




David Lobell

Benjamin M. Page Professor, William Wrigley Senior Fellow at the Freeman Spogli Institute, Senior Fellow at the Woods Institute for the Environment and at the Stanford Institute for Economic Policy Research

Earth System Science

 Curriculum Vitae available Online

CONTACT INFORMATION

• Administrative Contact

Karen Yang - FSE Associate Director for Finance and Administration

Email ksyang@stanford.edu

Tel 650-736-3681

Bio

BIO

David Lobell is a Professor at Stanford University in the Department of Earth System Science and the Gloria and Richard Kushel Director of the Center on Food Security and the Environment. He is also the William Wrigley Senior Fellow at the Stanford Woods Institute for the Environment, and a senior fellow at the Freeman Spogli Institute for International Studies (FSI) and the Stanford Institute for Economic Policy and Research (SIEPR). His research focuses on agriculture and food security, specifically on generating and using unique datasets to study rural areas throughout the world. He has been recognized with a MacArthur Fellowship in 2013, a McMaster Fellowship from CSIRO in 2014, and the Macelwane Medal from the American Geophysical Union in 2010. He also served as lead author for the food chapter and core writing team member for the Summary for Policymakers in the recent Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report.

Prior to his current appointment, Dr. Lobell was a Senior Research Scholar at FSE from 2008-2009 and a Lawrence Post-doctoral Fellow at Lawrence Livermore National Laboratory from 2005-2007. He received a PhD in Geological and Environmental Sciences from Stanford University in 2005, and a Sc.B. in Applied Mathematics, Magna Cum Laude from Brown University in 2000.

ACADEMIC APPOINTMENTS

- Professor, Earth System Science
- Senior Fellow, Freeman Spogli Institute for International Studies
- Senior Fellow, Stanford Woods Institute for the Environment
- Senior Fellow, Stanford Institute for Economic Policy Research (SIEPR)
- Affiliate, Precourt Institute for Energy

ADMINISTRATIVE APPOINTMENTS

- Lawrence Postdoctoral Fellow, Lawrence Livermore National Laboratory, (2005-2007)
- Senior Research Scholar, Program on Food Security and the Environment, Stanford University, (2008-2009)
- Senior Fellow, Stanford Woods Institute for the Environment, Stanford University, (2009- present)

- Senior Fellow, Freeman Spogli Institute for International Studies, Stanford University, (2009- present)
- Center Fellow, Center on Food Security and the Environment, Stanford University, (2009- present)
- Associate Director, Center on Food Security and the Environment, Stanford University, (2012-2014)
- Deputy Director, Center on Food Security and the Environment, Stanford University, (2014- present)
- Assistant Professor, Environmental Earth System Science, Stanford University, (2009- present)

HONORS AND AWARDS

- NAS Food and Agriculture Prize, National Academy of Sciences (2022)
- Outstanding Student Paper Award, American Geophysical Union Fall Meeting (1999)
- Honorary Doctorate, Brown University (2021)
- Graduate Research Fellowship, NSF (2000-2004)
- Carbon, Climate and Society Initiative Fellowship, NSF Integrative Graduate Education and Research Training (2001-2002)
- Best of Session Award, ERIM Conference on Geospatial Information in Agriculture and Forestry (2001)
- Graduate Student Fellowship, EPA Science to Achieve Results (2004)
- Graduate Student Fellowship, NASA Earth System Science (2004)
- Lawrence Fellowship, Lawrence Livermore National Laboratory (2005-2008)
- NASA New Investigator Program Award, NASA (2008-2011)
- Google Science Communication Fellow, Google (2010)
- James B. Macelwane Medal, American Geophysical Union (2010)
- Terman Fellow, Stanford University (2011-2014)
- Macarthur Fellow, Macarthur Foundation (2014-2018)
- Sir Frederick McMaster Fellowship, CSIRO, Australia (2014)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Advisor, Global Commission on Adaptation (2018 - present)
- Editorial Advisory Board Member, Global Food Security (2012 - present)
- Core Writing Team Member, IPCC Working Group 2 Summary for Policy Makers (2012 - 2014)
- Editor, Global Change Biology (2011 - present)
- Woodrow Wilson Fellowship selection committee, School of Education, Stanford University (2011 - 2013)
- Committee on Assessing the Impact of Climate Change on Political and Social Stresses, Member of National Academy of Sciences (2011 - 2012)
- Member of Technical Advisory and Review Panel, World Bank Group activities related to climate change adaptation (2011 - 2012)
- Advisory committee for Haas center, Stanford University (2010 - present)
- Fellow, American Geophysical Union (2010 - present)
- Freshman Advisor, Stanford University (2010 - present)
- Lead Author, IPCC Working Group 2, "Food Production Systems and Food Security" (2010 - 2014)
- Stanford Interdisciplinary Graduate Fellowship review committee, Stanford University (2010 - 2013)
- Woods Institute Environmental Venture Project proposal review committee, Stanford University (2010 - 2013)
- Carnegie Institution Dept. of Global Ecology Search Committee, Stanford University (2010 - 2010)
- EESS department seminar organizer, Stanford University (2010 - 2010)
- Earth Systems Executive Committee, Land Track Leader, Stanford University (2009 - present)

- Earth Systems masters advisor, Stanford University (2009 - present)
- Goldman Honors Program Advisory Committee, Stanford University (2009 - present)
- PhD committees for four students, Stanford University (2009 - present)
- Editorial Board Member, Environmental Research Letters (2009 - 2013)
- Member, National Academy of Sciences Committee on Stabilization Targets for Atmospheric Greenhouse Gas Concentrations (2009 - 2010)
- Associate Editor, Journal of Environmental Quality (2008 - 2010)
- Panel on Climate, Energy, and Security, Panel on Climate, Energy, and Security (2008 - 2008)
- Workshop on Remote Sensing for Human Welfare, National Academy of Sciences (2006 - 2006)
- Member, American Society of Agronomy (2005 - present)
- Member, Ecological Society of America (2005 - present)
- Land Cover Land Use Change Grant Review Panel, NASA (2005 - 2005)
- Member, American Geophysical Union (2000 - present)

PROFESSIONAL EDUCATION

- Ph.D., Stanford University , Geological and Environmental Sciences (2005)
- Sc.B., Brown University , Applied Mathematics (2000)

PATENTS

- David Lobell. "United States Patent 9,953,241 Systems and Methods for Satellite Image Processing to Estimate Crop Yield", Apr 24, 2018

LINKS

- Lobell Lab: <http://lobell-lab.stanford.edu/>
- (FSE) Food Security and the Environment: http://foodsecurity.stanford.edu/people/david_lobell/
- Atlas AI: <https://www.atlasai.co/>
- David Lobell's Twitter: <http://twitter.com/DavidBLobell>
- G-Feed: Global Food, Environment and Economic Dynamics: <http://www.g-feed.com/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

I study the interactions between food production, food security, and the environment using a range of modern tools. Current work focuses on three main areas of research: how to effectively adapt agriculture to climate change, how to reduce yield gaps in major cropping regions, and how to quantify environmental consequences of biofuel and food crop production. A common theme is the use of large datasets to constrain and improve models that represent our understanding of how the world works. Prospective students interested in food security, climate change, and/or how to combine models and large datasets in creative ways are encouraged to contact me.

Teaching

I regularly teach three courses open to both undergraduate and graduate students. One is Fundamentals of Modeling (EESS 211), which is a hands-on introduction to environmental modeling concepts and techniques, taught every year. Second is Feeding Nine Billion (ES185), an introduction to basics of crop ecology and agronomy, world crop production systems, and tradeoffs associated with various new practices or technologies, also taught every year (starting in 2013). Third is Climate and Agriculture (ES184) which covers different aspects of climate change impacts on food production and food security, and is taught every other year (next in 2015).

Professional Activities

Current activities in 2012: Lead author for IPCC Fifth Assessment Report; Member of National Academy of Science committee on "Assessing the Impact of Climate Change on Political and Social Stresses"; Member of Technical Advisory and Review Panel for World Bank Group activities related to climate change adaptation; Editor for Global Change Biology and Associate Editor for Environmental Research Letters; numerous academic and public lectures

PROJECTS

- Use of Climate Information in International Negotiations for Adaptation Resources - Stanford University
- Quantification and reduction of uncertainties in projections of climate impacts on drought and agriculture for North America - Stanford (8/1/2011 - 7/31/2015)
- Evaluating Climate Adaptation Options in African Agriculture - Stanford University (1/1/2011 - 10/31/2014)
- Interdisciplinary Research on Introducing Heat-Tolerant Wheat to Bolster Food Security - Stanford University (8/1/2014 - 7/31/2017)
- Using Remote Sensing to Close the Corn Yield Gap in Northern China - Stan
- Prioritizing Investments in Food Security Under a Changing Climate - Stanford University (2008 - present)

Teaching

COURSES

2021-22

- Climate and Society: EARTH 2 (Win)
- Data for Sustainable Development: CS 325B, EARTHSYS 162, EARTHSYS 262 (Aut)
- Feeding Nine Billion: EARTHSYS 185 (Win)
- Rethinking Meat: An Introduction to Alternative Proteins: ESS 103, ESS 203 (Spr)

2020-21

- Climate and Society: EARTH 2 (Win)
- Feeding Nine Billion: EARTHSYS 185 (Win)
- Rethinking Meat: An Introduction to Alternative Proteins: EARTHSYS 109, EARTHSYS 209, ESS 103, ESS 203, ETHICSOC 107 (Spr)

2019-20

- Climate and Society: EARTH 2 (Win)
- Data for Sustainable Development: CS 325B, EARTHSYS 162, EARTHSYS 262 (Aut)
- Feeding Nine Billion: EARTHSYS 185 (Win)

2018-19

- Climate and Society: EARTH 2 (Win)
- Data for Sustainable Development: CS 325B, EARTHSYS 162, EARTHSYS 262 (Aut)
- Feeding Nine Billion: EARTHSYS 185 (Win)
- Principles of Effective Decision Making for Sustainability: GSBGEN 501 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Ju Young Lee, Yuhao Nie

Postdoctoral Faculty Sponsor

Hemant Pullabhotla, Liya Weldegebriel

Master's Program Advisor

Michelle Leung, Cairo Mo, Elena Press

Doctoral (Program)

Angela Tsao

Publications

PUBLICATIONS

- **Globally ubiquitous negative effects of nitrogen dioxide on crop growth.** *Science advances*
Lobell, D. B., Di Tommaso, S., Burney, J. A.
2022; 8 (22): eabm9909
- **Globally ubiquitous negative effects of nitrogen dioxide on crop growth** *SCIENCE ADVANCES*
Lobell, D. B., Di Tommaso, S., Burney, J. A.
2022; 8 (22)
- **Early- and in-season crop type mapping without current-year ground truth: Generating labels from historical information via a topology-based approach** *REMOTE SENSING OF ENVIRONMENT*
Lin, C., Zhong, L., Song, X., Dong, J., Lobell, D. B., Jin, Z.
2022; 274
- **Combining randomized field experiments with observational satellite data to assess the benefits of crop rotations on yields** *ENVIRONMENTAL RESEARCH LETTERS*
Kluger, D. M., Owen, A. B., Lobell, D. B.
2022; 17 (4)
- **Mapping Sugarcane in Central India with Smartphone Crowdsourcing** *REMOTE SENSING*
Lee, J., Wang, S., Figueroa, A., Strey, R., Lobell, D. B., Naylor, R. L., Gorelick, S. M.
2022; 14 (3)
- **Evaluating maize yield response to fertilizer and soil in Mexico using ground and satellite approaches** *FIELD CROPS RESEARCH*
Campolo, J., Ortiz-Monasterio, I., Guerena, D., Lobell, D. B.
2022; 276
- **Combining GEDI and Sentinel-2 for wall-to-wall mapping of tall and short crops** *ENVIRONMENTAL RESEARCH LETTERS*
Di Tommaso, S., Wang, S., Lobell, D. B.
2021; 16 (12)
- **Prior crop season management constrains farmer adaptation to warming temperatures: Evidence from the Indo-Gangetic Plains.** *The Science of the total environment*
Ishtiaque, A., Singh, S., Lobell, D., Singh, B., Fishman, R., Jain, M.
2021: 151671
- **Two shifts for crop mapping: Leveraging aggregate crop statistics to improve satellite-based maps in new regions** *REMOTE SENSING OF ENVIRONMENT*
Kluger, D. M., Wang, S., Lobell, D. B.
2021; 262
- **The impact of groundwater depletion on agricultural production in India** *ENVIRONMENTAL RESEARCH LETTERS*
Bhattarai, N., Pollack, A., Lobell, D. B., Fishman, R., Singh, B., Dar, A., Jain, M.
2021; 16 (8)
- **Twice Is Nice: The Benefits of Two Ground Measures for Evaluating the Accuracy of Satellite-Based Sustainability Estimates** *REMOTE SENSING*
Lobell, D. B., Di Tommaso, S., Burke, M., Kilic, T.
2021; 13 (16)
- **Cleaner air has contributed one-fifth of US maize and soybean yield gains since 1999** *ENVIRONMENTAL RESEARCH LETTERS*
Lobell, D. B., Burney, J. A.

2021; 16 (7)

- **Using Sentinel-1, Sentinel-2, and Planet Imagery to Map Crop Type of Smallholder Farms** *REMOTE SENSING*
Rao, P., Zhou, W., Bhattarai, N., Srivastava, A. K., Singh, B., Poonia, S., Lobell, D. B., Jain, M.
2021; 13 (10)
- **Scalable deep learning to identify brick kilns and aid regulatory capacity.** *Proceedings of the National Academy of Sciences of the United States of America*
Lee, J., Brooks, N. R., Tajwar, F., Burke, M., Ermon, S., Lobell, D. B., Biswas, D., Luby, S. P.
2021; 118 (17)
- **Anthropogenic climate change has slowed global agricultural productivity growth** *NATURE CLIMATE CHANGE*
Ortiz-Bobea, A., Ault, T. R., Carrillo, C. M., Chambers, R. G., Lobel, D. B.
2021; 11 (4): 306-U28
- **A million kernels of truth: Insights into scalable satellite maize yield mapping and yield gap analysis from an extensive ground dataset in the US Corn** *REMOTE SENSING OF ENVIRONMENT*
Deines, J. M., Patel, R., Liang, S., Dado, W., Lobell, D. B.
2021; 253
- **Uniting remote sensing, crop modelling and economics for agricultural risk management** *NATURE REVIEWS EARTH & ENVIRONMENT*
Benami, E., Jin, Z., Carter, M. R., Ghosh, A., Hijmans, R. J., Hobbs, A., Kenduiwo, B., Lobell, D. B.
2021; 2 (2): 140-159
- **Evaluation of soil-dependent crop yield outcomes in Nepal using ground and satellite-based approaches** *FIELD CROPS RESEARCH*
Campolo, J., Guarena, D., Maharjan, S., Lobell, D. B.
2021; 260
- **Geography-Aware Self-Supervised Learning**
Ayush, K., Uzkent, B., Meng, C., Tanmay, K., Burke, M., Lobell, D., Ermon, S., IEEE
IEEE.2021: 10161-10170
- **Efficient Poverty Mapping from High Resolution Remote Sensing Images**
Ayush, K., Uzkent, B., Tanmay, K., Burke, M., Lobell, D., Ermon, S., Assoc Advancement Artificial Intelligence
ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2021: 12-20
- **Predicting Livelihood Indicators from Community-Generated Street-Level Imagery**
Lee, J., Grosz, D., Uzkent, B., Zeng, S., Burke, M., Lobell, D., Ermon, S., Assoc Advancement Artificial Intelligence
ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2021: 268-276
- **Using satellite imagery to understand and promote sustainable development.** *Science (New York, N.Y.)*
Burke, M., Driscoll, A., Lobell, D. B., Ermon, S.
2021; 371 (6535)
- **High-Resolution Soybean Yield Mapping Across the US Midwest Using Subfield Harvester Data** *REMOTE SENSING*
Dado, W. T., Deines, J. M., Patel, R., Liang, S., Lobell, D. B.
2020; 12 (21)
- **Changes in the drought sensitivity of US maize yields** *NATURE FOOD*
Lobell, D. B., Deines, J. M., Di Tommaso, S.
2020; 1 (11): 729-35
- **Mapping Crop Types in Southeast India with Smartphone Crowdsourcing and Deep Learning** *REMOTE SENSING*
Wang, S., Di Tommaso, S., Faulkner, J., Friedel, T., Kennepohl, A., Strey, R., Lobell, D. B.
2020; 12 (18)
- **The COVID-19 lockdowns: a window into the Earth System** *NATURE REVIEWS EARTH & ENVIRONMENT*
Diffenbaugh, N. S., Field, C. B., Appel, E. A., Azevedo, I. L., Baldocchi, D. D., Burke, M., Burney, J. A., Ciais, P., Davis, S. J., Fiore, A. M., Fletcher, S. M., Hertel, T. W., Horton, et al
2020; 1 (9): 470-481
- **Factors Constraining Timely Sowing of Wheat as an Adaptation to Climate Change in Eastern India** *WEATHER CLIMATE AND SOCIETY*

- Newport, D., Lobell, D. B., Balwinder-Singh, Srivastava, A. K., Rao, P., Umashaanker, M., Malik, R. K., McDonald, A., Jain, M.
2020; 12 (3): 515–28
- **On the role of anthropogenic climate change in the emerging food crisis in Southern Africa in the 2019-2020 growing season.** *Global change biology*
Wolski, P., Lobell, D., Stone, D., Pinto, I., Crespo, O., Johnston, P.
2020
 - **Viewpoint: Principles and priorities for one CGIAR FOOD POLICY**
Lobell, D. B.
2020; 91
 - **From sunlight to seed: Assessing limits to solar radiation capture and conversion in agro-ecosystems** *AGRICULTURAL AND FOREST METEOROLOGY*
Edreira, J., Mourtzinis, S., Azzari, G., Andrade, J. F., Conley, S. P., Lobell, D., Specht, J. E., Grassini, P.
2020; 280
 - **Weakly Supervised Deep Learning for Segmentation of Remote Sensing Imagery** *REMOTE SENSING*
Wang, S., Chen, W., Xie, S., Azzari, G., Lobell, D. B.
2020; 12 (2)
 - **EYES IN THE SKY, BOOTS ON THE GROUND: ASSESSING SATELLITE- AND GROUND-BASED APPROACHES TO CROP YIELD MEASUREMENT AND ANALYSIS** *AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS*
Lobell, D. B., Azzari, G., Burke, M., Gourlay, S., Jin, Z., Kilic, T., Murray, S.
2020; 102 (1): 202–19
 - **LANDSAT-BASED RECONSTRUCTION OF CORN AND SOYBEAN YIELD HISTORIES IN THE UNITED STATES SINCE 1999**
Lobell, D. B., Dado, W. T., Deines, J., Di Tommaso, S., Wang, S., IEEE
IEEE.2020: 5179-5182
 - **META-LEARNING FOR FEW-SHOT TIME SERIES CLASSIFICATION**
Wang, S., Russwurm, M., Koerner, M., Lobell, D. B., IEEE
IEEE.2020: 7041-7044
 - **Using publicly available satellite imagery and deep learning to understand economic well-being in Africa.** *Nature communications*
Yeh, C. n., Perez, A. n., Driscoll, A. n., Azzari, G. n., Tang, Z. n., Lobell, D. n., Ermon, S. n., Burke, M. n.
2020; 11 (1): 2583
 - **Sight for Sorghums: Comparisons of Satellite- and Ground-Based Sorghum Yield Estimates in Mali** *REMOTE SENSING*
Lobell, D. B., Di Tommaso, S., You, C., Djima, I., Burke, M., Kilic, T.
2020; 12 (1)
 - **Mapping twenty years of corn and soybean across the US Midwest using the Landsat archive.** *Scientific data*
Wang, S. n., Di Tommaso, S. n., Deines, J. M., Lobell, D. B.
2020; 7 (1): 307
 - **Satellites reveal a small positive yield effect from conservation tillage across the US Corn Belt** *ENVIRONMENTAL RESEARCH LETTERS*
Deines, J. M., Wang, S., Lobell, D. B.
2019; 14 (12)
 - **Rotation Effects on Corn and Soybean Yield Inferred from Satellite and Field-level Data** *AGRONOMY JOURNAL*
Cohen, A., Seifert, C. A., Azzari, G., Lobell, D. B.
2019; 111 (6): 2940–48
 - **A new spin on an old debate: Errors in farmer-reported production and their implications for inverse scale - Productivity relationship in Uganda** *JOURNAL OF DEVELOPMENT ECONOMICS*
Gourlay, S., Kilic, T., Lobell, D. B.
2019; 141
 - **The impact of agricultural interventions can be doubled by using satellite data** *NATURE SUSTAINABILITY*
Jain, M., Balwinder-Singh, Rao, P., Srivastava, A. K., Poonia, S., Blesh, J., Azzari, G., McDonald, A. J., Lobell, D. B.
2019; 2 (10): 931–34

- **The role of irrigation in changing wheat yields and heat sensitivity in India.** *Nature communications*
Zaveri, E., B Lobell, D.
2019; 10 (1): 4144
- **Integrating satellite and climate data to predict wheat yield in Australia using machine learning approaches** *AGRICULTURAL AND FOREST METEOROLOGY*
Cai, Y., Guan, K., Lobell, D., Potgieter, A. B., Wang, S., Peng, J., Xu, T., Asseng, S., Zhang, Y., You, L., Peng, B.
2019; 274: 144–59
- **Smallholder maize area and yield mapping at national scales with Google Earth Engine** *REMOTE SENSING OF ENVIRONMENT*
Jin, Z., Azzari, G., You, C., Di Tommaso, S., Aston, S., Burke, M., Lobell, D. B.
2019; 228: 115–28
- **How much will precision nitrogen management pay off? An evaluation based on simulating thousands of corn fields over the US Corn-Belt** *FIELD CROPS RESEARCH*
Jin, Z., Archontoulis, S. V., Lobell, D. B.
2019; 240: 12–22
- **Crop type mapping without field-level labels: Random forest transfer and unsupervised clustering techniques** *REMOTE SENSING OF ENVIRONMENT*
Wang, S., Azzari, G., Lobell, D. B.
2019; 222: 303–17
- **Satellite detection of cover crops and their effects on crop yield in the Midwestern United States (vol 13, 064033, 2018)** *ENVIRONMENTAL RESEARCH LETTERS*
Seifert, C. A., Azzari, G., Lobell, D. B.
2019; 14 (3)
- **Satellite mapping of tillage practices in the North Central US region from 2005 to 2016** *REMOTE SENSING OF ENVIRONMENT*
Azzari, G., Grassini, P., Edreira, J., Conley, S., Mourtzinis, S., Lobell, D. B.
2019; 221: 417–29
- **Water Use Efficiency as a Constraint and Target for Improving the Resilience and Productivity of C3 and C4 Crops.** *Annual review of plant biology*
Leakey, A. D., Ferguson, J. N., Pignon, C. P., Wu, A. n., Jin, Z. n., Hammer, G. L., Lobell, D. B.
2019; 70: 781–808
- **Water Use Efficiency as a Constraint and Target for Improving the Resilience and Productivity of C-3 and C-4 Crops** *ANNUAL REVIEW OF PLANT BIOLOGY, VOL 70*
Leakey, A. B., Ferguson, J. N., Pignon, C. P., Wu, A., Jin, Z., Hammer, G. L., Lobell, D. B., Merchant, S. S.
2019; 70: 781–808
- **Mapping Missing Population in Rural India: A Deep Learning Approach with Satellite Imagery**
Hu, W., Patel, J., Robert, Z., Novosad, P., Asher, S., Tang, Z., Burke, M., Lobell, D., Ermon, S., Assoc Comp Machinery
ASSOC COMPUTING MACHINERY.2019: 353–59
- **Tile2Vec: Unsupervised Representation Learning for Spatially Distributed Data**
Jean, N., Wang, S., Samar, A., Azzari, G., Lobell, D., Ermon, S., AAAI
ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2019: 3967–74
- **Predicting Economic Development using Geolocated Wikipedia Articles**
Sheehan, E., Meng, C., Tan, M., UzKent, B., Jean, N., Burke, M., Lobell, D., Ermon, S., Assoc Comp Machinery
ASSOC COMPUTING MACHINERY.2019: 2698–2706
- **Strengthened scientific support for the Endangerment Finding for atmospheric greenhouse gases.** *Science (New York, N.Y.)*
Duffy, P. B., Field, C. B., Diffenbaugh, N. S., Doney, S. C., Dutton, Z., Goodman, S., Heinzerling, L., Hsiang, S., Lobell, D. B., Mickley, L. J., Myers, S., Natali, S. M., Parmesan, et al
2018
- **The important but weakening maize yield benefit of grain filling prolongation in the US Midwest** *GLOBAL CHANGE BIOLOGY*
Zhu, P., Jin, Z., Zhuang, Q., Ciaia, P., Bernacchi, C., Wang, X., Makowski, D., Lobell, D.
2018; 24 (10): 4718–30

- **Synthesis and Review: an inter-method comparison of climate change impacts on agriculture** *ENVIRONMENTAL RESEARCH LETTERS*
Ciscar, J., Fisher-Vanden, K., Lobell, D. B.
2018; 13 (7)
- **Anticipated burden and mitigation of carbon-dioxide-induced nutritional deficiencies and related diseases: A simulation modeling study** *PLOS MEDICINE*
Weyant, C., Brandeau, M. L., Burke, M., Lobell, D. B., Bendavid, E., Basu, S.
2018; 15 (7)
- **Anticipated burden and mitigation of carbon-dioxide-induced nutritional deficiencies and related diseases: A simulation modeling study.** *PLoS medicine*
Weyant, C., Brandeau, M. L., Burke, M., Lobell, D. B., Bendavid, E., Basu, S.
2018; 15 (7): e1002586
- **Satellite detection of cover crops and their effects on crop yield in the Midwestern United States** *ENVIRONMENTAL RESEARCH LETTERS*
Seifert, C. A., Azzari, G., Lobell, D. B.
2018; 13 (6)
- **Differences, or lack thereof, in wheat and maize yields under three low-warming scenarios** *ENVIRONMENTAL RESEARCH LETTERS*
Tebaldi, C., Lobell, D.
2018; 13 (6)
- **Estimated impacts of emission reductions on wheat and maize crops** *CLIMATIC CHANGE*
Tebaldi, C., Lobell, D.
2018; 146 (3-4): 533–45
- **Increasing drought and diminishing benefits of elevated carbon dioxide for soybean yields across the US Midwest.** *Global change biology*
Jin, Z., Ainsworth, E. A., Leakey, A. D., Lobell, D. B.
2018; 24 (2): e522-e533
- **Deep Transfer Learning for Crop Yield Prediction with Remote Sensing Data**
Wang, A. X., Tran, C., Desai, N., Lobell, D., Ermon, S., Assoc Comp Machinery
ASSOC COMPUTING MACHINERY.2018
- **Infrastructure Quality Assessment in Africa using Satellite Imagery and Deep Learning**
Oshri, B., Hu, A., Adelson, P., Chen, X., Dupas, P., Weinstein, J., Burke, M., Lobell, D., Ermon, S., ACM
ASSOC COMPUTING MACHINERY.2018: 616–25
- **Improving the accuracy of satellite-based high-resolution yield estimation: A test of multiple scalable approaches** *AGRICULTURAL AND FOREST METEOROLOGY*
Jin, Z., Azzari, G., Lobell, D. B.
2017; 247: 207–20
- **Towards fine resolution global maps of crop yields: Testing multiple methods and satellites in three countries** *REMOTE SENSING OF ENVIRONMENT*
Azzari, G., Jain, M., Lobell, D. B.
2017; 202: 129–41
- **Historical effects of CO2 and climate trends on global crop water demand** *NATURE CLIMATE CHANGE*
Urban, D. W., Sheffield, J., Lobell, D. B.
2017; 7 (12): 901+
- **Comparing and combining process-based crop models and statistical models with some implications for climate change** *ENVIRONMENTAL RESEARCH LETTERS*
Roberts, M. J., Braun, N. O., Sinclair, T. R., Lobell, D. B., Schlenker, W.
2017; 12 (9)
- **Temperature increase reduces global yields of major crops in four independent estimates** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Zhao, C., Liu, B., Piao, S., Wang, X., Lobell, D. B., Huang, Y., Huang, M., Yao, Y., Bassu, S., Ciais, P., Durand, J., Elliott, J., Ewert, et al
2017; 114 (35): 9326–31
- **Hot spots of wheat yield decline with rising temperatures** *GLOBAL CHANGE BIOLOGY*

- Asseng, S., Cammarano, D., Basso, B., Chung, U., Alderman, P. D., Sonder, K., Reynolds, M., Lobell, D. B.
2017; 23 (6): 2464-2472
- **Hot spots of wheat yield decline with rising temperatures.** *Global change biology*
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- Water use efficiency in agriculture - Australian National University (6/16/2014)
- The search for climate-adaptive crop traits - The University of Queensland (May 13, 2014)

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