# 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; future water and agriculture

**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

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

**Academic certifications**

**National Center for Atmospheric Research (NCAR)**, Boulder, CO, USA
Community Land Model Workshop **September 2016**

**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 2011-2012**

**United States Government**, Washington, District of Columbia, USA

Intelligence Officer **2004-2008**

## Publications

### Peer-reviewed articles

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

7. 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), 10.1007/s40641-016-0042-x.

6. Coats, S. & **J. S. Mankin**, The challenge of accurately quantifying future megadrought risk in the American Southwest, *Geophysical Research Letters*, (2016), 10.1002/2016GL070445.

5. 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, *Journal of Geophysical Research: Atmospheres*, (2016), 10.1002/2016JD025116.

4. **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.

3. **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.

2. 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.

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

### Peer-reviewed book chapters

1. 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

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

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

1. 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 revision*.

### Manuscripts in preparation (full drafts only)

3. **Mankin, J. S.**, J. E. Smerdon, B. I. Cook, A. P. Williams, R. Seager, Transpiration-driven aridification of the American West in 21st century model projections.

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

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

### Other publications

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

1. **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 Editors' 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.

## Academic 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 & Climate Physics Seminar Organizer**, 2016-2017

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

**E-IPER Student Representative to the Executive Committee**, Stanford University, 2011-2012.

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

## Presentations

### Invited talks

11. **Mankin, J. S.**, A warm(ing) Earth and what (or who) is responsible for it, Urban Ecology Studio, Graduate School of Architecture, Planning, and Preservation, Columbia University, New York, NY, USA, 30 June 2016 and again 28 September 2016.

10. **Mankin, J. S.**, Identifying human impacts of climate change in the context of climate uncertainty, Department of Earth & Planetary Sciences Seminar, Northwestern University, Evanston, IL, USA, 19 February 2016.

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

8. **Mankin, J. S.**, Near-term hydroclimatic change, climate uncertainty, and adaptation decision-making, Ocean & Climate Physics Seminar, Lamont-Doherty Earth Observatory, Palisades, NY, 20 February 2015.

7. **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.

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

5. **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, 4 May 2012.

4. **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, Stanford, CA, USA, 27 January 2012.

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

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

1. **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.

### Contributed ($1^{st}$ author only)

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

2. **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.

1. **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.

Poster presentations

8. 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.

7. **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.

6. **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.

5. **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.

4. **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 7 December 2012.

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

2. **Mankin, J. S.** and N.S. Diffenbaugh, Climate signals in Afghan agricultural decision-making MIT Graduate Climate Conference, Woods Hole, MA, USA, 29 October 2011.

1. 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, San Francisco, CA, USA, 17 December 2010.

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

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