

## RICHARD SEAGER

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**Education** LIVERPOOL UNIVERSITY Liverpool, England  
October 1980–May 1983  
**1983 B. Sc. Honours First Class, Geography**

COLUMBIA UNIVERSITY New York, NY  
September 1983– February 1990  
**1985 M. A. in Geological Sciences**  
**1990 M. Phil. in Geological Sciences**  
**1990 Ph. D. in Geological Sciences**

**Ph.D. Thesis:** Modeling sea surface temperature and low level winds in the tropics.  
*Advisor:* Professor Mark Cane.

**Employment** March 1990–December 1990. Post-Doctoral Research Scientist at Lamont Doherty Geological Observatory of Columbia University, New York.

January 1991–December 1992. Post-Doctoral Research Scientist at The Joint Institute for Study of the Atmosphere and Ocean, University of Washington, Seattle.

January 1993 to December 1993. National Oceanic and Atmospheric Administration Program in Climate and Global Change Postdoctoral Fellow at Lamont Doherty Earth Observatory of Columbia University, New York.

January 1994 to July 1997. Associate Research Scientist at Lamont Doherty Earth Observatory of Columbia University, Palisades, New York.

July 1997 to July 2000. Research Scientist at Lamont Doherty Earth Observatory of Columbia University, Palisades, New York.

July 2000 to September 2008. Doherty Senior Research Scientist at Lamont Doherty Earth Observatory of Columbia University, Palisades, New York.

September 2008 to June 2010 Palisades Geophysical Institute Senior Research Scientist at Lamont Doherty Earth Observatory of Columbia University, Palisades, New York.

July 2010 to present. Palisades Geophysical Institute/Lamont Research Professor at Lamont Doherty Earth Observatory of Columbia University, Palisades, New York.

January 2011. Appointed member of Earth Institute Faculty.

### Research interests

Climate change and variability on seasonal to glacial timescales, tropical forcing of global climate variations, North American drought, tropical atmosphere-ocean interactions,

tropical climate change, explaining the causes of regional climates, climate modeling, seasonal to decadal climate prediction, global hydroclimate variability and change.

### **Professional service**

US CLIVAR drought working group member (2006 to present).  
NOAA Drought Task Force (2011 to present)  
NOAA CMIP5 Task Force (2012 to present)  
National Integrated Drought Information System Forecasts and Predictions Working Group (2014 to present)  
Contributing author for Climate Change Science Program Synthesis and Assessment Report, abrupt change chapter (2006 to 2009).  
Associate Editor, *Quarterly Journal of the Royal Meteorological Society* (2005 to 2011)  
Member of the American Meteorological Society Committee on Tropical Meteorology and Hurricanes (1995 to 1999).  
Member of the CLIVAR Pacific panel (1999 to 2001) Member of NOAA Climate and Global Change Postdoctoral Fellowship Committee (2011 to 2013).

### **Awards**

Fellow of the American Meteorological Society, September 2013 to present.  
California Department of Water Resources Climate Science Paper awards for two separate papers, November 2008.  
Lamont Director's Award for Outstanding Research Performance, September 2007.  
National Oceanic and Atmospheric Administration Climate and Global Change Postdoctoral Fellowship, July 1992.

### **Professional Associations**

Member of the Royal Meteorological Society  
Member of The American Meteorological Society.  
Member of the American Geophysical Union.

### **Lamont service**

Executive Committee, elected representative of Ocean and Climate Physics Division, currently in third term  
DEES Graduate Program Committee (2014 to present)  
Served on Storke-Doherty Lectureship, Postdoctoral Fellowship, PGI Junior, LRP search committees

### **Graduate students advised (wholly or partially)**

Amy Clement, Sloan Coats, Alessandra Giannini, Arthur Greene, Alicia Karspeck, Julien Emile-Geay, Celine Herweijer, Wenchang Yang, Yutian Wu, Colin Kelley, David Wang, Nandini Ramesh, Etienne Dunn-Seguín, Madeleine Pascolini-Campbell, Olivia Clifton, Weston Anderson, Bor-Ting Jong.

### **Postdoctoral fellows mentored**

Nili Harnik (Lamont fellowship), Kris Karnauskas (Lamont fellowship), Jason Smerdon (Lamont fellowship), Ben Cook (NOAA fellowship), Isla Simpson (Lamont fellowship, September 2012 to 2014), Jack Scheff (NSF Fellow, current).

## Undergraduate interns co-authored published papers with

Alexandrina Tzanova, Laura Vogel, Tyler Ruff, Stephanie Jurburg (2), Tristan Ballard, Allison Hooks

## Popular articles, un-refereed articles, encyclopedia entries etc.

- R. Seager, 2015: Mark Cane: 2014 Fellow of The Oceanography Society, *Oceanography*, **28**, 8-9.
- R. Seager and B. Cook, 2013: The Dust Bowl, *Encyclopedia of Natural Hazards*, Peter Bobrowsky, Ed., Springer, New York, 197-200.
- R. Seager, 2008: Setting the record straight on the Gulf Stream and European climate. *The Plantsman*, the quarterly magazine of the Royal Horticultural Society, **7**, 22-27.
- R. Seager, 2007: Making a bad situation worse: Climate change and human-induced aridification of southwestern North America. California Department of Water Resources *California Drought Update*, June 2008.
- Schubert, S., R. Koster, M. Hoerling, R. Seager, D. Lettenmaier, A. Kumar and D. Gutzler, 2007: Predicting drought on seasonal-to-decadal timescales. *Bull. Amer. Meteor. Soc.*, **88**, 1625-1630.
- R. Seager, 2006: The source of Europe's mild climate, *Am. Sci.*, **94**, 334-341.
- Clement, A.C., J. Emile-Geay, R. Seager, M. Cane and M. N. Evans, 2006: Solar forcing of the tropical Pacific climate and impacts over North America for the last millennium. *PAGES News*, **14**, 12-14.
- R. Seager, 2003: Gulf Stream, la fin d'un mythe. *La Recherche*, **361**, 40-45 (In French).

## Refereed professional reports

- Sheffield, J., A. Barrett, D. Barrie, S. Camargo, E. Chang, B. Colle, D. Fernando, R. Fu, K. L. Geil, Q. Hu, X. Jiang, N. Johnson, K. Karnauskas, S. Kim, J. Kinter, S. Kumar, B. Langenbrunner, K. Lombardo, L. Long, E. Maloney, A. Mariotti, J. Meyerson, K. Mo, J. D. Neelin, S. Nigam, Z. Pan, T. Ren, A. Ruiz-Barrades, R. Seager, Y. Serra, A. Seth, D.-Z. Sun, J. Thibeault, J. Stroeve, C. Wang, S.-P. Xie, Y. Yang, L. Yin, J.-Y. Yu, T. Zhang, M. Zhao, 2014: Regional climate processes and projections for North America: CMIP3/CMIP5 differences, attribution and outstanding issues. NOAA Technical Report OAR CPO-2
- Seager, R., M. Hoerling, S. Schubert, H. Wang, B. Lyon, A. Kumar, J. Nakamura and N. Henderson, 2014: Causes and predictability of the 2011-14 California Drought, NOAA Drought Task Force Narrative Team Assessment Report, <http://cpo.noaa.gov/ClimatePrograms/ModelingAnalysisPredictionsandProjections/MAPPTaskForces/DroughtTaskForce/CaliforniaDrought.aspx>
- Hoerling, R., S. Schubert, K. Mo, A. AghaKouchak, H. Berbery, J. Dong, A. Kumar, V. Lakshmi, R. Leung, J. Li, X. Liang, L. Luo, B. Lyon, D. Miskus, X. Quan, S. Schubert, R. Seager, S. Sorooshian, H. Wang, Y. Xia, N. Zeng, 2013, An Interpretation of the Origins of the 2012 Central Great Plains Drought, NOAA Drought Task Force Narrative Team Assessment Report, [www.drought.gov/drought/content/resources/reports](http://www.drought.gov/drought/content/resources/reports)

- Sheffield, J., A. Barrett, D. Barrie, S. Camargo, E. Chang, B. Colie, D. Fernando, R. Fu, K. Geil, Q. Hu, X. Jiang, N. Johnson, K. Karlsrukas, S. Kim, J. Kinter, S. Kumar, B. Langenbrunner, K. Lombardo, L. Long, E. Maloney, A. Mariotti, J. Meyerson, K. Mo, J. Neelin, S. Nigam, Z. Pan, T. ren, A. Ruiz-Barradas, R. Seager, Y. Serra, A. Seth, D.-Z. Sun, J. Thibeault, J. Stroeve, C. Wang, S.-P. Xie, Z. Yang, L Yin, J.-Y. Yu, T. Zhang, M. Zhao, 2014: Regional Climate Processes and Pprojections for North America. CMIP3/CMIP5 Differences, Attribution and Outstanding Issues. *NOAA Technical Report OAR CPO-2*.
- Cook, E.R., P.J. Bartlein, N. Diffenbaugh, R. Seager, B.N. Shuman, R. S. Webb and C. Woodhouse, 2008, Hydrological variability and change. In *Abrupt Climate Change*, A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. U.S. geological Survey, Reston, VA, pp. 143-257.
- Delworth, T.L., P.U. Clark, M. Holland, W.E. Johns, T. Kuhlbrodt, J. Lynch-Stieglitz, C. Morrill, R. Seager, A.J. Weaver, and R. Zhang, 2008: The potential for abrupt change in the Atlantic Meridional Overturning Circulation. In: *Abrupt Climate Change*. A report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. U.S. Geological Survey, Reston, VA, pp. 258-359.

## Refereed publications

- Seager, R. and N. Henderson, 2016: Tropical ocean forcing of the persistent North American west coast ridge of winter 2013/14. *J. Climate*, submitted.
- Coats, S., K. Karlsrukas, J. Smerdon and R. Seager, 2016: The improbable but unexceptional occurrence of megadrought clustering in the American West during the Medieval Climate Anomaly. *Env. Res. Lett.*, submitted.
- Jong, B., M. Ting and R. Seager, 2015: El Niño's impact on California precipitation: Seasonality, regionality and El Niño intensity. *Env. Res. Lett.*, submitted.
- Coats, S., J. Smerdon, B. Cook, R. Seager, E. Cook and K. Anchukaitis, 2015: Internal ocean-atmosphere variability drives megadroughts in Western North America, *Nature Geo.*, in review.
- Anderson, W., R. Seager, W. Baethgen and M. Cane, 2015: Life cycles of agriculturally-relevant ENSO teleconnections in North and South America, *J. Appl. Meteor. Clim.*, submitted.
- Ramesh, N., M. Cane and R. Seager, 2015: Predictability and prediction of persistent cool states of the tropical Pacific Ocean, 2015: *J. Climate*, submitted.
- Greene, A. M. and R. Seager, 2015: Categorical representation of North American precipitation projections, *Nature Sci. Comm.*, in press.
- Cook, B., E. Cook, J. E. Smerdon, R. Seager, A. P. Williams, S. Coats, D. W. Stahle and J. Villanueva-Diaz, 2016: North American megadroughts in the Common Era: reconstructions and simulations, WIREs Clim Change 2016. doi: 10.1002/wcc.394.
- Cook, E. R., R. Seager, Y. Kushnir, K. Briffa, U. Buntgen, D. Frabk, P. Krusic, W. Tegel, G. van der Schrier, L. Andreu-Hayles, M. Baillie, C. Baittinger, A. Billamboz, N. Bleicher, N. Bonde, D. Brown, M. Carrer, R. Cooper, K. Cufar, C. Dittmar, J. Esper, C. Giggs, B. Gunnarson, B. Gunther, E. Gutierrez, K. Haneca, S. Helema, F. Herzig, K.-U. Heussner, J. Hofman, P. Janda, R. Kontic, N. Kose, T. Kyncl, T. Levanic, H. Linderholm, S. Manning, T. Melvin, D. Miles, B. Neuwirth,

K. Nicolussi, P. Nola, M. Panayotov, I. Popa, A. Rothe, K. Seftigen, A. Seim, H. Svarva, M. Svoboda, T. Thun, M. Timonen, R. Touchan, V. Trotsiuk, V. Truet, F. Walder, T. Wazny, R. Wilson, C. Zang, 2015: Old World megadroughts and pluvials during the Common Era, *Science Adv.*, doi:10.1126/sciadv.1500561.

- Williams, A. P., R. Seager, J. T. Abatzoglou, B. I. Cook, J. E. Smerdon and E. R. Cook, 2015: Contribution of anthropogenic warming to the 2012-14 California drought, *Geophys. Res. Lett.*, 10.1002/2015GL063266.
- Coats, S., B. I. Cook, J. E. Smerdon and R. Seager, 2015: Winter-to-summer precipitation phasing in southwestern North America: A multi-century perspective from paleoclimatic model-data comparisons, *J. Geophys. Res.*, in press.
- Yang, W., R. Seager, M. A. Cane and B. Lyon, 2015: The rainfall annual cycle bias over East Africa induced by CMIP5 coupled climate models. *J. Climate*, in press.
- Simpson, I., R. Seager, M. Ting and T. Shaw, 2015: Causes of change in Northern Hemisphere winter meridional wind and regional hydroclimate, *Nature Clim. Change*, DOI: 10.1038/NCLIMATE2783.
- Seager, R., M. Hoerling, S. Schubert, H. Wang, B. Lyon, A. Kumar, J. Nakamura and N. Henderson, 2015: Causes of the 2011-14 California Drought, *J. Climate*, **28**, 6997-7024, DOI:10.1175/JCLI-D-14-00860.1.
- Biasutti, M. and R. Seager 2015: Projected changes in U.S. erosivity. *Hydrol. Earth Syst. Sci.*, doi:10.5194/hessd-12-1469-2015.
- Williams, A. P., R. E. Schwartz, S. Iacobellis, R. Seager, B. I. Cook, C. J. Small, G. Husak and J. Michaelsen, 2015: Urbanization reduces summer fogginess in coastal Southern California. *Geophys. Res. Lett.*, doi: 10.1002/2015GL063266.
- Coats, S., B. I. Cook, J. E. Smerdon and R. Seager, 2015: North American Pan-Continental Drought in Model Simulations of the Last Millennium, *J. Climate*, **28**, 2025-2043.
- Smerdon, J. E., B. I. Cook, E. R. Cook and R. Seager, 2015: Bridging past and future climate across models and observations: A hydroclimate case study. *J. Climate*, **28**, 3212-3231.
- Seager, R., A. Hooks, A. P. Williams, B. I. Cook and J. Nakamura, 2015: Climatology, variability and trends in the U.S. vapor pressure deficit, an important fire-related meteorological variable. *J. Appl. Meteor. Clim.*, **54**, 1121-1141.
- Pascolini-Campbell, M. A., R. Seager, D. Gutzler, B. Cook, D. Griffin, 2015: Causes of interannual to decadal variability of Gila River streamflow over the past century. *J. Hydrol. Reg. Stud.*, **3**, 494-508.
- Yang, W., R. Seager, M. A. Cane and B. Lyon, 2015: The annual cycle of East African precipitation. *J. Climate*, **28**, 2385-2404.
- Simpson, I., R. Seager, T. Shaw and M. Ting, 2015: Mediterranean summer climate and the importance of Middle East topography. *J. Climate*, **28**, 1977-1996.
- Coats, S., J. E. Smerdon, B. I. Cook and R. Seager, 2015: Are simulated megadroughts in the North American southwest forced? *J. Climate*, **28**, 124-142.
- Ballard, T., R. Seager, J. E. Smerdon, B. I. Cook, A. J. Ray, B. Rajagopalan, Y. Kushnir, J. Nakamura, N. Henderson, 2014: Hydroclimate variability and change in the Prairie Potholes Region: The "duck factory" of North America, *Earth Interactions*, **14**, DOI: 10.1175/EI-D-14-0004.1.

- Kelley, C., S. Mohtadi, M. Cane, R. Seager and Y. Kushnir, 2015: Climate change in the Fertile Crescent and implications of the recent Syrian drought. *Proc. Nat. Acad. Sci.*, doi/10.1073/pnas.1421533112.
- Cook, B. I., R. Seager and J. E. Smerdon, 2014: The worst North American drought year of the last millennium: 1934. *Geophys. Res. Lett.*, **41**, DOI: 10.1002/2014GL061661.
- Seager, R., D. Neelin, I. Simpson, H. Liu, N. Henderson, T. Shaw, Y. Kushnir and M. Ting, 2014: Dynamical and thermodynamical causes of large-scale changes in the hydrological cycle over North America in response to global warming. *J. Climate*, **27**, 7921-7948.
- Kang, S., R. Seager, D. Frierson and X. Liu, 2014: Croll revisited: Why is the northern hemisphere warmer than the southern hemisphere? *Clim. Dyn.*, doi:10.1007/s00382-014-2147-z.
- Simpson, I., T. Shaw and R. Seager, 2014: A diagnosis of the seasonally and longitudinally varying mid-latitude circulation response to global warming. *J. Atmos. Sci.*, **71**, 2489-2515.
- Cook, B., J. Smerdon, R. Seager and S. Coats, 2014: Global warming and 21st century drying. *Clim. Dyn.*, **43**, 2607-2627, doi:10.1007/s00382-014-2075-y.
- Yang, W., R. Seager, M. Cane and B. Lyon, 2014: The East African long rains in observations and models. *J. Climate*, **27**, 7185-7202.
- Seager, R., H. Liu, N. Henderson, I. Simpson, C. Kelley, T. Shaw, Y. Kushnir and M. Ting, 2014: Causes of increasing aridification of the Mediterranean region in response to rising greenhouse gases. *J. Climate*, **27**, 4655-4676.
- Seager, R. 2015: Decadal hydroclimate variability across the Americas. In *Climate Change, Multidecadal and Beyond*, C.-P. Chang, M. Ghil, M. Latif and J. M. Wallace, Eds., World Scientific Publishing Co., Singapore, ISBN:978-981-4579-92-6, 4, pp235-253.
- Seager, R. and M. P. Hoerling, 2014: Atmosphere and ocean origins of North American droughts, *J. Climate*, **27**, 4581-4606.
- Williams, A. P., R. Seager, M. Berkelhammer, A. K. Macaladay, M. A. Crimmins, T. W. Swetnam, A. T. Trugman, N. Buenning, N. Hyrniw, N. G. McDowell, D. Noone, C. I. Mora, T. Rahn, 2014: Causes and implications of extreme atmospheric moisture demand during the record-breaking 2011 wildfire season in the southwest United States, *J. App. Meteor. Clim.*, **53**, 2671-2684.
- Williams, A. P., R. Seager, A. K. Macaladay, M. Berkelhammer, M. A. Crimmins, T. W. Swetnam, A. T. Trugman, N. Buenning, D. Noone, N. G. McDowell, N. Hyrniw, C. I. Mora, T. Rahn, 2014: Correlations between components of the water balance and burned area reveal new insights for predicting forest-fire area in the southwest United States, *Int. J. Wildland Fire*, <http://dx.doi.org/10.1071/WF14023>.
- Seager, R., L. Goddard, J. Nakamura, N. Henderson, D. Lee, 2014: Dynamical causes of the 2010/11 first year of the Texas-northern Mexico drought. *J. Hydromet.*, **15**, 39-68.
- Hoerling, M., J. Eischeid, A. Kumar, R. Leung, A. Mariotti, K. Mo, S. Schubert and R. Seager, 2014: Causes and Predictability of the 2012 Great Plains Drought. *Bull. Amer. Meteor. Soc.*, **95**, 269-282.
- Sheffield, J. and others, 2013: North American Climate in CMIP5 Experiments. Part II: Evaluation of historical simulations of intra-Seasonal to decadal variability. *J. Climate*, **26**, 9247-9290.

- Maloney, E.D. and others, 2014: North American Climate in CMIP5 Experiments: Part III: Assessment of 21st Century Projections. *J. Climate*, **27**, 2230-2270.
- Cook, B. I., J. E. Smerdon, R. Seager and E. R. Cook, 2014: Pan-continental droughts in North America over the last millennium. *J. Climate*, **27**, 383-397.
- Coats, S., J.E. Smerdon, B. I. Cook, R. Seager, 2013: Stationarity of the tropical Pacific teleconnection to North America in CMIP5/PMIP3 Model Simulations, *Geophys. Res. Lett.*, **40**, doi:10.1002/grl.50938.
- Sheffield, J. and others, 2013: North American Climate in CMIP5 Experiments. Part I Evaluation of historical simulations of continental and regional climatology. *J. Climate*, **26**, 9209-9245.
- Seager, R. and N. Henderson, 2013: Diagnostic computation of moisture budgets in the ERA-Interim Reanalysis with reference to analysis of CMIP-archived atmospheric model data. *J. Climate*, **26**, 7876-7901.
- Gonzalez, P., L. Polvani, R. Seager and G. Correa, 2013: Stratospheric ozone depletion: a key driver of recent precipitation trends in South Eastern South America. *Clim. Dyn.*, doi:10.1007/s00382-013-1777-x.
- Frierson, D. Y.-T. Hwang, N. Fuckar, R. Seager, S. M. Kang, A. Donahue, E. A. Maroon, X. Liu, D. S. Battisti, 2013: Contribution of ocean overturning circulation to tropical rainfall peak in the Northern Hemisphere, *Nature Geoscience*, **6**, 940-944.
- Tierney, J., J. Smerdon, K. Anchukaitis and R. Seager, 2013: Multidecadal variability in East African hydroclimate controlled by the Indian Ocean. *Nature*, **439**, 389-392.
- Coats, S., J. Smerdon, R. Seager, B. Cook and J. F. Gonzalez-Rpuco, 2013: Megadroughts in southwest North America in ECHO-G millennial simulations and their comparison to proxy drought reconstructions. *J. Climate*, **26**, 7635-7649.
- Yang, W., R. Seager and M. A. Cane, 2013: Zonal momentum balance in the tropical atmospheric circulation during the global monsoon mature months. *J. Atmos. Sci.*, **70**, 583-599.
- Cook, B. I. and R. Seager, 2013: The response of the North American Monsoon to increased greenhouse gas forcing. *J. Geophys. Res. (Atmospheres)*, **118**, 1690-1699.
- Seager, R., M. Ting, C. Li, N. Naik, B. Cook, J. Nakamura and H. Liu, 2013: Projections of declining surface-water availability for the southwestern United States. *Nature Climate Change*, **3**, 482-486.
- Williams, A.P., C. D. Allen, A. K. Macalady, D. Griffin, C. Woodhouse, D. Meko, T. Swetnam, S. Rauscher, R. Seager, H. Grissino-Mayer, J. Dean, E.R. Cook, C. Gangodagamage, M. Cai and N. McDowell, 2013: Temperature as a potent driver of regional forest drought stress and tree mortality, *Nature Climate Change*, **3**, 292-297.
- Wu, Y., L. Polvani and R. Seager, 2013: The importance of the Montreal Protocol for protecting the Earth's hydroclimate. *J. Climate*, **26**, 4049-4068.
- Nakamura, J., U. Lall, Y. Kushnir, A. Robertson and R. Seager, 2013: Dynamical structure of major floods in the U.S. Midwest and the United Kingdom. *J. Hydromet.*, **14**, 485-504.
- Wu, Y., R. Seager, T. Shaw, M. Ting and N. Naik, 2013: Atmospheric circulation response to an instantaneous doubling of carbon dioxide. Part II: Atmospheric transient adjustment and its dynamics. *J. Climate*, **26**, 918-935.

- Karlsrukas, K., R. Seager, A. Giannini and A. Busalacchi, 2013: A simple mechanism for the climatological mid-summer drought along the Pacific coast of Central America. *Atmosfera*, **26**, 261-281.
- Cook, B. I., R. Seager, R. L. Miller and J.A. Mason, 2013: Intensification of North American megadroughts through surface and dust aerosol forcing. *J. Climate*, **26**, 4414-4430.
- Kelley, C., M. Ting, R. Seager and Y. Kushnir, 2012: Mediterranean precipitation climatology, seasonal cycle, and trend as simulated by CMIP5. *Geophys. Res. Lett.*, doi:10.1029/2012GL053416.
- Karlsrukas, K., J. E. Smerdon, R. Seager and J. F. Gonzalez-Rouco, 2012: A Pacific centennial oscillation predicted by coupled GCMs. *J. Climate*, **25**, 5943-5961.
- Seager, R., N. Pederson, Y. Kushnir, J. Nakamura and S. Jurburg, 2012: The 1960s drought and subsequent shift to a wetter climate in the Catskill Mountains region of the New York City watershed. *J. Climate*, **25**, 6721-6742.
- Pederson, N., A. Bell, E. Cook, U. Lall, N. Devenini, R. Seager, K. Eggeston and K. Vranes, 2012: Is an epic pluvial masking the water insecurity of the greater New York City region? *J. Climate*, **26**, 1339-1354.
- Seager, R., N. Naik and L. Vogel, 2012: Does global warming cause intensified interannual hydroclimate variability?, *J. Climate*, **25**, 3355-3372.
- Wu, Y., R. Seager, M. Ting, N. Naik and T. Shaw, 2012: Atmospheric circulation response to an instantaneous doubling of carbon dioxide. Part I: Model experiments and transient thermal response in the troposphere. *J. Climate*, **25**, 2862-2879.
- Seager, R. and N. Naik, 2012: A mechanisms-based approach for detecting recent anthropogenic hydroclimate change. *J. Climate*, **25**, 236-261.
- Ruff, T., Y. Kushnir and R. Seager, 2012: Comparing Twentieth and Twenty-First Century patterns of interannual precipitation variability over the western United States and northern Mexico. *J. Hydrometeor.*, **13**, 366-378.
- Kelley, C., M. Ting, R. Seager and Y. Kushnir, 2011: The relative roles of natural variability and forced change in causing the late 20<sup>th</sup> Century drying of the Mediterranean region. *Clim. Dyn.*, doi:10.1007/s00382-011-1221.
- Cook, B., R. Seager and R. Miller, 2011: The causes and dynamics of the early 20<sup>th</sup> Century North American pluvial. *J. Climate*, **24**, 5043-5060.
- Ting, M., Y. Kushnir, R. Seager, and C. Li, 2011: Robust features of Atlantic multi-decadal variability and its climate impacts, *Geophys. Res. Lett.*, **38**, L17705, doi:10.1029/2011GL048712.
- Seager, R. and R. Burgman, 2011: Medieval hydroclimate revisited. *PAGES*, **19**, 10-12.
- D'Arrigo, R., R. Seager, J. Smerdon, A. LeGrande and E. Cook 2011: Winter 1783-1784: Was Laki or an analog of winter 2009/10 to blame? *Geophys. Res. Lett.*, **38**, doi:10.1029/2011GL046696.
- Cook, B., R. Seager and R. Miller, 2011: Impact of devegetated dune fields on North American climate during the Medieval Climate Anomaly. *Geophys. Res. Lett.*, **38**, doi:10.1029/2011GL047566.
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- Cook, B., R. Seager and R. Miller, 2010: Atmospheric circulation anomalies during two persistent North American droughts: 1932-1939 and 1948-1957. *Clim. Dyn.*, **36**, 2339-2355
- Harnik, N., R. Seager, N. Naik, M. Cane and M. Ting, 2010: The role of linear wave refraction in the transient eddy-mean flow response to tropical Pacific SST anomalies. *Quart. J. Roy. Meteor. Soc.*, **136**, 2132-2146.
- Seager, R. and G. Vecchi, 2010: Greenhouse warming and the 21st century hydroclimate of southwestern North America. *Proc. Nat. Acad. Sci.*, **107**, 21277-21282.
- Kushnir, Y., R. Seager, M. Ting, N. Naik and J. Nakamura, 2010: Mechanisms of tropical Atlantic SST influence on North American precipitation variability. *J. Climate*, **23**, 5610-5628.
- Seager, R., N. Naik and G. Vecchi, 2010: Thermodynamic and dynamic mechanisms for large-scale changes in the hydrological cycle in response to global warming. *J. Climate*, **23**, 4651-4668.
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