

MEHA JAIN
School of Natural Resources and Environment
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EMPLOYMENT

- **University of Michigan, Assistant Professor**
School of Natural Resources and Environment. September 2016 to present.

EDUCATION

- **Stanford University, NSF-SEES Postdoctoral Fellow**
Department of Earth System Science. August 2014 to 2016.
Advisor: David Lobell
- **Columbia University, NSF-GRF Ph.D.**
Department of Ecology, Evolution, and Environmental Biology. Fall of 2008 to Summer 2014.
Advisors: Shahid Naeem and Ruth DeFries
- **Princeton University, A.B., *cum laude***
Department of Ecology and Evolutionary Biology. Fall of 2003 to Spring 2007.
Advisor: Daniel Rubenstein

PUBLICATIONS

1. **Jain, M.**, B. Singh, A. Srivastava, R.K. Malik, A. McDonald, D.B. Lobell (In Revision). Using Satellite Data to Identify the Causes of and Potential Solutions for Yield Gaps in India's Wheat Belt.
2. Fishman, R., **M. Jain**, A. Kishore (In Revision). When Water Runs Out: Adaptation to Gradual Environmental Change in Indian Agriculture.
3. **Jain, M.**, R.S. DeFries, S. Naeem, A.S. Jina, S.A. Wood, P. West, B. Orlove (In Revision). Adapting Adaptation Research: A Systematic Review of the Climate Adaptation Literature in the Agricultural Sector.
4. **Jain, M.**, P. Mondal, G.L. Galford, G. Fiske, R.S. DeFries (In Press). An Automated Approach to Mapping Cropped Area of Smallholder Farms Across Large Scales. *Remote Sensing*.
5. D. Kramer, J. Hartter, A. Boag, **M. Jain**, K. Nicholas, K. Stevens, J. Liu, B. McConnell (In Press). Top 40 Transformative Questions in Coupled Human and Natural Systems (CHANS) Research. *Ecology and Society*.
6. Azzari, G., **M. Jain**, D. Lobell (In Press). Towards Fine Resolution Global Maps of Crop Yields: Testing Multiple Methods and Sensors in Three Countries. *Remote Sensing of Environment*.
7. **Jain, M.**, A. Srivastava, B. Singh, A. McDonald, K. Royal, M.C. Lisaius, D.B. Lobell (2016). Mapping Smallholder Wheat Yields and Sow Dates Using Microsatellite Data. *Remote Sensing*. 8(10): 860.
8. Mondal, P., **M. Jain**, M. Zukowski, G. Galford, R.S. DeFries (2016). Quantifying fluctuations in the winter cropped area in the Central Indian Highlands. *Regional Environmental Change* 16: 69-82.

9. Feola, G., A.M. Lerner, **M. Jain**, M.J.F. Montefrio, K.A. Nicholas (2015). Understanding Farmer Behavior in Climate Change Adaptation and Sustainable Agriculture: Lessons Learned From Five Case Studies. *Journal of Rural Studies*. 35: 74-84.
10. **Jain, M.**, S. Naeem, B. Orlove, V. Modi, R.S. DeFries (2015). Understanding the Causes and Consequences of Differential Decision-Making in Adaptation Research: Adapting to a Delayed Monsoon Onset in Gujarat, India. *Global Environmental Change*. 31: 98-109.
11. Mondal, P., **M. Jain**, R.S. DeFries, G.L. Galford, C. Small (2015). Sensitivity of crop cover to climate variability: Insights from two Indian agro-ecoregions. *Journal of Environmental Management*. 148: 21-30.
12. Mondal, P., **M. Jain**, A.W. Robertson, G.L. Galford, C. Small, R.S. DeFries (2014). Winter crop sensitivity to inter-annual climate variability in central India. *Climatic Change*. 126: 61-76.
13. Wood, S., A. Jina, **M. Jain**, P. Kristjanson, R.S. DeFries (2014). Smallholder farmer cropping decisions related to climate variability across multiple regions. *Global Environmental Change*. 25: 163-172.
14. **Jain, M.**, Y. Lim, J.A. Arce-Nazario, M. Uriarte (2014). Perceptual and socio-demographic factors associated with household water treatment in rural Puerto Rico. *PLoS ONE*. 9(2): 1-8.
15. **Jain, M.**, D.F.B. Flynn, C.M. Prager, G.M. Hart, C.M. DeVan, F.S. Ahrestani, M.I. Palmer, D.E. Bunker, J.M.H. Knops, C.F. Jouseau, and S. Naeem (2014). The importance of rare species: A trait based assessment of the potential for rare species to contribute to ecosystem function in tall-grass prairies. *Ecology and Evolution*. 4(1): 104-112.
16. **Jain, M.**, P. Mondal, R.S. DeFries, C. Small, G.L. Galford (2013). Mapping cropping intensity of smallholder farms – a comparison of methods using multiple sensors. *Remote Sensing of Environment*. 134: 210-223.
17. Balvanera, P., M. Uriarte, L. Almeida-Lenero, A. Altesor, F. DeClerck, T. Gardner, J. Hall, A. Lara, P. Lateralra, M. Pena-Claros, D.M.S. Matos, L.P. Romero-Duque, A.L. Vogl, L.F. Arreola, A.P. Caro-Borrero, F. Gallego, **M. Jain**, C. Little, R. de Oliveira Xavier, J.M. Paruelo, J.E. Peinado, L. Poorter, N. Ascarrunz, F. Correa, M.B. Cunha-Santino, A.P. Hernandez-Sanchez, M. Vallejos (2012). Ecosystem Services Research in Latin America: The state of the art. *Ecosystem Services*. 2: 56-70.
18. **Jain, M.***, C.B. Yackulic*, M. Fagan*, A. Jina, Y. Lim, M. Marlier, R. Muscarella, P. Adame, R.S. DeFries, M. Uriarte (2011). Biophysical and Socioeconomic Factors Associated with Forest Transitions at Multiple Spatial and Temporal Scales. *Ecology and Society*. 16(3): 15.
* first authorship was shared equally by the starred authors.
19. Odadi, W., **M. Jain**, S. Van Wieren, H.T. Prins, D.I. Rubenstein (2011). Facilitation between bovids and equids on an African savanna. *Evolutionary Ecology Research*. 13:237-252.
20. Flynn, DFP. N. Mirotchnick, **M. Jain**, M.I. Palmer, S. Naeem (2011). Functional and phylogenetic diversity as predictors of biodiversity-ecosystem-function relationships. *Ecology*. 92(8): 1573-1581.

21. Forbes, T., V. Goss, **M. Jain**, P.C. Burns (2007). Structure Determination and Infrared Spectroscopy of K(UO₂)(SO₄)(OH)(H₂O) and K(UO₂)(SO₄)(OH). *Inorganic Chemistry*. 26(18):7163-7168

FELLOWSHIPS AND GRANTS

- **NASA** (\$751,707). Land Use Land Cover Change (LCLUC) Program. May 2017 to 2020.
PI: M. Jain. Co-PIs: D. Lobell, R. Fishman. Collaborators: A. Chhatre, B. Singh.
- **NASA** (\$262,612). New Investigator Program (NIP) in Earth Science Grant. September 2016 – 2019.
PI: M. Jain. Collaborators: D. Lobell, R. Fishman, A. Chhatre, B. Singh.
- **National Science Foundation** Sustainability Postdoctoral Fellowship (SEES; \$487,020). August 2014 –2018.
PI: M. Jain. Mentors: D. Lobell, R. Fishman.
- **Google Earth Engine Research Award** (\$62,867). Summer 2014-2015.
PIs: G. Galford, R.S. DeFries. Co-PIs: M. Jain, G. Fiske, P. Mondal
- **National Science Foundation** Doctoral Dissertation Improvement Grant (DDIG; \$14,488). Spring 2013 to Fall 2015.
- **CHANS (Coupled Human and Natural Systems) Fellow** (\$1000). NSF CHANS-Net 2012.
- **National Science Foundation** Graduate Research Fellowship (NSF GRF; \$150,000). Fall 2009 to 2012.
- **National Geographic** Young Explorers Grant (\$5,000). Fall 2011
- **Advanced Consortium on Cooperation, Conflict, and Complexity** Fellow (\$3,000). Fall 2011
- **NASA** Land Cover and Land Use Change Grant (\$751,000) Summer 2011 to 2014.
PIs: R.S. DeFries, C. Small, G. Galford; Collaborator: M. Lal, M. Jain
- **Compton Foundation** Mentor Fellowship (\$36,000). Fall 2007 to 2008.
- **Becky Colvin Fund**, Undergraduate Thesis Research (\$2,500). Summer 2006

TEACHING AND ADVISING EXPERIENCE

- Natural Resource Statistics (NRE 538) – Introductory Statistics and R Programming Class for students in the School of Natural Resources and Environment.
- Currently advising 2 postdocs and 1 undergraduate, and will advise three M.A. theses starting Fall 2017.

PROFESSIONAL SERVICE AND SKILLS

- **Skills:** Software: Fluent in R, ENVI, Google Earth Engine, ArcGIS, QGIS, Amazon Cluster Computing, Google Cloud Computing, and APSIM Crop Modeling. Versed in Python, IDL, and NetLogo. Languages: Fluent - Hindi, Conversational - Gujarati, French.
- **Reviewer:** Science Advances, Global Change Biology, Ecology Letters, Geophysical Research Letters, Remote Sensing of Environment, Remote Sensing, Global Environmental Change, Ecology and Society, Journal of Development Economics,

International Journal of Remote Sensing, Regional Environmental Change, Human Ecology

- **Member:** American Geophysical Union (AGU)

SELECT PRESENTATIONS AND WORKSHOPS

- **Association of Environmental and Resource Economists** (Pittsburgh, PA). Oral Presentation (Invited, 2017).
- **NASA South/Southeast Asian Research Initiative** (New Delhi, India). Oral Presentation (Invited 2017)
- **Google Earth Engine Summit** (Mountain View, CA). Attendee (2017, 2016). Oral Presentation (Invited 2015).
- **American Association of Geographers** (Multiple Locations). Oral Presentation (Invited 2017; 2012)
- **NASA Land Cover Land Use Change Conference** (Rockville, Maryland). Attendee (2017); Poster (2012, 2013).
- **National Socio-Economic Synthesis Center Workshop** (SESYNC; Annapolis, MD). Observing Rural Development from Space. Attendee (Invited).
- **Toward Sustainable Groundwater in Agriculture** (San Francisco, CA). Oral Presentation (2016).
- **American Geophysical Union** (San Francisco, CA). Oral Presentation (Invited 2013); Poster Presentation (2012, 2014, 2015).
- **International Conference on Global Food Security** (Ithaca, NY). Oral Presentation (2015).
- **Global Land Project** (Berlin, Germany). Oral Presentation (2014).
- **Governance of Adaptation Symposium** (Amsterdam, Netherlands). Oral Presentation (2012).

REPORTS, NEWS ARTICLES, AND FILMS

- Jain Lab Research featured in Smithsonian Magazine (2017). <http://www.smithsonianmag.com/innovation/how-daily-images-entire-earth-will-change-way-we-look-it-180962467/>
- **Jain, M.** (2013). Indian Farmers Cope with Climate Change and Falling Water Tables. Water Currents. *National Geographic News Watch*.
- Naeem, S., P. Olmsted, J. Sircely, **M. Jain**, S. Smukler, C. Ingram (2010). Ecosystem services: A Primer for Biodiversity Conservation. Natural Resources Management and Development Portal. USAID.
- **Jain, M.** (2010). Conservation wisdom of a pastoral community in the Aravalli Hills, Rajasthan, India. People in Conservation. Kalpavriksh. 3(1).