

DEEKSHA RASTOGI

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EDUCATION

Aug' 2016 – Dec' 2019 (Expected)	Doctoral Candidate, Energy Science and Engineering Focus: Environmental and Climate Sciences The University of Tennessee, Knoxville, TN
Aug' 2010 – Dec' 2012	M.S., Atmospheric Sciences University of Illinois Urbana-Champaign, Urbana, IL
Aug' 2006 – May 2010	B. Tech., Environmental Engineering Indian School of Mines, Dhanbad, India

WORK EXPERIENCE

Aug' 2016 – Present	Graduate Research Assistant, The University of Tennessee, Knoxville, TN - Oak Ridge National Laboratory, Oak Ridge, TN
Thesis Title:	<i>Assessment of human system responses to future changes in mean and extreme climate.</i>
Jan' 2013 – Jun' 2016 May 2012 – Aug' 2012	Research Associate (Post Masters), Summer Intern, Oak Ridge National Laboratory, Oak Ridge, TN
Research Focus:	<i>Regional climate modeling, numerical weather modeling, climate and weather extremes, South Asian monsoon dynamics</i>
Aug' 2010 – Dec' 2012	Graduate Research Assistant, University of Illinois Urbana-Champaign, Urbana, IL
Thesis Title:	A numerical study of cropland-atmosphere feedbacks by incorporating a crop growth module in the WRF model.

RESEARCH INTERESTS

Weather/climate extremes, climate variability, change and impacts, hydroclimatic responses, human-climate interaction.

SKILLS

Statistical data analysis, handling large datasets, Python, shell scripting, Fortran 90, NCO, NCAR command language (NCL), numerical weather/climate modeling (WRF, RegCM)

LIST OF PUBLICATIONS

In Print/Press [13] ([Google Scholar Profile](#))

- **Rastogi, D.**, J.S. Holladay, K. J. Evans, K., B.L. Preston, and M. Ashfaq (2019), Future Changes in U.S. Residential Energy Consumption Driven by More Summer like Conditions. *Environmental Research Letters*, *Accepted*, doi: 10.1088/1748-9326/ab22d2.
- **Rastogi, D.**, M. Ashfaq, L. R. Leung, S. Ghosh, A. Saha, K. Hodges, and K. J. Evans (2018), Characteristics of Bay of Bengal Monsoon Depressions in the 21st Century. *Geophysical Research Letters*, *45*(13), 6637-6645, doi:10.1029/2018GL078756.
- **Rastogi, D.**, S.-C. Kao, M. Ashfaq, R. Mei, E.D. Kabela, S. Gangrade, B. S. Naz, B. L. Preston, N. Singh, and V.G. Anantharaj (2017), Effects of climate change on probable maximum precipitation: A sensitivity study over the Alabama-Coosa-Tallapoosa River Basin. *Journal of Geophysical Research: Atmospheres*, *122*(9), 4808-4828, doi: /10.1002/2016JD026001.
- Gangrade, S., S.-C. Kao, B.S. Naz., **D. Rastogi**, M. Ashfaq, N. Singh, and B.L. Preston (2018), Sensitivity of probable maximum flood in a changing environment, *Water Resources Research*, *54*(6), 3913-3936, doi:10.1029/2017WR021987.
- Naz, B. S., S.-C. Kao, M. Ashfaq., H. Gao, **D. Rastogi**, and S. Gangrade (2018), Effects of climate change on streamflow extremes and implications for reservoir inflow in the United States, *Journal of Hydrology*, *556*, 359-370, doi: 10.1016/j.jhydrol.2017.11.027.
- Paull, S. H., D. E. Horton, M. Ashfaq, **D. Rastogi**, L. D. Kramer, N. S. Diffenbaugh, and A. M. Kilpatrick (2017), Drought and immunity determine the intensity of West Nile virus epidemics and climate change impacts. *Proceedings of the Royal Society B: Biological Sciences*, *284*(1848), 20162078, doi:10.1098/rspb.2016.2078.
- Ashfaq, M., **D. Rastogi**, R. Mei, D. Touma, and L. R. Leung (2017), Sources of errors in the simulation of south Asian summer monsoon in the CMIP5 GCMs. *Climate dynamics*, *49*(1-2), 193-223, doi: 10.1007/s00382-016-3337-7.
- Ashfaq, M., **D. Rastogi**, R. Mei, S.-C. Kao, S. Gangrade, B.S. Naz, and D. Touma (2016), High-resolution ensemble projections of near-term regional climate over the continental United States, *Journal of Geophysical Research: Atmospheres*, *121*(17), 9943-9963, doi:10.1002/2016JD025285.
- Pagán, B. R., M. Ashfaq, **D. Rastogi**, D. R. Kendall, S.-C. Kao, B. S. Naz, R. Mei, and J.S. Pal. (2016), Extreme hydrological changes in the southwestern US drive reductions in water supply to Southern California by mid century. *Environmental Research Letters*, *11*(9), 094026, doi:10.1088/1748-9326/11/9/094026.
- Naz, B. S., S.-C. Kao, M. Ashfaq, **D. Rastogi**, R. Mei, and L.C. Bowling, (2016), Regional hydrologic response to climate change in the conterminous United States using high-resolution hydroclimate simulations. *Global and Planetary Change*, *143*, 100-117, doi:10.1016/j.gloplacha.2016.06.003.
- Mani, A., F. T.-C. Tsai, S.-C. Kao, B.S. Naz, M. Ashfaq, and **D. Rastogi** (2016), Conjunctive management of surface and groundwater resources under projected future climate change scenarios. *Journal of Hydrology*, *540*, 397-411, doi:10.1016/j.jhydrol.2016.06.021.
- Mei, R., M. Ashfaq, **D. Rastogi**, L. R. Leung, and F. Dominguez (2015), Dominating controls

for wetter South Asian summer monsoon in the twenty-first century. *Journal of Climate*, 28(8), 3400-3419, doi:10.1175/JCLI-D-14-00355.1.

- Singh, D., D. E. Horton, M. Tsiang, M. Haugen, M. Ashfaq, R. Mei, R., **D. Rastogi**, N.C. Johnson, A. Charland, B. Rajaratnam, and N.S. Diffenbaugh (2014), Severe precipitation in Northern India in June 2013: Causes, historical context, and changes in probability. *Bulletin of the American Meteorological Society*, 95(9), S58.

To be Submitted [1]

- **Rastogi, D.**, D. Touma and M. Ashfaq. Shift towards intense and widespread precipitation events over the United States by mid 21st century, *Geophysical Research Letters* (in preparation).

Articles/Technical Reports [3]

- Kao, S.-C., M. Ashfaq, B. S. Naz, R. Martinez, **D. Rastogi**, R. Mei, J. Yetta, N. M. Samu, M. J. Sale (2016), The Second Assessment of the Effects of Climate Change on Federal Hydropower, ORNL Technical Report, Oak Ridge National Laboratory, Oak Ridge, TN.
- Schubel, J., J.A. Lentz, F. Qader, A. Kishaba, D. Bader, L. Perkins, E. Yam, A. Kaneda, L. Brown, B.R. Pagan, J.S. Pal, C. Gao, J. Reichenberger, D.R. Kendall, M. Ashfaq, **D. Rastogi**, S.-C. Kao, B. Naz, D. Otto (2015), City of Long Beach Climate Resiliency Assessment Report. Prepared by the Aquarium of the Pacific (AOP), for the City of Long Beach, California: 88p.
- Roy, S. B. and **D. Rastogi** (2014), Land--Atmosphere Interactions. In Encyclopedia of Natural Resources: Air. Taylor and Francis: New York, Published online: 21 Oct 2014; 1040-1043.

SELECTED CONFERENCE PRESENTATIONS

- **Rastogi D.**, J. S. Holladay, K. J. Evans, B. L. Preston, M. Ashfaq (2019), Shift in Seasonal Climate Patterns Likely to Impact Residential Energy Consumption in the United States. The Bredesen Center Retreat, 8 January 2019, The University of Tennessee, Knoxville.
- **Rastogi D.**, J. S. Holladay, K. J. Evans, B. L. Preston, M. Ashfaq (2018), Shift in Seasonal Climate Patterns Likely to Impact Residential Energy Consumption in the United States. American Geophysical Fall Meeting 2018, 10-14 December 2018, Washington D.C.
- Gangrade S., S.-C. Kao, B. S. Naz, **D. Rastogi**, M. Ashfaq, N. Singh, B. L. Preston (2018), Evaluating the Sensitivity of Probable Maximum Flood using a High-resolution Distributed Hydrologic Model, Environmental and Water Resources Congress. June 2018, Minneapolis, Minnesota.
- **Rastogi D.**, K. J. Evans, M. Ashfaq (2018), Future Changes in U.S. Residential Energy Consumption Driven by More Summer like conditions, Oak Ridge Post-Doc Association Research Symposium, August 2018, Oak Ridge National Laboratory, Oak Ridge, TN.
- Ashfaq M., **D. Rastogi**, R. Leung, S. Ghosh, A. Saha, K. Hodges, K. Evans (2018), Characteristics of Bay of Bengal Monsoon Depressions in the 21st Century, 15th AOGS annual meeting, Jun 3-8, Honolulu, HI.
- Ashfaq M., B. Bonds, M. Alifa, **D. Rastogi**, F. Batibeniz, B. Pagan, J. Pal, K. Evans (2018), Near-Term Increase in the Hazardous Weather Conditions over North America, 15th AOGS Annual Meeting, Jun 3-8, Honolulu, HI.

- Ashfaq M., B. Bonds, M. Alifa, **D. Rastogi**, F. Batibeniz, B. Pagan, J. Pal, K. Evans (2018), Near-Term Increase in the Hazardous Weather Conditions over North America, Ninth ICTP Workshop on the Theory and Use of Regional Climate Models, May 28-Jun 8, Trieste, Italy (Invited).
- **Rastogi D.**, M. Ashfaq, B. R. Pagan, B. W. Bonds (2017), Impacts of Future Changes in Weather Conditions on U.S Transportation, Science Advisory Board Meeting, March 8, 2017, Oak Ridge National Laboratory.
- Ashfaq M., B. R. Pagan, B. W. Bonds, **D. Rastogi** (2016), Impacts of future changes in weather condition on US transportation, American Geophysical Union 2016 Fall Meeting, Dec. 12–16, San Francisco, CA.
- Gangrade, S. S.-C. Kao, **D. Rastogi**, M. Ashfaq, B. S. Naz, E. Kabela, V. G. Anantharaj, N. Singh, B. L. Preston, R. Mei (2016), Evaluation of Probable Maximum Precipitation and Flood under Climate Change in the 21st Century, American Geophysical Union 2016 Fall Meeting, Dec. 12–16, San Francisco, CA.
- S.-C. Kao, B. S. Naz, S. Gangrade, M. Ashfaq, **D. Rastogi** (2016), Sensitivity of Hydrologic Extremes to Spatial Resolution of Meteorological Forcings: A Case Study of the Conterminous United States, American Geophysical Union 2016 Fall Meeting, Dec. 12–16, San Francisco, CA.

RESEARCH PROJECTS

- Energy Exascale Earth System Model (E3SM), U.S. Department of Energy, Office of Science, Office of Biological and Environmental Research, Aug' 2016 – Present, (Principal Investigator: Peter E. Thornton, ORNL)
- CCSI PD Project: Climate dataset for stakeholders, 2016, (Principal Investigator: Moetasim Ashfaq, ORNL)
- Effects of Climate Change on Federal Hydropower – The Second 9505 Assessment. Sponsor: Water Power Technologies Office, U.S. Department of Energy. Role: Research Associate, Mar' 2014 – Jun' 2016, (Principal Investigator: S.-C. Kao, ORNL)
- Towards the Development of an Integrated Energy-Water Risk Assessment Tool for Probable Maximum Precipitation and Flood. Sponsor: Laboratory Directed Research and Development Program, Oak Ridge National Laboratory. Role: Research Associate, Mar' 2014 – Sep' 2015, (Principal Investigator: S.-C. Kao, ORNL)
- A Hierarchical Regional Modeling Framework for Decadal-Scale Hydro-climatic Predictions and Impact Assessments, funded by Laboratory Directed Research and Development (LDRD) Program, Jan' 2013 – Sep' 2013, (Principal Investigator: Moetasim Ashfaq, ORNL)
- Development of Frameworks for Robust Regional Climate Modeling, funded by U.S. Department of Energy Biological and Environmental Research (DOE-BER), US 1.2 Million, Jan' 2013 – Sep' 2013, (Principal Investigator: Moetasim Ashfaq, ORNL)

HONORS AND AWARDS

- Graduate Visitor Program, Advanced Study Program, 2019, National Center for Atmospheric Research, Boulder, CO.
- Young Scientist Summer Program 2019 at the International Institute for Applied Systems Analysis, Laxenburg, Austria. (Declined)

- Bredesen Center Fellow, The University of Tennessee, Knoxville, TN, August 2016 – Present.
- Graduate Research Fellowship, Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign, Urbana IL, 2010-2012.

PROFESSIONAL SERVICES

- Session chair/convener:
American Geophysical Fall Meeting 2018, 10-14 December 2018 Washington D.C.
 - GC21A Coupled Human–Natural Systems and Global Environmental Change: Innovative Interdisciplinary Approaches I
 - GC22A Coupled Human–Natural Systems and Global Environmental Change: Innovative Interdisciplinary Approaches II
 - GC31D Coupled Human–Natural Systems and Global Environmental Change: Innovative Interdisciplinary Approaches Posters
- Peer Reviews (13 Journals):
 - *Journal of Geophysical Research-Atmospheres*
 - *Journal of Climate*
 - *Climate Dynamics*
 - *Journal of the American Water Resources Association*
 - *International Journal of Climatology*
 - *Journal of Hydrometeorology*
 - *Journal of Hydrology: Regional Studies*
 - *Journal of Water and Climate Change*
 - *Climate Risk Management*
 - *Journal of Agronomy*
 - *Climate Change*
 - *Water*
 - *Catena*