Curriculum Vitae for David B. Lobell

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Professional Appointments:

2013 - Present	Associate Professor, Environmental Earth System Science Department (EESS), Stanford University Senior Fellow, Center on Food Security and the Environment (FSE), Woods Institute for the Environment and Freeman Spogli Institute for International Studies, Stanford University
2009 – 2013	Assistant Professor (EESS) and Center Fellow (FSE), Stanford
2008 – 2009	Senior Research Scholar, FSE, Stanford
2005 – 2007	Lawrence Postdoctoral Fellow, Lawrence Livermore National Laboratory

Education:

2005	Ph.D.	Stanford University, Department of Geological and Environmental Sciences Dissertation: "A remote sensing approach to understand controls on cropland productivity"
2000	Sc.B.	Brown University Department of Applied Mathematics, Magna Cum Laude

Post-Degree Awards and Honors:

Macarthur Fellow, 2014-2018
Sir Frederick McMaster Fellowship, CSIRO, Australia, 2014
Terman Fellow, Stanford University, 2011-2014
Google Science Communication Fellow, 2011
James B. Macelwane Medal, American Geophysical Union, 2010
Fellow, American Geophysical Union, 2010
NASA New Investigator Program Award, 2008-2010
Lawrence Fellowship, Lawrence Livermore National Laboratory, 2005-2008

Teaching Experience:

Courses Taught at Stanford University.
EESS / EARTHSYST 211: "Fundamentals of Modeling" Fall 2009-2014
EARTHSYST 184: "Feeding Nine Billion" Fall 2013-2014
EESS / EARTHSYST 184/284: "Climate and Agriculture" Spring 2008, 2010, 2012
EESS 260: "Advanced Statistical Methods for Earth System Science" Winter 2012
EESS 318: "Global Land Use to 2050" Winter 2012

Professional Activities and Service

Lead Author, Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report, Chapter 7 of the Working Group II, "Food Production Systems and Food Security", 2010-2014. Also member of core writing team for "Summary for Policy Makers" and contributing author for Ch. 18 on "Detection and Attribution of Observed Impacts"

Member of National Academy of Sciences Committee on Stabilization Targets for Atmospheric Greenhouse Gas Concentrations (August 2009-May 2010) and Assessing the Impact of Climate Change on Political and Social Stresses (Sep 2011-Sep 2012)

Member of Technical Advisory and Review Panel for World Bank Group activities related to climate change adaptation, 2012

Editor, Global Change Biology, 2011-present
Editorial Advisory Board Member, Global Food Security, 2012-present
Editorial Board Member, Environmental Research Letters, 2009-2013
Associate Editor, Journal of Environmental Quality, 2008 – 2010
Co-organized and Led Meeting of 20 International Scientists on "Adapting Agriculture to Climate Change: The Role of Crop Wild Relatives" in Bellagio, Italy in September, 2010
Organized and Led Meeting of 17 International Scientists on "Climate extremes and crop adaptation" at Stanford in June, 2009
Edited special issue of J Environmental Quality on "Remote Sensing of Soil Degradation"
National Academy of Sciences Panel on Climate, Energy, and Security (May-June 2008)
National Academy of Sciences Workshop on Remote Sensing for Human Welfare (January 2006)
NASA Land Cover Land Use Change Grant Review Panel, September 2005
Reviewer for over 25 scientific journals, including Science, Nature and PNAS
Numerous invited talks at corporations and business conferences on climate change adaptation
Numerous public lectures throughout the Bay Area on climate change and food

Books:

Lobell, D.B. and Burke, M.B. (eds.) 2010. Climate Change and Food Security. Springer. http://www.springerlink.com/content/978-90-481-2952-2

Peer Reviewed Journal Publications (*indicates first author was a student or post-doc):

Lobell, D.B., 2014. Climate change adaptation in crop production: Beware of illusions. *Global Food Security*. 3: 72-76

Lobell, D.B. and Tebaldi, C., 2014. Getting caught with our plants down: the risks of a global crop yield slowdown from climate trends in the next two decades. *Environmental Research Letters*, 9(7): 074003.

*Moore, F.C. and Lobell, D.B., 2014. Adaptation potential of European agriculture in response to climate change. *Nature Climate Change*. 4(7) 610-614

Lobell, D.B., Roberts, M.J., Schlenker, W., Braun, N., Little, B.B., Rejesus, R.M. and Hammer, G.L., 2014. Greater Sensitivity to Drought Accompanies Maize Yield Increase in the U.S. Midwest. *Science*, 344(6183): 516-519.

*Ravi, S., Lobell, D.B. and Field, C.B., 2014. Tradeoffs and Synergies between Biofuel Production and Large Solar Infrastructure in Deserts. *Environmental science & technology*, 48(5): 3021-3030.

Hertel TW, Lobell DB. 2014. Agricultural adaptation to climate change in rich and poor countries: Current modeling practice and potential for empirical contributions. *Energy Economics*.

Challinor, A.J., Watson, J., Lobell, D.B., Howden, S.M., Smith, D.R. and Chhetri, N., 2014. A meta-analysis of crop yield under climate change and adaptation. *Nature Clim. Change*, 4(4): 287-291.

* Sibley, A., P. Grassini, N. Thomas. K. Cassman, and D.B. Lobell. 2014. Testing remote sensing approaches for assessing yield variability among maize fields, *Agronomy Journal*, 106: 24-32

*Meng Q, Hou P, Lobell D.B, Wang H, Cui Z, Zhang F, Chen X. 2013. The benefits of recent warming for maize production in high latitude China. Climatic Change. Doi: 10.1007/s10584-013-1009-8

Stone, D., Auffhammer, M., Carey, M., Hansen, G., Huggel, C., Cramer, W., Lobell, D., Molau, U., Solow, A., Tibig, L. and Yohe, G., 2013. The challenge to detect and attribute effects of climate change on human and natural systems. Climatic Change: 1-15.

Saba, A., Biasutti, M., Gerrard, M. B., & Lobell, D. B. 2013. Getting Ahead of the Curve: Supporting Adaptation to Long-term Climate Change and Short-term Climate Variability Alike. Carbon and Climate Law Review, 7(1), 3–23.

Campbell, J.E., Lobell, D.B., Genova, R.C., Zumkehr, A. and Field, C.B., 2013. Seasonal energy storage using bioenergy production from abandoned croplands. *Environmental Research Letters*, 8(3): 035012.

*Gourdji, S.M., Sibley, A.M. and Lobell, D.B., 2013. Global crop exposure to critical high temperatures in the reproductive period: historical trends and future projections. *Environmental Research Letters*, 8(2): 024041.

*McGrath, J.M. and Lobell, D.B., 2013. Regional disparities in the CO2 fertilization effect and implications for crop yields. *Environmental Research Letters*, 8(1): 014054.

Schlenker, W., Roberts, M.J. and Lobell, D.B., 2013. US maize adaptability. *Nature Climate Change*, 3(8): 690-691.

Lobell, D.B.. G.L. Hammer, G. McLean, C. Messina, M.J. Roberts, and W. Schlenker. 2013. The critical role of extreme heat for maize production in the United States, *Nature Climate Change*, DOI: 10.1038/NCLIMATE1832.

* Georgescu, M., Lobell, D.B., Field, C.B., & Mahalov, A. (2013). Simulated hydroclimatic impacts of projected Brazilian sugarcane expansion. *Geophysical Research Letters*, 40, 1–6.

Lobell, D.B., U. Baldos, and T.W. Hertel. 2013. Climate adaptation as mitigation: the case of agricultural investments, *Environmental Research Letters*, 8 015012 doi:10.1088/1748-9326/8/1/015012

* Gourdji, S.M., K. Matthews, M. Reynolds, J. Cross, and D.B. Lobell. 2013. An assessment of wheat yield sensitivity and breeding gains in hot environments, *Proceedings of the Royal Society B: Biological Sciences*, 280: 1752.

Lobell, D.B., 2013. The use of satellite data for crop yield gap analysis. *Field Crops Research*, 143, 56-64

Lobell, D.B., Ortiz-Monasterio, J.I., Sibley, A.M., & Sohu, V.S. 2013. Satellite detection of earlier wheat sowing in India and implications for yield trends. Agricultural Systems, 115, 137-143

Lobell, D.B. 2013. Errors in climate datasets and their effects on statistical crop models. Agricultural and Forest Meteorology, 170, 58-66

Lobell, D.B., and Gourdji, S.M., 2012. The influence of climate change on global crop productivity, *Plant Physiology*, 160: 1686-1697.

* McGrath, J.M., & Lobell, D.B. 2012. Reduction of transpiration and altered nutrient allocation contribute to nutrient decline of crops grown in elevated CO2 concentrations. Plant, Cell & Environment, in press.

* Urban, D., Roberts, M., Schlenker, W. and Lobell, D., 2012. Projected temperature changes indicate significant increase in interannual variability of U.S. maize yields. Climatic Change, 112(2): 525-533.

Lobell, D.B., Sibley, A. and Ivan Ortiz-Monasterio, J., 2012. Extreme heat effects on wheat senescence in India. Nature Clim. Change, advance online publication. DOI: 10.1038/NCLIMATE1356

*Pongratz, J., Lobell, D.B., Cao, L. and Caldeira, K., 2012. Crop yields in a geoengineered climate. Nature Clim. Change, 2(2): 101-105.

*Maltais-Landry, G. and Lobell, D.B., 2012. Evaluating the Contribution of Weather to Maize and Wheat Yield Trends in 12 US Counties. Agronomy journal, 104(2): 301.

Lobell, D. and Field, C., 2012. California perennial crops in a changing climate. Climatic Change, 109: 317-333.

Lobell, D., Torney, A. and Field, C., 2012. Climate extremes in California agriculture. Climatic Change, 109: 355-363.

Lobell, D.B., W.S. Schlenker, and J. Costa-Roberts. 2011. Climate trends and global crop production since 1980. *Science*, doi:10.1126/science.1204531.

Lobell, D.B., Banziger, M., Magorokosho, C. and Vivek, B., 2011. Nonlinear heat effects on African maize as evidenced by historical yield trials. *Nature Clim. Change*, 1(1): 42-45.

* Loarie, S.R., Lobell, D.B., Asner, G.P., Mu, Q. and Field, C.B., 2011. Direct impacts on local climate of sugar-cane expansion in Brazil. Nature Clim. Change, 1(2): 105-109.

*Nicholas, K.A., Matthews, M.A., Lobell, D.B., Willits, N.H. and Field, C.B., 2011. Effect of vineyard-scale climate variability on Pinot noir phenolic composition. *Agricultural and Forest Meteorology*, 151(12): 1556-1567.

Ahmed, S.A. et al., 2011. Climate volatility and poverty vulnerability in Tanzania. *Global Environmental Change*, 21(1): 46-55.

Rowhani, P., Lobell, D. B., Linderman, M. & Ramankutty, N. 2011. Climate variability and crop production in Tanzania. *Agricultural and Forest Meteorology* 10.1016/j.agrformet.2010.12.002.

*McGrath, J.M., and D.B. Lobell. 2011. An independent method for deriving the carbon fertilization effect using historical yield data from wet and dry years. *Global Change Biology*, doi: 10.1111/j.1365-2486.2011.02406.x.

* Georgescu, M., Lobell, D.B. and Field, C.B., 2011. Direct climate effects of perennial bioenergy crops in the United States. *Proceedings of the National Academy of Sciences*, 108(11): 4307-4312.

* Seifert, C., Ortiz-Monasterio, J.I. and Lobell, D.B., 2011. Satellite-Based Detection of Salinity and Sodicity Impacts on Wheat Production in the Mexicali Valley. *Soil Science Society of America Journal*, 75(2): 699.

* Loarie, S.R., Lobell, D.B., Asner, G.P. and Field, C.B., 2011. Land-Cover and Surface Water Change Drive Large Albedo Increases in South America. *Earth Interactions*, 15(7): 1-16.

Ebi, K.L., D.B. Lobell, and C.B. Field. 2010. Climate change impacts on food security and nutrition, *United Nations' SCN News*, 38: 11-17.

*Burney, J.A., Davis, S.J. and Lobell, D.B., 2010. Greenhouse gas mitigation by agricultural intensification. *Proceedings of the National Academy of Sciences*, 107(26): 12052.
Lobell, D.B., Ortiz-Monasterio, J.I. and Lee, A.S., 2010. Satellite evidence for yield growth opportunities in Northwest India. *Field Crops Research*, 118: 13-20.
Hertel, T., M.B. Burke and D.B. Lobell, 2010. The poverty implications of climate-induced crop yield changes by 2030. *Global Environmental Change*, 20(4): 577-585.
Lobell, D.B. and M.B. Burke. 2010. On the use of statistical models to predict crop yield responses to climate change. *Agricultural and Forest Meteorology*, 150 (11): 1443-1452.
Schlenker W and Lobell DB. 2010. Robust negative impacts of climate change on African agriculture. *Environmental Research Letters*: 014010 (8pp)
*Ahrens, T.D., D.B. Lobell, J.I. Ortiz-Monasterio, Y. Li, P.A. Matson. 2010. Narrowing the agronomic yield gap with improved nitrogen use efficiency: a modeling approach. *Ecological Applications*. 20(1): 91-100.
*Georgescu, M., D. B. Lobell, and C. B. Field. 2009, Potential impact of U.S. biofuels on regional climate, *Geophys. Res. Lett*., 36, L21806, doi: 10.1029/2009GL040477.
Lobell, D.B. 2009. Remote Sensing of Soil Degradation: Introduction. *J. Environ. Qual*. 39:1-4.
Lobell, D.B., S.M. Lesch, D.L. Corwin, M.G. Ulmer, K.A. Anderson, D.J. Potts, J.A. Doolittle, M.R. Matos, and M.J. Baltes. 2009. Regional-scale Assessment of Soil Salinity in the Red River Valley Using Multi-year MODIS EVI and NDVI. *J. Environ. Qual*. 39:35-41.
Burke, M.B., E. Miguel, S. Satyanath, J.A. Dykema, and D.B. Lobell. 2009. Warming increases the risk of civil war in Africa. *Proceedings of the National Academy of Sciences* 106:20670.
Burke MB, Lobell DB and Guarino L 2009 Shifts in African crop climates by 2050, and the implications for crop improvement and genetic resources conservation *Global Environmental Change*: 19, 317-325.
Lobell D.B., K.G. Cassman, and C.B.Field. 2009. Crop Yield Gaps: Their Importance, Magnitudes, and Causes. *Annual Review of Environment and Resources*, 34:4.1-4.26.
Campbell, J. E., D.B. Lobell, Field, C. B. 2009. Greater transportation energy and GHG offsets from bioelectricity than ethanol. *Science* 10.1126/science.1168885
Lobell, D.B., G. Bala, A. Mirin, T. Phillips, R. Maxwell, D. Rotman. 2009, Regional differences in the influence of irrigation on climate, *J Climate*. 22:2248-2255.
Lobell, D.B., and M.B. Burke. 2008. Why are agricultural impacts of climate change so uncertain? The importance of temperature relative to precipitation. *Environmental Research Letters* 3:034007.
Campbell, J. E., Lobell, D. B., Genova, R. C., Field, C. B. 2008. The global potential of bioenergy on abandoned agriculture lands, *Environmental Science and Technology*. 10.1021/es800052w
Lobell, D.B., M.B. Burke, C. Tebaldi, M.M. Mastrandrea, W.P. Falcon, and R.L. Naylor. 2008. Prioritizing climate change adaptation needs for food security in 2030. *Science*, 319:607-610. DOI: 10.1126/science.1152339
Lobell, D.B., and J.I. Ortiz-Monasterio. 2008. Satellite Monitoring of Yield Responses to Irrigation Practices across Thousands of Fields. *Agron. J*. 100:1005-101
Lobell, D. B., C. J. Bonfils, L. M. Kueppers, and M. A. Snyder. 2008, Irrigation cooling effect on temperature and heat index extremes, *Geophys. Res. Lett*., 35, L09705, doi:10.1029/2008GL034145.
Tebaldi, C., and D. B. Lobell 2008, Towards probabilistic projections of climate change impacts on global crop yields, *Geophys. Res. Lett*., 35, L08705, doi:10.1029/2008GL033423.
Bonfils, C., P. Duffy, B. Santer, T. Wigley, D. Lobell, T. Phillips, and C. Doutriaux. 2008. Identification of external influences on temperatures in California. *Clim. Change*:10.1007/s10584-007-9374-9.
Field, C.B., J.E. Campbell and D.B. Lobell. 2008. Biomass energy: The scale of the potential resource. *Trends in Ecology & Evolution*,. doi:10.1016/j.tree.2007.12.001
Lobell, D.B., C. Bonfils, and J.M. Faures. 2008. The role of irrigation expansion in past and future temperature trends. *Earth Interactions*, 12:1-11.
Lobell, D.B., and C. Bonfils. 2008. The Effect of Irrigation on Regional Temperatures: A Spatial and Temporal Analysis of Trends in California, 1934–2002. *J. Clim.* 21:2063-2071.
Lobell, D.B. and C.B. Field. 2008. Estimation of the CO_2 fertilization effect using growth rate anomalies in CO_2 and crop yields since 1961. *Global Change Biology*, 14, 39-45.
Duffy, P.B., C. Bonfils, and D.B. Lobell. 2007. Interpreting Recent Temperature Trends in California. *EOS Transcations*, 88 (41): 409-410.
Field, C.B., D.B. Lobell, H.A. Peters, and N.R. Chiariello. 2007. Feedbacks of Terrestrial Ecosystems to Climate Change. *Annual Review of Environment and Resources*, 32: 7.1-7.29.
Bonfils, C. and D.B. Lobell. 2007. Evidence for a recent slowdown in irrigation-induced cooling, *Proceedings of the National Academy of Sciences*, doi: 10.1073/pnas.0700144104

Lobell, D.B. 2007. Changes in diurnal temperature range and national cereal yields. *Agricultural and Forest Meteorology*, 145, 229-238.
Lobell, D.B. and C.B. Field. 2007. Global scale climate-crop yield relationships and the impacts of recent warming. *Environmental Research Letters*, 2, 004000 (7pp)
Lobell, D. B., C. Bonfils, and P. B. Duffy. 2007. Climate change uncertainty for daily minimum and maximum temperatures: a model inter-comparison. *Geophysical Research Letters*, 34: L05715, doi:10.1029/2006GL028726.
Bala, G., K. Caldeira, M. Wickett, T. J. Phillips, D. B. Lobell, C. Delire, and A. Mirin. 2007, Combined climate and carbon-cycle effects of large-scale deforestation, *Proceedings of the National Academy of Sciences*, 0608998104.
Bonfils, C., P. Duffy, and D. Lobell, 2007, Comments on "Methodology and Results of Calculating Central California Surface Temperature Trends: Evidence of Human-Induced Climate Change?" *J. Climate*, 20, 4486-4489.
Lobell, D. B., J. I. Ortiz-Monasterio, F. C. Gurrola, and L. Valenzuela. 2007. Identification of Saline Soils with Multiyear Remote Sensing of Crop Yields, *Soil Science Society of America Journal*, 71, 777-783.
Lobell, D.B., and J.I. Ortiz-Monasterio. 2007. Impacts of day vs. night temperatures on spring wheat yields: a comparison of empirical and CERES model predictions in three locations. *Agronomy Journal*, 99:469-477.
Ortiz-Monasterio, J.I., and D.B. Lobell. 2007. Remote sensing assessment of regional yield losses due to sub-optimal planting dates and fallow period weed management. *Field Crops Research*. 101:80-87.
Lobell, D.B. 2007. The cost of uncertainty for nitrogen fertilizer management: A sensitivity analysis. *Field Crops Research*. 100:210-217.
Lobell, D.B., K.N. Cahill, and C. Field. 2007. Historical effects of temperature and precipitation on California crop yields. *Climatic Change*, 81: 187-203.
Lobell, D.B. , J.I. Ortiz-Monasterio, and W.P. Falcon. 2007. Yield Uncertainty at Field Scales Evaluated with Multi-Year Satellite Data. *Agricultural Systems*, 92:76-90.
Lobell, D.B., C.B. Field, K.N. Cahill, and C. Bonfils. 2006. Impacts of future climate change on California perennial crop yields: model projections with climate and crop uncertainties. *Agricultural and Forest Meteorology*, 141(2-3):208-218.
Lobell, D. B., G. Bala, C. Bonfils, and P. B. Duffy. 2006. Potential bias of model projected greenhouse warming in irrigated regions, Geophys. Res. Lett., 33, L13709, doi:10.1029/2006GL026770.
Lobell, D.B., G. Bala, and P.B. Duffy, 2006. Biogeophysical impacts of cropland management changes on climate. *Geophysical Research Letters*, 33, L06708, doi:10.1029/2005GL025492.
Lobell, D.B., K.N. Cahill, and C.B. Field, 2006. Weather-based forecasts of California crop yields. *California Agriculture*, 60: 211-215.
Lobell, D.B., and J.I. Ortiz-Monasterio, 2006. Evaluating Strategies for Improved Water Use in Spring Wheat with CERES. *Agricultural Water Management*, 84: 249-258.
Lobell, D.B., and J.I. Ortiz-Monasterio. 2006. Regional importance of crop yield constraints: Linking simulation models and geostatistics to interpret spatial patterns. *Ecological Modelling* 196:173-182.
Lobell, D.B., J.I. Ortiz-Monasterio, G.P. Asner, R. Naylor, W. Falcon, and P. Matson, 2005. Analysis of wheat yield and climatic trends in Mexico. *Field Crops Research*, 94 (2-3): 250-256.
Lobell, D.B., J.I. Ortiz-Monasterio, G.P. Asner, R. Naylor, and W. Falcon, 2005. Combining field surveys, remote sensing, and regression trees to understand yield variations in an irrigated wheat landscape. *Agronomy Journal*, 97 (1): 241-249.
Hicke, J.A., and D.B. Lobell, 2004. Spatiotemporal patterns of cropland area and net primary production in the central United States. *Geophysical Research Letters*, 31, L20502, doi:10.1029/2004GL020927.
Lobell, D.B., and G.P. Asner, 2004. Cropland Distributions from Temporal Unmixing of MODIS Data. *Remote Sensing of Environment*, 93(3): 412-422.
Hicke, J.A., D.B. Lobell, and G.P. Asner, 2004. Cropland area and net primary production computed from 30 years of USDA agricultural harvest data. *Earth Interactions*, 8(10): 1-20.
Lobell, D.B., J.I. Ortiz-Monasterio, and G.P. Asner, 2004. Relative Importance of Soil and Climate Variability for Nitrogen Management in Irrigated Wheat. *Field Crops Research*, 87, 155-165.
Luers, A.L., D.B. Lobell, L.S. Sklar, C.L. Addams, and P.A. Matson, 2003. A method for quantifying vulnerability, applied to the agricultural system of the Yaqui Valley, Mexico. *Global Environmental Change - Human and Policy Dimensions*, 13(4): 255-267.

Lobell, D.B. and G.P. Asner, 2003. Comparison of Earth Observing-1 ALI and Landsat ETM+ for crop identification and yield prediction in Mexico. *IEEE Transactions On Geoscience and Remote Sensing*, 41(6): 1277-1282.

Lobell, D.B. and G.P. Asner, 2003. Climate and management contributions to recent trends in U.S. agricultural yields. *Science*, 299: 1032.

Lobell, D.B., G.P. Asner, J.I. Ortiz-Monasterio, and T.L. Benning, 2003. Remote sensing of regional crop production in the Yaqui Valley, Mexico: estimates and uncertainties. *Agriculture, Ecosystems, and Environment*, 94: 205-220.

Lobell, D.B., J.I. Ortiz-Monasterio, C.L. Addams, and G.P. Asner, 2002. Soil, climate, and management impacts on regional agricultural productivity from remote sensing. *Agricultural and Forest Meteorology*, 114: 31-43.

Lobell, D.B., J.A. Hicke, G.P. Asner, C.B. Field, and S.O. Los, 2002, Satellite estimates of productivity and light use efficiency in United States agriculture, 1982-1998. *Global Change Biology*, 8: 722-735.

Lobell, D.B., and G.P. Asner, 2002. Moisture effects on soil reflectance. *Soil Science Society of America Journal*, 66: 722-727.

Lobell, D.B., G.P. Asner, R. Treuhaft, and B. Law, 2002, View Angle Effects on Canopy Reflectance and Spectral Mixture Analysis of Temperate Forests Using AVIRIS. *International Journal of Remote Sensing*, 23: 2247-2262.

Lobell, D.B., G.P. Asner, R. Treuhaft, and B. Law, 2001, Sub-pixel Canopy Cover Estimation of Coniferous Forests in Oregon Using SWIR Imaging Spectrometry. *Journal of Geophysical Research*, 106: 5151-5160.

Elmore, A.J., J.F. Mustard, S.J. Manning, and D.B. Lobell, 2000, Quantifying Vegetation Change in Semi-Arid Environments: Precision and Accuracy of Spectral Mixture Analysis and the Normalized Difference Vegetation Index. *Remote Sensing of Environment*, 73(1): 87-102.

Asner, G.P., and D.B. Lobell, 2000, A Biogeophysical Approach for Automated SWIR Unmixing of Soils and Vegetation. *Remote Sensing of Environment*, 74(1): 99-112.

Commentaries and Perspectives:

Lobell, D.B. 2012. The case of the missing wheat. *Environmental Research Letters* in press

Guarino, L. and Lobell, D.B., 2011. A walk on the wild side. *Nature Clim. Change*, 1(8): 374-375.

Fedoroff, N.V., D.S. Battisti, R.N. Beachy, P.J.M. Cooper, D.A. Fischhoff, C.N. Hodges, V.C. Knauf, D. Lobell, B.J. Mazur, D. Molden, M.P. Reynolds, P.C. Ronald, M.W. Rosegrant, P.A. Sanchez, A. Vonshak, and J.K. Zhu. 2010. Radically Rethinking Agriculture for the 21st Century. *Science* 327:833-834.

Book Chapters:

Lobell, D.B. 2010. African Agriculture in 2050: Climate Change Impacts and Adaptation Options. In Rosenzweig and Hillel (ed.) 2010. Handbook on Climate Change and Agroecosystems, ASA.

Lobell, D.B. and Burke, M.B. 2010. Economic Impacts of Climate Change on Agriculture to 2030. In Reynolds, M. (ed.) 2010. Climate Change and Crop Production. CABI.

Lobell, D.B. and Burke, M.B. 2010. Chapter 1: Introduction. In Lobell, D.B. and Burke, M.B. (eds.) 2010. Climate Change and Food Security. Springer.

Burke, M.B. and Lobell, D.B. 2010. Chapter 2: Food Security and Climate: An Overview. In Lobell, D.B. and Burke, M.B. (eds.) 2010. Climate Change and Food Security. Springer.

Lobell, D.B. 2010. Chapter 5: Crop Responses to Climate: Time Series Models. In Lobell, D.B. and Burke, M.B. (eds.) 2010. Climate Change and Food Security. Springer.

Burke, M.B. and Lobell, D.B. 2010. Chapter 8: Adaptation – What Do We Know? In Lobell, D.B. and Burke, M.B. (eds.) 2010. Climate Change and Food Security. Springer.

Lobell, D.B. and Burke, M.B. 2010. Chapter 10: Regional and Global Assessments. In Lobell, D.B. and Burke, M.B. (eds.) 2010. Climate Change and Food Security. Springer.

Lobell, D.B. and Burke, M.B. 2010. Chapter 11: Where Do We Go From Here? In Lobell, D.B. and Burke, M.B. (eds.) 2010. Climate Change and Food Security. Springer.

Lobell, D.B. 2010. Impacts of climate change on global crop production and food security. In Climate Change Science and Policy, edited by S. Schneider et al., in press

Corwin, D. L., S.M. Lesch, and D.B. Lobell. 2009. Chapter 10 - Laboratory and field measurements of salinity. In: Tanji, K.K. (ed.) Agricultural Salinity Assessment and Management, 2nd edition.

Asner, G.P., J.A. Hicke, and D.B. Lobell. 2003. Per-pixel analysis of forest structure: Vegetation indices, spectral mixture analysis and canopy reflectance modeling. In M. Wulder and S.E. Franklin (eds.),

Methods and Applications for Remote Sensing of Forests: Concepts and Case Studies. Kluwer Academic Publishers, New York.

Conference Proceedings:

Lobell, D.B. and J.I. Ortiz-Monasterio. Mapping Soil Salinity in the Colorado River Delta Region: Scaling From Point to Regional Scales With Multi-Year Satellite Imagery. International Salinity Forum, Riverside, CA, 2005.

Lobell, D.B. and G.P. Asner. Hyperion studies of crop stress in Mexico. Proceedings of the AVIRIS Workshop, NASA Jet Propulsion Laboratory, Pasadena, CA, 2003.

Selected Recent Invited Talks (* = keynote address)

*"Aussie Rules Agriculture" Australia National University, Symposium on Food and Environmental Security, Canberra, Australia, April 2014.

"Can satellites help to close crop yield gaps?" CSIRO, Canberra, Australia, April 2014.

"Feeding Nine Billion" Monash University, Melbourne, Australia, April 2014.

"Scalable yield gap analysis" CIMMYT workshop on Remote Sensing: Beyond Images. Mexico City, December 2013.

"Feeding Nine Billion in a Hotter World" Distinguished Scholar Seminar Series, Florida Climate Institute, University of Florida, November 2013.

"Food Production and Food Security under Global Change: What do the data show?" Annual Meeting of the American Society of Plant Biologists, Providence, July 2013.

*"What aspects of climate change really matter for agriculture, and vice versa?" Community Earth System Model (CESM) Workshop, Breckenridge, June 2013.

*"(How) Should climate trends affect decisions in agricultural development?" Association for International Agriculture and Rural Development (AIARD) Annual Conference. Washington, D.C. June 2013.

"Why heat hurts hunger (and what to do about it)" Brown University Geology Colloquium, April 2013

"Heat, hunger, and the next generation of crops" Arizona State Sustainability Colloquium, March 2013

"Direct Impacts of climate change on crops" Monsanto Climate Science Symposium, St. Louis, February 2013

"Impacts of climate change on agriculture and opportunities for detection and attribution." Banff International Research Station Workshop on Frontiers in the Detection and Attribution of Climate. Banff, Alberta, Canada May 2012.

*"(How) should climate change alter investment in agriculture and natural resource management? FAO - World Bank meeting on Investing in agriculture and natural resources management in the context of climate change in East Asia and the Pacific Bangkok, Thailand, May 2012 (by video)

"Climate Change and Agricultural Adaptation" Global Food Policy and Food Security Symposium Series, Stanford, CA, Dec. 2011

*"Food Security and Climate Change: What do we really need to know?" NCCR Climate Summer School, Grindelwald, Switzerland, Sep 2011

"Climate trends and crop production" China Agricultural University, Sept 2011

"How satellites can and can't be useful for yield gap analysis" Yield Gap Assessment Workshop, China Agricultural University, Sept 2011

"Implications of climate change for agriculture and commodity markets" Climate Change Impacts and Integrated Assessment (CCI/IA) Workshop, Snowmass, CO July 2011

"Climate change: risks and vulnerabilities" National Academy of Sciences Meeting on Exploring Sustainable Solutions for Increasing Global Food Supplies, Washington, DC. May 2011

"Agricultural applications of multi-year remote sensing" 15th Annual NASA LCLUC Science Team Meeting. Maryland , March 2011

*"Corn yields and climate: their inseparable futures." National Corn Grower's Association Annual Meeting, August 2010

"Applying new satellite technologies to improve productivity in wheat." Punjab Agricultural University, March 2010

"The Effects of Global Climate Change on Food Security." AAAS Annual Meeting, February 2010