st-century drying but greening in the American West”, *Journal of Climate*, 30, 8689–8710, doi: 10.1175/JCLI-D-17-0213.1
- [83] Smerdon JE, Luterbacher J, Phipps S, and the **Hydro2k Consortium** (2017) “Comparing proxy and model estimates of hydroclimate variability and change over the Common Era”, *Climate of the Past*, 13, 1851–1900, doi: 10.5194/cp-2017-37
- [82] †Pascolini-Campbell MA, Seager R, Pinson A, **Cook BI** (2017) “Covariability of climate and streamflow in the Upper Rio Grande from interannual to interdecadal timescales”, *Journal of Hydrology: Regional Studies*, 13, 58–71, doi: doi.org/10.1016/j.ejrh.2017.07.007
- [81] Bonfils C, Anderson G, Santer BD, Phillips TJ, Taylor K, Cuntz M, Zelinka M, Marvel K, **Cook BI**, Cvijanovic I, Durack P (2017) “Competing influences of anthropogenic warming, ENSO, and plant physiology on future terrestrial aridity”, *Journal of Climate*, 30, 6883–6904, doi: doi.org/10.1175/JCLI-D-17-0005.1
- [80] †Baek SH, Smerdon JE, Coats S, Williams AP, **Cook BI**, Cook ER, Seager R (2017) “Precipitation, temperature, and teleconnection signals across the combined North American, Monsoon Asia, and Old World Drought Atlases”, 30, 7141–7155, *Journal of Climate*, Early Online Releases, doi: doi.org/10.1175/JCLI-D-16-0766.1
- [79] †Rao MP, **Cook BI**, Cook ER, D’Arrigo RD, Krusic P, Anchukaitis KJ, LeGrande A, Buckley BM, Davi NK, Leland C, Griffin KL (2017) “European and Mediterranean hydroclimate responses to tropical volcanic forcing over the past millennium”, *Geophysical Research Letters*, 44, 5104–5112, doi:10.1002/2017GL073057
- [78] Marvel K, Biasutti M, Bonfils C, Taylor KE, Kushnir Y, **Cook BI** (2017) “Observed and Projected Changes to the Precipitation Annual Cycle”, *Journal of Climate*, 30, 4983–4995, doi: http://dx.doi.org/10.1175/JCLI-D-16-0572.1
- [77] Touchan R, Anchukaitis KJ, Meko D, Kerchouche D, Slimani S, Ilmen R, Hasnaoui F-H, Guibal F, Julio-Camarero J, Sanchez-Salguero R, Piermattei A, Sesbou AS, **Cook BI**, Sabir M, Touchane H (2017) “Climate controls on tree growth in the Western Mediterranean”, *The Holocene*, 27, 1429–1442 doi:10.1177/0959683617693901

- [76] Krakauer NY, Puma MJ, **Cook BI**, Gentine P, Nazarenko L (2016) “Ocean-atmosphere interactions modulate irrigation’s climate impacts”, *Earth System Dynamics*, 7, 863–876, doi:10.5194/esd-7-863-2016
- [75] **Cook BI**, Palmer JG, Cook ER, Turney CSM, Allen K, Fenwick P, O’Donnell A, Lough J, Grierson PF, Ho M, Baker PJ (2016) “The paleoclimate context and future trajectory of extreme summer hydroclimate events in eastern Australia”, *Journal of Geophysical Research, Atmospheres*, DOI: 10.1002/2016JD024892
- [74] †Coats S, Smerdon JE, **Cook BI**, Seager R, Cook ER, Anchukaitis KJ (2016) “Internal ocean-atmosphere variability drives megadroughts in Western North American”, *Geophysical Research Letters*, 43, no. 18, 9886–9894, doi:10.1002/2016GL070105
- [73] Ault TR, Mankin JS, **Cook BI**, Smerdon JE (2016) “Relative impacts of mitigation, temperature, and precipitation on 21st-Century megadrought risk in the American Southwest”, *Science Advances*, DOI: 10.1126/sciadv.1600873
- [72] Stahle DW, Cook ER, Burnett DJ, Villanueva J, Cerano J, Burns JN, Griffin RD, **Cook BI**, Acuna R, Torbenson MCA, Sjezner P (2016) “The Mexican Drought Atlas: Tree-Ring Reconstructions of the Soil Moisture Balance During the late Pre-Hispanic, Colonial, and Modern Eras”, *Quaternary Science Reviews*, Vol 149, Pages 34–60, doi:10.1016/j.quascirev.2016.06.018
- [71] Griffiths ML, Kimbrough AK, Gagan MK, Drysdale RN, Cole JE, Johnson KR, Zhao J, **Cook BI**, Hellstrom JC, Wahyoe SH (2016) “Western Pacific hydroclimate linked to global climate variability over the past millennium”, *Nature Communications*, doi:10.1038/ncomms11719
- [70] **Cook BI**, Wolkovich EM (2016) “Climate change decouples drought from early winegrape harvests in France”, *Nature Climate Change*, doi:10.1038/nclimate2960
- [69] **Cook BI**, Anchukaitis KJ, Touchan R, Meko DM, Cook ER (2016) “Spatiotemporal drought variability in the Mediterranean over the last 900 years”, *Journal of Geophysical Research, Atmospheres*, Vol 121, pages 2060–2074, DOI:10.1002/2015JD023929
- [68] **Cook BI**, Cook ER, Smerdon JE, Seager R, Williams AP, †Coats S, Stahle DW, Diaz JV (2016) “North American Megadroughts in the Common Era: Reconstructions and Simulations”, *WIREs Climate Change*, doi:10.1002/wcc.394
- [67] Palmer JG, Cook ER, Turney CSM, Fenwick P, **Cook BI**, O’Donnell A, Lough J, Grierson P, Baker P (2015) “Drought variability in the eastern Australia and New Zealand summer drought atlas (ANZDA, CE 1500-2012) modulated by the Interdecadal Pacific Oscillation”, *Environmental Research Letters*, 10, doi: http://dx.doi.org/10.1088/1748-9326/10/12/124002
- [66] Williams AP, Seager R, Abatzoglou JT, **Cook BI**, Smerdon JE, Cook ER (2015) “Contribution of anthropogenic warming to California drought during 2012–2014”, *Geophysical Research Letters*, DOI: 10.1002/2015GL06492
- [65] †Coats S, Smerdon JE, Seager R, Griffin D, **Cook BI** (2015), “Winter-to-summer precipitation phasing in southwestern North America: A multicentury perspective from paleoclimatic model-data comparisons”, *Journal of Geophysical Research, Atmospheres*, DOI: 10.1002/2015JD023085
- [64] †Pascolini-Campbell MA, Seager R, Gutzler DS, **Cook BI**, Griffin D (2015) “Causes of Interannual to Decadal Variability of Gila River Streamflow over the Past Century”, *Journal of Hydrology: Regional Studies*, 3, 494-508, doi:10.1016/j.ejrh.2015.02.013

- [63] Seager R, †Hooks A, Williams AP, **Cook BI**, Nakamura J, Henderson N (2015) “Climatology, variability and trends in United States vapor pressure deficit, an important fire-related meteorological quantity”, *Journal of Applied Meteorology and Climatology*, 54, 1121–1141, doi:<http://dx.doi.org/10.1175/JAMC-D-14-0321.1>
- [62] Williams AP, Schwartz RE, Iacobellis S, Seager R, **Cook BI**, Still CJ, Husak G, Michaelsen J (2015) “Urbanization causes increased cloud base height and decreased fog in coastal Southern California”, *Geophysical Research Letters*, 42, 1527–1536, DOI: 10.1002/2015GL063266
- [61] Smerdon JE, **Cook BI**, Cook ER, Seager R (2015) “Bridging past and future climate across paleoclimatic reconstructions, observations, and models: A hydroclimate case study”, *Journal of Climate*, 28, 3212–3231, doi: <http://dx.doi.org/10.1175/JCLI-D-14-00417.1>
- [60] **Cook BI**, Ault TR, Smerdon JE (2015) “Unprecedented 21st century drought risk in the American Southwest and Central Plains”, *Science Advances*, 1, e1400082, DOI: <http://dx.doi.org/10.1126/sciadv.1400082>
- [59] Puma MJ, Bose S, Chon S-Y, **Cook BI** (2015) “Assessing the evolving fragility of the global food system”, *Environmental Research Letters*, 10, 024007, doi:10.1088/1748-9326/10/2/024007
- [58] †Coats S, **Cook BI**, Smerdon JE, Seager R (2015) “North American Pan-continental Droughts in Model Simulations of the Last Millennium”, *Journal of Climate*, 28, 2025–2043, doi: <http://dx.doi.org/10.1175/JCLI-D-14-00634.1>
- [57] †Coats S, Smerdon JE, **Cook BI**, Seager R (2015) “Are Simulated Megadroughts in the North American Southwest Forced?”, *Journal of Climate*, 28, 124–142, doi: <http://dx.doi.org/10.1175/JCLI-D-14-00071.1>
- [56] **Cook BI**, Shukla SP, Puma MJ, Nazarenko LS (2014) “Irrigation as an historical climate forcing”, *Climate Dynamics*, 44, 1715–1730, doi: 10.1007/s00382-014-2204-7
- [55] Pederson N, Dyer JM, McEwan RW, Hessler AE, Mock CJ, Orwig DA, Rieder HE, **Cook BI** (2014) “The legacy of episodic climatic events in shaping temperate, broadleaf forests”, *Ecological Monographs*, 84, 599–620, doi: <http://dx.doi.org/10.1890/13-1025.1>
- [54] **Cook BI**, Seager R, Smerdon JE (2014) “The Worst North American Drought Year of the Last Millennium: 1934”, *Geophysical Research Letters*, 41, 7298–7305, DOI: 10.1002/2014GL061661
- [53] **Cook BI**, Smerdon JE, Seager R, Coats S (2014) “Global Warming and 21<sup>st</sup> Century Drying”, *Climate Dynamics*, 43, 2607–2627, doi: 10.1007/s00382-014-2075-y
- [52] Wolkovich EM, **Cook BI**, McLauchlan K, Davies TJ (2014) “Temporal ecology in the Anthropocene”, *Ecology Letters*, 17, 1365–1379, DOI: 10.1111/ele.12353
- [51] Ballard T, Seager R, Smerdon JE, **Cook BI**, Ray AJ, Rajagopalan B, Kushnir Y, Nakamura J, Henderson N (2014) “Hydroclimate variability and change in the Prairie Potholes Region: The ‘duck factory’ of North America”, *Earth Interactions*, 18, 1–28, doi: <http://dx.doi.org/10.1175/EI-D-14-0004.1>
- [50] Schmidt GA, Annan JD, Bartlein PJ, **Cook BI**, Guilyardi E, Hargreaves JC, Harrison SP, Kageyama M, LeGrande AN, Konecky B, Lovejoy S, Mann ME, Masson-Delmotte V, Risi C, Thompson D, Timmermann A, Tremblay L-B, and Yiou P (2014) “Using paleo-climate comparisons to constrain future projections in CMIP5”, *Climates of the Past*, 10, 221–250, doi:10.5194/cp-10-221-2014

- [49] Wolkovich EM, **Cook BI**, Davies TJ (2014) “Progress towards an interdisciplinary science of plant phenology: building predictions across space, time and species diversity”, 201, 1156-1162, DOI: 10.1111/nph.12599
- [48] **Cook BI**, Smerdon JE, Seager R, Cook ER (2014) “Pan-continental droughts in North America over the last millennium”, *Journal of Climate*, 27, 383-397, doi:10.1175/JCLI-D-13-00100.1
- [47] †Shukla SP, Puma MJ, **Cook BI** (2014) “The Response of the South Asian Summer Monsoon Circulation to Intensified Irrigation in Global Climate Model Simulations”, *Climate Dynamics*, 42, 21-36, doi: 10.1007/s00382-013-1786-9
- [46] Davies TJ, Wolkovich EM, Kraft NJB, Salamin N, Allen JM, Ault TR, Betancourt JL, Bolmgren K, Cleland EE, **Cook BI**, Crimmins TM, Mazer SJ, McCabe GR, Pau S, Regetz J, Schwartz MD, Travers SE (2013) “Phylogenetic conservatism in plant phenology”. *Journal of Ecology*, 101, 1520-1530, doi: 10.1111/1365-2745.12154
- [45] Pau S, Wolkovich EM, **Cook BI**, Nytch CJ, Regetz J, Zimmerman JK, Wright SJ (2013) “Clouds and temperature drive dynamic changes in tropical flower production”, *Nature Climate Change*, 3, 838–842, doi: 10.1038/nclimate1934
- [44] †Coats S, Smerdon JE, Seager R, **Cook BI**, González-Rouco JF (2013) “Megadroughts in Southwestern North America in Millennium-Length ECHO-G Simulations and their Comparison to Proxy Drought Reconstruction”, *Journal of Climate*, 26, 7635–7649, doi: <http://dx.doi.org/10.1175/JCLI-D-12-00603.1>
- [43] †Bell AR, Osgood DE, **Cook BI**, Anchukaitis KJ, McCarney GR, Greene AM, Buckley BM, Cook ER (2013) “Paleoclimate histories improve access and sustainability in index insurance programs”, *Global Environmental Change*, 4, 774–781, doi: <http://dx.doi.org/10.1016/j.gloenvcha.2013.03.003>
- [42] Mazer SJ, Travers SE, **Cook BI**, Davies TJ, Bolmgren K, Kraft NJB, Salamin N, Inouye DW (2013) “Flowering date of taxonomic families predicts phenological sensitivity to temperature: implications for forecasting the effects of climate change on unstudied taxa”, *American Journal of Botany*, 100, doi: 10.3732/ajb.1200455
- [41] Wolkovich EM, Davies TJ, Schaefer H, Cleland EE, **Cook BI**, Travers SE, Willis CG, Davis CC (2013) “Temperature-dependent shifts in phenology contribute to the success of exotic species with climate change”, *American Journal of Botany*, 100, 1407–1421, doi: 10.3732/ajb.1200478
- [40] **Cook BI**, Seager R, Miller RL, Mason JA (2013) “Intensification of North American megadroughts through surface and dust aerosol forcing”, *Journal of Climate*, 26, 4414–4430, doi: <http://dx.doi.org/10.1175/JCLI-D-12-00022.1>
- [39] †Coats S, Smerdon JE, **Cook BI**, Seager R (2013) “Teleconnection Stability over North America in CMIP5/PMIP3 Model Simulations”, *Geophysical Research Letters*, 40, 4927–4932, doi: 10.1002/grl.50938.
- [38] Krakauer NY, Puma MJ, **Cook BI** (2013) “Impacts of soil-aquifer heat and water fluxes on simulated global climate”, *Hydrology and Earth System Sciences*, 17, 1963–1974, doi: 10.5194/hess-17-1963-2013
- [37] **Cook BI**, Pau S (2013) “A Global Assessment of Long-Term Greening and Browning Trends in Pasture Lands Using the GIMMS LAI3g Dataset”, *Remote Sensing*, 5, 2492–2512, doi: 10.3390/rs5052492

- [36] Puma MJ, Koster RD, **Cook BI** (2013) “Phenological versus meteorological controls on land - atmosphere water and carbon fluxes”, *Journal of Geophysical Research-Biogeosciences*, 118, doi: 10.1029/2012JG002088
- [35] **Cook BI**, Seager R (2013) “The response of the North American Monsoon to increased greenhouse gas forcing”, *Journal of Geophysical Research-Atmospheres*, 118, 1690–1699, doi: 10.1002/jgrd.50111
- [34] Seager R, Ting M, Li C, Naik N, **Cook BI**, Liu H, Nakamura J (2013) “Declining surface water availability projected for the southwest U.S. in coming decades”, *Nature Climate Change*, 3, 482–486, doi: 10.1038/nclimate1787
- [33] **Cook BI**, Wolkovitch EM, Davies TJ, Ault TR, Betancourt JL, Allen JM, Bolmgren K, Cleland EE, Crimmins TM, Kraft NJB, Lancaster LT, Mazer SJ, McCabe GJ, McGill BJ, Parmesan C, Pau S, Regetz J, Salamin N, Schwartz MD, Travers SE (2012) “Sensitivity of spring phenology to warming across temporal and spatial climate gradients in two independent databases”, *Ecosystems*, 15, 1283–1294, doi: 10.1007/s10021-012-9584-5
- [32] **Cook BI**, Bell AR, Anchukaitis KJ, Buckley BM (2012) “Snow cover and precipitation impacts on dry season streamflow in the Lower Mekong Basin”, *Journal of Geophysical Research-Atmospheres*, 117, doi: 10.1029/2012JD017708
- [31] **Cook BI**, Anchukaitis KJ, Kaplan JO, Puma MJ, Kelley M, Gueyffier D (2012) “Pre-Columbian deforestation as an amplifier of drought in Mesoamerica”, *Geophysical Research Letters*, 39, doi: 10.1029/2012GL052565
- [30] **Cook BI**, Wolkovich EM, Parmesan C (2012) “Divergent responses to spring and winter warming drive community level flowering trends”, *Proceedings of the National Academy of Sciences*, 109, 9000–9005, doi: 10.1073/pnas.1118364109
- [29] Wolkovich EM, **Cook BI**, Allen JM, Crimmins TM, Betancourt JL, Travers SE, Pau S, Regetz J, Davies TJ, Kraft NJB, Ault TR, Bolmgren K, Mazer SJ, McCabe GJ, McGill BJ, Parmesan C, Salamin N, Schwartz MD, Cleland EE (2012) “Warming experiments underpredict plant phenological responses to climate change”, *Nature*, 485, 494–497, doi:10.1038/nature11014
- [28] **Cook BI**, Seager R, Miller RL (2011) “On the causes and dynamics of the early twentieth century North American pluvial”, *Journal of Climate*, 24, 5043–5060, doi: <http://dx.doi.org/10.1175/2011JCLI4201.1>
- [27] **Cook BI**, Puma MJ, Krakauer NY (2011) “Irrigation induced surface cooling in the context of modern and increased greenhouse gas forcing”, *Climate Dynamics*, 37, 1587–1600, DOI: 10.1007/s00382-010-0932-x
- [26] **Cook BI**, Cook ER, Anchukaitis KJ, Seager R, Miller RL (2011) “Forced and unforced variability of twentieth century North American droughts and pluvials”, *Climate Dynamics*, 37, 1097–1110, doi: 10.1007/s00382-010-0897-9
- [25] **Cook BI**, Seager R, Miller RL (2011) “The impact of devegetated dune fields on North American climate during the Medieval Climate Anomaly”, *Geophysical Research Letters*, 38, doi:10.1029/2011GL047566
- [24] Tierney JE, Lewis SC, **Cook BI**, Legrande AN, Schmidt GA (2011) “Model, proxy and isotopic perspectives on the East African Humid Period”, *Earth and Planetary Science Letters*, 307, 103–112, doi: [dx.doi.org/10.1016/j.epsl.2011.04.038](http://dx.doi.org/10.1016/j.epsl.2011.04.038)

- [23] McCabe GJ, Ault TR, **Cook BI**, Betancourt JL, Schwartz MD (2011) “Influences of the El Niño Southern Oscillation and the Pacific Decadal Oscillation on the timing of the North American spring”, *International Journal of Climatology*, 31, 2301–2310, doi: 10.1002/joc/3400
- [22] Pau S, Wolkovich EM, **Cook BI**, Davies TJ, Kraft NJB, Bolmgren K, Betancourt JL, Cleland EE (2011) “Predicting phenology by integrating ecology, evolution and climate science”, *Global Change Biology*, 17, 3633–3643, DOI: 10.1111/j.1365-2486.2011.02515.x
- [21] **Cook BI**, Seager R, Miller RL (2011) “Atmospheric circulation anomalies during two persistent North American droughts: 1932-1939 and 1948-1957”, *Climate Dynamics*, 36, 2339–2355, doi: 10.1007/s00382-010-0807-1
- [20] †Bell AR, **Cook BI**, Anchukaitis KJ, Buckley BM, Cook ER (2011) “Repurposing climate reconstructions for drought prediction in Southeast Asia”, *Climatic Change*, 106, p 691–698, DOI: 10.1007/s10584-011-0064-2
- [19] **Cook BI**, Terando A, Steiner A (2010) “Ecological forecasting and climate data uncertainties: a phenology modeling case study”, *Environmental Research Letters*, 5, doi: 10.1088/1748-9326/5/4/044014
- [18] Anchukaitis KJ, Buckley BM, Cook ER, **Cook BI**, D’Arrigo RD, Ammann CM (2010) “The influence of volcanic eruptions on the climate of the Asian monsoon region”, *Geophysical Research Letters*, 37, doi: 10.1029/2010GL044843
- [17] Puma MJ, **Cook BI** (2010) “Effects of irrigation on global climate during the twentieth century”, *Journal of Geophysical Research-Atmospheres*, 115, doi: 10.1029/2010JD014122
- [16] Krakauer NY, **Cook BI**, Puma MJ (2010) “Contribution of soil moisture feedback to global climate variability”, *Hydrology and Earth System Sciences*, 14, 505–520, doi: 10.5194/hess-14-505-2010
- [15] **Cook BI**, Cook ER, Anchukaitis KJ, Huth PC, Thompson JE, Smiley SF (2010) “A homogeneous record (1896-2006) of daily weather and climate at Mohonk Lake, New York”, *Journal of Applied Meteorology and Climatology*, 49, 544–555, doi: <http://dx.doi.org/10.1175/2009JAMC2221.1>
- [14] **Cook BI**, Buckley BM (2009) “Objective determination of monsoon season onset, withdrawal, and length”, *Journal of Geophysical Research-Atmospheres*, 114, doi: 10.1029/2009JD012795
- [13] **Cook BI**, Miller RL, Seager R (2009) “Amplification of the ‘Dust Bowl’ drought through human induced land degradation”, *Proceedings of the National Academy of Sciences*, 106, 4997–5001, doi: 10.1073/pnas.0810200106
- [12] Sacks W, **Cook BI**, Buening N, Levis S, Helkowski JH (2009) “Effects of global irrigation on near-surface climate”, *Climate Dynamics*, 33, 159–175, doi:10.1007/s00382-008-0445-z
- [11] Hui WCJ, **Cook BI**, D’Odorico P, Ravi S, Fuentes J (2008) “Dust-rainfall feedbacks in the West African Sahel”, *Water Resources Research*, 44, doi: 10.1029/2008WV006885
- [10] **Cook BI**, Miller RL, Seager R (2008) “Dust and sea surface temperature forcing of the 1930s ‘Dust Bowl’ drought”, *Geophysical Research Letters*, 35, doi:10.1029/2007GL032509
- [9] **Cook BI**, Bonan GB, Levis S, Epstein HE (2008) “The thermoinsulation effect of snow cover within a climate model”, *Climate Dynamics*, 31, 107–124, doi: 10.1007/s00382-007-0341-y
- [8] **Cook BI**, Bonan GB, Levis S, Epstein HE (2008) “Rapid vegetation responses and feedbacks amplify climate model response to snow cover changes”, *Climate Dynamics*, 30, 391–406, doi:10.1007/s00382-007-0296-z



- [7] **Cook BI**, Cook ER, Huth P, Thompson JE, Forster A, Smiley D (2008) “A cross-taxa phenological dataset from Mohonk Lake, NY and its relationship to climate”, *International Journal of Climatology*, 28, 1369–1383, DOI: 10.1002/joc.1629
- [6] **Cook BI**, Bonan GB, Levis S (2006) “Soil moisture feedbacks to precipitation in southern Africa”, *Journal of Climate*, 19, 4198–4206, doi: <http://dx.doi.org/10.1175/JCLI3856.1>
- [5] Buckley BM (2005) **Cook BI**, Bhattacharyya A, Dukpa D, Chaudhary V, “Global surface temperature signals in pine ring-width chronologies from southern monsoon Asia”, *Geophysical Research Letters*, 32, doi:10.1029/2005GL0234745
- [4] **Cook BI**, Smith TM, Mann ME (2005) “The North Atlantic Oscillation and regional phenology prediction over Europe”, *Global Change Biology*, 11, 919–926, doi: 10.1111/j.1365-2486.2005.00960.x
- [3] L'Heureux ML, Mann ME, **Cook BI**, Gleason BE, Vose RS (2004) “Atmospheric circulation influences on seasonal precipitation patterns in Alaska during the latter twentieth century”, *Journal of Geophysical Research-Atmospheres*, 109, doi: 10.1029/2003JD003845
- [2] **Cook BI**, Mann ME, D'Odorico P, Smith TM (2004) “Statistical simulation of the NAO on European winter surface temperatures: applications to phenological modeling”, *Journal of Geophysical Research-Atmospheres*, 109, doi: 10.1029/2003JD004305
- [1] Cook ER, Palmer JG, **Cook BI**, Hogg A, D'Arrigo RD (2003) “A multi-millennial palaeoclimate resource from *Lagorostrobos colensoi* tree-rings at Oroko Swamp, New Zealand”, *Global and Planetary Change*, 33, 209–220, doi: [http://dx.doi.org/10.1016/S0921-8181\(02\)00078-4](http://dx.doi.org/10.1016/S0921-8181(02)00078-4)

#### Other Publications

**Cook BI** (2016): “Global warming is pushing wine harvests earlier – but not necessarily for the better”, *The Conversation*

Marvel K, Schmidt GA, Tsigaridis K, **Cook BI** (2015) “Sensitivity to factors underlying the hiatus”, *US CLIVAR Variations*, 13, no. 3, 25-29

Seager R, **Cook BI** (2012), “Dust Bowl”, *Encyclopedia of Natural Hazards*

Puma MJ, **Cook BI** (2011), “Irrigation’s climate effects and the water sustainability link”, *International Water Power and Dam Construction Magazine*, pp. 38–40, March

#### Students, Postdocs, Interns

Andrew Bell (postdoc), Liora Hostyk (undergrad), Sloan Coats (graduate student-committee member), Madeleine Pascolini-Campbell

#### Funded Proposal & Grants

“Collaborative Research: Cool and Warm Season Reconstruction and Modeling over North America”, NSF Award AGS-1266014, Collaborator, \$219,650

“P2C2: Continental scale droughts in North America: Their frequency, character and causes over

the past millennium and near term future”, NSF Paleo-Perspectives on Climate Change, Collaborator, \$776,807

“Parameter Sets and Propagation of Uncertainty in a Global Terrestrial Biosphere Model: Data Mining, Diversity, and Expected Variability”, NASA ROSES 2012, Modeling Analysis and Prediction, CO-I, \$630,600

“Collaborative Research: EaSM2: Linking near-term future changes in weather and hydroclimate in western North America to adaptation for ecosystem and water management” NSF Award, CO-I, \$2,106,026

“Forecasting phenology: Integrating ecology, climatology, and phylogeny to understand plant responses to climate change.” Working Group Proposal, National Center for Ecological Analysis and Synthesis. **Cook BI** and Wolkovich E

“Paleoclimate Shocks: Environmental Variability, Human Vulnerability, and Societal Adaptation During the Last Millennium in the Greater Mekong Basin.” NSF Award GEO-0908971, CO-I, \$1,401,351

“North American Megadrought: Atmosphere-Ocean Forcing and Landscape Response from the Medieval Period to the Near-Term Greenhouse Future.” NSF Award ATM-0902716, CO-I, \$638,135

“NSF P2C2 Collaborative Research: Past and Future Drought Variability in the Mediterranean Basin”. NSF Award 1103450, CO-I, \$70,388

### Professional Activities

- Member of “Phenology Team” as part of the National Climate Assessment
- Member of the Plant Phenology Advising Working Group, National Ecological Observatory Network (NEON)
- Advisor to research interns and postdoctoral researchers as part of NSF Award GEO-0908971; also advised High School Students on independent study projects at LDEO
- Panel, proposal, and manuscript reviewer: NASA, NSF, Journal of Geophysical Research, Global Change Biology, Water Resources Research, Geophysical Research Letters, Climate Dynamics, and Nature Geoscience.
- Lead organizer for oral and poster session at AGU 2010, “A03: Understanding Drought Variability, Forcing, and Feedbacks”
- Lead organizer for oral and poster session at AGU 2011, “B43a: Beyond Earlier Spring: Diverse Phenological Responses to Climate Across Species and Ecosystems”

### Classes Taught

**The Earth’s Climate System:** A quantitative introduction to the climate system, including an overview of the global energy balance, general circulation, and specialized topics intended for non-science majors. (*Sustainability Management Program, Columbia University*)

## Selected Media Coverage

Allison Aubrey *All Things Considered*, *National Public Radio* (March 23, 2016), [Study Finds Climate Change Could Be Leading To Better Wine](#)

Lucy Westcott *Newsweek* (March 3, 2016), [MOST RECENT MIDDLE EAST DROUGHT WAS WORST IN 900 YEARS: NASA](#)

Ishaan Tharoor *Washington Post* (March 4, 2016), [The Middle East just suffered its worst drought in 900 years](#)

Don Melvin *CNN* (March 3, 2016), [Mideast's worst drought in 900 years may have contributed to Syrian war](#)

Darryl Fears *Washington Post*, [A 'megadrought' will grip U.S. in the coming decades, NASA researchers say](#)

Ben Brumfeld *CNN* (February 14, 2015), [Risk of American 'megadroughts' for decades, NASA warns](#)

Brian Clark Howard *National Geographic* (February 12, 2015), [Worst Drought in 1,000 Years Predicted for American West](#)

Hannah Hoag *Nature News & Views* (October 16, 2014), [US Dust Bowl unrivalled in past 1,000 years](#)

Andrea Thompson, *Climate Central* (April 2, 2014), [Warming Temperatures Could Dry Out One Third of Planet](#)

Jonathan Overpeck, *Nature News & Views* (November 20, 2013), [Climate science: The challenge of hot drought](#)

*ScienceDaily* (March 11, 2013), [Study Predicts Lag in Summer Rains Over Parts of US and Mexico](#)

Nicholas Mott, *National Geographic, Daily News* (November 9, 2012), [Why the Maya Fell: Climate Change, Conflict—And a Trip to the Beach?](#)

UC Santa Barbara, *Science Daily* (June 1, 2012), [Plants Previously Thought to Be 'Stable' Found to Be Responding to Climate Change](#)

Kim McDonald, *Phys.Org* (May 22, 2012), [More plant species responding to global warming than previously thought](#)

Elizabeth Pennisi, *ScienceNOW* (May 2, 2012), [Plant Experiments Underestimate Climate Change Effects](#)

Leslie McCarthy and Patrick Lynch, *NASA* (May 2, 2012), [Decades of Data Show Spring Advancing Faster Than Experiments Suggest](#)

Shazia Khan, *NYI* (March 20, 2012), [Experts Say Warm Winter Could Lead To A Hot, Buggy Spring](#)

Holli Riebeek and Jess Allen, *NASA Image of the Day* (February 1, 2012), [Mayan Deforestation and Drought](#)

Stephanie Pappas, *MSNBC* (December 5, 2011), [Real Mayan apocalypse may have been their own fault](#)

Adam Voiland and Maria José-Viñas, *NASA* (December 1, 2011), [Ancient Dry Spells Offer Clues About the Future of Drought](#)

Jai Ranganathan, *Pacific Standard* (December 17, 2010), [The Dust Bowl: Lessons from the Greatest U.S. Environmental Disaster](#)

Justin Gillis, *New York Times* (September 9, 2010), [The Irrigation Juggernaut](#)

Michael Reilly, *Discovery News* (March 23, 2009), [Dust Bowl Had Human Fingerprint](#)

Anthony DePalma, *New York Times* (September 15, 2008), [Weather History Offers Insight Into Global Warming](#)

Jeanna Bryner, *Live Science* (May 4, 2008), [Why the 1930s Dust Bowl Was So Bad](#)