Justin Staller Mankin

Contact information

Ocean & Climate Physics
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Research

Climate change, variability, impacts and uncertainty; hydroclimate; human and natural systems vulnerability and response to climate variability and change

Present position

Postdoctoral Research Fellow, The Earth Institute of Columbia University, jointly appointed between Lamont-Doherty Earth Observatory & NASA Goddard Institute for Space Studies

Education

Ph.D., Environment & Resources (E-IPER), 2015
Stanford University, School of Earth, Energy, & Environmental Sciences, Stanford, California

M.P.A., Environmental Science & Policy, 2010
Columbia University, The Earth Institute & SIPA, New York, New York

M.Sc., Global Politics & Development Studies, 2008
The London School of Economics (LSE), London, England UK

B.A., Political Science, 2004
Columbia University, New York, New York USA

Academic certifications

National Centre of Competence in Research, Climate (NCCR), Grindewald, Switzerland
NCCR Swiss Climate Research Summer School **Summer 2013**

National Center for Atmospheric Research (NCAR), Boulder, CO, USA
Community Earth System Model (CESM) Workshop **Summer 2012**

Academic appointments

Columbia University, New York, New York USA
Postdoctoral Research Scientist **2015-2017**

Stanford University, Stanford, California USA
Teaching Assistant, EARTHSYS 41N, The Global Warming Paradox **Fall 2013**
Teaching Consultant, BIO/EARTHSYS 147/247, Controlling Climate Change **Spring 2012**

Columbia University, New York, New York, USA
Research Assistant, The Earth Institute Water Center **Winter 2010**

Professional appointments

International Security Assistance Force (ISAF), Kabul, Afghanistan
Senior Anti-Corruption Advisor **Winter 2011**

United States Government, Washington, District of Columbia, USA
Intelligence Officer **2004-2008**

Publications

Peer-reviewed articles

Horton, R., **J. S. Mankin**, C. Lesk, E. Coffel, C. Raymond, A review of recent advances in research on extreme heat events, *Current Climate Change Reports*, (2016) *in press*.

Mankin, J. S., D. Viviroli, D. Singh, A. Y. Hoekstra, and N. S. Diffenbaugh, The potential for snow to supply human water demand in the present and future, *Environmental Research Letters*, (2015), DOI 10.1088/1748-9326/10/11/114016.

Mankin, J. S., N. S. Diffenbaugh, Influence of temperature and precipitation variability on near-term snow trends, *Climate Dynamics*, **45** 1099-1116, (2015), DOI 10.1007/s00382-014-2357-4.

Siegfried, T., T. Bernauer, R. Guiennet, S. Sellars, A. W. Robertson, **J. S. Mankin**, P. Bauer-Gottwein, Will Climate Change Exacerbate or Mitigate Water Stress in Central Asia?, *Climatic Change*, **112** (3-4), 881 (2012), DOI 10.1007/s10584-011-0253-z.

Mankin, J. S., Gaming the system: how Afghan opium underpins local power, *Journal of International Affairs*, **63** (1), 195 (2009).

Peer-reviewed book chapters

Moore, F., **J. S. Mankin**, A. H. Becker, Disciplines: Integrating Climate and Social Sciences, Chapter 4 in *Climate Cultures: Anthropological Perspectives on Climate Change*. Jessica Barnes and Michael Dove (eds). New Haven: Yale University Press, (2015).

Manuscripts submitted or in revision

Mankin, J. S., D. Viviroli, M. M. Mekonnen, A. Y. Hoekstra, and N. S. Diffenbaugh, Future population exposure to hydroclimatic deficits, *in review*.

Schultz, K. & **J. S. Mankin**, Sources of uncertainty in forecasting the climate-conflict relationship, *in revision*.

Singh, D, D. L. Swain, **J. S. Mankin**, D. E. Horton, L. Thomas, N. S. Diffenbaugh, Recent amplification of the North American winter temperature dipole, *revised*.

Coats, S. & **J. S. Mankin**, The challenge of accurately quantifying future megadrought risk in the American Southwest, *revised*.

Ault, T., **J. S. Mankin**, B. Cook, J. Smerdon, Relative impacts of mitigation, temperature, and precipitation on 21st Century megadrought risk in the American Southwest, *in review*.

Diffenbaugh, N. S., D. Singh, **J. S. Mankin**, A. Charland, M. Haugen, D. E. Horton, D. L. Swain, D. E. Touma, M. Tsiang, B. Rajaratnam, Quantifying the influence of historical global warming on the probability of unprecedented extreme climate events, *in review*.

Manuscripts in preparation

Mankin, J. S., et al., The implications of drought measures for estimates of drought occurrence.

Mankin, J. S., et al., The influence of internal variability on the time of emergence and distribution of agricultural adaptation benefits.

Mankin, J. S., et al., Compound climate extremes and cereal yield shocks.

Schultz, K. & **J. S. Mankin**, The influence of conflict on temperature.

Mankin, J. S., M. Tsiang, B. Rajaratnam, and N. S. Diffenbaugh, A model of Afghan poppy farmer decision-making.

Other publications

Mankin, J. S., Rotten to the core, *Foreign Policy*, (2011).

Mankin, J. S., Preventive semantics, *Foreign Policy*, 146 (2005).

Grants and fellowships

Earth Institute Cross-Cutting Initiative, Assessing farmer vulnerability in India to increasing risks from climate extremes, co-PI with D. Singh, R. DeFries, M. Ting, 2016 ($23,000).

Earth Institute Postdoctoral Fellowship, Lamont-Doherty Earth Observatory & The Center for Climate Systems Research, 2015-2017.

Northeast Climate Science Center Fellowship, The Center for Climate Systems Research & University of Massachusetts, Amherst, 2015-2017.

Geography Postdoctoral Fellowship, Dartmouth College, 2015-2017. (*declined*)

Predoctoral Science Fellowship, Center for International Security and Cooperation (CISAC), Stanford University, tuition and stipend, 2014-2015.

Stanford Center on International Conflict and Negotiation (SCICN) Fellowship, Stanford Law School, 2012-2013.

E-IPER Graduate Summer Research Grant, 2012.

McGee Grant, Stanford University, School of Earth Sciences, 2011.

Margaret Jonsson Family Foundation Fellowship, School of Earth Sciences, Stanford University, tuition and stipend, 2010-2014.

Environmental Science Academic Fellowship, Columbia University, 2010.

Academic honors and awards

Environmental Research Letters Highlight of 2015, April 2016.

IOP Select Article, "The potential for snow to supply human water demand in the present and future", ERL, 2015.

Environmental Research Letters Monthly Highlights Collection, November 2015.

Rising Environmental Leadership Program (RELP), Woods Institute for the Environment, Stanford University, 2012-2013.

Andrew Wellington Cordier Essay Winner, Columbia University, 2009.

Distinction, MSc. Thesis, London School of Economics, 2008.

Professional service

Journal referee: Journal of Climate, Geophysical Research Letters, Environmental Research Letters, Nature Climate Change, Journal of Geophysical Research-Atmospheres, Earth-Science Reviews

LDEO Division of Ocean and Climate Physics Seminar Organizer, 2016-2017

PAGES2k PMIP3 Workshop planning committee, Lamont-Doherty Earth Observatory, June 1-3 2016

Professional societies: Member, American Geophysical Union (AGU), 2010-present, American Meteorological Society (AMS), 2012-present

Presentations

23. **Mankin, J. S.**, Identifying human impacts of climate change in the context of climate un-

certainty, Department of Earth & Planetary Sciences Winter Seminar, Northwestern University, Evanston, IL, USA, 19 February 2016 (*Invited talk*).

22. Horton, D. E., **Mankin, J.S.**, Singh, D., Swain, D. L., Johnson, N. C., Diffenbaugh, N. S., Probability of Atmospheric Circulation Pattern Occurrence in Pre-Industrial, Historical, and Future Climates, American Geophysical Union Annual Meeting, San Francisco, CA, USA, 18 December, 2015 (*poster*).

21. Diffenbaugh, N. S., Horton, D. E., Singh, D., Swain, D. L., Touma, D. E., **Mankin, J. S.**, Using Atmospheric Circulation Patterns to Detect and Attribute Changes in the Risk of Extreme Climate Events, American Geophysical Union Annual Meeting, San Francisco, CA, USA, 15 December, 2015 (*talk*).

20. **Mankin, J. S.**, Climate certainty, uncertainty and human water availability in a warming world, Stanford University, Stanford, CA, USA, 12 June 2015.

19. Diffenbaugh, N. S., **J. S. Mankin**, D. Singh, D. Swain, Earth Matters Panel Series, "A Matter of Degrees", School of Continuing Education, Stanford University, Stanford, CA, USA, 24 February 2015 (*Invited talk*).

18. **Mankin, J. S.**, Near-term hydroclimatic change, climate uncertainty, and adaptation decision-making, Ocean & Climate Physics Seminar, Lamont-Doherty Earth Observatory, Palisades, NY (*Invited talk*).

17. **Mankin, J. S.**, Crossing the isotherm: climate uncertainty, snow, and water security in a warming world. Center for International Security and Cooperation (CISAC), Freeman Spogli Institute (FSI), Stanford, CA, USA, 15 January 2015 (*Invited talk*).

16. **Mankin, J. S.**, D. Viviroli, M. M. Mekonnen, A. Y. Hoekstra, and N. S. Diffenbaugh, Quantifying the crucial role of snow in supplying human water demand. American Geophysical Union Annual Meeting, San Francisco, CA, USA, 15 December 2014 (*talk*).

15. **Mankin, J. S.** and N. S. Diffenbaugh, Internal variability's influence on future Northern Hemisphere snow accumulation. American Geophysical Union Annual Meeting, San Francisco, CA, USA, 10 December 2013 (*Poster*).

14. **Mankin, J. S.** and N. S. Diffenbaugh, Climate controls on future Northern Hemisphere snow-dependent water availability. National Centre of Competence in Research Climate (NCCR), Grindewald, Switzerland, 5 September 2013 (*Poster*).

13. **Mankin, J. S.**, Does climate cause conflict? Stanford Center on International Conflict and Negotiation (SCICN), Stanford, CA, 28 May 2013 (*Invited talk*).

12. **Mankin, J. S.**, M. Scherer, and N. S. Diffenbaugh, Diagnosing the inter-model spread in snow water equivalent over Central and Southwest Asia. Stanford School of Earth Sciences Review, CA, USA, 12 April 2013 (*Talk, Poster*).

11. **Mankin, J. S.**, M. Scherer, and N. S. Diffenbaugh, Diagnosing the inter-model spread in snow water equivalent over Central and Southwest Asia. Berkeley Atmospheric Science Symposium, Berkeley, CA, USA, 8 February 2013 (*Poster*).

10. **Mankin, J. S.**, M. Scherer, and N. S. Diffenbaugh, Diagnosing the inter-model spread in snow water equivalent over Central and Southwest Asia. American Geophysical Union Annual Meeting, San Francisco, CA, USA 3-7 December 2012 (*Poster*).

9. **Mankin, J. S.** and N. S Diffenbaugh, From climate to violence: A potential mechanism in climate-conflict interactions in Afghanistan, Knowledge transfer program (KTP), University of Reading, Reading, UK, May 4, 2012 (*Invited talk*).

8. **Mankin, J. S.** and N. S Diffenbaugh, From planting to violence: socioclimatic exposure of an Afghan poppy farm, Policy & Economic Research Roundtable (PERR), Stanford University, January 27, 2012, Stanford, CA, USA (*Invited talk*).

7. **Mankin, J. S.**, Climate change and security: making the connections, National Conference on Science, Policy and the Environment (NCSE): Environment and Security, January 18-20, Washington, DC, 2012 (*Invited talk*).

6. **Mankin, J. S.**, Security and the Environment: the case of Afghanistan, Center for International Security and Cooperation (CISAC), Hewlett Foundation, CA, USA, January 17, 2012 (*Invited panelist*).

5. **Mankin, J. S.** and N. S. Diffenbaugh, Socioclimatic exposure of an Afghan poppy farm, American Geophysical Union Annual Meeting, San Francisco, CA, USA, 3-7 December 2011 (*Poster*).

4. **Mankin, J. S.** and N.S. Diffenbaugh, Climate signals in Afghan agricultural decision-making MIT Graduate Climate Conference, Woods Hole, MA, USA, 28-30 October 2011 (*Abstract selected, poster*)

3. **Mankin, J. S.**, Soundly addressing corruption under the aegis of the NATO mission in Afghanistan, NATO ISAF HQ CJIATF-Shafafiyat, Kabul, Afghanistan, 30 January 2011 (*Invited talk*).

2. T. Siegfried, T. Bernauer, R. Guiennet, S. Sellars, A. W. Robertson, **J. S. Mankin**, P. Bauer-Gottwein, Will Climate Change Exacerbate or Mitigate Water Stress in Central Asia? American Geophysical Union Annual Meeting, 13-17 December, 2010, San Francisco, CA, USA (*Poster*).

1. T. Siegfried, T. Bernauer, R. Guiennet, S. Sellars, A. W. Robertson, **J. S. Mankin**, P. Bauer-Gottwein, Coping With International Water Conflict in Central Asia: Implications of Climate Change and Melting Ice in the Syr Darya Catchment, Climate Change and Security, The Royal Norwegian Society of Sciences and Letters. June 21, 2010, Trondheim, Norway (*Talk*).

Skills & miscellany

Technical: Unix/Linux shell, NCL, R, Matlab, Python/Jupyter, ArcGIS, ENVI, git, HTML, CSS LaTeX

Clearance: Top Secret/Sensitive Compartmented Information (TS/SCI) clearance, granted 2004; NATO Secret as of 2011

Scientific communication & outreach

Media interviews and coverage of research (truncated): NYTimes, Nature, BBC World News, National Geographic, The Weather Channel, FSRN, NPR Academic Minute, LA Times, The Christian Science Monitor, Phys.org, CarbonBrief, environmentalresearchnews, Hurriyet, Radio Ecoshock, Salon, China Radio International, SciDev, Columbia Magazine, Desert Sun

Last updated: *June 2016*